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# Tables for the Thermophysical Properties of Methane

Daniel G. Friend
James F. Ely
Hepburn Ingham

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**Daniel G. Friend**
**James F. Ely**
**Hepburn Ingham**

Thermophysics Division
Center for Chemical Engineering
National Engineering Laboratory
National Institute of Standards and Technology
Boulder, Colorado 80303-3328

U.S. DEPARTMENT OF COMMERCE, Robert A. Mosbacher, Secretary
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, Raymond G. Kammer, Acting Director

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## LIST OF SYMBOLS AND UNITS

| Symbol | Description | SI Units (used in text) | REFERENCE |
|---|---|---|---|
| Roman | | | |
| $A$ | Molar Helmholtz energy | $J \cdot mol^{-1}$ + | eq (4) |
| $a,b$ | Exponents in scaled equation | - | eq (21), table (10) |
| $B$ | Second virial coefficient | $dm^3 \cdot mol^{-1}$ | table (7) |
| $C_i$ | Coefficients in $\Omega^{(2,2)*}$ | - | eq (10), table (8) |
| $C_P$ | Isobaric specific heat capacity | $J \cdot mol^{-1} \cdot K^{-1}$ | table (7) |
| $C_V$ | Isochoric specific heat capacity | $J \cdot mol^{-1} \cdot K^{-1}$ | table (7) |
| $E$ | Constant in scaled equation | - | eq (22), table (10) |
| $F$ | Crossover function in $\lambda_{cr}$ | - | eq (17) |
| $F_T, F_A, F_\rho$ | Coefficients in F | - | eq (17), table (10) |
| $f_{int}, f_i$ | Contribution from internal modes | - | eqs (11,12), table (8) |
| $G$ | Molar Gibbs energy | $J \cdot mol^{-1}$ | table (7) |
| $G_i$ | Coefficients in $\rho_{\sigma L}$ | - | eq (2), table (2) |
| $g_i$ | Coefficients in $\eta_{ex}$ | - | eq (13), table (9) |
| $H$ | Molar enthalpy | $J \cdot mol^{-1}$ | tables (1,7) |
| $H_i$ | Coefficients in $P_\sigma$ | - | eq (1), table (2) |
| $J_i$ | Coefficients in $\rho_{\sigma V}$ | - | eq (3), table (2) |
| $j_i$ | Coefficients in $\lambda_{ex}$ | - | eq (15), table (9) |
| $k$ | Boltzmann constant | $J \cdot K^{-1}$ | table (1) |
| $M_r$ | Relative molecular mass | - | table (1) |
| $N_A$ | Avogadro constant | $mol^{-1}$ | table (1) |
| $n_i$ | Coefficients in $\phi^r$ | - | eq (6), table (4) |
| $P$ | Pressure | MPa | - |
| $Q$ | Constant in scaled equation | - | eq (21), table (10) |
| $Q_i$ | Coefficients in $\phi^{id}$ | - | eq (5), table (3) |
| $R$ | Molar gas constant | $J \cdot mol^{-1} \cdot K^{-1}$ | table (1) |
| $R$ | Constant in scaled equation | - | eq (21), table (10) |

## LIST OF SYMBOLS AND UNITS (CONT'D)

| Symbol | Description | SI Units (used in text) | REFERENCE |
|---|---|---|---|
| $r_i$ | Exponent of $\delta$ | - | eqs (6,13,15), tables (4,9) |
| S | Molar entropy | $J \cdot mol^{-1} \cdot K^{-1}$ | table (7) |
| S | Constant in scaled equation | - | eq (22), table (10) |
| SWEOS | Schmidt-Wagner Equation of State | | |
| $s_i$ | Exponent of $\tau$ | - | eqs (6,13,15), tables (4,9) |
| t | Reduced temperature, $kT/\epsilon$ | - | eqs (9,10) |
| T | Temperature, IPTS-68 | K | - |
| $T^*$ | Reduced temperature, $(T_c-T)/T_c$ | - | eq (18) |
| U | Molar internal energy | $J \cdot mol^{-1}$ | table (7) |
| u | Unified atomic mass unit | kg | table (1) |
| W | Constant in scaled equation | - | eq (23), table (10) |
| w | Speed of sound | $m \cdot s^{-1}$ | table (7) |
| Z | Compressibility factor, $P/RT\rho$ | - | eq (3) |
| Greek | | | |
| $\beta$ | Scaling exponent in $\rho_{\sigma L}, \rho_{\sigma V}$ | - | eqs (2,3), table (2) |
| $\Gamma$ | Constant in scaled equation | - | eq (24), table (10) |
| $\delta$ | Reduced density, $\rho/\rho_c$ | - | - |
| $\delta_\sigma^*$ | Reduced density variable | - | eq (14) |
| $\epsilon$ | Scaling exponent in $P_\sigma$ | - | eq (1), table (2) |
| $\epsilon$ | Energy parameter potential | J | See $\epsilon/k$, below |
| $\epsilon/k$ | Energy parameter potential | K | table (1) |
| $\eta$ | Shear viscosity | $\mu Pa \cdot s$ | eq (7) |
| $\theta$ | Variable in scaled equation | - | eqs (21,22) |
| $\lambda$ | Thermal conductivity | $mW \cdot m^{-1} \cdot K^{-1}$ | eq (8) |
| $\rho$ | Molar density | $mol \cdot dm^{-3}$ | - |

| Symbol | Description | SI Units | REFERENCE |
|---|---|---|---|
| $\rho^*$ | Reduced density, $(\rho_c - \rho)/\rho_c$ | - | eq (19) |
| $\sigma$ | Distance parameter in potential | nm | table (1) |
| $\tau$ | Reduced inverse temperature, $T_c/T$ | - | - |
| $\phi$ | Reduced Helmholtz energy, A/RT | - | eq (4) |
| $\chi_T^*$ | Reduced compressibility | - | eqs (20,21,24) |
| $\Omega$ | Variable in scaled equation | - | eqs (21,23) |
| $\Omega^{(2,2)*}$ | Reduced collision integral | - | eqs (9,10) |
| Superscripts | | | |
| id | Ideal gas contribution | | eq (4), table (1) |
| r | Residual contribution | | eq (4) |
| Subscripts | | | |
| c | Value at critical point | | table (1) |
| cr | Critical contribution | | eqs (8,16) |
| ex | Excess contribution | | eqs (7,8,13,15) |
| t | Value at triple point | | table (1) |
| tL, tV | Value at triple point in liquid, vapor | | table (1) |
| $\sigma$ | Value at saturation boundary | | eq (1) |
| $\sigma$L, $\sigma$V | Value in saturated liquid, vapor | | eqs (2,3) |
| $\delta$ | Partial derivative with respect to $\delta$ | | tables (5,6) |
| $\tau$ | Partial derivative with respect to $\tau$ | | tables (5,6) |
| 0 | Value at zero density | | eqs (7-9,11) |

+ Throughout this paper, the mole (mol) quantifies the amount of substance whose elementary entities are the molecular constituents ($CH_4$) of the methane fluid.

# TABLES FOR THE THERMOPHYSICAL PROPERTIES OF METHANE

Daniel G. Friend, James F. Ely and Hepburn Ingham
Thermophysics Division
National Engineering Laboratory
National Institute of Standards and Technology
(formerly National Bureau of Standards)
Boulder, Colorado 80303

The thermophysical properties of methane are tabulated for a large range of fluid states based on recently formulated correlations. For the thermodynamic properties, temperatures from 91 to 600 K at pressures less than 100 MPa are included. For the viscosity, the corresponding range is 91 - 400 K with pressures to 55 MPa, while for the thermal conductivity the range is 91 - 600 K with pressures to 100 MPa. In addition to the tables of properties, algebraic expressions and associated tables of coefficients are given to allow additional property calculations. Tables of comparisons between experimental property determinations and the correlations are also given both for primary data used in the formulation of the correlations and for additional data. A listing of a FORTRAN program for the evaluation of methane thermophysical properties using the Schmidt-Wagner equation of state is included.

Key words: correlation; density; equation of state; heat capacity; methane; phase boundary; pressure; speed of sound; thermal conductivity; thermophysical properties; transport properties; virial coefficients; viscosity.

## 1. INTRODUCTION

We have recently developed correlations for several of the thermophysical properties of methane [1], including an equation of state analogous to that proposed by Schmidt and Wagner [2], equations for the liquid-vapor phase boundary, and correlations for the fluid viscosity and thermal conductivity. Details of the development and error analysis of the formulations have been presented elsewhere [1]. In this paper, we summarize our equations and present extensive tabular comparisons of the correlations with experimental data and tables of properties based on these correlations. We have also included the listing of a FORTRAN program which can be used interactively to calculate properties of methane.

The rationale for these new correlations and the present set of tables was discussed in Ref.[1]. Briefly summarized, since the extensive works of Goodwin [3], Angus et al. [4], and Sychev et al. [5], for example, there have been many new experimental measurements, including accurate phase boundary measurements [6], critical region PVT experiments [7], and extensive thermal conductivity [8] and viscosity measurements [9]. In addition, the form of the residual Helmholtz energy correlation, first proposed by Schmidt and Wagner [2], gives an excellent description of the thermodynamic surface and describes the critical region extremely well for a classical equation of state. The new ancillary equations for the phase boundary incorporate the results of lowest order scaling theory, and both viscosity and thermal conductivity correlations improve the description of the fluid properties when compared to previous correlations. The economic importance of methane, as the major constituent of natural gas, makes the use of improved thermophysical properties correlations especially desirable. Also, the present correlations should prove useful as reference equations for corresponding states models for mixtures and other pure fluids.

The next two sections give, for thermodynamic and transport properties, the algebraic forms for the fluid property correlations with very brief narrative. The List of Symbols and Units given above is a useful adjunct to the equations, and tables of necessary coefficients and constants are interspersed throughout the text. Extensive discussion of the development of the equations and evaluation of fitted coefficients was given in Ref.[1]. Tables which follow, in Appendix A, give the comparisons between the correlations and experimental data; these include both primary data, used in the determination of the coefficients in the equation, and secondary data, not explicitly used for any of a number of reasons as discussed in Ref.[1]. The next set of tables, in Appendix B, gives values of the thermophysical properties for convenient values of the temperature, density, or pressure. Finally, this report concludes with a listing in Appendix C, of a FORTRAN 77 program which allows interactive evaluation of many thermophysical properties for any state point within the range of the correlations.

## 2. THERMODYNAMIC PROPERTIES AND THEIR ALGEBRAIC REPRESENTATION

### 2.1 Fixed Point Constants

Values for the critical and triple-point constants, intermolecular potential parameters (for transport properties using the 11-6-8, $\gamma = 3$ potential), reference values for ideal gas properties, and miscellaneous constants are given in table 1. Details of the selection process and quoted uncertainties are given in Ref.[1]. The values of the critical constants, including all the quoted digits and disregarding the associated uncertainties, are needed for evaluating the correlating equations below. The fundamental constants in table 1 agree with the values most recently recommended by CODATA [10].

TABLE 1

FIXED POINT CONSTANTS AND OTHER PARAMETERS USED IN THE CORRELATIONS

| | |
|---|---|
| Triple Point: | $T_t = 90.6854 \pm 0.0003$ K<br>$P_t = 11.696 \pm 0.002$ kPa<br>$\rho_{tL} = 28.145 \pm 0.005$ mol•dm$^{-3}$<br>$\rho_{tv} = 15.66 \pm 0.05$ mol•m$^{-3}$ |
| Critical Point: | $T_c = 190.551 \pm 0.01$ K<br>$P_c = 4.5992 \pm 0.003$ MPa<br>$\rho_c = 10.139 \pm 0.01$ mol•dm$^{-3}$<br>$Z_c = 0.28631 \pm 0.0005$ |
| Intermolecular Potential Parameters: | $\epsilon/k = 174$ K  $\sigma = 0.36652$ nm |
| Ideal Gas Reference Point Values: | (at 298.15 K and 0.101 325 MPa)<br>$S^{id} = 186.266$ J•K$^{-1}$•mol$^{-1}$<br>$H^{id} = 10.0177$ kJ•mol$^{-1}$ |
| Miscellaneous: | Relative molecular mass...$M_r = 16.043$<br>Universal gas constant...R = 8.314 510 J•mol$^{-1}$•K$^{-1}$<br>Boltzmann constant...k = 1.380 658 x 10$^{-23}$ J•K$^{-1}$<br>Avogadro constant...$N_A$ = 6.022 136 7 x 10$^{23}$ mol$^{-1}$<br>Unified atomic mass unit...u = 1.660 540 2 x 10$^{-27}$ kg |

## 2.2 Liquid-Vapor Saturation Boundary

The three equations for the pressure, liquid density, and vapor density along the two-phase boundary are described in this section. Although the full equation of state can be used with the Maxwell construction method to evaluate these quantities, these equations include theoretically inspired scaling terms and are more accurate in the critical region. The measurements of Kleinrahm and Wagner [6] were the primary data used to establish these correlations.

For the saturated vapor pressure $P_\sigma$, the equation

$$P_\sigma(T) = P_c \ \mathrm{EXP}\ [\ H_1T^*/(1-T^*) + H_2T^* + H_3T^{*\epsilon} + H_4T^{*2} + H_5T^{*3}\ ], \tag{1}$$

where $T^*=(T_c-T)/T_c$, is used. The necessary constants and critical exponent are given in table 2.

The densities of the saturated liquid $\rho_{\sigma L}$ and saturated vapor $\rho_{\sigma V}$ are given by

$$\rho_{\sigma L}(T) = \rho_c \left[ 1 + \frac{G_1T^{*\beta} + G_2T^{*2} + G_3T^{*3}}{1 + G_4T^{*(1-\beta)}} \right] \tag{2}$$

and

$$\rho_{\sigma V}(T) = \frac{P_\sigma(T)}{R\ T} \left\{ 1 + P_\sigma(T)\tau^8 \ \frac{Z_c - 1}{P_c} \left[ 1 + \frac{J_0T^{*\beta} + J_1T^{*2\beta} + J_2(T^* + T^{*4}) + J_3T^{*2}}{1 + J_4T^*} \right] \right\}^{-1} \tag{3}$$

respectively. In eq (3), $Z_c = P_c/(RT_c\rho_c)$ is the critical compressibility factor given in table 1, $\tau = T_c/T$, and $P_\sigma(T)$ must be evaluated from eq (1). The constants are again found in table 2. Tables A1, A2, and A3 in Appendix A give comparisons between experimental phase boundary measurements and the quantities calculated by eqs (1-3).

TABLE 2

COEFFICIENTS FOR LIQUID-VAPOR BOUNDARY CORRELATIONS

| Saturated Vapor Pressure eq (1) | Saturated Liquid Density eq (2) | Saturated Vapor Density eq (3) |
|---|---|---|
| $\epsilon$ = 1.90 | $\beta$ = 0.355 | $\beta$ = 0.355 |
| $H_1$ = -6.589 879 | $G_1$ = 1.838 982 | $J_0$ = -0.737 748 3 |
| $H_2$ = 0.635 517 5 | $G_2$ = -0.772 745 2 | $J_1$ = -1.241 532 |
| $H_3$ = 11.310 28 | $G_3$ = 0.559 244 6 | $J_2$ = -1.649 972 |
| $H_4$ = -10.387 20 | $G_4$ = -0.380 779 3 | $J_3$ = 2.281 949 |
| $H_5$ = 3.393 075 | | $J_4$ = 1.439 570 |

## 2.3 Ideal Gas Equation

The thermodynamic surface is described by an equation for the molar Helmholtz energy, A. Thus, the important derived properties can be obtained by simple, analytical differentiation. The Helmholtz energy is divided into ideal gas and residual constituents according to

$$A(\rho,T) = A^{id} + A^{r} = RT\phi = RT(\phi^{id} + \phi^{r}). \qquad (4)$$

All the derived thermodynamic properties can similarly be divided into ideal and residual contributions as discussed below.

Our ideal gas correlation is based on Goodwin's fit [11] of the spectroscopically derived data of McDowell and Kruse [12]. With the definitions $\delta = \rho/\rho_c$ and $\tau = T_c/T$, the dimensionless ideal gas contribution to the Helmholtz energy is written as

$$\begin{aligned} \phi^{id}(\delta,\tau) &= A^{id} / RT \\ &= Q_1 + \ln \delta + Q_2 \ln \tau + Q_3\, \tau^{-1/3} + \\ &\quad Q_4\, \tau^{-2/3} + Q_5\, \tau^{-1} + Q_6 \ln (1 - e^{Q_7 \tau}) \end{aligned} \qquad (5)$$

with the coefficients $Q_i$ given in table 3. Equation (5) must be evaluated at the experimental density and temperature, although for many thermodynamic properties, there is no density (or pressure) dependence in the required derivatives, as discussed below. The constants in table 3 incorporate integration constants necessary to give the standard values of the entropy and enthalpy reported in table 1. Reference [11] gives a table of comparisons between the spectroscopic data and the correlations; these comparisons are not repeated in this paper.

TABLE 3

COEFFICIENTS FOR IDEAL GAS FREE ENERGY, eq (5)

| | |
|---|---|
| $Q_0$ = -15.479 844 | $Q_4$ = 1.690 097 9 |
| $Q_1$ = -10.413 865 | $Q_5$ = -0.391 154 1 |
| $Q_2$ = 2.599 832 4 | $Q_6$ = 4.720 671 5 |
| $Q_3$ = -3.385 408 3 | $Q_7$ = -10.543 907 |

2.4 Residual Helmholtz Energy

The residual term in eq (5) for the Helmholtz energy was correlated by a 32-term function introduced by Schmidt and Wagner [2]. The resulting equation of state has been called the SWEOS and the coefficients for methane were obtained by multiproperty least-squares fitting as described in Ref.[1]. Explicitly, we write

$$\phi^r = \sum_{i=1}^{13} n_i \delta^{r_i} \tau^{s_i} + e^{-\delta^2} \sum_{i=14}^{24} n_i \delta^{r_i} \tau^{s_i} + e^{-\delta^4} \sum_{i=25}^{32} n_i \delta^{r_i} \tau^{s_i} \qquad (6)$$

with $\delta = \rho/\rho_c$ and $\tau = T_c/T$ as before. The coefficients $n_i$ and the exponents $r_i$ and $s_i$ are given in table 4.

TABLE 4

EXPONENTS AND COEFFICIENTS FOR THE RESIDUAL FREE ENERGY $\phi^r$ (eq (6))

| | i | $r_i$ | $s_i$ | $n_i$ |
|---|---|---|---|---|
| $\delta^{r_i} \tau^{s_i}$ | 1 | 1 | 0 | $0.384\,436\,099\,66$ |
| | 2 | 1 | 1.5 | $-0.179\,692\,598\,80 \times 10$ |
| | 3 | 1 | 2.5 | $0.329\,444\,947\,37$ |
| | 4 | 2 | -0.5 | $0.226\,312\,728\,44 \times 10^{-1}$ |
| | 5 | 2 | 1.5 | $0.759\,236\,768\,80 \times 10^{-1}$ |
| | 6 | 2 | 2 | $0.693\,758\,447\,26 \times 10^{-1}$ |
| | 7 | 3 | 0 | $0.241\,163\,263\,95 \times 10^{-1}$ |
| | 8 | 3 | 1 | $0.107\,009\,920\,85 \times 10^{-1}$ |
| | 9 | 3 | 2.5 | $-0.380\,933\,275\,16 \times 10^{-1}$ |
| | 10 | 6 | 0 | $0.471\,537\,561\,14 \times 10^{-3}$ |
| | 11 | 7 | 2 | $0.556\,607\,678\,81 \times 10^{-3}$ |
| | 12 | 7 | 5 | $0.548\,759\,346\,53 \times 10^{-6}$ |
| | 13 | 8 | 2 | $-0.999\,632\,699\,97 \times 10^{-4}$ |
| $e^{-\delta^2} \delta^{r_i} \tau^{s_i}$ | 14 | 1 | 5 | $-0.128\,087\,979\,28$ |
| | 15 | 1 | 6 | $0.380\,198\,873\,38 \times 10^{-1}$ |
| | 16 | 2 | 3.5 | $0.139\,226\,650\,55$ |
| | 17 | 2 | 5.5 | $-0.874\,996\,348\,86 \times 10^{-1}$ |
| | 18 | 3 | 3 | $-0.334\,894\,165\,76 \times 10^{-2}$ |
| | 19 | 3 | 7 | $-0.517\,576\,297\,12 \times 10^{-1}$ |
| | 20 | 5 | 6 | $0.252\,835\,179\,12 \times 10^{-1}$ |
| | 21 | 6 | 8.5 | $0.518\,703\,205\,95 \times 10^{-3}$ |
| | 22 | 7 | 4 | $-0.166\,770\,594\,52 \times 10^{-2}$ |
| | 23 | 8 | 6.5 | $-0.607\,401\,927\,39 \times 10^{-3}$ |
| | 24 | 10 | 5.5 | $-0.972\,915\,359\,99 \times 10^{-4}$ |
| $e^{-\delta^4} \delta^{r_i} \tau^{s_i}$ | 25 | 2 | 22 | $-0.298\,844\,010\,46 \times 10^{-4}$ |
| | 26 | 3 | 11 | $-0.130\,940\,111\,24 \times 10^{-1}$ |
| | 27 | 3 | 18 | $0.198\,175\,833\,80 \times 10^{-1}$ |
| | 28 | 4 | 11 | $0.208\,465\,762\,33 \times 10^{-1}$ |
| | 29 | 4 | 23 | $-0.358\,025\,052\,63 \times 10^{-1}$ |
| | 30 | 5 | 17 | $-0.203\,486\,851\,74$ |
| | 31 | 5 | 18 | $0.215\,964\,755\,09$ |
| | 32 | 5 | 23 | $-0.429\,340\,628\,25 \times 10^{-2}$ |

## 2.5 Derived Property Equations

One can evaluate many of the thermodynamic properties of methane by taking the appropriate derivatives of the Helmholtz energy as given in eqs (4-6). In tables 5 and 6 we have collected the coefficients necessary to calculate the six lowest order derivatives for the ideal gas and residual contributions to the free energy. In our notation, the first isothermal (reduced) density derivative of the (reduced) residual free energy is denoted

$$\phi_{\delta}^{r} = \left.\frac{\partial \phi^{r}(\delta,\tau)}{\partial \delta}\right|_{\tau} = \frac{\rho_c}{RT} \left.\frac{\partial A^{r}(\rho,T)}{\partial \rho}\right|_{T}$$

and similarly for other derivatives.

To calculate derivatives of the ideal gas contribution to the free energy, one is guided by the form of eq (5). The left-most column of table 5 lists the factors necessary for the various derivatives, and the remaining columns give the coefficients of these factors directly beneath the heading which indicates the quantity to be calculated. The resulting terms are to be added as in eq (7). The values of the $Q_i$ parameters are obtained from table 4.

TABLE 5

IDEAL GAS FREE ENERGY AND ITS DERIVATIVES

| | $\phi^{id}$ eq (5) | $\delta\phi_{\delta}^{id}$ ( =1 ) | $\tau\phi_{\tau}^{id}$ | $\delta^2\phi_{\delta\delta}^{id}$ ( =-1 ) | $\tau^2\phi_{\tau\tau}^{id}$ | $\delta\tau\phi_{\delta\tau}^{id}$ ( =0 ) |
|---|---|---|---|---|---|---|
| 1 | $Q_1$ | 1 | $Q_2$ | -1 | $-Q_2$ | 0 |
| $\ln\delta$ | 1 | 0 | 0 | 0 | 0 | 0 |
| $\ln\tau$ | $Q_2$ | 0 | 0 | 0 | 0 | 0 |
| $\tau^{-1/3}$ | $Q_3$ | 0 | $-Q_3/3$ | 0 | $4Q_3/9$ | 0 |
| $\tau^{-2/3}$ | $Q_4$ | 0 | $-2Q_4/3$ | 0 | $10Q_4/9$ | 0 |
| $\tau^{-1}$ | $Q_5$ | 0 | $-Q_5$ | 0 | $2Q_5$ | 0 |
| $\ln(1 - e^{Q_7\tau})$ | $Q_6$ | 0 | 0 | 0 | 0 | 0 |
| $(e^{-Q_7\tau}-1)^{-1}$ | 0 | 0 | $-Q_6Q_7\tau$ | 0 | 0 | 0 |
| $e^{Q_7\tau}(e^{Q_7\tau}-1)^{-2}$ | 0 | 0 | 0 | 0 | $-Q_6Q_7^2\tau^2$ | 0 |

For derivatives of the residual free energy, eq (2) and tables 4 and 6 can be used. As in eq (6), the derivatives are obtained by summing 32 terms of three general types. Each of the terms has factors consisting of powers of the reduced density and temperature with the explicit exponents $r_i$ and $s_i$ and coefficients $n_i$ given for each value of i in table 4. The additional exponential factor, with its argument either the second or fourth power of the density, is indicated in the column heading of table 6 where appropriate. The remaining coefficients relevant to the derivative being calculated are given in the appropriate row in that table.

TABLE 6

RESIDUAL FREE ENERGY AND ITS DERIVATIVES

| | $n_i \delta^{r_i} \tau^{s_i}$ (i = 1 to 13) | $e^{-\delta^2} n_i \delta^{r_i} \tau^{s_i}$ (i = 14 to 24) | $e^{-\delta^4} n_i \delta^{r_i} \tau^{s_i}$ (i = 25 to 32) |
|---|---|---|---|
| $\phi^r$ | 1 | 1 | 1 |
| $\delta\phi^r_\delta$ | $r_i$ | $r_i - 2\delta^2$ | $r_i - 4\delta^4$ |
| $\tau\phi^r_\tau$ | $s_i$ | $s_i$ | $s_i$ |
| $\delta^2\phi^r_{\delta\delta}$ | $r_i(r_i-1)$ | $[r_i(r_i-1) -2(2r_i+1)\delta^2 +4\delta^4]$ | $[r_i(r_i-1) -4(2r_i+3)\delta^4 +16\delta^8]$ |
| $\tau^2\phi^r_{\tau\tau}$ | $s_i(s_i-1)$ | $s_i(s_i-1)$ | $s_i(s_i-1)$ |
| $\delta\tau\phi^r_{\delta\tau}$ | $r_i s_i$ | $s_i(r_i-2\delta^2)$ | $s_i(r_i-4\delta^4)$ |

In table 7, the most common thermodynamic quantities of interest have been expressed in terms of the reduced derivatives of the Helmholtz energy as discussed above. All nominally extensive quantities (that is, the various thermodynamic potentials and heat capacities) are given on a per-mole basis. It is straightforward to use these tables to calculate the most useful thermodynamic properties of methane. In tables A4-A9 of Appendix A, we give comparisons of experimental data and correlated values for the PVT surface, second virial coefficient, isochoric specific heat capacity, isobaric specific heat capacity, specific heat capacity of the liquid along the saturation boundary, and speed of sound.

TABLE 7

THERMODYNAMIC PROPERTY EQUATIONS

| | |
|---|---|
| Pressure: | $P(\rho,T) = \rho RT\ (1 + \delta\phi_{\delta}^{r})$ |
| Internal Energy: | $U(\rho,T) = RT\ (\tau\phi_{\tau}^{id} + \tau\phi_{\tau}^{r})$ |
| Enthalpy: | $H(\rho,T) = RT\ (1 + \tau\phi_{\tau}^{id} + \tau\phi_{\tau}^{r} + \delta\phi_{\delta}^{r})$ |
| Gibbs Energy: | $G(\rho,T) = RT\ (1 + \phi^{id} + \phi^{r} + \delta\phi_{\delta}^{r})$ |
| Helmholtz Energy: | $A(\rho,T) = RT\ (\phi^{id} + \phi^{r})$ |
| Entropy: | $S(\rho,T) = -R\ (\phi^{id} + \phi^{r} - \tau\phi_{\tau}^{id} - \tau\phi_{\tau}^{r})$ |
| Isochoric Specific Heat Capacity: | $C_{v}(\rho,T) = -R\ (\tau^{2}\phi_{\tau\tau}^{id} + \tau^{2}\phi_{\tau\tau}^{r})$ |
| Isobaric Specific Heat Capacity: | $C_{p}(\rho,T) = C_{v}(\rho,T) + R\ \dfrac{(1 + \delta\phi_{\delta}^{r} - \delta\tau\phi_{\delta}^{r})^{2}}{1 + 2\delta\phi_{\delta}^{r} + \delta^{2}\phi_{\delta\delta}^{r}}$ |
| Saturated Liquid Specific Heat Capacity: | $C_{\sigma L}(T) = C_{v}(\rho_{\sigma L},T) - R\ (1 + \delta\phi_{\delta}^{r} - \delta\tau\phi_{\delta\tau}^{r})\ \dfrac{T}{\rho_{\sigma L}}\ \dfrac{d\rho_{\sigma L}}{dT}$ |
| Speed of Sound: | $w^{2}(\rho,T) = \dfrac{RT}{uN_{A}M_{r}}\ \dfrac{C_{p}(\rho,T)}{C_{v}(\rho,T)}(1+2\delta\phi_{\delta}^{r}+\delta^{2}\phi_{\delta\delta}^{r})$ |
| Second Virial Coefficient: | $B(T) = \dfrac{1}{\rho_{c}}\ \lim_{\delta\to 0}\ \phi_{\delta}^{r}$ |

# 3. TRANSPORT PROPERTIES AND THEIR ALGEBRAIC REPRESENTATION

The viscosity and thermal conductivity are correlated as the sums of terms representing the temperature dependent dilute gas contributions, the temperature and density dependent excess contributions and, for the thermal conductivity, a contribution from the critical enhancement. The viscosity is given by

$$\eta(\rho,T) = \eta_0(T) + \eta_{ex}(\rho,T) \tag{7}$$

and the expression for thermal conductivity is

$$\lambda(\rho,T) = \lambda_0(T) + \lambda_{ex}(\rho,T) + \lambda_{cr}(\rho,T). \tag{8}$$

These terms are described in this section.

## 3.1 Dilute Gas Correlations

Our expression for the dilute gas viscosity is from the Chapman-Enskog theory [13]. Using the appropriate constants from table 1, we find

$$\eta_0(T) = 10.50 \sqrt{t} \;/\; \Omega^{(2,2)*}(t) \;\mu\text{Pa}\cdot\text{s} \tag{9}$$

where the reduced temperature $t = kT/\epsilon$. The collision integral $\Omega^{(2,2)*}$ has been approximated for the 11-6-8, $\gamma = 3$ intermolecular potential function [14],

$$\Omega^{(2,2)*} = \left[ \sum_{i=1}^{9} C_i \; t^{[(i-1)/3-1]} \right]^{-1} , \tag{10}$$

with coefficients $C_i$ listed in table 8. The collision integrals tabulated in Ref.[14] are compared to eq (10) in table A10 of Appendix A; experimental values of $\eta_0$ are compared to values calculated from eq (9) in table A11.

TABLE 8

COEFFICIENTS FOR DILUTE GAS TRANSPORT PROPERTIES

| $\Omega^{(2,2)*}$, eq (10) | | $f_{int}$, eq (12) | |
|---|---|---|---|
| $c_1$ | -3.032 813 828 1 | | |
| $c_2$ | 16.918 880 086 | $f_1$ | 1.458 850 |
| $c_3$ | -37.189 364 917 | | |
| $c_4$ | 41.288 861 858 | $f_2$ | -0.437 716 2 |
| $c_5$ | -24.615 921 140 | | |
| $c_6$ | 8.948 843 095 9 | | |
| $c_7$ | -1.873 924 504 2 | | |
| $c_8$ | 0.209 661 013 90 | | |
| $c_9$ | $-9.657\ 043\ 707\ 4 \times 10^{-3}$ | | |

For the thermal conductivity $\lambda_0$ of the dilute gas, we have chosen a modified Eucken model [15] with resulting equation

$$\lambda_0(T) = 0.51826\ \eta_0(T)[\ 3.75 - f_{int}(\tau^2\phi^{id}_{\tau\tau} + 1.5)\ ]\ \mathrm{mW{\cdot}m^{-1}{\cdot}K^{-1}}. \quad (11)$$

In eq (11), $f_{int}$ is the dimensionless function defined by

$$f_{int} = f_1 + (f_2/t) \quad (12)$$

with the fitted coefficients f also given in table 8, and the viscosity should be expressed in $\mu$Pa$\cdot$s, as in eq (9). The quantity $\tau^2\phi^{id}_{\tau\tau}$ in eq (12) can be evaluated from tables 3 and 5. Table A12 of Appendix A gives comparisons between experimental values for the dilute gas thermal conductivity and values calculated from eq (11).

## 3.2 Excess Property Correlations

For the excess viscosity, we use the rational polynomial

$$\eta_{ex}(\rho,T) = 12.149 \left[\sum_{i=1}^{9} g_i\, \delta^{r_i} \tau^{s_i}\right] \left[1 + \sum_{i=10}^{11} g_i\, \delta^{r_i} \tau^{s_i}\right]^{-1} \mu\mathrm{Pa{\cdot}s} \qquad (13)$$

where the exponents $r_i$ and $s_i$ and the dimensionless fitted coefficients, $g_i$, are given in table 9. Comparisons between experimental viscosities and viscosities calculated using eq (7) with eqs (9) and (13) are given in table A13 of Appendix A.

The excess thermal conductivity $\lambda_{ex}$ has been correlated to a polynomial in $\delta$ and $\tau$ with a factor in the final term of $(\delta_\sigma^*)^{-1}$, defined by

$$\delta_\sigma^*(T) = \begin{cases} \rho_{\sigma v}(T) / \rho_c \,, & \text{if } T < T_c \text{ and } \rho < \rho_c \,, \\ 1 \,, & \text{otherwise,} \end{cases} \qquad (14)$$

in the final term. In eq (14), $\rho_{\sigma v}$ is the density of the saturated vapor and can be calculated from eq (3). The quantity $\delta_\sigma^*(T)$ differs from 1 only in the vapor phase below the critical temperature. Thus we write

$$\lambda_{ex}(\rho,T) = 6.29638 \left[\sum_{i=1}^{6} j_i\, \delta^{r_i} \tau^{s_i} + j_7 \delta^2/\delta_\sigma^*\right] \mathrm{mW{\cdot}m^{-1}{\cdot}K^{-1}} \qquad (15)$$

The exponents and dimensionless fitting coefficients for eq (15) are included in table 9.

TABLE 9

COEFFICIENTS FOR EXCESS TRANSPORT PROPERTY CORRELATIONS

| | $\eta_{ex}$, eq (13) | | | $\lambda_{ex}$, eq (15) | | |
|---|---|---|---|---|---|---|
| i | $r_i$ | $s_i$ | $g_i$ | $r_i$ | $s_i$ | $j_i$ |
| 1 | 1 | 0 | 0.412 501 37 | 1 | 0 | 2.414 920 7 |
| 2 | 1 | 1 | -0.143 909 12 | 3 | 0 | 0.551 663 31 |
| 3 | 2 | 0 | 0.103 669 93 | 4 | 0 | -0.528 377 34 |
| 4 | 2 | 1 | 0.402 874 64 | 4 | 1 | 0.073 809 553 |
| 5 | 2 | 1.5 | -0.249 035 24 | 5 | 0 | 0.244 655 07 |
| 6 | 3 | 0 | -0.129 531 31 | 5 | 1 | -0.047 613 626 |
| 7 | 3 | 2 | 0.065 757 76 | * 2 | 0 | 1.555 461 2 |
| 8 | 4 | 0 | 0.025 666 28 | | | |
| 9 | 4 | 1 | -0.037 165 26 | | | |
| 10 | 1 | 0 | -0.387 983 41 | | | |
| 11 | 1 | 1 | 0.035 338 15 | | | |

* Term divided by $\delta_\sigma^*$

## 3.3 Critical Enhancement Correlation

The remaining term in eq (8) is the critical enhancement of the thermal conductivity; it is easily observed in a broad region around the critical point. We have correlated this using a function very similar to that developed by Sengers et al. [16]. After evaluating the universal, fluid dependent, and correlated constants, we write

$$\lambda_{cr}(\rho,T) = \frac{91.855}{\eta(\rho,T)\ \tau^2}\ [1 + \delta\phi_\delta^r - \delta\tau\phi_{\delta\tau}^r]^2\ \chi_T^{*0.4681}\ F(T^*,\rho^*)\ \frac{\mathrm{mW}}{\mathrm{m{\cdot}K}} \tag{16}$$

where the viscosity is expressed in $\mu$Pa•s in eq (16). The empirical dimensionless crossover or damping function F is defined by

$$F(T^*,\rho^*) = e^{-[F_T|T^*|^{1/2} + F_\rho\rho^{*2} + F_A\rho^*]} \tag{17}$$

where $F_T$, $F_A$, and $F_\rho$ are constants in table 10 and $T^*$ and $\rho^*$ measure deviations from the critical point according to

$$T^* = (T_c - T)/T_c \quad ( = 1 - 1/\tau ) \tag{18}$$

and

$$\rho^* = (\rho_c - \rho)/\rho_c \quad ( = 1 - \delta ). \tag{19}$$

The final factor in eq (16) is the reduced and symmetrized compressibility $\chi_T^*$. Throughout most of the phase diagram, this can be evaluated classically using

$$\chi_T^* = 0.28631\ \delta\tau\ [1 + 2\delta\phi_\delta^r + \delta^2\phi_{\delta\delta}^r]^{-1} , \tag{20}$$

where the derivatives in eq (20) are found from tables 4 and 6. However, the classical quantity in eq (20) is not very accurate in the region very close to the critical point, so in the small region defined by 185 K $\le$ T $\le$ 196 K and 7.6 $\mathrm{mol \cdot dm^{-3}} \le \rho \le$ 12.7 $\mathrm{mol \cdot dm^{-3}}$, we recommend evaluating the compressibility using the MLSG [17] scaled equation of state. In this region, then,

$$\chi_T^*(\rho,T) = Q\ |\rho^*|^{-a}\ \theta^b\ [\theta + \Omega(\theta+R)]^{-1}. \tag{21}$$

where the variables $\theta$ and $\Omega$ are defined as

$$\theta = \begin{cases} 1 + E\ (1 + S\ T^*\ |\rho^*|^{-1/\beta})^{2\beta}, & \text{if } T^* < -|\rho^*|^{1/\beta}/S \\ 1 & , \quad \text{if } T^* > -|\rho^*|^{1/\beta}/S \end{cases} \tag{22}$$

and

$$\Omega = W\ T^*\ |\rho^*|^{-1/\beta} \tag{23}$$

and the remaining constants in eq (21) can be found in table 10. Finally, along the critical isochore, if 185 K $\le$ T $\le$ 196 K, we can use

$$\chi_T^*(\rho=\rho_c,T) = \Gamma\ |T^*|^{-\gamma} \tag{24}$$

to avoid spurious singularities in eq (21). This completes the description of the thermal conductivity enhancement and the correlation for the methane fluid transport properties. Table A14 of Appendix A gives tabular comparisons between experimental values of the thermal conductivity coefficient and those calculated from eq (8) using eqs (11, 12, 15-17).

TABLE 10

CONSTANTS FOR $\lambda_{cr}$

| | |
|---|---|
| Fitted coefficients: | $F_T$ = 2.646<br>$F_\rho$ = 2.678<br>$F_A$ = -0.637 |
| Critical exponent: | $\beta$ = 0.355 |
| Universal constants: | a = 3.352<br>b = 0.732<br>E = 0.287<br>R = 0.535 |
| Fluid dependent constants derived from Ref.[16] : | Q = 0.113 3<br>S = -6.098<br>W = -1.401<br>$\Gamma$ = 0.080 1 |

# 4. SUMMARY OF UNCERTAINTIES ASSOCIATED WITH THE CORRELATIONS

We have judged the uncertainties associated with the correlations in various regions of the phase diagram. These judgements are based on an examination of the deviations of our correlations from experimental data using tables such as included in Appendix A and deviation plots as in Ref.[1], an assessment of the experiments themselves and their reported accuracies, and comparisons of these correlations with previously published equations. In this section, we will summarize the results of our assesment so that the equations and the tables in Appendix B can be used appropriately; details concerning the establishment of these uncertainties are given in Ref.[1]. In this section, the terms "uncertainty", "error", and "accuracy" are used interchangeably; the deviations from the true value, of quantities calculated from the correlations, will not exceed the stated uncertainty.

## 4.1 Two-Phase Boundary

First, for the pressure along the liquid-vapor saturation boundary, we have considered the uncertainties of both the triple-point and critical point pressures (table 1), the quality of the measurements of Ref.[6], and the disconcerting disagreement between the earlier benchmark data. We make the subjective judgment that either the ancillary eq (1) or the SWEOS will provide values of the saturation pressures accurate within 0.06 percent above $T = 120$ K and accurate within 0.3 percent below this temperature.

For the density of the saturated liquid, again, either the ancillary equation or the value of the density from the SWEOS can be used with an estimated accuracy well under 0.2 percent throughout the range from the triple point to just below the critical point. We estimate that between 190.5 K and $T_c$ the uncertainty in the saturated liquid density associated with these equations may exceed 1 percent.

We have considered the data and conclusions of Refs.[3, 4, 6], and estimate that the error associated with either eq (3) or the SWEOS for the density of the saturated vapor does not exceed 1 percent from the triple point temperature to 91 K, 2 percent above T = 190.5 K, and is well under 0.5 percent for the remainder of the two-phase boundary.

## 4.2 Thermodynamic Properties

In this section, we discuss the uncertainties associated with the full equation of state. The PVT surface is considered first, and both the calculation of pressure with temperature and density as independent variables, and the calculation of density with temperature and pressure as independent variables are discussed. For this discussion, the thermodynamic space is divided into temperature regions: $T_t$ - 185 K, 185 - 195 K, 195 - 300 K, and 300 - 600 K. Following the treatment of the PVT surface, uncertainties associated with the calculation of the second virial coefficient, isochoric specific heat capacity, isobaric specific heat capacity, specific heat capacity of the saturated liquid, and speed of sound are discussed in turn.

We offer the following guidelines when calculating pressures from the SWEOS when given densities and temperatures between the triple point and 185 K. For the vapor phase, the errors should not exceed 0.2 percent. For the liquid below 150 K and below 1 MPa, the percentage uncertainty is extremely large, but the actual pressure should not be in error by more than 0.1 MPa. Most of the remaining data indicate that the error should be less than 5 percent. An exception occurs below 120 K or very close to the saturation line, where the uncertainty approaches 10 percent. Most of the primary PVT data (from Goodwin [38]) in this temperature region and below about 30 MPa and 28.5 $mol \cdot dm^{-3}$ exhibit deviations from the correlation well below 1 percent. Calculation of an accurate density from a given temperature and pressure is a much easier task in the region below 185 K. The general uncertainty is well below 1 percent. In the vapor phase, all points at temperatures below 180 K or pressures below 3.5 MPa show absolute deviations below 0.5 percent. A few vapor points closer to the critical point in both temperature and pressure show higher deviations. We estimate that for the liquid in this range, a 0.2 percent accuracy in the determination of the density from the SWEOS is expected.

Our comparisons suggest that in calculating the pressure using the SWEOS in the temperature range 185 - 195 K, accuracies of better than 0.1 percent are expected at up to 6 MPa. The accuracy is expected to deteriorate to about 2 percent at higher pressures. Our study suggests that in this temperature range the SWEOS should return a density well within 0.5 percent accuracy. The exception is quite close to the critical point, 190.4 K $<$ T $<$ 190.6 K and 4.4 MPa $<$ P $<$ 4.8 MPa, where errors of nearly 5 percent are possible.

In the temperature range 195 to 300 K, we find the largest quantity of PVT data with a very large range in pressures. In predicting pressures from the present SWEOS in this temperature region and below 10 MPa (or 15 $mol \cdot dm^{-3}$) an accuracy of 0.5 percent is expected; above these pressures, 5 percent errors are possible. For prediction of densities, in our judgment, 0.2 percent is the general uncertainty associated with the SWEOS for most of this region, except for a deterioration to 0.5 percent above 20 $mol \cdot dm^{-3}$ and below 210 K. The correlation can be extrapolated to pressures above 100 MPa in this temperature range (to about 600 MPa), but the estimated uncertainty becomes closer to 8 percent in pressure and 1 percent in density.

We summarize our observations of the data and the SWEOS for predicting pressures at temperatures above 300 K as follows. For pressures below 40 MPa and temperatures to 600 K, the expected accuracy is 0.2 percent. In the pressure range 40 - 200 MPa the accuracy is near 1 percent, but for higher pressures the uncertainty increases with increasing pressure and may reach 20 percent at 1000 MPa. In the highest pressure range, above 800 MPa, it is also prudent to restrict the temperature to 450 K because there are no data at significantly higher temperatures. We have extended the correlation above the 100 MPa cutoff in this temperature range, but the quality of the equation clearly deteriorates at high pressures; pressures above 100 MPa are not included in the tables of Appendix B. For the calculation of densities for temperatures below 350 K and densities below 15 $mol \cdot dm^{-3}$, an accuracy of 0.2 percent should be associated with the SWEOS. For temperatures up to 600 K or densities to 20 $mol \cdot dm^{-3}$, the error increases to 0.5 percent. The error increases to 1 percent up to 25 $mol \cdot dm^{-3}$ and 5 percent at higher densities. Extrapolation of the SWEOS to state points above 450 K for the density range above 20 $mol \cdot dm^{-3}$ is not advised.

We estimate an uncertainty in the correlation for the second virial coefficient of about 1 percent throughout the range, from the triple point to 625 K.

In our judgment, a 2 percent uncertainty should be expected when calculating the isochoric specific heat capacity from the SWEOS outside the critical region, and the accuracy approaches 5 percent for temperatures between 180 K and 200 K for densities up to 14 $mol \cdot dm^{-3}$. The asymptotically critical behavior of $C_V$ is not well described by this (or any) classical equation of state.

We estimate that the SWEOS will give isobaric heat specific capacities within about 2 percent for the liquid and supercritical fluid from 115 K to about 300 K for pressures to about 15 MPa. The uncertainty is assumed to be worse outside these ranges, and in the general critical region, 20 percent errors may be possible. Very close to the critical point, the behavior of this classical SWEOS will not describe the heat capacities accurately.

The accuracy of the SWEOS in predicting saturated liquid specific heat capacities is 2 percent from the triple point to 186 K and 5 percent for temperatures approaching the critical point.

For predicting the speed of sound in methane, we can summarize our observations by the following subjective guidelines for the use of the SWEOS. Below 180 K or above 195 K, with pressures below about 20 MPa, for the saturated liquid, compressed liquid, vapor phase, and supercritical fluid, accuracies of 0.6 percent can be anticipated. Between 180 K and 188 K, or above 20 MPa (to about 35 MPa), the accuracy decreases to 1.5 percent. In the general region of the critical point, 188 K to 195 K and 4.5 MPa to 4.7 MPa, the uncertainties can exceed 5 percent. Our classical equation of state cannot give accurate results for derivative properties at the critical point or for state points extremely close to the critical point (approximately 190 to 191 K and 4.55 to 4.65 MPa). In particular, theory indicates that the speed of sound should vanish at the critical point; in our formulation this speed is about 231 $m \cdot s^{-1}$. This discrepancy between theory and our correlation occurs principally because the very small divergence of the isochoric specific heat capacity ( $\sim |T-T_c|^{-\alpha}$ where $\alpha$ is about 0.1) is not predicted by a classical equation of state; in our formulation the value of $C_v$ at the critical point is about 45 $J \cdot mol^{-1} \cdot K^{-1}$. In addition, because of truncation error, the nominally zero value of $\partial P/\partial \rho|_T$ is equal to about $10^{-8}$ $J \cdot mol^{-1}$ and the related $C_P$, which should diverge strongly, is found to be about $10^{13}$ $J \cdot mol^{-1} \cdot K^{-1}$ at the critical point.

The comparisons with experimental data (and the process of determining the coefficients of the SWEOS) probe only four derivatives of the dimensionless, residual Helmholtz energy, namely $\phi^r_\delta$, $\phi^r_{\delta\delta}$, $\phi^r_{\tau\tau}$, and $\phi^r_{\delta\tau}$. While this should describe the actual surface quite well, additional uncertainties will enter any calculation which requires other derivatives or integrals of these directly accessible functions. We hesitate to make any quantitative predictions of the errors involved in calculating any thermodynamic quantities not explicitly discussed in this section, but we do conjecture that these errors will be comparable to those found with any other precise equation of state for methane.

## 4.3 Transport Properties

From the dispersion of the data and correlations, the quoted experimental accuracies associated with the data, and a study of the use of the 11-6-8 intermolecular potential in the Chapman-Enskog dilute gas theory, we estimate that the correlation of eqs (9) and (10) will give dilute gas viscosities for methane with associated accuracies of 0.5 percent from the 270 K to 600 K and 1 percent above that range. For lower temperatures, and especially below the critical point, the data are extremely sparse or nonexistent. We anticipate that, with this potential function, the theory will extrapolate well, but we increase our error estimate to 2 percent for temperatures from the triple point to 270 K.

We next examine the viscosity of methane at elevated pressures. For the vapor phase, below the critical temperature, we estimate that the error varies from 2 percent, as above, to more than 5 percent as the saturated vapor line is approached. For the liquid below the critical temperature, the data indicate an accuracy of about 3 percent from the phase boundary to the compressed liquid at pressures to 30 MPa. Above the critical temperature, in the temperature range from $T_c$ to 270 K, the data indicate an accuracy of about 5 percent for densities up to 10 $mol \cdot dm^{-3}$. In the same temperature range, but for higher densities and for pressures up to about 30 MPa, the viscosity increases and the estimated uncertainty drops to about 2 percent. For the low density region, to 10 $mol \cdot dm^{-3}$, we estimate that the uncertainty associated with the correlation is 1 percent in the higher temperature range, to 450 K. For pressures up to 55 MPa and temperatures to 450 K, the error is about 2 percent. The correlation attempts to describe the rapidly rising excess viscosity as the melting line is approached. It has a zero in the denominator, corresponding to a singularity in the correlation within the fluid region; this occurs well outside the range of any data. In addition to the usual warnings concerning extrapolation beyond the range of the correlating equation, any user is cautioned about this singularity, which can be a problem only at pressures exceeding 200 MPa.

For the thermal conductivity of the dilute methane gas, we estimate that the accuracy of the correlation is about 2.5 percent for temperatures between 130 and 625 K. For temperatures below 130 K, where the vapor pressure is about 0.37 MPa, the current correlation could give errors in excess of 10 percent for the thermal conductivity of dilute methane.

We estimate that the accuracy of the correlation for the total thermal conductivity of methane is about 2 percent for most of the range between 110 K and 725 K and for pressures to 70 MPa (or densities to about 29 $mol \cdot dm^{-3}$). The exceptions occur around the critical point and near both saturation boundaries, where 5 percent errors are typical, and greater errors could occur in the very close to the critical point. For the vapor at lower temperatures and the dense liquid near the triple point, an uncertainty of nearly 10 percent is possible.

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# APPENDIX A

## TABLES FOR THE COMPARISON OF EXPERIMENTAL DATA AND THE CORRELATIONS

We make several prefatory notes to the fourteen tables in this Appendix. Additional specific notes can be found at the beginning of most of the tables. In several instances, only first authors are given; complete citations can be found in the numbered references. Deviations are given on a percentage basis according to Dev = 100 (Cal - Exp)/Exp. The weights (Wt) refer to weighting of individual data points in the least squares algorithms for the determination of the coefficients of the correlating equations as discussed in detail in Ref.[1]. The summary statistics given for each reference and for the cumulative experimental data are defined as follows,

$$\mathrm{AAD} = \frac{1}{N}\sum_{i} |\mathrm{Cal}_i - \mathrm{Exp}_i| \,, \tag{A1}$$

$$\mathrm{BIAS} = \frac{1}{N}\sum_{i} (\mathrm{Cal}_i - \mathrm{Exp}_i) \,, \tag{A2}$$

$$\mathrm{RMS} = \left[\frac{1}{N}\sum_{i} (\mathrm{Cal}_i - \mathrm{Exp}_i)^2 - \mathrm{BIAS}^2\right]^{1/2} . \tag{A3}$$

The quantity N above represents the number of points in the data set, and the summation over the index i is over all N points. These statistics give dimensioned quantities; the analogously defined dimensionless statistics are based on percentage deviations. Thus, AAD-%, BIAS-%, and RMS-% are defined as above, but with the quantity ($\mathrm{Cal}_i$ - $\mathrm{Exp}_i$) replaced by 100($\mathrm{Cal}_i$ - $\mathrm{Exp}_i$). Some of the entries in the tables have digits beyond the range of significance, including trailing zeroes; these serve only to maintain uniform appearance of the columns and the quantities can be truncated according to the error estimates in the original experimental publications, the discussion in Ref.[1], or the uncertainties quoted in Sec. 4 above.

TABLE A1

COMPARISONS FOR SATURATED VAPOR PRESSURES

Notes for Table A1. The numeral 1 associated with quantities refers to comparisons with eq (1); the numeral 2 refers to comparisons with the SWEOS. Similarly, Wt1 refers to weighting for the development of eq (1), and Wt2 refers to weighting of the Gibbs condition for the development of the SWEOS. For the points generated from eq (1), in the last part of the table, statistics relative to eq (1) have no meaning; these points are therefore excluded from the totals.

Data from Kleinrahm and Wagner [6]

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 90.685 | 0.117 00E-01 | 0.116 93E-01 | -0.060 | 0.116 93E-01 | -0.061 | 1.0 | 0.0 |
| 91.000 | 0.121 70E-01 | 0.121 75E-01 | 0.043 | 0.121 75E-01 | 0.040 | 1.0 | 0.0 |
| 95.000 | 0.198 30E-01 | 0.198 34E-01 | 0.019 | 0.198 32E-01 | 0.011 | 1.0 | 0.0 |
| 100.000 | 0.344 00E-01 | 0.344 08E-01 | 0.022 | 0.344 08E-01 | 0.024 | 1.0 | 0.0 |
| 105.000 | 0.564 30E-01 | 0.564 26E-01 | -0.007 | 0.564 33E-01 | 0.006 | 1.0 | 0.0 |
| 110.000 | 0.882 20E-01 | 0.882 03E-01 | -0.019 | 0.882 19E-01 | -0.001 | 1.0 | 0.0 |
| 111.631 | 0.101 10E+00 | 0.101 11E+00 | 0.006 | 0.101 13E+00 | 0.025 | 1.0 | 0.0 |
| 115.000 | 0.132 34E+00 | 0.132 32E+00 | -0.015 | 0.132 34E+00 | 0.003 | 1.0 | 0.0 |
| 120.000 | 0.191 56E+00 | 0.191 58E+00 | 0.010 | 0.191 61E+00 | 0.024 | 1.0 | 0.0 |
| 125.000 | 0.268 98E+00 | 0.268 96E+00 | -0.006 | 0.268 99E+00 | 0.002 | 1.0 | 0.0 |
| 130.000 | 0.367 62E+00 | 0.367 60E+00 | -0.006 | 0.367 60E+00 | -0.005 | 1.0 | 0.0 |
| 135.000 | 0.490 70E+00 | 0.490 71E+00 | 0.003 | 0.490 68E+00 | -0.003 | 1.0 | 0.0 |
| 140.000 | 0.641 62E+00 | 0.641 65E+00 | 0.004 | 0.641 56E+00 | -0.010 | 1.0 | 0.0 |
| 145.000 | 0.823 73E+00 | 0.823 79E+00 | 0.008 | 0.823 69E+00 | -0.005 | 1.0 | 0.0 |
| 150.000 | 0.104 06E+01 | 0.104 06E+01 | 0.007 | 0.104 05E+01 | -0.007 | 1.0 | 0.0 |
| 155.000 | 0.129 57E+01 | 0.129 58E+01 | 0.008 | 0.129 56E+01 | -0.005 | 1.0 | 0.0 |
| 160.000 | 0.159 29E+01 | 0.159 30E+01 | 0.004 | 0.159 28E+01 | -0.007 | 1.0 | 0.0 |
| 165.000 | 0.193 62E+01 | 0.193 61E+01 | -0.007 | 0.193 59E+01 | -0.014 | 1.0 | 0.0 |
| 170.000 | 0.232 96E+01 | 0.232 94E+01 | -0.011 | 0.232 93E+01 | -0.015 | 1.0 | 0.0 |
| 175.000 | 0.277 79E+01 | 0.277 76E+01 | -0.010 | 0.277 76E+01 | -0.011 | 1.0 | 0.0 |
| 180.000 | 0.328 68E+01 | 0.328 65E+01 | -0.009 | 0.328 63E+01 | -0.017 | 1.0 | 0.0 |
| 182.000 | 0.350 89E+01 | 0.350 87E+01 | -0.005 | 0.350 84E+01 | -0.014 | 1.0 | 0.0 |
| 184.000 | 0.374 23E+01 | 0.374 23E+01 | 0.000 | 0.374 19E+01 | -0.011 | 1.0 | 0.0 |
| 186.000 | 0.398 78E+01 | 0.398 81E+01 | 0.007 | 0.398 76E+01 | -0.006 | 1.0 | 0.0 |
| 187.000 | 0.411 54E+01 | 0.411 59E+01 | 0.010 | 0.411 53E+01 | -0.003 | 1.0 | 0.0 |

Data from Kleinrahm and Wagner [6] (continued)

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 188.000 | 0.424 66E+01 | 0.424 71E+01 | 0.013 | 0.424 65E+01 | 0.000 | 1.0 | 0.0 |
| 189.000 | 0.438 14E+01 | 0.438 20E+01 | 0.014 | 0.438 15E+01 | 0.003 | 1.0 | 0.0 |
| 189.500 | 0.445 03E+01 | 0.445 09E+01 | 0.013 | 0.445 05E+01 | 0.004 | 1.0 | 0.0 |
| 189.800 | 0.449 22E+01 | 0.449 27E+01 | 0.011 | 0.449 24E+01 | 0.004 | 1.0 | 0.0 |
| 190.000 | 0.452 04E+01 | 0.452 08E+01 | 0.010 | 0.452 05E+01 | 0.003 | 1.0 | 0.0 |
| 190.100 | 0.453 45E+01 | 0.453 49E+01 | 0.009 | 0.453 47E+01 | 0.003 | 1.0 | 0.0 |
| 190.200 | 0.454 88E+01 | 0.454 91E+01 | 0.007 | 0.454 89E+01 | 0.003 | 1.0 | 0.0 |
| 190.300 | 0.456 30E+01 | 0.456 33E+01 | 0.006 | 0.456 31E+01 | 0.002 | 1.0 | 0.0 |
| 190.400 | 0.457 74E+01 | 0.457 76E+01 | 0.004 | 0.457 75E+01 | 0.002 | 1.0 | 0.0 |
| 190.450 | 0.458 46E+01 | 0.458 47E+01 | 0.003 | 0.458 46E+01 | 0.001 | 1.0 | 0.0 |
| 190.500 | 0.459 18E+01 | 0.459 19E+01 | 0.002 | 0.459 18E+01 | 0.001 | 1.0 | 0.0 |
| 190.530 | 0.459 61E+01 | 0.459 62E+01 | 0.001 | 0.459 62E+01 | 0.000 | 1.0 | 0.0 |
| 190.551 | 0.459 92E+01 | 0.459 92E+01 | 0.000 | 0.459 92E+01 | 0.000 | 1.0 | 0.0 |

Number of Points (Ref. 6) 38

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.011, | BIAS1-% | 0.002, | RMS1-% | 0.015 | |
| AAD1 | 0.171, | BIAS1 | 0.105, | RMS1 | 0.233 | kPa |
| AAD2-% | 0.009, | BIAS2-% | -0.001, | RMS2-% | 0.015 | |
| AAD2 | 0.118, | BIAS2 | -0.050, | RMS2 | 0.177 | kPa |

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Data from Prydz and Goodwin [18]

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 91.000 | 0.122 30E-01 | 0.121 75E-01 | -0.448 | 0.121 75E-01 | -0.451 | 0.0 | 0.0 |
| 92.000 | 0.138 80E-01 | 0.138 14E-01 | -0.473 | 0.138 14E-01 | -0.477 | 0.0 | 0.0 |
| 93.000 | 0.157 00E-01 | 0.156 28E-01 | -0.458 | 0.156 27E-01 | -0.465 | 0.0 | 0.0 |
| 94.000 | 0.177 00E-01 | 0.176 30E-01 | -0.396 | 0.176 29E-01 | -0.404 | 0.0 | 0.0 |
| 95.000 | 0.199 10E-01 | 0.198 34E-01 | -0.383 | 0.198 32E-01 | -0.391 | 0.0 | 0.0 |

Data from Prydz and Goodwin [18] (continued)

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 96.000 | 0.223 40E-01 | 0.222 54E-01 | -0.385 | 0.222 52E-01 | -0.392 | 0.0 | 0.0 |
| 97.000 | 0.250 00E-01 | 0.249 06E-01 | -0.377 | 0.249 04E-01 | -0.382 | 0.0 | 0.0 |
| 98.000 | 0.279 00E-01 | 0.278 04E-01 | -0.343 | 0.278 04E-01 | -0.346 | 0.0 | 0.0 |
| 99.000 | 0.310 70E-01 | 0.309 66E-01 | -0.334 | 0.309 66E-01 | -0.335 | 0.0 | 0.0 |
| 100.000 | 0.345 10E-01 | 0.344 08E-01 | -0.297 | 0.344 08E-01 | -0.295 | 0.0 | 0.0 |
| 101.000 | 0.382 60E-01 | 0.381 46E-01 | -0.298 | 0.381 47E-01 | -0.294 | 0.0 | 0.0 |
| 102.000 | 0.423 20E-01 | 0.421 99E-01 | -0.287 | 0.422 01E-01 | -0.280 | 0.0 | 0.0 |
| 103.000 | 0.467 10E-01 | 0.465 84E-01 | -0.270 | 0.465 88E-01 | -0.262 | 0.0 | 0.0 |
| 104.000 | 0.514 40E-01 | 0.513 20E-01 | -0.233 | 0.513 25E-01 | -0.223 | 0.0 | 0.0 |
| 105.000 | 0.565 60E-01 | 0.564 26E-01 | -0.237 | 0.564 33E-01 | -0.224 | 0.0 | 0.0 |
| 106.000 | 0.620 60E-01 | 0.619 22E-01 | -0.223 | 0.619 31E-01 | -0.208 | 0.0 | 0.0 |
| 107.000 | 0.679 90E-01 | 0.678 27E-01 | -0.240 | 0.678 38E-01 | -0.224 | 0.0 | 0.0 |
| 108.000 | 0.743 20E-01 | 0.741 62E-01 | -0.213 | 0.741 74E-01 | -0.196 | 0.0 | 0.0 |
| 109.000 | 0.811 30E-01 | 0.809 47E-01 | -0.226 | 0.809 61E-01 | -0.208 | 0.0 | 0.0 |
| 110.000 | 0.883 90E-01 | 0.882 03E-01 | -0.211 | 0.882 19E-01 | -0.193 | 0.0 | 0.0 |
| 111.000 | 0.961 50E-01 | 0.959 52E-01 | -0.205 | 0.959 71E-01 | -0.187 | 0.0 | 0.0 |
| 111.000 | 0.961 60E-01 | 0.959 52E-01 | -0.216 | 0.959 71E-01 | -0.197 | 0.0 | 0.0 |
| 112.000 | 0.104 48E+00 | 0.104 22E+00 | -0.252 | 0.104 24E+00 | -0.233 | 0.0 | 0.0 |
| 113.000 | 0.113 28E+00 | 0.113 02E+00 | -0.232 | 0.113 04E+00 | -0.213 | 0.0 | 0.0 |
| 114.000 | 0.122 65E+00 | 0.122 38E+00 | -0.222 | 0.122 40E+00 | -0.203 | 0.0 | 0.0 |
| 115.000 | 0.132 55E+00 | 0.132 32E+00 | -0.174 | 0.132 34E+00 | -0.155 | 0.0 | 0.0 |
| 115.000 | 0.132 62E+00 | 0.132 32E+00 | -0.227 | 0.132 34E+00 | -0.208 | 0.0 | 0.0 |
| 116.000 | 0.143 11E+00 | 0.142 87E+00 | -0.170 | 0.142 89E+00 | -0.152 | 0.0 | 0.0 |
| 116.000 | 0.143 17E+00 | 0.142 87E+00 | -0.212 | 0.142 89E+00 | -0.194 | 0.0 | 0.0 |
| 117.000 | 0.154 34E+00 | 0.154 04E+00 | -0.193 | 0.154 07E+00 | -0.175 | 0.0 | 0.0 |
| 118.000 | 0.166 16E+00 | 0.165 87E+00 | -0.174 | 0.165 90E+00 | -0.158 | 0.0 | 0.0 |
| 119.000 | 0.178 71E+00 | 0.178 37E+00 | -0.188 | 0.178 40E+00 | -0.172 | 0.0 | 0.0 |
| 120.000 | 0.191 91E+00 | 0.191 58E+00 | -0.173 | 0.191 61E+00 | -0.158 | 0.0 | 0.0 |
| 121.000 | 0.205 81E+00 | 0.205 51E+00 | -0.147 | 0.205 54E+00 | -0.134 | 0.0 | 0.0 |
| 122.000 | 0.220 52E+00 | 0.220 18E+00 | -0.152 | 0.220 21E+00 | -0.140 | 0.0 | 0.0 |
| 123.000 | 0.235 98E+00 | 0.235 64E+00 | -0.145 | 0.235 66E+00 | -0.134 | 0.0 | 0.0 |
| 124.000 | 0.252 28E+00 | 0.251 89E+00 | -0.155 | 0.251 91E+00 | -0.146 | 0.0 | 0.0 |
| 125.000 | 0.269 33E+00 | 0.268 96E+00 | -0.136 | 0.268 99E+00 | -0.128 | 0.0 | 0.0 |
| 126.000 | 0.287 31E+00 | 0.286 89E+00 | -0.147 | 0.286 91E+00 | -0.140 | 0.0 | 0.0 |
| 127.000 | 0.306 08E+00 | 0.305 69E+00 | -0.128 | 0.305 70E+00 | -0.123 | 0.0 | 0.0 |

Data from Prydz and Goodwin [18] (continued)

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 128.000 | 0.325 80E+00 | 0.325 39E+00 | -0.126 | 0.325 40E+00 | -0.122 | 0.0 | 0.0 |
| 129.000 | 0.346 44E+00 | 0.346 02E+00 | -0.122 | 0.346 02E+00 | -0.120 | 0.0 | 0.0 |
| 130.000 | 0.368 02E+00 | 0.367 60E+00 | -0.115 | 0.367 60E+00 | -0.114 | 0.0 | 0.0 |
| 131.000 | 0.390 61E+00 | 0.390 16E+00 | -0.116 | 0.390 16E+00 | -0.117 | 0.0 | 0.0 |
| 132.000 | 0.414 18E+00 | 0.413 72E+00 | -0.111 | 0.413 71E+00 | -0.113 | 0.0 | 0.0 |
| 133.000 | 0.438 80E+00 | 0.438 32E+00 | -0.110 | 0.438 30E+00 | -0.113 | 0.0 | 0.0 |
| 134.000 | 0.464 47E+00 | 0.463 97E+00 | -0.107 | 0.463 95E+00 | -0.111 | 0.0 | 0.0 |
| 135.000 | 0.491 26E+00 | 0.490 71E+00 | -0.111 | 0.490 68E+00 | -0.117 | 0.0 | 0.0 |
| 136.000 | 0.519 08E+00 | 0.518 57E+00 | -0.099 | 0.518 53E+00 | -0.106 | 0.0 | 0.0 |
| 137.000 | 0.548 10E+00 | 0.547 56E+00 | -0.098 | 0.547 51E+00 | -0.108 | 0.0 | 0.0 |
| 138.000 | 0.578 34E+00 | 0.577 72E+00 | -0.107 | 0.577 66E+00 | -0.118 | 0.0 | 0.0 |
| 139.000 | 0.609 64E+00 | 0.609 07E+00 | -0.093 | 0.609 00E+00 | -0.105 | 0.0 | 0.0 |
| 140.000 | 0.642 19E+00 | 0.641 65E+00 | -0.085 | 0.641 56E+00 | -0.099 | 0.0 | 0.0 |
| 141.000 | 0.676 06E+00 | 0.675 47E+00 | -0.088 | 0.675 36E+00 | -0.103 | 0.0 | 0.0 |
| 142.000 | 0.711 16E+00 | 0.710 56E+00 | -0.084 | 0.710 44E+00 | -0.101 | 0.0 | 0.0 |
| 143.000 | 0.747 58E+00 | 0.746 97E+00 | -0.082 | 0.746 82E+00 | -0.101 | 0.0 | 0.0 |
| 144.000 | 0.785 25E+00 | 0.784 70E+00 | -0.070 | 0.784 60E+00 | -0.082 | 0.0 | 0.0 |
| 145.000 | 0.824 39E+00 | 0.823 79E+00 | -0.072 | 0.823 69E+00 | -0.085 | 0.0 | 0.0 |
| 146.000 | 0.864 91E+00 | 0.864 27E+00 | -0.073 | 0.864 16E+00 | -0.087 | 0.0 | 0.0 |
| 147.000 | 0.906 79E+00 | 0.906 17E+00 | -0.068 | 0.906 05E+00 | -0.082 | 0.0 | 0.0 |
| 148.000 | 0.950 21E+00 | 0.949 51E+00 | -0.073 | 0.949 38E+00 | -0.087 | 0.0 | 0.0 |
| 149.000 | 0.995 01E+00 | 0.994 33E+00 | -0.068 | 0.994 19E+00 | -0.082 | 0.0 | 0.0 |
| 150.000 | 0.104 14E+01 | 0.104 06E+01 | -0.074 | 0.104 05E+01 | -0.088 | 0.0 | 0.0 |
| 151.000 | 0.108 92E+01 | 0.108 85E+01 | -0.065 | 0.108 83E+01 | -0.080 | 0.0 | 0.0 |
| 152.000 | 0.113 86E+01 | 0.113 79E+01 | -0.064 | 0.113 77E+01 | -0.078 | 0.0 | 0.0 |
| 153.000 | 0.118 98E+01 | 0.118 89E+01 | -0.072 | 0.118 87E+01 | -0.086 | 0.0 | 0.0 |
| 154.000 | 0.124 24E+01 | 0.124 15E+01 | -0.068 | 0.124 14E+01 | -0.082 | 0.0 | 0.0 |
| 155.000 | 0.129 67E+01 | 0.129 58E+01 | -0.068 | 0.129 56E+01 | -0.082 | 0.0 | 0.0 |
| 156.000 | 0.135 26E+01 | 0.135 17E+01 | -0.064 | 0.135 16E+01 | -0.077 | 0.0 | 0.0 |
| 157.000 | 0.141 04E+01 | 0.140 94E+01 | -0.068 | 0.140 92E+01 | -0.080 | 0.0 | 0.0 |
| 158.000 | 0.146 98E+01 | 0.146 88E+01 | -0.070 | 0.146 86E+01 | -0.082 | 0.0 | 0.0 |
| 159.000 | 0.153 10E+01 | 0.153 00E+01 | -0.070 | 0.152 98E+01 | -0.081 | 0.0 | 0.0 |
| 160.000 | 0.159 41E+01 | 0.159 30E+01 | -0.069 | 0.159 28E+01 | -0.080 | 0.0 | 0.0 |
| 161.000 | 0.165 88E+01 | 0.165 78E+01 | -0.064 | 0.165 76E+01 | -0.074 | 0.0 | 0.0 |
| 162.000 | 0.172 57E+01 | 0.172 45E+01 | -0.073 | 0.172 43E+01 | -0.083 | 0.0 | 0.0 |

Data from Prydz and Goodwin [18] (continued)

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 163.000 | 0.179 42E+01 | 0.179 30E+01 | -0.063 | 0.179 29E+01 | -0.072 | 0.0 | 0.0 |
| 164.000 | 0.186 49E+01 | 0.186 36E+01 | -0.069 | 0.186 34E+01 | -0.077 | 0.0 | 0.0 |
| 165.000 | 0.193 73E+01 | 0.193 61E+01 | -0.062 | 0.193 59E+01 | -0.069 | 0.0 | 0.0 |
| 166.000 | 0.201 20E+01 | 0.201 06E+01 | -0.070 | 0.201 04E+01 | -0.076 | 0.0 | 0.0 |
| 167.000 | 0.208 83E+01 | 0.208 71E+01 | -0.057 | 0.208 70E+01 | -0.062 | 0.0 | 0.0 |
| 168.000 | 0.216 74E+01 | 0.216 57E+01 | -0.079 | 0.216 56E+01 | -0.083 | 0.0 | 0.0 |
| 169.000 | 0.224 81E+01 | 0.224 65E+01 | -0.072 | 0.224 64E+01 | -0.075 | 0.0 | 0.0 |
| 170.000 | 0.233 10E+01 | 0.232 94E+01 | -0.071 | 0.232 93E+01 | -0.074 | 0.0 | 0.0 |
| 171.000 | 0.241 60E+01 | 0.241 45E+01 | -0.064 | 0.241 44E+01 | -0.066 | 0.0 | 0.0 |
| 172.000 | 0.250 33E+01 | 0.250 18E+01 | -0.059 | 0.250 17E+01 | -0.061 | 0.0 | 0.0 |
| 173.000 | 0.259 30E+01 | 0.259 14E+01 | -0.060 | 0.259 13E+01 | -0.062 | 0.0 | 0.0 |
| 174.000 | 0.268 49E+01 | 0.268 33E+01 | -0.058 | 0.268 33E+01 | -0.060 | 0.0 | 0.0 |
| 175.000 | 0.277 91E+01 | 0.277 76E+01 | -0.053 | 0.277 76E+01 | -0.054 | 0.0 | 0.0 |
| 176.000 | 0.287 61E+01 | 0.287 44E+01 | -0.060 | 0.287 43E+01 | -0.062 | 0.0 | 0.0 |
| 177.000 | 0.297 50E+01 | 0.297 36E+01 | -0.049 | 0.297 35E+01 | -0.051 | 0.0 | 0.0 |
| 178.000 | 0.307 70E+01 | 0.307 53E+01 | -0.054 | 0.307 52E+01 | -0.057 | 0.0 | 0.0 |
| 179.000 | 0.318 09E+01 | 0.317 96E+01 | -0.041 | 0.317 95E+01 | -0.044 | 0.0 | 0.0 |
| 180.000 | 0.328 82E+01 | 0.328 65E+01 | -0.052 | 0.328 63E+01 | -0.059 | 0.0 | 0.0 |
| 180.000 | 0.328 84E+01 | 0.328 65E+01 | -0.058 | 0.328 63E+01 | -0.065 | 0.0 | 0.0 |
| 181.000 | 0.339 77E+01 | 0.339 62E+01 | -0.042 | 0.339 59E+01 | -0.051 | 0.0 | 0.0 |
| 182.000 | 0.350 98E+01 | 0.350 87E+01 | -0.032 | 0.350 84E+01 | -0.041 | 0.0 | 0.0 |
| 182.000 | 0.351 00E+01 | 0.350 87E+01 | -0.038 | 0.350 84E+01 | -0.047 | 0.0 | 0.0 |
| 183.000 | 0.362 56E+01 | 0.362 40E+01 | -0.045 | 0.362 36E+01 | -0.055 | 0.0 | 0.0 |
| 184.000 | 0.374 35E+01 | 0.374 23E+01 | -0.032 | 0.374 19E+01 | -0.044 | 0.0 | 0.0 |
| 185.000 | 0.386 47E+01 | 0.386 36E+01 | -0.029 | 0.386 31E+01 | -0.041 | 0.0 | 0.0 |
| 186.000 | 0.398 89E+01 | 0.398 81E+01 | -0.020 | 0.398 76E+01 | -0.033 | 0.0 | 0.0 |
| 187.000 | 0.411 66E+01 | 0.411 59E+01 | -0.018 | 0.411 53E+01 | -0.031 | 0.0 | 0.0 |
| 188.000 | 0.424 74E+01 | 0.424 71E+01 | -0.008 | 0.424 65E+01 | -0.021 | 0.0 | 0.0 |
| 189.000 | 0.438 24E+01 | 0.438 20E+01 | -0.009 | 0.438 15E+01 | -0.020 | 0.0 | 0.0 |
| 190.000 | 0.452 10E+01 | 0.452 08E+01 | -0.003 | 0.452 05E+01 | -0.010 | 0.0 | 0.0 |

Number of Points (Ref.18) 105

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.137, | BIAS1-% | -0.137, | RMS1-% | 0.108 | |
| AAD1 | 0.679, | BIAS1 | -0.679, | RMS1 | 0.514 | kPa |
| AAD2-% | 0.139, | BIAS2-% | -0.139, | RMS2-% | 0.103 | |
| AAD2 | 0.771, | BIAS2 | -0.771, | RMS2 | 0.587 | kPa |

Data from Haynes [19]

| T | $P\sigma$, exp | $P\sigma$, eq (1) | Dev1 | $P\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 95.000 | 0.198 70E-01 | 0.198 34E-01 | -0.182 | 0.198 32E-01 | -0.190 | 0.0 | 0.0 |
| 100.000 | 0.344 80E-01 | 0.344 08E-01 | -0.210 | 0.344 08E-01 | -0.208 | 0.0 | 0.0 |
| 105.000 | 0.565 10E-01 | 0.564 26E-01 | -0.148 | 0.564 33E-01 | -0.136 | 0.0 | 0.0 |
| 110.000 | 0.883 40E-01 | 0.882 03E-01 | -0.155 | 0.882 19E-01 | -0.137 | 0.0 | 0.0 |
| 115.000 | 0.132 48E+00 | 0.132 32E+00 | -0.121 | 0.132 34E+00 | -0.103 | 0.0 | 0.0 |
| 120.000 | 0.191 67E+00 | 0.191 58E+00 | -0.048 | 0.191 61E+00 | -0.033 | 0.0 | 0.0 |
| 125.000 | 0.269 08E+00 | 0.268 96E+00 | -0.044 | 0.268 99E+00 | -0.035 | 0.0 | 0.0 |
| 130.000 | 0.367 60E+00 | 0.367 60E+00 | -0.001 | 0.367 60E+00 | 0.000 | 0.0 | 0.0 |
| 135.000 | 0.490 69E+00 | 0.490 71E+00 | 0.005 | 0.490 68E+00 | -0.001 | 0.0 | 0.0 |
| 140.000 | 0.641 55E+00 | 0.641 65E+00 | 0.015 | 0.641 56E+00 | 0.001 | 0.0 | 0.0 |

Number of Points (Ref. 19) 10

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.093, | BIAS1-% | -0.089, | RMS1-% | 0.080 | |
| AAD1 | 0.082, | BIAS1 | -0.058, | RMS1 | 0.075 | kPa |
| AAD2-% | 0.084, | BIAS2-% | -0.084, | RMS2-% | 0.077 | |
| AAD2 | 0.061, | BIAS2 | -0.060, | RMS2 | 0.048 | kPa |

---

Data from eq (1)

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 91.0 | 1.217 52E-02 | 1.217 52E-02 | - | 1.217 49E-02 | -0.003 | - | 46595.385 |
| 96.0 | 2.225 40E-02 | 2.225 40E-02 | - | 2.225 25E-02 | -0.007 | - | 25531.209 |
| 101.0 | 3.814 59E-02 | 3.814 59E-02 | - | 3.814 75E-02 | 0.004 | - | 14913.515 |
| 106.0 | 6.192 18E-02 | 6.192 18E-02 | - | 6.193 06E-02 | 0.014 | - | 9199.929 |
| 111.0 | 9.595 25E-02 | 9.595 25E-02 | - | 9.597 06E-02 | 0.019 | - | 5947.908 |
| 116.0 | 1.428 67E-01 | 1.428 67E-01 | - | 1.428 93E-01 | 0.018 | - | 4004.906 |
| 121.0 | 2.055 07E-01 | 2.055 07E-01 | - | 2.055 35E-01 | 0.013 | - | 2793.881 |
| 126.0 | 2.868 87E-01 | 2.868 87E-01 | - | 2.869 07E-01 | 0.007 | - | 2010.580 |
| 131.0 | 3.901 56E-01 | 3.901 56E-01 | - | 3.901 55E-01 | 0.000 | - | 1487.113 |
| 136.0 | 5.185 69E-01 | 5.185 69E-01 | - | 5.185 28E-01 | -0.008 | - | 1127.035 |

Data from eq (1) (continued)

| T | $P_\sigma$, exp | $P_\sigma$, eq (1) | Dev1 | $P_\sigma$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | MPa | % | | |
| 141.0 | 6.754 67E-01 | 6.754 67E-01 | - | 6.753 61E-01 | -0.016 | - | 1500.000 |
| 146.0 | 8.642 75E-01 | 8.642 75E-01 | - | 8.641 59E-01 | -0.013 | - | 1500.000 |
| 151.0 | 1.088 50E+00 | 1.088 50E+00 | - | 1.088 34E+00 | -0.014 | - | 1500.000 |
| 156.0 | 1.351 74E+00 | 1.351 74E+00 | - | 1.351 57E+00 | -0.013 | - | 1500.000 |
| 161.0 | 1.657 78E+00 | 1.657 78E+00 | - | 1.657 60E+00 | -0.010 | - | 1500.000 |
| 166.0 | 2.010 57E+00 | 2.010 57E+00 | - | 2.010 44E+00 | -0.006 | - | 3750.000 |
| 171.0 | 2.414 45E+00 | 2.414 45E+00 | - | 2.414 39E+00 | -0.002 | - | 3750.000 |
| 176.0 | 2.874 35E+00 | 2.874 35E+00 | - | 2.874 31E+00 | -0.001 | - | 3750.000 |
| 181.0 | 3.396 22E+00 | 3.396 22E+00 | - | 3.395 94E+00 | -0.008 | - | 3750.000 |
| 186.0 | 3.988 10E+00 | 3.988 10E+00 | - | 3.987 57E+00 | -0.013 | - | 3750.000 |

Number of Points (eq (1)) 20

| | | | | | |
|---|---|---|---|---|---|
| AAD1-% | - , | BIAS1-% | - , | RMS1-% | - |
| AAD1 | - , | BIAS1 | - , | RMS1 | - |
| AAD2-% | 0.010, | BIAS2-% | -0.002, | RMS2-% | 0.011 |
| AAD2 | 0.096, | BIAS2 | -0.086, | RMS2 | 0.132 kPa |

Total Points 153 for Ancillary Equation

| | | | | | |
|---|---|---|---|---|---|
| AAD1-% | 0.103, | BIAS1-% | -0.099, | RMS1-% | 0.109 |
| AAD1 | 0.514, | BIAS1 | -0.444, | RMS1 | 0.563 kPa |

Total Points 173 for Equation of State

| | | | | | |
|---|---|---|---|---|---|
| AAD2-% | 0.092, | BIAS2-% | -0.090, | RMS2-% | 0.104 |
| AAD2 | 0.508, | BIAS2 | -0.492, | RMS2 | 0.581 kPa |

TABLE A2

COMPARISONS FOR SATURATED LIQUID DENSITIES

Note: The numeral 1 associated with quantities refers to comparisons with eq (2); the numeral 2 refers to comparisons with the SWEOS. Similarly, Wt1 refers to weighting for the development of eq (2), and Wt2 refers to weighting of the Gibbs condition for the development of the SWEOS. For the points generated from eq (2), in the last part of the table, statistics relative to eq (2) have no meaning; these points are therefore excluded from the totals.

Data from Kleinrahm and Wagner [6]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | $mol\cdot dm^{-3}$ | % | | |
| 90.685 | 28.1411 | 28.1474 | 0.022 | 28.1452 | 0.015 | 1.0 | 0.0 |
| 91.000 | 28.1144 | 28.1208 | 0.023 | 28.1192 | 0.017 | 1.0 | 0.0 |
| 95.000 | 27.7811 | 27.7811 | 0.000 | 27.7860 | 0.018 | 1.0 | 0.0 |
| 100.000 | 27.3571 | 27.3518 | -0.019 | 27.3624 | 0.019 | 1.0 | 0.0 |
| 105.000 | 26.9223 | 26.9157 | -0.025 | 26.9295 | 0.027 | 1.0 | 0.0 |
| 110.000 | 26.4772 | 26.4709 | -0.024 | 26.4858 | 0.032 | 1.0 | 0.0 |
| 111.631 | 26.3286 | 26.3236 | -0.019 | 26.3384 | 0.037 | 1.0 | 0.0 |
| 115.000 | 26.0197 | 26.0154 | -0.016 | 26.0298 | 0.039 | 1.0 | 0.0 |
| 120.000 | 25.5490 | 25.5473 | -0.007 | 25.5600 | 0.043 | 1.0 | 0.0 |
| 125.000 | 25.0629 | 25.0641 | 0.005 | 25.0744 | 0.046 | 1.0 | 0.0 |
| 130.000 | 24.5594 | 24.5632 | 0.015 | 24.5708 | 0.046 | 1.0 | 0.0 |
| 135.000 | 24.0353 | 24.0415 | 0.026 | 24.0466 | 0.047 | 1.0 | 0.0 |
| 140.000 | 23.4889 | 23.4956 | 0.028 | 23.4984 | 0.040 | 1.0 | 0.0 |
| 145.000 | 22.9145 | 22.9210 | 0.028 | 22.9221 | 0.033 | 1.0 | 0.0 |
| 150.000 | 22.3071 | 22.3123 | 0.023 | 22.3124 | 0.024 | 1.0 | 0.0 |
| 155.000 | 21.6599 | 21.6624 | 0.012 | 21.6622 | 0.011 | 1.0 | 0.0 |
| 160.000 | 20.9618 | 20.9618 | 0.000 | 20.9617 | -0.001 | 1.0 | 0.0 |
| 165.000 | 20.2000 | 20.1966 | -0.017 | 20.1966 | -0.017 | 1.0 | 0.0 |
| 170.000 | 19.3516 | 19.3457 | -0.030 | 19.3451 | -0.034 | 1.0 | 0.0 |
| 175.000 | 18.3815 | 18.3730 | -0.046 | 18.3706 | -0.059 | 1.0 | 0.0 |
| 180.000 | 17.2151 | 17.2070 | -0.047 | 17.2044 | -0.062 | 1.0 | 0.0 |
| 182.000 | 16.6600 | 16.6537 | -0.038 | 16.6536 | -0.039 | 1.0 | 0.0 |
| 184.000 | 16.0238 | 16.0205 | -0.020 | 16.0263 | 0.016 | 1.0 | 0.0 |
| 186.000 | 15.2610 | 15.2622 | 0.008 | 15.2793 | 0.120 | 1.0 | 0.0 |
| 187.000 | 14.8040 | 14.8072 | 0.021 | 14.8325 | 0.193 | 1.0 | 0.0 |

Data from Kleinrahm and Wagner [6] continued

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 188.000 | 14.2617 | 14.2672 | 0.039 | 14.3028 | 0.288 | 1.0 | 0.0 |
| 189.000 | 13.5704 | 13.5766 | 0.046 | 13.6234 | 0.391 | 1.0 | 0.0 |
| 189.500 | 13.1152 | 13.1218 | 0.050 | 13.1727 | 0.439 | 1.0 | 0.0 |
| 189.800 | 12.7744 | 12.7795 | 0.040 | 12.8303 | 0.438 | 1.0 | 0.0 |
| 190.000 | 12.4960 | 12.5000 | 0.032 | 12.5476 | 0.413 | 1.0 | 0.0 |
| 190.100 | 12.3325 | 12.3356 | 0.025 | 12.3796 | 0.382 | 1.0 | 0.0 |
| 190.200 | 12.1436 | 12.1463 | 0.022 | 12.1838 | 0.331 | 1.0 | 0.0 |
| 190.300 | 11.9180 | 11.9187 | 0.006 | 11.9449 | 0.226 | 1.0 | 0.0 |
| 190.400 | 11.6225 | 11.6228 | 0.002 | 11.6265 | 0.034 | 1.0 | 0.0 |
| 190.450 | 11.4243 | 11.4242 | -0.001 | 11.4071 | -0.150 | 1.0 | 0.0 |
| 190.500 | 11.1494 | 11.1463 | -0.027 | 11.0923 | -0.513 | 1.0 | 0.0 |
| 190.530 | 10.8882 | 10.8736 | -0.135 | 10.7796 | -0.997 | 1.0 | 0.0 |
| 190.551 | 10.1390 | 10.1390 | 0.000 | 10.1390 | 0.000 | 1.0 | 0.0 |

Number of Points (Ref. 6) 38

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.025, | BIAS1-% | 0.000, | RMS1-% | 0.034 | |
| AAD1 | 0.004, | BIAS1 | 0.000, | RMS1 | 0.005 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.148, | BIAS2-% | 0.050, | RMS2-% | 0.249 | |
| AAD2 | 0.020, | BIAS2 | 0.009, | RMS2 | 0.030 | $mol \cdot dm^{-3}$ |

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Data from Orrit and Laupretre [20]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 99.447 | 27.4263 | 27.3996 | -0.097 | 27.4097 | -0.061 | 0.0 | 0.0 |
| 104.630 | 26.9731 | 26.9482 | -0.092 | 26.9618 | -0.042 | 0.0 | 0.0 |
| 109.832 | 26.5081 | 26.4860 | -0.083 | 26.5009 | -0.027 | 0.0 | 0.0 |
| 115.147 | 26.0219 | 26.0019 | -0.077 | 26.0162 | -0.022 | 0.0 | 0.0 |
| 117.812 | 25.7545 | 25.7539 | -0.002 | 25.7674 | 0.050 | 0.0 | 0.0 |

Data from Orrit and Laupretre [20] continued

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 120.577 | 25.5183 | 25.4924 | -0.102 | 25.5048 | -0.053 | 0.0 | 0.0 |
| 123.300 | 25.2303 | 25.2302 | 0.000 | 25.2414 | 0.044 | 0.0 | 0.0 |
| 126.026 | 24.9872 | 24.9628 | -0.097 | 24.9726 | -0.059 | 0.0 | 0.0 |
| 128.614 | 24.7142 | 24.7040 | -0.041 | 24.7123 | -0.008 | 0.0 | 0.0 |
| 131.494 | 24.4343 | 24.4096 | -0.101 | 24.4165 | -0.073 | 0.0 | 0.0 |
| 134.235 | 24.1376 | 24.1228 | -0.061 | 24.1282 | -0.039 | 0.0 | 0.0 |
| 137.004 | 23.8590 | 23.8259 | -0.139 | 23.8299 | -0.122 | 0.0 | 0.0 |
| 139.730 | 23.5405 | 23.5258 | -0.063 | 23.5287 | -0.050 | 0.0 | 0.0 |
| 142.412 | 23.2494 | 23.2223 | -0.117 | 23.2242 | -0.108 | 0.0 | 0.0 |
| 145.146 | 22.9265 | 22.9037 | -0.099 | 22.9048 | -0.095 | 0.0 | 0.0 |
| 147.933 | 22.5955 | 22.5685 | -0.120 | 22.5689 | -0.118 | 0.0 | 0.0 |
| 153.472 | 21.9111 | 21.8659 | -0.206 | 21.8657 | -0.207 | 0.0 | 0.0 |
| 150.627 | 22.2515 | 22.2332 | -0.082 | 22.2333 | -0.082 | 0.0 | 0.0 |
| 155.955 | 21.5415 | 21.5329 | -0.040 | 21.5327 | -0.041 | 0.0 | 0.0 |
| 159.051 | 21.1301 | 21.0992 | -0.146 | 21.0991 | -0.147 | 0.0 | 0.0 |

Number of Points (Ref. 20) 20

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.088, | BIAS1-% | -0.088, | RMS1-% | 0.047 | |
| AAD1 | 0.021, | BIAS1 | -0.021, | RMS1 | 0.011 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.072, | BIAS2-% | -0.063, | RMS2-% | 0.059 | |
| AAD2 | 0.017, | BIAS2 | -0.015, | RMS2 | 0.013 | $mol \cdot dm^{-3}$ |

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Data from Haynes and Hiza [21]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 105.000 | 26.9458 | 26.9157 | -0.112 | 26.9295 | -0.061 | 0.0 | 0.0 |
| 110.000 | 26.4985 | 26.4709 | -0.104 | 26.4858 | -0.048 | 0.0 | 0.0 |
| 115.000 | 26.0443 | 26.0154 | -0.111 | 26.0298 | -0.056 | 0.0 | 0.0 |
| 120.000 | 25.5721 | 25.5473 | -0.097 | 25.5600 | -0.047 | 0.0 | 0.0 |
| 125.000 | 25.0845 | 25.0641 | -0.081 | 25.0744 | -0.040 | 0.0 | 0.0 |

Data from Haynes and Hiza [21] continued

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 130.000 | 24.5775 | 24.5632 | -0.058 | 24.5708 | -0.027 | 0.0 | 0.0 |
| 135.000 | 24.0540 | 24.0415 | -0.052 | 24.0466 | -0.031 | 0.0 | 0.0 |
| 140.000 | 23.5067 | 23.4956 | -0.047 | 23.4984 | -0.035 | 0.0 | 0.0 |
| 145.000 | 22.9312 | 22.9210 | -0.045 | 22.9221 | -0.040 | 0.0 | 0.0 |
| 150.000 | 22.3218 | 22.3123 | -0.043 | 22.3124 | -0.042 | 0.0 | 0.0 |
| 160.000 | 20.9876 | 20.9618 | -0.123 | 20.9617 | -0.124 | 0.0 | 0.0 |

Number of Points (Ref. 21) 11

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.079, | BIAS1-% | -0.079, | RMS1-% | 0.030 | |
| AAD1 | 0.020, | BIAS1 | -0.020, | RMS1 | 0.008 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.050, | BIAS2-% | -0.050, | RMS2-% | 0.025 | |
| AAD2 | 0.012, | BIAS2 | -0.012, | RMS2 | 0.005 | $mol \cdot dm^{-3}$ |

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Data from McClune [22]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 93.150 | 27.9493 | 27.9385 | -0.039 | 27.9407 | -0.031 | 0.0 | 0.0 |
| 93.150 | 27.9493 | 27.9385 | -0.039 | 27.9407 | -0.031 | 0.0 | 0.0 |
| 98.150 | 27.5267 | 27.5113 | -0.056 | 27.5201 | -0.024 | 0.0 | 0.0 |
| 103.150 | 27.0978 | 27.0779 | -0.073 | 27.0908 | -0.026 | 0.0 | 0.0 |
| 108.150 | 26.6521 | 26.6366 | -0.058 | 26.6513 | -0.003 | 0.0 | 0.0 |
| 113.150 | 26.1977 | 26.1853 | -0.047 | 26.2000 | 0.009 | 0.0 | 0.0 |
| 118.150 | 25.7340 | 25.7221 | -0.046 | 25.7355 | 0.006 | 0.0 | 0.0 |
| 123.150 | 25.2615 | 25.2448 | -0.066 | 25.2560 | -0.022 | 0.0 | 0.0 |

Number of Points (Ref.22) 7

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.055, | BIAS1-% | -0.055, | RMS1-% | 0.011 | |
| AAD1 | 0.015, | BIAS1 | -0.015, | RMS1 | 0.003 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.017, | BIAS2-% | -0.013, | RMS2-% | 0.015 | |
| AAD2 | 0.005, | BIAS2 | -0.004, | RMS2 | 0.004 | $mol \cdot dm^{-3}$ |

Data from Terry et al. [23]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 92.029 | 28.0346 | 28.0336 | -0.003 | 28.0339 | -0.003 | 0.0 | 0.0 |
| 93.090 | 27.9519 | 27.9436 | -0.030 | 27.9457 | -0.022 | 0.0 | 0.0 |
| 93.654 | 27.8975 | 27.8957 | -0.006 | 27.8986 | 0.004 | 0.0 | 0.0 |
| 95.743 | 27.7233 | 27.7177 | -0.020 | 27.7236 | 0.001 | 0.0 | 0.0 |
| 95.905 | 27.7225 | 27.7038 | -0.067 | 27.7099 | -0.045 | 0.0 | 0.0 |
| 100.939 | 27.2831 | 27.2705 | -0.046 | 27.2818 | -0.005 | 0.0 | 0.0 |
| 102.616 | 27.1502 | 27.1246 | -0.094 | 27.1371 | -0.048 | 0.0 | 0.0 |
| 107.338 | 26.7229 | 26.7089 | -0.053 | 26.7234 | 0.002 | 0.0 | 0.0 |
| 108.806 | 26.6082 | 26.5780 | -0.114 | 26.5928 | -0.058 | 0.0 | 0.0 |
| 112.156 | 26.2882 | 26.2759 | -0.047 | 26.2907 | 0.010 | 0.0 | 0.0 |
| 114.003 | 26.1369 | 26.1072 | -0.114 | 26.1218 | -0.058 | 0.0 | 0.0 |
| 117.523 | 25.7883 | 25.7810 | -0.028 | 25.7946 | 0.024 | 0.0 | 0.0 |
| 119.319 | 25.6420 | 25.6119 | -0.117 | 25.6248 | -0.067 | 0.0 | 0.0 |
| 123.040 | 25.2307 | 25.2555 | 0.098 | 25.2667 | 0.143 | 0.0 | 0.0 |
| 125.765 | 25.0206 | 24.9887 | -0.128 | 24.9986 | -0.088 | 0.0 | 0.0 |
| 127.426 | 24.8201 | 24.8234 | 0.013 | 24.8324 | 0.050 | 0.0 | 0.0 |
| 130.078 | 24.5872 | 24.5552 | -0.130 | 24.5628 | -0.099 | 0.0 | 0.0 |
| 132.228 | 24.3426 | 24.3335 | -0.037 | 24.3399 | -0.011 | 0.0 | 0.0 |
| 136.122 | 23.9493 | 23.9213 | -0.117 | 23.9258 | -0.098 | 0.0 | 0.0 |
| 137.671 | 23.8061 | 23.7532 | -0.222 | 23.7569 | -0.207 | 0.0 | 0.0 |
| 140.482 | 23.4704 | 23.4415 | -0.123 | 23.4441 | -0.112 | 0.0 | 0.0 |
| 142.092 | 23.2555 | 23.2589 | 0.015 | 23.2610 | 0.023 | 0.0 | 0.0 |
| 145.195 | 22.9151 | 22.8979 | -0.075 | 22.8990 | -0.070 | 0.0 | 0.0 |
| 147.541 | 22.6171 | 22.6163 | -0.004 | 22.6168 | -0.001 | 0.0 | 0.0 |
| 151.369 | 22.1523 | 22.1388 | -0.061 | 22.1388 | -0.061 | 0.0 | 0.0 |

Number of Points (Ref. 23) 25

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.070, | BIAS1-% | -0.060, | RMS1-% | 0.064 | |
| AAD1 | 0.018, | BIAS1 | -0.015, | RMS1 | 0.016 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.052, | BIAS2-% | -0.032, | RMS2-% | 0.065 | |
| AAD2 | 0.013, | BIAS2 | -0.008, | RMS2 | 0.016 | $mol \cdot dm^{-3}$ |

Data from Klosek and McKinley [24]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 94.261 | 27.8437 | 27.8441 | 0.001 | 27.8479 | 0.015 | 0.0 | 0.0 |
| 99.817 | 27.3539 | 27.3676 | 0.050 | 27.3780 | 0.088 | 0.0 | 0.0 |
| 105.372 | 26.8631 | 26.8829 | 0.074 | 26.8968 | 0.126 | 0.0 | 0.0 |
| 110.928 | 26.3635 | 26.3872 | 0.090 | 26.4021 | 0.146 | 0.0 | 0.0 |
| 116.483 | 25.8654 | 25.8780 | 0.049 | 25.8920 | 0.103 | 0.0 | 0.0 |
| 122.039 | 25.3377 | 25.3522 | 0.057 | 25.3640 | 0.104 | 0.0 | 0.0 |
| 127.594 | 24.7887 | 24.8066 | 0.072 | 24.8155 | 0.108 | 0.0 | 0.0 |
| 133.150 | 24.2373 | 24.2372 | 0.000 | 24.2431 | 0.024 | 0.0 | 0.0 |

Number of Points (Ref. 24) 8

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.049, | BIAS1-% | 0.049, | RMS1-% | 0.031 | |
| AAD1 | 0.013, | BIAS1 | 0.013, | RMS1 | 0.008 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.089, | BIAS2-% | 0.089, | RMS2-% | 0.043 | |
| AAD | 0.023, | BIAS2 | 0.023, | RMS2 | 0.011 | $mol \cdot dm^{-3}$ |

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Data from Rodosevich and Miller [25]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 91.000 | 28.1175 | 28.1208 | 0.012 | 28.1192 | 0.006 | 0.0 | 0.0 |
| 100.150 | 27.3545 | 27.3388 | -0.057 | 27.3495 | -0.018 | 0.0 | 0.0 |
| 108.050 | 26.6638 | 26.6455 | -0.069 | 26.6602 | -0.014 | 0.0 | 0.0 |
| 114.940 | 26.0396 | 26.0210 | -0.071 | 26.0354 | -0.016 | 0.0 | 0.0 |

Number of Points (Ref. 25) 4

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.052, | BIAS1-% | -0.046, | RMS1-% | 0.034 | |
| AAD1 | 0.014, | BIAS1 | -0.012, | RMS1 | 0.009 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.014, | BIAS2-% | -0.011, | RMS2-% | 0.010 | |
| AAD2 | 0.004, | BIAS2 | -0.003, | RMS2 | 0.003 | $mol \cdot dm^{-3}$ |

Data from Verbeke [26]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 190.050 | 12.4400 | 12.4204 | -0.158 | 12.4664 | 0.212 | 0.0 | 0.0 |
| 190.150 | 12.2700 | 12.2447 | -0.206 | 12.2859 | 0.129 | 0.0 | 0.0 |
| 190.250 | 12.0700 | 12.0385 | -0.261 | 12.0712 | 0.010 | 0.0 | 0.0 |
| 190.350 | 11.7900 | 11.7826 | -0.063 | 11.7997 | 0.082 | 0.0 | 0.0 |
| 190.450 | 11.4100 | 11.4242 | 0.125 | 11.4071 | -0.025 | 0.0 | 0.0 |

Number of Points (Ref. 26) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.163, | BIAS1-% | -0.113, | RMS1-% | 0.135 | |
| AAD1 | 0.020, | BIAS1 | -0.014, | RMS1 | 0.016 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.092, | BIAS2-% | 0.082, | RMS2-% | 0.085 | |
| AAD2 | 0.011, | BIAS2 | 0.010, | RMS2 | 0.010 | $mol \cdot dm^{-3}$ |

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Data from Vennix et al. [27]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 138.951 | 23.6246 | 23.6124 | -0.052 | 23.6155 | -0.038 | 0.0 | 0.0 |
| 158.829 | 21.2348 | 21.1311 | -0.488 | 21.1309 | -0.489 | 0.0 | 0.0 |
| 166.766 | 20.0075 | 19.9073 | -0.501 | 19.9072 | -0.501 | 0.0 | 0.0 |
| 174.773 | 18.5009 | 18.4206 | -0.434 | 18.4183 | -0.446 | 0.0 | 0.0 |
| 178.726 | 17.5690 | 17.5291 | -0.227 | 17.5260 | -0.245 | 0.0 | 0.0 |
| 182.608 | 16.5275 | 16.4711 | -0.341 | 16.4723 | -0.334 | 0.0 | 0.0 |
| 186.771 | 14.9754 | 14.9175 | -0.387 | 14.9408 | -0.231 | 0.0 | 0.0 |
| 188.852 | 13.7549 | 13.6933 | -0.448 | 13.7385 | -0.119 | 0.0 | 0.0 |
| 189.882 | 12.6809 | 12.6713 | -0.076 | 12.7213 | 0.319 | 0.0 | 0.0 |

Number of Points (Ref. 27) 9

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.328, | BIAS1-% | -0.328, | RMS1-% | 0.161 | |
| AAD1 | 0.058, | BIAS1 | -0.058, | RMS1 | 0.032 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.302, | BIAS2-% | -0.232, | RMS2-% | 0.247 | |
| AAD2 | 0.054, | BIAS2 | -0.045, | RMS2 | 0.044 | $mol \cdot dm^{-3}$ |

Data from Goodwin [28]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 130.000 | 24.5580 | 24.5632 | 0.021 | 24.5708 | 0.052 | 0.0 | 0.0 |
| 135.000 | 24.0410 | 24.0415 | 0.002 | 24.0466 | 0.023 | 0.0 | 0.0 |
| 140.000 | 23.5000 | 23.4956 | -0.019 | 23.4984 | -0.007 | 0.0 | 0.0 |
| 145.000 | 22.9320 | 22.9210 | -0.048 | 22.9221 | -0.043 | 0.0 | 0.0 |
| 150.000 | 22.3290 | 22.3123 | -0.075 | 22.3124 | -0.074 | 0.0 | 0.0 |
| 155.000 | 21.6860 | 21.6624 | -0.109 | 21.6622 | -0.110 | 0.0 | 0.0 |
| 160.000 | 20.9910 | 20.9618 | -0.139 | 20.9617 | -0.140 | 0.0 | 0.0 |
| 165.000 | 20.2340 | 20.1966 | -0.185 | 20.1966 | -0.185 | 0.0 | 0.0 |
| 170.000 | 19.3870 | 19.3457 | -0.213 | 19.3451 | -0.216 | 0.0 | 0.0 |
| 175.000 | 18.4170 | 18.3730 | -0.239 | 18.3706 | -0.252 | 0.0 | 0.0 |
| 180.000 | 17.2490 | 17.2070 | -0.243 | 17.2044 | -0.258 | 0.0 | 0.0 |
| 184.000 | 16.0540 | 16.0205 | -0.209 | 16.0263 | -0.172 | 0.0 | 0.0 |
| 186.000 | 15.2860 | 15.2622 | -0.156 | 15.2793 | -0.044 | 0.0 | 0.0 |
| 188.000 | 14.2840 | 14.2672 | -0.118 | 14.3028 | 0.131 | 0.0 | 0.0 |

Number of Points (Ref. 28) 14

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.127, | BIAS1-% | -0.124, | RMS1-% | 0.086 | |
| AAD | 0.024, | BIAS1 | -0.023, | RMS1 | 0.016 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.122, | BIAS2-% | -0.093, | RMS2-% | 0.114 | |
| AAD | 0.023, | BIAS2 | -0.018, | RMS2 | 0.021 | $mol \cdot dm^{-3}$ |

Data from Ricci and Scafe [29]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 185.030 | 15.7100 | 15.6501 | -0.381 | 15.6609 | -0.313 | 0.0 | 0.0 |
| 186.030 | 15.3020 | 15.2495 | -0.343 | 15.2668 | -0.230 | 0.0 | 0.0 |
| 187.031 | 14.8360 | 14.7919 | -0.297 | 14.8176 | -0.124 | 0.0 | 0.0 |
| 188.031 | 14.2850 | 14.2486 | -0.255 | 14.2845 | -0.004 | 0.0 | 0.0 |
| 189.032 | 13.5780 | 13.5505 | -0.202 | 13.5976 | 0.145 | 0.0 | 0.0 |
| 190.032 | 12.4740 | 12.4496 | -0.196 | 12.4963 | 0.178 | 0.0 | 0.0 |

Data from Ricci and Scafe [29] continued

Number of Points (Ref. 29) 6

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.279, | BIAS1-% | -0.279, | RMS1-% | 0.069 | |
| AAD1 | 0.041, | BIAS1 | -0.041, | RMS1 | 0.013 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.166, | BIAS2-% | -0.058, | RMS2-% | 0.182 | |
| AAD2 | 0.024, | BIAS2 | -0.010, | RMS2 | 0.027 | $mol \cdot dm^{-3}$ |

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Data from Goodwin [30]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 150.000 | 22.3320 | 22.3123 | -0.088 | 22.3124 | -0.088 | 0.0 | 0.0 |
| 175.000 | 18.4200 | 18.3730 | -0.255 | 18.3706 | -0.268 | 0.0 | 0.0 |
| 180.000 | 17.2540 | 17.2070 | -0.272 | 17.2044 | -0.287 | 0.0 | 0.0 |
| 184.000 | 16.0600 | 16.0205 | -0.246 | 16.0263 | -0.210 | 0.0 | 0.0 |

Number of Points (Ref. 30) 4

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.215, | BIAS1-% | -0.215, | RMS1-% | 0.074 | |
| AAD1 | 0.038, | BIAS1 | -0.038, | RMS1 | 0.011 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.213, | BIAS2-% | -0.213, | RMS2-% | 0.078 | |
| AAD2 | 0.038, | BIAS2 | -0.038, | RMS2 | 0.012 | $mol \cdot dm^{-3}$ |

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Data from Goodwin [31]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 93.512 | 27.9100 | 27.9078 | -0.008 | 27.9105 | 0.002 | 0.0 | 0.0 |
| 97.173 | 27.6050 | 27.5952 | -0.035 | 27.6029 | -0.007 | 0.0 | 0.0 |
| 101.434 | 27.2430 | 27.2275 | -0.057 | 27.2392 | -0.014 | 0.0 | 0.0 |
| 105.165 | 26.9160 | 26.9011 | -0.055 | 26.9150 | -0.004 | 0.0 | 0.0 |
| 109.611 | 26.5270 | 26.5058 | -0.080 | 26.5207 | -0.024 | 0.0 | 0.0 |

Data from Goodwin [31] (continued)

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 113.772 | 26.1460 | 26.1284 | -0.067 | 26.1430 | -0.011 | 0.0 | 0.0 |
| 117.746 | 25.7820 | 25.7601 | -0.085 | 25.7736 | -0.033 | 0.0 | 0.0 |
| 121.893 | 25.3880 | 25.3663 | -0.086 | 25.3781 | -0.039 | 0.0 | 0.0 |
| 125.825 | 24.9990 | 24.9827 | -0.065 | 24.9926 | -0.026 | 0.0 | 0.0 |
| 129.657 | 24.6110 | 24.5982 | -0.052 | 24.6060 | -0.020 | 0.0 | 0.0 |
| 133.773 | 24.1860 | 24.1717 | -0.059 | 24.1773 | -0.036 | 0.0 | 0.0 |
| 133.878 | 24.1760 | 24.1606 | -0.064 | 24.1661 | -0.041 | 0.0 | 0.0 |
| 139.352 | 23.5780 | 23.5679 | -0.043 | 23.5709 | -0.030 | 0.0 | 0.0 |
| 145.448 | 22.8800 | 22.8679 | -0.053 | 22.8689 | -0.048 | 0.0 | 0.0 |
| 151.553 | 22.1300 | 22.1152 | -0.067 | 22.1152 | -0.067 | 0.0 | 0.0 |
| 157.199 | 21.3790 | 21.3612 | -0.083 | 21.3610 | -0.084 | 0.0 | 0.0 |
| 163.659 | 20.4280 | 20.4092 | -0.092 | 20.4092 | -0.092 | 0.0 | 0.0 |
| 169.326 | 19.4920 | 19.4665 | -0.131 | 19.4660 | -0.133 | 0.0 | 0.0 |
| 175.053 | 18.3900 | 18.3618 | -0.153 | 18.3594 | -0.166 | 0.0 | 0.0 |

Number of Points (Ref. 31) 19

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.070, | BIAS1-% | -0.070, | RMS1-% | 0.031 | |
| AAD1 | 0.016, | BIAS1 | -0.016, | RMS1 | 0.006 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.046, | BIAS2-% | -0.046, | RMS2-% | 0.044 | |
| AAD2 | 0.010, | BIAS2 | -0.010, | RMS2 | 0.008 | $mol \cdot dm^{-3}$ |

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Data from Jansoone et al. [32]

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 187.469 | 14.5820 | 14.5672 | -0.102 | 14.5971 | 0.103 | 0.0 | 0.0 |
| 189.311 | 13.3000 | 13.3068 | 0.051 | 13.3566 | 0.425 | 0.0 | 0.0 |
| 189.707 | 12.8790 | 12.8935 | 0.112 | 12.9448 | 0.511 | 0.0 | 0.0 |
| 190.048 | 12.3970 | 12.4237 | 0.215 | 12.4698 | 0.587 | 0.0 | 0.0 |
| 190.316 | 11.8240 | 11.8772 | 0.450 | 11.9008 | 0.650 | 0.0 | 0.0 |
| 190.442 | 11.3670 | 11.4597 | 0.815 | 11.4466 | 0.701 | 0.0 | 0.0 |
| 190.515 | 10.7960 | 11.0288 | 2.157 | 10.9573 | 1.494 | 0.0 | 0.0 |

Data from Jansoone et al. [32] (continued)

Number of Points (Ref. 32) 7

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.557, | BIAS1-% | 0.528, | RMS1-% | 0.721 | |
| AAD1 | 0.063, | BIAS1 | 0.059, | RMS1 | 0.078 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.639, | BIAS2-% | 0.639, | RMS2-% | 0.394 | |
| AAD2 | 0.076, | BIAS2 | 0.076, | RMS2 | 0.041 | $mol \cdot dm^{-3}$ |

---

Data from eq (2)

| T | $\rho_{\sigma L}$, exp | $\rho_{\sigma L}$, eq(2) | Dev1 | $\rho_{\sigma L}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 91.0 | 28.12075 | 28.12075 | - | 28.11919 | -0.006 | - | 17.390 |
| 96.0 | 27.69569 | 27.69569 | - | 27.70194 | 0.023 | - | 10.963 |
| 101.0 | 27.26517 | 27.26517 | - | 27.27660 | 0.042 | - | 7.354 |
| 106.0 | 26.82746 | 26.82746 | - | 26.84162 | 0.053 | - | 5.201 |
| 111.0 | 26.38069 | 26.38069 | - | 26.39559 | 0.056 | - | 3.850 |
| 116.0 | 25.92291 | 25.92291 | - | 25.93700 | 0.054 | - | 2.964 |
| 121.0 | 25.45195 | 25.45195 | - | 25.46417 | 0.048 | - | 2.362 |
| 126.0 | 24.96542 | 24.96542 | - | 24.97517 | 0.039 | - | 1.941 |
| 131.0 | 24.46062 | 24.46062 | - | 24.46769 | 0.029 | - | 1.639 |
| 136.0 | 23.93442 | 23.93442 | - | 23.93895 | 0.019 | - | 49.669 |
| 141.0 | 23.38312 | 23.38312 | - | 23.38551 | 0.010 | - | 44.004 |
| 146.0 | 22.80217 | 22.80217 | - | 22.80303 | 0.004 | - | 199.223 |
| 151.0 | 22.18586 | 22.18586 | - | 22.18588 | 0.000 | - | 184.268 |
| 156.0 | 21.52672 | 21.52672 | - | 21.52651 | -0.001 | - | 174.141 |
| 161.0 | 20.81447 | 20.81447 | - | 20.81438 | 0.000 | - | 168.363 |
| 166.0 | 20.03418 | 20.03418 | - | 20.03409 | 0.000 | - | 167.007 |
| 171.0 | 19.16248 | 19.16248 | - | 19.16155 | -0.005 | - | 170.897 |
| 176.0 | 18.15860 | 18.15860 | - | 18.15590 | -0.015 | - | 182.282 |
| 181.0 | 16.93856 | 16.93856 | - | 16.93686 | -0.010 | - | 206.862 |
| 186.0 | 15.26221 | 15.26221 | - | 15.27930 | 0.112 | - | 260.343 |

Number of Points (eq. (2)) 20

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | - , | BIAS1-% | -, | RMS1-% | - | |
| AAD1 | - , | BIAS1 | -, | RMS1 | - | |
| AAD2-% | 0.026, | BIAS2-% | 0.023, | RMS2-% | 0.031 | |
| AAD2 | 0.006, | BIAS2 | 0.005, | RMS2 | 0.006 | $mol \cdot dm^{-3}$ |

Total Points  177 for Ancillary Equation

```
AAD1-%  0.111, BIAS1-%  -0.055,    RMS1-%  0.214
AAD1    0.020, BIAS1    -0.013,    RMS1    0.029  mol•dm⁻³
```

Total Points  197 for Equation of State

```
AAD2-%  0.114, BIAS2-%  -0.001,    RMS2-%  0.211
AAD2    0.019, BIAS2    -0.003,    RMS2    0.033  mol•dm⁻³
```

Total Points 76 from Refs. 6, 20-22  for Ancillary Equation

```
AAD1-%  0.052, BIAS1-%  -0.040,    RMS1-%  0.054
AAD1    0.012, BIAS1    -0.010,    RMS1    0.012  mol•dm⁻³
```

Total Points 76 from Refs. 6, 20-22  for Equation of State

```
AAD1-%  0.102, BIAS1-%   0.000,    RMS1-%  0.186
AAD1    0.017, BIAS1    -0.002,    RMS1    0.025  mol•dm⁻³
```

TABLE A3

COMPARISONS FOR SATURATED VAPOR DENSITIES

Notes for Table A3. The numeral 1 associated with quantities refers to comparisons with eq (3); the numeral 2 refers to comparisons with the SWEOS. Similarly, Wt1 refers to weighting for the development of eq (3), and Wt2 refers to weighting of the saturated vapor densities in the development of the SWEOS. For the points generated from eq (3), in the last part of the table, statistics relative to eq (3) have no meaning; these points are therefore excluded from the totals.

Data from Kleinrahm and Wagner [6]

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 90.685 | 0.015 63 | 0.015 64 | 0.034 | 0.015 65 | 0.155 | 1.0 | 0.0 |
| 91.000 | 0.016 23 | 0.016 23 | -0.012 | 0.016 25 | 0.104 | 1.0 | 0.0 |
| 95.000 | 0.025 43 | 0.025 42 | -0.041 | 0.025 43 | 0.018 | 1.0 | 0.0 |
| 100.000 | 0.042 16 | 0.042 14 | -0.047 | 0.042 15 | -0.025 | 1.0 | 0.0 |
| 105.000 | 0.066 28 | 0.066 30 | 0.028 | 0.066 30 | 0.035 | 1.0 | 0.0 |
| 110.000 | 0.099 77 | 0.099 81 | 0.045 | 0.099 82 | 0.053 | 1.0 | 0.0 |
| 111.631 | 0.113 10 | 0.113 12 | 0.017 | 0.113 13 | 0.028 | 1.0 | 0.0 |
| 115.000 | 0.144 75 | 0.144 79 | 0.029 | 0.144 83 | 0.052 | 1.0 | 0.0 |
| 120.000 | 0.203 49 | 0.203 54 | 0.026 | 0.203 63 | 0.070 | 1.0 | 0.0 |
| 125.000 | 0.278 63 | 0.278 62 | -0.003 | 0.278 81 | 0.063 | 1.0 | 0.0 |
| 130.000 | 0.373 02 | 0.372 91 | -0.030 | 0.373 22 | 0.052 | 1.0 | 0.0 |
| 135.000 | 0.490 01 | 0.489 71 | -0.062 | 0.490 14 | 0.027 | 1.0 | 0.0 |
| 140.000 | 0.633 24 | 0.632 89 | -0.055 | 0.633 43 | 0.030 | 1.0 | 0.0 |
| 145.000 | 0.807 50 | 0.807 15 | -0.043 | 0.807 71 | 0.025 | 1.0 | 0.0 |
| 150.000 | 1.018 33 | 1.018 30 | -0.003 | 1.018 76 | 0.042 | 1.0 | 0.0 |
| 155.000 | 1.273 35 | 1.273 83 | 0.037 | 1.274 06 | 0.056 | 1.0 | 0.0 |
| 160.000 | 1.582 93 | 1.583 83 | 0.057 | 1.583 75 | 0.052 | 1.0 | 0.0 |
| 165.000 | 1.961 49 | 1.962 64 | 0.059 | 1.962 28 | 0.040 | 1.0 | 0.0 |
| 170.000 | 2.430 79 | 2.432 20 | 0.058 | 2.431 73 | 0.039 | 1.0 | 0.0 |
| 175.000 | 3.028 90 | 3.029 52 | 0.020 | 3.029 25 | 0.012 | 1.0 | 0.0 |
| 180.000 | 3.828 69 | 3.827 39 | -0.034 | 3.827 36 | -0.035 | 1.0 | 0.0 |
| 182.000 | 4.238 42 | 4.236 04 | -0.056 | 4.235 79 | -0.062 | 1.0 | 0.0 |
| 184.000 | 4.729 87 | 4.726 28 | -0.076 | 4.725 28 | -0.097 | 1.0 | 0.0 |
| 186.000 | 5.347 68 | 5.343 67 | -0.075 | 5.340 76 | -0.129 | 1.0 | 0.0 |
| 187.000 | 5.732 94 | 5.729 03 | -0.068 | 5.724 44 | -0.148 | 1.0 | 0.0 |

Data from Kleinrahm and Wagner [6] (continued)

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 188.000 | 6.202 44 | 6.199 74 | -0.044 | 6.192 76 | -0.156 | 1.0 | 0.0 |
| 189.000 | 6.820 73 | 6.821 13 | 0.006 | 6.811 37 | -0.137 | 1.0 | 0.0 |
| 189.500 | 7.237 74 | 7.241 06 | 0.046 | 7.230 89 | -0.095 | 1.0 | 0.0 |
| 189.800 | 7.556 57 | 7.562 03 | 0.072 | 7.553 44 | -0.041 | 1.0 | 0.0 |
| 190.000 | 7.820 23 | 7.826 92 | 0.085 | 7.821 73 | 0.019 | 1.0 | 0.0 |
| 190.100 | 7.976 69 | 7.983 80 | 0.089 | 7.981 91 | 0.065 | 1.0 | 0.0 |
| 190.200 | 8.156 83 | 8.165 49 | 0.106 | 8.168 94 | 0.148 | 1.0 | 0.0 |
| 190.300 | 8.375 62 | 8.385 08 | 0.113 | 8.397 75 | 0.264 | 1.0 | 0.0 |
| 190.400 | 8.660 47 | 8.672 58 | 0.140 | 8.703 06 | 0.492 | 1.0 | 0.0 |
| 190.450 | 8.854 95 | 8.866 51 | 0.131 | 8.913 33 | 0.659 | 1.0 | 0.0 |
| 190.500 | 9.129 22 | 9.139 30 | 0.110 | 9.214 75 | 0.937 | 1.0 | 0.0 |
| 190.530 | 9.396 00 | 9.408 46 | 0.133 | 9.514 12 | 1.257 | 1.0 | 0.0 |
| 190.551 | 10.139 00 | 10.139 00 | 0.000 | 10.139 00 | 0.000 | 1.0 | 0.0 |

Number of Points (Ref. 6) 38

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.055, | BIAS1-% | 0.021, | RMS1-% | 0.063 | |
| AAD1 | 0.003, | BIAS1 | 0.002, | RMS1 | 0.004 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.150, | BIAS2-% | 0.102, | RMS2-% | 0.282 | |
| AAD2 | 0.011, | BIAS2 | 0.008, | RMS2 | 0.026 | $mol \cdot dm^{-3}$ |

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Data from Goodwin [3]

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 94.000 | 0.022 90 | 0.022 81 | -0.384 | 0.022 83 | -0.313 | 0.0 | 0.0 |
| 100.000 | 0.042 20 | 0.042 14 | -0.141 | 0.042 15 | -0.120 | 0.0 | 0.0 |
| 106.000 | 0.072 20 | 0.072 19 | -0.016 | 0.072 19 | -0.010 | 0.0 | 0.0 |
| 112.000 | 0.116 20 | 0.116 31 | 0.091 | 0.116 32 | 0.104 | 0.0 | 0.0 |
| 118.000 | 0.178 10 | 0.178 23 | 0.074 | 0.178 29 | 0.109 | 0.0 | 0.0 |
| 124.000 | 0.262 10 | 0.262 17 | 0.026 | 0.262 33 | 0.087 | 0.0 | 0.0 |
| 130.000 | 0.373 00 | 0.372 91 | -0.024 | 0.373 22 | 0.058 | 0.0 | 0.0 |
| 136.000 | 0.516 40 | 0.516 10 | -0.059 | 0.516 56 | 0.030 | 0.0 | 0.0 |
| 142.000 | 0.699 20 | 0.698 57 | -0.090 | 0.699 13 | -0.011 | 0.0 | 0.0 |
| 148.000 | 0.930 10 | 0.928 98 | -0.121 | 0.929 49 | -0.065 | 0.0 | 0.0 |

Data from Goodwin [3] (continued)

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 154.000 | 1.220 90 | 1.218 73 | -0.178 | 1.219 02 | -0.154 | 0.0 | 0.0 |
| 160.000 | 1.585 20 | 1.583 83 | -0.087 | 1.583 75 | -0.091 | 0.0 | 0.0 |
| 169.067 | 2.344 10 | 2.336 30 | -0.333 | 2.335 83 | -0.353 | 0.0 | 0.0 |
| 169.270 | 2.364 00 | 2.356 81 | -0.304 | 2.356 34 | -0.324 | 0.0 | 0.0 |
| 169.417 | 2.381 00 | 2.371 78 | -0.387 | 2.371 31 | -0.407 | 0.0 | 0.0 |
| 169.601 | 2.400 60 | 2.390 67 | -0.414 | 2.390 20 | -0.433 | 0.0 | 0.0 |
| 169.794 | 2.418 80 | 2.410 66 | -0.336 | 2.410 19 | -0.356 | 0.0 | 0.0 |
| 173.088 | 2.791 60 | 2.782 59 | -0.323 | 2.782 21 | -0.336 | 0.0 | 0.0 |
| 173.290 | 2.814 70 | 2.807 49 | -0.256 | 2.807 12 | -0.269 | 0.0 | 0.0 |
| 173.489 | 2.840 00 | 2.832 28 | -0.272 | 2.831 92 | -0.284 | 0.0 | 0.0 |
| 173.473 | 2.842 30 | 2.830 28 | -0.423 | 2.829 92 | -0.436 | 0.0 | 0.0 |
| 173.675 | 2.864 30 | 2.855 69 | -0.301 | 2.855 34 | -0.313 | 0.0 | 0.0 |
| 173.857 | 2.887 70 | 2.878 83 | -0.307 | 2.878 49 | -0.319 | 0.0 | 0.0 |
| 177.094 | 3.343 40 | 3.332 77 | -0.318 | 3.332 64 | -0.322 | 0.0 | 0.0 |
| 177.328 | 3.379 50 | 3.369 12 | -0.307 | 3.369 01 | -0.310 | 0.0 | 0.0 |
| 181.389 | 4.126 90 | 4.103 90 | -0.557 | 4.103 76 | -0.561 | 0.0 | 0.0 |
| 181.768 | 4.204 20 | 4.185 03 | -0.456 | 4.184 83 | -0.461 | 0.0 | 0.0 |
| 183.514 | 4.618 90 | 4.597 76 | -0.458 | 4.597 02 | -0.474 | 0.0 | 0.0 |
| 184.285 | 4.826 30 | 4.804 97 | -0.442 | 4.803 78 | -0.467 | 0.0 | 0.0 |
| 184.510 | 4.887 60 | 4.868 98 | -0.381 | 4.867 63 | -0.409 | 0.0 | 0.0 |
| 186.319 | 5.479 50 | 5.459 46 | -0.366 | 5.456 09 | -0.427 | 0.0 | 0.0 |
| 188.545 | 6.527 80 | 6.512 37 | -0.236 | 6.503 83 | -0.367 | 0.0 | 0.0 |

Number of Points (Ref. 3) 32

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.265, | BIAS1-% | -0.253, | RMS1-% | 0.168 | |
| AAD1 | 0.008, | BIAS1 | -0.008, | RMS1 | 0.007 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.274, | BIAS2-% | -0.250, | RMS2-% | 0.194 | |
| AAD2 | 0.009, | BIAS2 | -0.009, | RMS2 | 0.008 | $mol \cdot dm^{-3}$ |

Data from Ricci and Scafe [29]

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | mol•dm$^{-3}$ | mol•dm$^{-3}$ | % | mol•dm$^{-3}$ | % | | |
| 185.030 | 5.038 00 | 5.023 89 | -0.280 | 5.022 10 | -0.316 | 0.0 | 0.0 |
| 186.030 | 5.384 00 | 5.354 31 | -0.552 | 5.351 36 | -0.606 | 0.0 | 0.0 |
| 187.031 | 5.786 00 | 5.742 13 | -0.758 | 5.737 48 | -0.839 | 0.0 | 0.0 |
| 188.031 | 6.275 00 | 6.216 23 | -0.937 | 6.209 16 | -1.049 | 0.0 | 0.0 |
| 189.032 | 6.918 00 | 6.845 03 | -1.055 | 6.835 19 | -1.197 | 0.0 | 0.0 |
| 190.032 | 7.960 00 | 7.874 93 | -1.069 | 7.870 63 | -1.123 | 0.0 | 0.0 |

Number of Points (Ref. 29) 6

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.775, | BIAS1-% | -0.775, | RMS1-% | 0.285 | |
| AAD1 | 0.051, | BIAS1 | -0.051, | RMS1 | 0.024 | mol•dm$^{-3}$ |
| AAD2-% | 0.855, | BIAS2-% | -0.855, | RMS2-% | 0.311 | |
| AAD2 | 0.055, | BIAS2 | -0.055, | RMS2 | 0.026 | mol•dm$^{-3}$ |

---

Data from Jansoone et al. [32]

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | mol•dm$^{-3}$ | mol•dm$^{-3}$ | % | mol•dm$^{-3}$ | % | | |
| 189.785 | 7.551 00 | 7.544 14 | -0.091 | 7.535 40 | -0.207 | 0.0 | 0.0 |
| 190.066 | 7.935 00 | 7.928 11 | -0.087 | 7.924 93 | -0.127 | 0.0 | 0.0 |
| 190.299 | 8.392 00 | 8.382 63 | -0.112 | 8.395 17 | 0.038 | 0.0 | 0.0 |
| 190.500 | 9.161 00 | 9.139 30 | -0.237 | 9.214 75 | 0.587 | 0.0 | 0.0 |
| 190.524 | 9.686 00 | 9.340 56 | -3.566 | 9.439 01 | -2.550 | 0.0 | 0.0 |

Number of Points (Ref. 32) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.819, | BIAS1-% | -0.819, | RMS1-% | 1.375 | |
| AAD1 | 0.078, | BIAS1 | -0.078, | RMS1 | 0.134 | mol•dm$^{-3}$ |
| AAD2-% | 0.702, | BIAS2-% | -0.452, | RMS2-% | 1.085 | |
| AAD2 | 0.066, | BIAS2 | -0.043, | RMS2 | 0.105 | mol•dm$^{-3}$ |

Data from Verbeke [26]

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 190.070 | 8.000 00 | 7.934 53 | -0.818 | 7.931 48 | -0.856 | 0.0 | 0.0 |
| 190.170 | 8.170 00 | 8.107 78 | -0.762 | 8.109 33 | -0.743 | 0.0 | 0.0 |
| 190.270 | 8.360 00 | 8.313 99 | -0.550 | 8.323 30 | -0.439 | 0.0 | 0.0 |
| 190.370 | 8.620 00 | 8.575 86 | -0.512 | 8.599 53 | -0.237 | 0.0 | 0.0 |
| 190.470 | 9.000 00 | 8.961 86 | -0.424 | 9.018 02 | 0.200 | 0.0 | 0.0 |

Number of Points (Ref. 26) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD1-% | 0.613, | BIAS1-% | -0.613, | RMS1-% | 0.151 | |
| AAD1 | 0.051, | BIAS1 | -0.051, | RMS1 | 0.011 | $mol \cdot dm^{-3}$ |
| AAD2-% | 0.495, | BIAS2-% | -0.415, | RMS2-% | 0.378 | |
| AAD2 | 0.041, | BIAS2 | -0.034, | RMS2 | 0.031 | $mol \cdot dm^{-3}$ |

---

Data from eq (3)

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 91.0 | 1.622 81E-02 | 1.622 81E-02 | - | 1.624 68E-02 | 0.115 | - | 46595.385 |
| 96.0 | 2.825 47E-02 | 2.825 47E-02 | - | 2.826 86E-02 | 0.049 | - | 25531.209 |
| 101.0 | 4.631 83E-02 | 4.631 83E-02 | - | 4.632 59E-02 | 0.017 | - | 14913.515 |
| 106.0 | 7.218 88E-02 | 7.218 88E-02 | - | 7.219 25E-02 | 0.005 | - | 9199.929 |
| 111.0 | 1.078 22E-01 | 1.078 22E-01 | - | 1.078 33E-01 | 0.010 | - | 5947.908 |
| 116.0 | 1.553 63E-01 | 1.553 63E-01 | - | 1.554 04E-01 | 0.027 | - | 4004.906 |
| 121.0 | 2.171 65E-01 | 2.171 65E-01 | - | 2.172 70E-01 | 0.048 | - | 2793.881 |
| 126.0 | 2.958 44E-01 | 2.958 44E-01 | - | 2.960 50E-01 | 0.070 | - | 2010.580 |
| 131.0 | 3.943 53E-01 | 3.943 53E-01 | - | 3.946 86E-01 | 0.084 | - | 1487.113 |
| 136.0 | 5.160 96E-01 | 5.160 96E-01 | - | 5.165 55E-01 | 0.089 | - | 1127.035 |
| 141.0 | 6.650 93E-01 | 6.650 93E-01 | - | 6.656 38E-01 | 0.082 | - | 1500.000 |
| 146.0 | 8.462 19E-01 | 8.462 19E-01 | - | 8.467 63E-01 | 0.064 | - | 1500.000 |
| 151.0 | 1.065 57E+00 | 1.065 57E+00 | - | 1.066 00E+00 | 0.040 | - | 1500.000 |
| 156.0 | 1.331 08E+00 | 1.331 08E+00 | - | 1.331 27E+00 | 0.014 | - | 1500.000 |
| 161.0 | 1.653 52E+00 | 1.653 52E+00 | - | 1.653 39E+00 | -0.008 | - | 1500.000 |

Data from eq. (3) (continued)

| T | $\rho_{\sigma V}$, exp | $\rho_{\sigma V}$, eq(3) | Dev1 | $\rho_{\sigma V}$, SWEOS | Dev2 | Wt1 | Wt2 |
|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | $mol \cdot dm^{-3}$ | % | | |
| 166.0 | 2.048 40E+00 | 2.048 40E+00 | - | 2.048 00E+00 | -0.020 | - | 3750.000 |
| 171.0 | 2.539 84E+00 | 2.539 84E+00 | - | 2.539 39E+00 | -0.018 | - | 3750.000 |
| 176.0 | 3.169 62E+00 | 3.169 62E+00 | - | 3.169 42E+00 | -0.006 | - | 3750.000 |
| 181.0 | 4.023 30E+00 | 4.023 30E+00 | - | 4.023 21E+00 | -0.002 | - | 3750.000 |
| 186.0 | 5.343 67E+00 | 5.343 67E+00 | - | 5.340 76E+00 | -0.054 | - | 3750.000 |

Number of Points (eq (3)) 20

AAD1-% - , BIAS1-% - , RMS1-% -
AAD1 - , BIAS1 - , RMS1 -
AAD2-% 0.041, BIAS2-% 0.030, RMS2-% 0.043
AAD2 0.354, BIAS2 -0.064, RMS2 0.707 $mol \cdot dm^{-3}$

Total Points 86 for Ancillary Equation

AAD1-% 0.260, BIAS1-% -0.222, RMS1-% 0.454
AAD1 0.015, BIAS1 -0.013, RMS1 0.041 $mol \cdot dm^{-3}$

Total Points 106 for Equation of State

AAD2-% 0.250, BIAS2-% -0.123, RMS2-% 0.418
AAD2 0.012, BIAS2 -0.011, RMS2 0.037 $mol \cdot dm^{-3}$

TABLE A4

COMPARISONS OF EXPERIMENTAL AND CALCULATED PVT DATA

Notes for Table A4. The first column marked Dev in the tables refers to deviations between the experimental pressure and the pressure calculated using the SWEOS and the experimental temperature and density. The statistics for these deviations are given under the Pressure heading. The second Dev column refers to deviations between the experimental density and the density calculated using the SWEOS and the experimental temperature and pressure. The statistics for these deviations are given under the Density heading. The weights in the tables are for the least squares determination of the coefficients in the equation of state. Some of the tabulated densities in Ref.[37] (and included in this table) were near the two-phase boundary and are based on alternative correlations rather than being direct experimental determinations. This also applies to the data Ref.[44] at temperatures above 250 K.

Data from Achtermann et al. [33]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 323.15 | 1.070 | 1.069 | -0.011 | 0.4035 | 0.4036 | 0.011 | 0.2263 |
| 323.15 | 1.550 | 1.550 | -0.017 | 0.5882 | 0.5883 | 0.017 | 0.1566 |
| 323.15 | 2.021 | 2.021 | -0.019 | 0.7716 | 0.7717 | 0.019 | 0.1204 |
| 323.15 | 2.467 | 2.467 | -0.026 | 0.9471 | 0.9474 | 0.027 | 0.0989 |
| 323.15 | 3.047 | 3.046 | -0.033 | 1.1779 | 1.1783 | 0.034 | 0.0803 |
| 323.15 | 3.559 | 3.558 | -0.038 | 1.3844 | 1.3849 | 0.040 | 0.0690 |
| 323.15 | 4.026 | 4.024 | -0.047 | 1.5746 | 1.5753 | 0.049 | 0.0611 |
| 323.15 | 4.512 | 4.509 | -0.049 | 1.7746 | 1.7755 | 0.052 | 0.0546 |
| 323.15 | 5.026 | 5.023 | -0.058 | 1.9886 | 1.9898 | 0.062 | 0.0492 |
| 323.15 | 5.528 | 5.524 | -0.061 | 2.1993 | 2.2007 | 0.065 | 0.0448 |
| 323.15 | 6.000 | 5.996 | -0.064 | 2.3996 | 2.4013 | 0.068 | 0.0413 |
| 323.15 | 6.546 | 6.541 | -0.066 | 2.6329 | 2.6348 | 0.071 | 0.0379 |
| 323.15 | 7.037 | 7.032 | -0.068 | 2.8448 | 2.8469 | 0.073 | 0.0353 |
| 323.15 | 8.049 | 8.043 | -0.069 | 3.2863 | 3.2888 | 0.075 | 0.0309 |
| 323.15 | 9.027 | 9.021 | -0.066 | 3.7180 | 3.7206 | 0.072 | 0.0276 |
| 323.15 | 10.067 | 10.062 | -0.056 | 4.1816 | 4.1841 | 0.060 | 0.0247 |
| 323.15 | 11.072 | 11.068 | -0.042 | 4.6321 | 4.6341 | 0.045 | 0.0224 |
| 323.15 | 12.070 | 12.067 | -0.027 | 5.0801 | 5.0816 | 0.029 | 0.0205 |
| 323.15 | 13.054 | 13.052 | -0.011 | 5.5210 | 5.5216 | 0.011 | 0.0189 |
| 323.15 | 14.079 | 14.080 | 0.006 | 5.9777 | 5.9774 | -0.006 | 0.0174 |

Data from Achtermann et al. [33] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 323.15 | 15.092 | 15.095 | 0.022 | 6.4243 | 6.4229 | -0.022 | 0.0161 |
| 323.15 | 16.068 | 16.073 | 0.029 | 6.8484 | 6.8464 | -0.029 | 0.0150 |
| 323.15 | 17.081 | 17.088 | 0.042 | 7.2813 | 7.2783 | -0.042 | 0.0140 |
| 323.15 | 18.084 | 18.093 | 0.050 | 7.7011 | 7.6973 | -0.049 | 0.0131 |
| 323.15 | 18.988 | 18.999 | 0.055 | 8.0706 | 8.0664 | -0.052 | 0.0123 |
| 323.15 | 20.142 | 20.154 | 0.060 | 8.5292 | 8.5245 | -0.055 | 0.0114 |
| 323.15 | 21.125 | 21.138 | 0.063 | 8.9078 | 8.9028 | -0.056 | 0.0108 |
| 323.15 | 22.103 | 22.116 | 0.061 | 9.2728 | 9.2679 | -0.053 | 0.0101 |
| 323.15 | 23.109 | 23.123 | 0.058 | 9.6360 | 9.6312 | -0.050 | 0.0095 |
| 323.15 | 24.101 | 24.113 | 0.054 | 9.9816 | 9.9771 | -0.045 | 0.0090 |
| 323.15 | 25.107 | 25.118 | 0.046 | 10.3196 | 10.3158 | -0.037 | 0.0085 |
| 323.15 | 26.126 | 26.136 | 0.040 | 10.6497 | 10.6464 | -0.031 | 0.0080 |
| 323.15 | 27.139 | 27.148 | 0.033 | 10.9656 | 10.9628 | -0.025 | 0.0076 |
| 323.15 | 28.112 | 28.120 | 0.028 | 11.2581 | 11.2557 | -0.021 | 0.0072 |
| 323.15 | 28.668 | 28.675 | 0.024 | 11.4203 | 11.4183 | -0.017 | 0.0070 |

Number of Points (Ref. 33) 35

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.043 | BIAS-% | -0.004 | RMS-% | 0.046 | |
| | AAD | 0.006 | BIAS | 0.003 | RMS | 0.007 | MPa |
| DENSITY : | AAD-% | 0.042 | BIAS-% | 0.008 | RMS-% | 0.046 | |
| | AAD | 0.002 | BIAS | -0.001 | RMS | 0.003 | $mol \cdot dm^{-3}$ |

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Data from Achtermann et al. [34]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 0.102 | 0.102 | -0.072 | 0.0449 | 0.0449 | 0.072 | 0.0000 |
| 273.15 | 0.625 | 0.625 | -0.010 | 0.2794 | 0.2794 | 0.010 | 0.0000 |
| 273.15 | 1.086 | 1.086 | 0.004 | 0.4909 | 0.4909 | -0.004 | 0.0000 |
| 273.15 | 1.590 | 1.589 | -0.010 | 0.7273 | 0.7274 | 0.010 | 0.0000 |
| 273.15 | 2.102 | 2.102 | -0.014 | 0.9739 | 0.9740 | 0.015 | 0.0000 |

Data from Achtermann et al. [34] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | mol·dm$^{-3}$ | mol·dm$^{-3}$ | % | |
| 273.15 | 2.568 | 2.567 | -0.018 | 1.2038 | 1.2040 | 0.019 | 0.0000 |
| 273.15 | 3.061 | 3.060 | -0.029 | 1.4527 | 1.4532 | 0.032 | 0.0000 |
| 273.15 | 3.542 | 3.541 | -0.024 | 1.7018 | 1.7022 | 0.026 | 0.0000 |
| 273.15 | 4.046 | 4.045 | -0.026 | 1.9691 | 1.9697 | 0.029 | 0.0000 |
| 273.15 | 4.466 | 4.465 | -0.033 | 2.1968 | 2.1976 | 0.036 | 0.0000 |
| 273.15 | 5.026 | 5.024 | -0.044 | 2.5074 | 2.5086 | 0.049 | 0.0000 |
| 273.15 | 5.492 | 5.490 | -0.047 | 2.7729 | 2.7744 | 0.053 | 0.0000 |
| 273.15 | 6.013 | 6.008 | -0.077 | 3.0748 | 3.0775 | 0.088 | 0.0000 |
| 273.15 | 6.544 | 6.539 | -0.086 | 3.3911 | 3.3945 | 0.100 | 0.0000 |
| 273.15 | 6.967 | 6.961 | -0.088 | 3.6477 | 3.6515 | 0.103 | 0.0000 |
| 273.15 | 7.191 | 7.184 | -0.096 | 3.7853 | 3.7896 | 0.113 | 0.0000 |
| 273.15 | 8.586 | 8.585 | -0.007 | 4.6745 | 4.6749 | 0.008 | 0.0000 |
| 273.15 | 7.297 | 7.294 | -0.050 | 3.8534 | 3.8556 | 0.058 | 0.0000 |
| 273.15 | 6.185 | 6.180 | -0.077 | 3.1764 | 3.1792 | 0.089 | 0.0000 |
| 273.15 | 5.224 | 5.220 | -0.088 | 2.6184 | 2.6210 | 0.100 | 0.0000 |
| 273.15 | 4.398 | 4.394 | -0.089 | 2.1584 | 2.1605 | 0.100 | 0.0000 |
| 273.15 | 3.692 | 3.688 | -0.087 | 1.7792 | 1.7809 | 0.096 | 0.0000 |
| 273.15 | 3.090 | 3.087 | -0.079 | 1.4667 | 1.4680 | 0.085 | 0.0000 |
| 273.15 | 2.580 | 2.578 | -0.069 | 1.2090 | 1.2099 | 0.074 | 0.0000 |
| 273.15 | 2.149 | 2.148 | -0.066 | 0.9966 | 0.9973 | 0.070 | 0.0000 |
| 273.15 | 1.788 | 1.787 | -0.060 | 0.8215 | 0.8220 | 0.062 | 0.0000 |
| 273.15 | 1.485 | 1.484 | -0.050 | 0.6772 | 0.6776 | 0.052 | 0.0000 |
| 273.15 | 1.231 | 1.231 | -0.049 | 0.5582 | 0.5585 | 0.050 | 0.0000 |
| 273.15 | 1.020 | 1.020 | -0.053 | 0.4601 | 0.4603 | 0.054 | 0.0000 |
| 273.15 | 0.844 | 0.844 | -0.035 | 0.3793 | 0.3794 | 0.035 | 0.0000 |
| 273.15 | 0.699 | 0.698 | -0.053 | 0.3126 | 0.3128 | 0.054 | 0.0000 |
| 273.15 | 0.577 | 0.577 | -0.045 | 0.2577 | 0.2578 | 0.045 | 0.0000 |
| 273.15 | 0.477 | 0.477 | -0.038 | 0.2124 | 0.2125 | 0.039 | 0.0000 |
| 273.15 | 0.394 | 0.394 | -0.036 | 0.1751 | 0.1752 | 0.037 | 0.0000 |
| 273.15 | 0.325 | 0.325 | -0.048 | 0.1443 | 0.1444 | 0.048 | 0.0000 |
| 273.15 | 0.269 | 0.269 | 0.027 | 0.1190 | 0.1190 | -0.027 | 0.0000 |
| 273.15 | 0.221 | 0.222 | 0.052 | 0.0981 | 0.0980 | -0.052 | 0.0000 |
| 273.15 | 0.183 | 0.183 | -0.027 | 0.0808 | 0.0808 | 0.027 | 0.0000 |
| 283.15 | 0.236 | 0.236 | -0.027 | 0.1008 | 0.1008 | 0.027 | 0.0000 |
| 283.15 | 0.331 | 0.331 | 0.006 | 0.1418 | 0.1418 | -0.006 | 0.0000 |

Data from Achtermann et al. [34] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | mol·dm$^{-3}$ | mol·dm$^{-3}$ | % | |
| 283.15 | 0.426 | 0.426 | -0.010 | 0.1826 | 0.1826 | 0.010 | 0.0000 |
| 283.15 | 0.526 | 0.526 | -0.029 | 0.2258 | 0.2259 | 0.030 | 0.0000 |
| 283.15 | 0.623 | 0.623 | -0.035 | 0.2682 | 0.2683 | 0.035 | 0.0000 |
| 283.15 | 0.718 | 0.718 | -0.023 | 0.3096 | 0.3097 | 0.023 | 0.0000 |
| 283.15 | 0.913 | 0.913 | -0.032 | 0.3954 | 0.3955 | 0.033 | 0.0000 |
| 283.15 | 1.109 | 1.109 | -0.037 | 0.4821 | 0.4823 | 0.038 | 0.0000 |
| 283.15 | 1.280 | 1.279 | -0.052 | 0.5582 | 0.5585 | 0.053 | 0.0000 |
| 283.15 | 1.611 | 1.610 | -0.047 | 0.7078 | 0.7081 | 0.049 | 0.0000 |
| 283.15 | 1.638 | 1.637 | -0.054 | 0.7198 | 0.7202 | 0.056 | 0.0000 |
| 283.15 | 2.100 | 2.098 | -0.060 | 0.9320 | 0.9326 | 0.063 | 0.0000 |
| 283.15 | 2.156 | 2.155 | -0.056 | 0.9582 | 0.9588 | 0.058 | 0.0000 |
| 283.15 | 2.591 | 2.590 | -0.062 | 1.1626 | 1.1634 | 0.066 | 0.0000 |
| 283.15 | 3.070 | 3.067 | -0.074 | 1.3914 | 1.3925 | 0.079 | 0.0000 |
| 283.15 | 3.154 | 3.152 | -0.063 | 1.4324 | 1.4334 | 0.067 | 0.0000 |
| 283.15 | 3.555 | 3.552 | -0.075 | 1.6284 | 1.6297 | 0.081 | 0.0000 |
| 283.15 | 4.043 | 4.040 | -0.074 | 1.8717 | 1.8732 | 0.081 | 0.0000 |
| 283.15 | 4.105 | 4.103 | -0.065 | 1.9034 | 1.9048 | 0.071 | 0.0000 |
| 283.15 | 4.541 | 4.538 | -0.069 | 2.1255 | 2.1271 | 0.075 | 0.0000 |
| 283.15 | 5.014 | 5.010 | -0.069 | 2.3707 | 2.3725 | 0.076 | 0.0000 |
| 283.15 | 5.515 | 5.512 | -0.064 | 2.6359 | 2.6378 | 0.072 | 0.0000 |
| 283.15 | 5.884 | 5.880 | -0.066 | 2.8343 | 2.8364 | 0.074 | 0.0000 |
| 283.15 | 5.999 | 5.995 | -0.069 | 2.8965 | 2.8987 | 0.077 | 0.0000 |
| 283.15 | 6.509 | 6.504 | -0.068 | 3.1761 | 3.1786 | 0.077 | 0.0000 |
| 283.15 | 6.722 | 6.718 | -0.059 | 3.2951 | 3.2973 | 0.067 | 0.0000 |
| 283.15 | 6.991 | 6.988 | -0.052 | 3.4461 | 3.4482 | 0.060 | 0.0000 |
| 283.15 | 7.477 | 7.473 | -0.046 | 3.7216 | 3.7236 | 0.053 | 0.0000 |
| 283.15 | 7.531 | 7.528 | -0.036 | 3.7529 | 3.7544 | 0.041 | 0.0000 |
| 283.15 | 8.466 | 8.467 | 0.009 | 4.2973 | 4.2969 | -0.010 | 0.0000 |
| 283.15 | 7.160 | 7.158 | -0.021 | 3.5425 | 3.5434 | 0.024 | 0.0000 |
| 283.15 | 6.041 | 6.038 | -0.037 | 2.9201 | 2.9213 | 0.042 | 0.0000 |
| 283.15 | 5.082 | 5.080 | -0.038 | 2.4072 | 2.4082 | 0.042 | 0.0000 |
| 283.15 | 4.264 | 4.262 | -0.035 | 1.9843 | 1.9851 | 0.039 | 0.0000 |
| 283.15 | 3.568 | 3.567 | -0.030 | 1.6357 | 1.6362 | 0.032 | 0.0000 |
| 283.15 | 2.979 | 2.978 | -0.023 | 1.3483 | 1.3486 | 0.025 | 0.0000 |
| 283.15 | 2.482 | 2.482 | -0.021 | 1.1114 | 1.1116 | 0.022 | 0.0000 |

Data from Achtermann et al. [34] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 283.15 | 2.064 | 2.064 | -0.005 | 0.9162 | 0.9162 | 0.005 | 0.0000 |
| 283.15 | 1.714 | 1.714 | -0.005 | 0.7552 | 0.7552 | 0.005 | 0.0000 |
| 283.15 | 1.422 | 1.422 | -0.004 | 0.6225 | 0.6225 | 0.004 | 0.0000 |
| 283.15 | 1.178 | 1.178 | 0.012 | 0.5132 | 0.5131 | -0.012 | 0.0000 |
| 283.15 | 0.976 | 0.975 | -0.001 | 0.4230 | 0.4230 | 0.001 | 0.0000 |
| 283.15 | 0.807 | 0.807 | 0.023 | 0.3487 | 0.3486 | -0.024 | 0.0000 |
| 283.15 | 0.667 | 0.667 | -0.013 | 0.2874 | 0.2874 | 0.013 | 0.0000 |
| 283.15 | 0.551 | 0.551 | -0.007 | 0.2369 | 0.2369 | 0.007 | 0.0000 |
| 283.15 | 0.455 | 0.455 | 0.012 | 0.1953 | 0.1953 | -0.013 | 0.0000 |
| 283.15 | 0.376 | 0.376 | 0.025 | 0.1610 | 0.1610 | -0.025 | 0.0000 |
| 283.15 | 0.310 | 0.310 | -0.019 | 0.1327 | 0.1327 | 0.019 | 0.0000 |
| 283.15 | 0.256 | 0.256 | 0.018 | 0.1094 | 0.1094 | -0.018 | 0.0000 |
| 283.15 | 0.211 | 0.211 | 0.031 | 0.0902 | 0.0902 | -0.031 | 0.0000 |
| 283.15 | 0.174 | 0.174 | -0.050 | 0.0743 | 0.0743 | 0.050 | 0.0000 |
| 283.15 | 0.144 | 0.144 | 0.084 | 0.0613 | 0.0612 | -0.085 | 0.0000 |
| 293.15 | 0.098 | 0.098 | 0.035 | 0.0405 | 0.0405 | -0.035 | 0.0000 |
| 293.15 | 0.243 | 0.243 | -0.029 | 0.1002 | 0.1002 | 0.029 | 0.0000 |
| 293.15 | 0.353 | 0.353 | -0.013 | 0.1458 | 0.1458 | 0.013 | 0.0000 |
| 293.15 | 0.433 | 0.433 | 0.006 | 0.1793 | 0.1793 | -0.006 | 0.0000 |
| 293.15 | 0.524 | 0.524 | -0.012 | 0.2171 | 0.2171 | 0.012 | 0.0000 |
| 293.15 | 0.637 | 0.637 | -0.020 | 0.2644 | 0.2645 | 0.020 | 0.0000 |
| 293.15 | 0.734 | 0.734 | -0.016 | 0.3051 | 0.3051 | 0.016 | 0.0000 |
| 293.15 | 0.931 | 0.931 | -0.019 | 0.3886 | 0.3887 | 0.020 | 0.0000 |
| 293.15 | 1.137 | 1.137 | -0.024 | 0.4763 | 0.4764 | 0.024 | 0.0000 |
| 293.15 | 1.312 | 1.312 | -0.032 | 0.5515 | 0.5517 | 0.033 | 0.0000 |
| 293.15 | 1.621 | 1.621 | -0.036 | 0.6853 | 0.6856 | 0.037 | 0.0000 |
| 293.15 | 1.908 | 1.908 | -0.038 | 0.8110 | 0.8113 | 0.040 | 0.0000 |
| 293.15 | 2.313 | 2.312 | -0.035 | 0.9903 | 0.9907 | 0.037 | 0.0000 |
| 293.15 | 2.642 | 2.641 | -0.042 | 1.1384 | 1.1389 | 0.044 | 0.0000 |
| 293.15 | 3.080 | 3.079 | -0.037 | 1.3380 | 1.3385 | 0.039 | 0.0000 |
| 293.15 | 3.565 | 3.564 | -0.038 | 1.5629 | 1.5635 | 0.041 | 0.0000 |
| 293.15 | 4.064 | 4.063 | -0.038 | 1.7983 | 1.7990 | 0.040 | 0.0000 |
| 293.15 | 4.265 | 4.263 | -0.049 | 1.8940 | 1.8950 | 0.053 | 0.0000 |
| 293.15 | 4.540 | 4.538 | -0.048 | 2.0267 | 2.0278 | 0.052 | 0.0000 |
| 293.15 | 5.024 | 5.022 | -0.050 | 2.2625 | 2.2637 | 0.055 | 0.0000 |

Data from Achtermann et al. [34] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 293.15 | 5.514 | 5.511 | -0.042 | 2.5052 | 2.5063 | 0.046 | 0.0000 |
| 293.15 | 6.005 | 6.002 | -0.049 | 2.7521 | 2.7536 | 0.054 | 0.0000 |
| 293.15 | 6.493 | 6.490 | -0.039 | 3.0016 | 3.0029 | 0.043 | 0.0000 |
| 293.15 | 6.979 | 6.977 | -0.036 | 3.2536 | 3.2549 | 0.040 | 0.0000 |
| 293.15 | 7.466 | 7.463 | -0.036 | 3.5087 | 3.5101 | 0.041 | 0.0000 |
| 293.15 | 7.705 | 7.702 | -0.037 | 3.6353 | 3.6368 | 0.042 | 0.0000 |
| 293.15 | 8.409 | 8.406 | -0.036 | 4.0120 | 4.0136 | 0.040 | 0.0000 |
| 293.15 | 7.083 | 7.079 | -0.055 | 3.3073 | 3.3094 | 0.062 | 0.0000 |
| 293.15 | 5.954 | 5.951 | -0.061 | 2.7263 | 2.7281 | 0.068 | 0.0000 |
| 293.15 | 4.994 | 4.991 | -0.061 | 2.2474 | 2.2489 | 0.066 | 0.0000 |
| 293.15 | 4.179 | 4.176 | -0.054 | 1.8526 | 1.8537 | 0.058 | 0.0000 |
| 293.15 | 3.489 | 3.487 | -0.046 | 1.5271 | 1.5278 | 0.049 | 0.0000 |
| 293.15 | 2.907 | 2.906 | -0.044 | 1.2588 | 1.2594 | 0.046 | 0.0000 |
| 293.15 | 2.419 | 2.418 | -0.059 | 1.0377 | 1.0383 | 0.062 | 0.0000 |
| 293.15 | 2.009 | 2.008 | -0.051 | 0.8554 | 0.8559 | 0.053 | 0.0000 |
| 293.15 | 1.667 | 1.666 | -0.047 | 0.7051 | 0.7054 | 0.048 | 0.0000 |
| 293.15 | 1.381 | 1.381 | -0.040 | 0.5812 | 0.5814 | 0.041 | 0.0000 |
| 293.15 | 1.144 | 1.143 | -0.031 | 0.4791 | 0.4793 | 0.032 | 0.0000 |
| 293.15 | 0.946 | 0.946 | -0.022 | 0.3949 | 0.3950 | 0.023 | 0.0000 |
| 293.15 | 0.782 | 0.782 | -0.023 | 0.3255 | 0.3256 | 0.023 | 0.0000 |
| 293.15 | 0.646 | 0.646 | -0.035 | 0.2683 | 0.2684 | 0.035 | 0.0000 |
| 293.15 | 0.534 | 0.534 | -0.011 | 0.2212 | 0.2212 | 0.012 | 0.0000 |
| 293.15 | 0.441 | 0.441 | -0.027 | 0.1823 | 0.1823 | 0.027 | 0.0000 |
| 293.15 | 0.364 | 0.364 | -0.009 | 0.1503 | 0.1503 | 0.009 | 0.0000 |
| 293.15 | 0.300 | 0.300 | -0.034 | 0.1239 | 0.1239 | 0.034 | 0.0000 |
| 293.15 | 0.248 | 0.248 | -0.016 | 0.1021 | 0.1021 | 0.017 | 0.0000 |
| 293.15 | 0.204 | 0.205 | 0.026 | 0.0842 | 0.0842 | -0.026 | 0.0000 |
| 293.15 | 0.169 | 0.169 | 0.017 | 0.0694 | 0.0694 | -0.017 | 0.0000 |
| 293.15 | 0.139 | 0.139 | 0.001 | 0.0572 | 0.0572 | -0.001 | 0.0000 |

Number of Points (Ref. 34) 139

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.040 | BIAS-% | -0.034 | RMS-% | 0.030 | |
| | AAD | 0.001 | BIAS | -0.001 | RMS | 0.002 | MPa |
| DENSITY : | AAD-% | 0.043 | BIAS-% | 0.037 | RMS-% | 0.033 | |
| | AAD | 0.001 | BIAS | 0.001 | RMS | 0.001 | $mol \cdot dm^{-3}$ |

Data from Cheng [35]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 111.23 | 28.700 | 33.440 | 16.514 | 27.9096 | 27.7278 | -0.651 | 0.0136 |
| 111.23 | 40.200 | 44.534 | 10.780 | 28.3046 | 28.1549 | -0.529 | 0.2020 |
| 111.23 | 51.900 | 57.667 | 11.113 | 28.7274 | 28.5470 | -0.628 | 0.1794 |
| 111.23 | 72.600 | 79.897 | 10.052 | 29.3600 | 29.1621 | -0.674 | 0.1516 |
| 121.19 | 21.800 | 22.251 | 2.068 | 26.7237 | 26.7019 | -0.081 | 0.0183 |
| 121.19 | 33.500 | 34.321 | 2.452 | 27.2628 | 27.2285 | -0.126 | 0.0155 |
| 121.19 | 74.600 | 75.071 | 0.631 | 28.6780 | 28.6640 | -0.049 | 0.1730 |
| 121.19 | 94.200 | 94.341 | 0.150 | 29.2141 | 29.2104 | -0.013 | 0.1506 |
| 121.19 | 114.400 | 113.820 | -0.507 | 29.7000 | 29.7138 | 0.046 | 0.1336 |
| 131.79 | 46.500 | 48.655 | 4.634 | 27.1518 | 27.0645 | -0.322 | 0.2489 |
| 131.79 | 60.700 | 63.311 | 4.301 | 27.7008 | 27.6082 | -0.335 | 0.2133 |
| 131.79 | 74.800 | 77.646 | 3.805 | 28.1770 | 28.0865 | -0.321 | 0.1877 |
| 131.79 | 89.200 | 91.881 | 3.006 | 28.6041 | 28.5267 | -0.271 | 0.1680 |
| 131.79 | 104.800 | 107.675 | 2.743 | 29.0360 | 28.9603 | -0.261 | 0.1507 |
| 143.82 | 48.300 | 49.093 | 1.642 | 26.4131 | 26.3774 | -0.135 | 0.2861 |
| 143.82 | 70.500 | 70.968 | 0.664 | 27.2926 | 27.2756 | -0.062 | 0.2236 |
| 143.82 | 96.800 | 96.598 | -0.208 | 28.1373 | 28.1434 | 0.022 | 0.1792 |
| 156.96 | 49.500 | 48.046 | -2.937 | 25.5297 | 25.6039 | 0.291 | 0.3400 |
| 156.96 | 61.700 | 61.235 | -0.754 | 26.1575 | 26.1780 | 0.078 | 0.2839 |
| 156.96 | 76.900 | 75.511 | -1.806 | 26.7451 | 26.7982 | 0.199 | 0.2417 |
| 156.96 | 95.100 | 93.085 | -2.119 | 27.3748 | 27.4417 | 0.244 | 0.2049 |
| 167.61 | 41.500 | 41.589 | 0.214 | 24.4618 | 24.4562 | -0.023 | 0.4340 |
| 167.61 | 56.000 | 55.754 | -0.439 | 25.2653 | 25.2779 | 0.050 | 0.3423 |
| 167.61 | 75.100 | 74.609 | -0.654 | 26.1370 | 26.1575 | 0.078 | 0.2687 |
| 167.61 | 93.600 | 92.773 | -0.883 | 26.8384 | 26.8679 | 0.110 | 0.2234 |
| 179.29 | 48.800 | 49.037 | 0.486 | 24.1604 | 24.1455 | -0.062 | 0.4358 |
| 179.29 | 75.800 | 75.419 | -0.503 | 25.5493 | 25.5664 | 0.067 | 0.2951 |
| 179.29 | 100.300 | 99.289 | -1.008 | 26.5111 | 26.5477 | 0.138 | 0.2296 |
| 192.87 | 33.400 | 34.083 | 2.045 | 22.0605 | 21.9933 | -0.304 | 0.0015 |
| 192.87 | 52.900 | 53.319 | 0.792 | 23.5849 | 23.5573 | -0.117 | 0.0009 |
| 192.87 | 71.400 | 71.610 | 0.294 | 24.6427 | 24.6319 | -0.044 | 0.0007 |
| 192.87 | 97.900 | 97.370 | -0.542 | 25.7998 | 25.8208 | 0.081 | 0.0005 |
| 212.00 | 40.100 | 39.993 | -0.268 | 21.2404 | 21.2514 | 0.052 | 0.4820 |
| 212.00 | 58.600 | 58.230 | -0.632 | 22.7739 | 22.7998 | 0.114 | 0.3094 |
| 212.00 | 74.600 | 73.651 | -1.273 | 23.7417 | 23.7949 | 0.224 | 0.2378 |

Data from Cheng [35] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 212.00 | 95.000 | 93.595 | -1.479 | 24.7464 | 24.8095 | 0.255 | 0.1832 |
| 225.07 | 42.800 | 42.659 | -0.330 | 20.6101 | 20.6252 | 0.073 | 0.5187 |
| 225.07 | 62.500 | 61.376 | -1.799 | 22.2519 | 22.3331 | 0.365 | 0.3269 |
| 225.07 | 82.300 | 80.755 | -1.877 | 23.4797 | 23.5647 | 0.362 | 0.2362 |
| 225.07 | 108.700 | 106.345 | -2.167 | 24.7219 | 24.8216 | 0.403 | 0.1728 |
| 237.57 | 30.200 | 30.295 | 0.314 | 17.9437 | 17.9260 | -0.098 | 0.0034 |
| 237.57 | 60.600 | 60.209 | -0.645 | 21.4638 | 21.4951 | 0.146 | 0.3722 |
| 237.57 | 94.600 | 93.635 | -1.021 | 23.5793 | 23.6283 | 0.208 | 0.2156 |
| 249.43 | 41.100 | 41.437 | 0.820 | 18.8076 | 18.7619 | -0.243 | 0.7017 |
| 249.43 | 58.100 | 57.853 | -0.425 | 20.6016 | 20.6238 | 0.108 | 0.4320 |
| 249.43 | 74.400 | 73.885 | -0.692 | 21.8579 | 21.8932 | 0.161 | 0.3118 |
| 249.43 | 94.200 | 93.131 | -1.135 | 23.0256 | 23.0828 | 0.249 | 0.2327 |
| 261.55 | 40.700 | 40.850 | 0.369 | 17.9147 | 17.8923 | -0.125 | 0.8045 |
| 261.55 | 53.300 | 53.246 | -0.102 | 19.4666 | 19.4724 | 0.030 | 0.5348 |
| 261.55 | 68.000 | 67.150 | -1.250 | 20.7512 | 20.8194 | 0.329 | 0.3842 |
| 261.55 | 82.600 | 81.065 | -1.858 | 21.7628 | 21.8625 | 0.458 | 0.2981 |
| 261.55 | 100.100 | 97.875 | -2.222 | 22.7583 | 22.8763 | 0.518 | 0.2337 |
| 278.71 | 34.800 | 35.181 | 1.093 | 15.7754 | 15.6977 | -0.492 | 0.0040 |
| 278.71 | 50.000 | 50.473 | 0.945 | 18.1752 | 18.1163 | -0.324 | 0.4391 |
| 278.71 | 62.400 | 62.920 | 0.834 | 19.5160 | 19.4667 | -0.253 | 0.3145 |
| 278.71 | 77.400 | 77.392 | -0.011 | 20.7211 | 20.7217 | 0.003 | 0.2339 |
| 278.71 | 99.900 | 99.329 | -0.571 | 22.1288 | 22.1607 | 0.144 | 0.1668 |
| 293.41 | 46.500 | 46.390 | -0.236 | 16.7983 | 16.8144 | 0.096 | 0.5525 |
| 293.41 | 64.000 | 63.485 | -0.805 | 18.8466 | 18.8972 | 0.269 | 0.3379 |
| 293.41 | 79.100 | 78.868 | -0.293 | 20.1776 | 20.1952 | 0.087 | 0.2462 |
| 293.41 | 94.700 | 93.829 | -0.920 | 21.2089 | 21.2631 | 0.256 | 0.1930 |
| 309.29 | 36.900 | 36.877 | -0.061 | 14.2227 | 14.2275 | 0.033 | 0.8834 |
| 309.29 | 51.600 | 51.431 | -0.327 | 16.6694 | 16.6923 | 0.137 | 0.5110 |
| 309.29 | 66.700 | 67.047 | 0.521 | 18.4570 | 18.4231 | -0.184 | 0.3384 |
| 309.29 | 84.700 | 84.449 | -0.297 | 19.9283 | 19.9468 | 0.093 | 0.2406 |
| 309.29 | 105.800 | 105.101 | -0.661 | 21.2721 | 21.3122 | 0.189 | 0.1769 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 1.803 | BIAS-% | 0.721 | RMS-% | 3.315 | |
| | AAD | 1.080 | BIAS | 0.205 | RMS | 1.739 | MPa |
| DENSITY : | AAD-% | 0.204 | BIAS-% | 0.001 | RMS-% | 0.261 | |
| | AAD | 0.049 | BIAS | -0.002 | RMS | 0.065 | $mol \cdot dm^{-3}$ |

Data from Douslin et al. [36]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 1.638 | 1.637 | -0.029 | 0.7500 | 0.7502 | 0.030 | 0.0150 |
| 298.14 | 1.802 | 1.801 | -0.028 | 0.7500 | 0.7502 | 0.029 | 0.0135 |
| 303.14 | 1.835 | 1.834 | -0.021 | 0.7500 | 0.7502 | 0.021 | 0.0133 |
| 323.14 | 1.966 | 1.965 | -0.008 | 0.7500 | 0.7501 | 0.008 | 0.0124 |
| 348.14 | 2.129 | 2.129 | -0.005 | 0.7500 | 0.7500 | 0.006 | 0.0114 |
| 373.15 | 2.293 | 2.293 | -0.002 | 0.7500 | 0.7500 | 0.002 | 0.0106 |
| 398.16 | 2.456 | 2.456 | -0.003 | 0.7500 | 0.7500 | 0.003 | 0.0098 |
| 273.15 | 2.156 | 2.155 | -0.040 | 1.0000 | 1.0004 | 0.042 | 0.0114 |
| 298.14 | 2.379 | 2.378 | -0.033 | 1.0000 | 1.0003 | 0.034 | 0.0103 |
| 303.14 | 2.423 | 2.422 | -0.036 | 1.0000 | 1.0004 | 0.037 | 0.0101 |
| 323.14 | 2.601 | 2.600 | -0.023 | 1.0000 | 1.0002 | 0.024 | 0.0094 |
| 348.14 | 2.822 | 2.822 | -0.018 | 1.0000 | 1.0002 | 0.018 | 0.0086 |
| 373.15 | 3.043 | 3.043 | -0.012 | 1.0000 | 1.0001 | 0.012 | 0.0080 |
| 398.16 | 3.264 | 3.263 | -0.007 | 1.0000 | 1.0001 | 0.007 | 0.0074 |
| 273.15 | 3.154 | 3.152 | -0.052 | 1.5000 | 1.5008 | 0.056 | 0.0079 |
| 298.14 | 3.499 | 3.498 | -0.046 | 1.5000 | 1.5007 | 0.048 | 0.0071 |
| 303.14 | 3.569 | 3.567 | -0.053 | 1.5000 | 1.5008 | 0.056 | 0.0069 |
| 323.14 | 3.843 | 3.842 | -0.029 | 1.5000 | 1.5005 | 0.031 | 0.0064 |
| 348.14 | 4.185 | 4.184 | -0.024 | 1.5000 | 1.5004 | 0.025 | 0.0058 |
| 373.15 | 4.527 | 4.526 | -0.020 | 1.5000 | 1.5003 | 0.020 | 0.0054 |
| 398.16 | 4.868 | 4.867 | -0.021 | 1.5000 | 1.5003 | 0.021 | 0.0050 |
| 273.15 | 4.105 | 4.102 | -0.068 | 2.0000 | 2.0015 | 0.076 | 0.0061 |
| 298.14 | 4.580 | 4.578 | -0.057 | 2.0000 | 2.0012 | 0.062 | 0.0054 |
| 303.14 | 4.675 | 4.672 | -0.059 | 2.0000 | 2.0013 | 0.064 | 0.0053 |
| 323.14 | 5.053 | 5.050 | -0.052 | 2.0000 | 2.0011 | 0.055 | 0.0049 |
| 348.14 | 5.522 | 5.521 | -0.025 | 2.0000 | 2.0005 | 0.026 | 0.0044 |
| 373.15 | 5.992 | 5.990 | -0.041 | 2.0000 | 2.0008 | 0.042 | 0.0041 |
| 398.16 | 6.458 | 6.457 | -0.021 | 2.0000 | 2.0004 | 0.022 | 0.0038 |
| 273.15 | 5.014 | 5.010 | -0.069 | 2.5000 | 2.5019 | 0.077 | 0.0051 |
| 298.14 | 5.626 | 5.623 | -0.061 | 2.5000 | 2.5017 | 0.067 | 0.0045 |
| 303.14 | 5.748 | 5.745 | -0.064 | 2.5000 | 2.5017 | 0.069 | 0.0044 |
| 323.14 | 6.234 | 6.231 | -0.050 | 2.5000 | 2.5013 | 0.054 | 0.0040 |
| 348.14 | 6.839 | 6.836 | -0.040 | 2.5000 | 2.5010 | 0.041 | 0.0036 |
| 373.15 | 7.442 | 7.439 | -0.047 | 2.5000 | 2.5012 | 0.049 | 0.0033 |
| 398.16 | 8.041 | 8.039 | -0.023 | 2.5000 | 2.5006 | 0.023 | 0.0030 |

Data from Douslin et al. [36] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 5.884 | 5.881 | -0.055 | 3.0000 | 3.0019 | 0.063 | 0.0044 |
| 298.14 | 6.641 | 6.638 | -0.057 | 3.0000 | 3.0019 | 0.063 | 0.0038 |
| 303.14 | 6.794 | 6.788 | -0.083 | 3.0000 | 3.0027 | 0.091 | 0.0037 |
| 323.14 | 7.393 | 7.389 | -0.051 | 3.0000 | 3.0016 | 0.055 | 0.0034 |
| 348.14 | 8.139 | 8.136 | -0.043 | 3.0000 | 3.0014 | 0.045 | 0.0030 |
| 373.15 | 8.884 | 8.879 | -0.052 | 3.0000 | 3.0016 | 0.054 | 0.0027 |
| 398.16 | 9.623 | 9.619 | -0.039 | 3.0000 | 3.0012 | 0.040 | 0.0025 |
| 273.15 | 6.722 | 6.719 | -0.050 | 3.5000 | 3.5020 | 0.058 | 0.0038 |
| 298.14 | 7.631 | 7.627 | -0.046 | 3.5000 | 3.5018 | 0.051 | 0.0033 |
| 303.14 | 7.815 | 7.808 | -0.085 | 3.5000 | 3.5033 | 0.094 | 0.0032 |
| 323.14 | 8.532 | 8.528 | -0.048 | 3.5000 | 3.5018 | 0.052 | 0.0029 |
| 348.14 | 9.428 | 9.424 | -0.043 | 3.5000 | 3.5016 | 0.046 | 0.0026 |
| 373.15 | 10.320 | 10.315 | -0.054 | 3.5000 | 3.5019 | 0.055 | 0.0024 |
| 398.16 | 11.207 | 11.202 | -0.048 | 3.5000 | 3.5017 | 0.049 | 0.0022 |
| 273.15 | 7.531 | 7.529 | -0.027 | 4.0000 | 4.0013 | 0.031 | 0.0034 |
| 298.14 | 8.599 | 8.596 | -0.036 | 4.0000 | 4.0016 | 0.041 | 0.0029 |
| 303.14 | 8.814 | 8.809 | -0.065 | 4.0000 | 4.0029 | 0.072 | 0.0029 |
| 323.14 | 9.658 | 9.655 | -0.041 | 4.0000 | 4.0018 | 0.044 | 0.0026 |
| 348.14 | 10.709 | 10.706 | -0.031 | 4.0000 | 4.0013 | 0.032 | 0.0023 |
| 373.15 | 11.758 | 11.752 | -0.048 | 4.0000 | 4.0020 | 0.049 | 0.0021 |
| 398.16 | 12.799 | 12.793 | -0.048 | 4.0000 | 4.0019 | 0.048 | 0.0019 |
| 273.15 | 8.316 | 8.315 | -0.005 | 4.5000 | 4.5003 | 0.006 | 0.0031 |
| 298.14 | 9.551 | 9.549 | -0.020 | 4.5000 | 4.5010 | 0.022 | 0.0027 |
| 303.14 | 9.800 | 9.795 | -0.056 | 4.5000 | 4.5028 | 0.062 | 0.0026 |
| 323.14 | 10.778 | 10.773 | -0.049 | 4.5000 | 4.5024 | 0.053 | 0.0023 |
| 348.14 | 11.992 | 11.988 | -0.035 | 4.5000 | 4.5016 | 0.037 | 0.0020 |
| 373.15 | 13.201 | 13.196 | -0.039 | 4.5000 | 4.5018 | 0.039 | 0.0018 |
| 398.16 | 14.408 | 14.399 | -0.066 | 4.5000 | 4.5029 | 0.065 | 0.0017 |
| 273.15 | 9.080 | 9.083 | 0.030 | 5.0000 | 4.9982 | -0.036 | 0.0029 |
| 298.14 | 10.491 | 10.491 | 0.003 | 5.0000 | 4.9998 | -0.003 | 0.0024 |
| 303.14 | 10.774 | 10.772 | -0.027 | 5.0000 | 5.0015 | 0.029 | 0.0023 |
| 323.14 | 11.891 | 11.888 | -0.030 | 5.0000 | 5.0016 | 0.032 | 0.0021 |
| 348.14 | 13.278 | 13.274 | -0.029 | 5.0000 | 5.0015 | 0.030 | 0.0018 |
| 373.15 | 14.658 | 14.653 | -0.036 | 5.0000 | 5.0018 | 0.036 | 0.0016 |
| 398.16 | 16.035 | 16.025 | -0.060 | 5.0000 | 5.0029 | 0.058 | 0.0015 |

Data from Douslin et al. [36] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | mol·dm$^{-3}$ | mol·dm$^{-3}$ | % | |
| 273.15 | 9.832 | 9.837 | 0.051 | 5.5000 | 5.4967 | -0.061 | 0.0027 |
| 298.14 | 11.426 | 11.428 | 0.013 | 5.5000 | 5.4992 | -0.014 | 0.0022 |
| 303.14 | 11.745 | 11.744 | -0.007 | 5.5000 | 5.5004 | 0.007 | 0.0021 |
| 323.14 | 13.003 | 13.005 | 0.014 | 5.5000 | 5.4992 | -0.015 | 0.0019 |
| 348.14 | 14.575 | 14.571 | -0.024 | 5.5000 | 5.5014 | 0.025 | 0.0017 |
| 373.15 | 16.132 | 16.129 | -0.021 | 5.5000 | 5.5012 | 0.021 | 0.0015 |
| 398.16 | 17.689 | 17.678 | -0.059 | 5.5000 | 5.5031 | 0.057 | 0.0013 |
| 273.15 | 10.568 | 10.580 | 0.118 | 6.0000 | 5.9916 | -0.141 | 0.0025 |
| 298.14 | 12.358 | 12.363 | 0.034 | 6.0000 | 5.9978 | -0.037 | 0.0020 |
| 303.14 | 12.716 | 12.717 | 0.010 | 6.0000 | 5.9993 | -0.011 | 0.0020 |
| 323.14 | 14.126 | 14.130 | 0.025 | 6.0000 | 5.9984 | -0.026 | 0.0017 |
| 348.14 | 15.890 | 15.885 | -0.032 | 6.0000 | 6.0019 | 0.032 | 0.0015 |
| 373.15 | 17.631 | 17.629 | -0.009 | 6.0000 | 6.0005 | 0.009 | 0.0013 |
| 398.16 | 19.370 | 19.365 | -0.026 | 6.0000 | 6.0015 | 0.025 | 0.0012 |
| 273.15 | 11.306 | 11.320 | 0.124 | 6.5000 | 6.4905 | -0.146 | 0.0023 |
| 298.14 | 13.294 | 13.302 | 0.058 | 6.5000 | 6.4959 | -0.063 | 0.0019 |
| 303.14 | 13.692 | 13.696 | 0.031 | 6.5000 | 6.4978 | -0.033 | 0.0018 |
| 323.14 | 15.269 | 15.268 | -0.010 | 6.5000 | 6.5007 | 0.010 | 0.0016 |
| 348.14 | 17.220 | 17.220 | 0.004 | 6.5000 | 6.4997 | -0.004 | 0.0014 |
| 373.15 | 19.159 | 19.162 | 0.015 | 6.5000 | 6.4990 | -0.015 | 0.0012 |
| 398.16 | 21.101 | 21.093 | -0.042 | 6.5000 | 6.5025 | 0.039 | 0.0011 |
| 273.15 | 12.049 | 12.059 | 0.079 | 7.0000 | 6.9936 | -0.092 | 0.0021 |
| 298.14 | 14.241 | 14.251 | 0.067 | 7.0000 | 6.9950 | -0.071 | 0.0017 |
| 303.14 | 14.681 | 14.687 | 0.041 | 7.0000 | 6.9970 | -0.043 | 0.0017 |
| 323.14 | 16.421 | 16.425 | 0.025 | 7.0000 | 6.9982 | -0.026 | 0.0015 |
| 348.14 | 18.587 | 18.585 | -0.008 | 7.0000 | 7.0006 | 0.008 | 0.0013 |
| 373.15 | 20.735 | 20.732 | -0.011 | 7.0000 | 7.0007 | 0.010 | 0.0011 |
| 398.16 | 22.871 | 22.869 | -0.008 | 7.0000 | 7.0005 | 0.007 | 0.0010 |
| 273.15 | 12.785 | 12.803 | 0.141 | 7.5000 | 7.4880 | -0.160 | 0.0020 |
| 298.14 | 15.204 | 15.215 | 0.070 | 7.5000 | 7.4945 | -0.073 | 0.0016 |
| 303.14 | 15.678 | 15.695 | 0.105 | 7.5000 | 7.4919 | -0.108 | 0.0016 |
| 323.14 | 17.597 | 17.608 | 0.064 | 7.5000 | 7.4953 | -0.063 | 0.0014 |
| 348.14 | 19.981 | 19.986 | 0.024 | 7.5000 | 7.4983 | -0.023 | 0.0012 |
| 373.15 | 22.344 | 22.349 | 0.025 | 7.5000 | 7.4983 | -0.022 | 0.0010 |
| 398.16 | 24.705 | 24.701 | -0.017 | 7.5000 | 7.5011 | 0.015 | 0.0009 |

Data from Douslin et al. [36] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 13.541 | 13.558 | 0.129 | 8.0000 | 7.9886 | -0.143 | 0.0019 |
| 298.14 | 16.187 | 16.200 | 0.079 | 8.0000 | 7.9936 | -0.080 | 0.0015 |
| 303.14 | 16.713 | 16.726 | 0.076 | 8.0000 | 7.9939 | -0.076 | 0.0014 |
| 323.14 | 18.814 | 18.823 | 0.047 | 8.0000 | 7.9964 | -0.045 | 0.0012 |
| 348.14 | 21.422 | 21.430 | 0.036 | 8.0000 | 7.9974 | -0.033 | 0.0011 |
| 373.15 | 24.008 | 24.021 | 0.055 | 8.0000 | 7.9961 | -0.048 | 0.0009 |
| 398.16 | 26.602 | 26.599 | -0.013 | 8.0000 | 8.0009 | 0.011 | 0.0008 |
| 273.15 | 14.309 | 14.330 | 0.147 | 8.5000 | 8.4866 | -0.158 | 0.0017 |
| 298.14 | 17.198 | 17.214 | 0.091 | 8.5000 | 8.4924 | -0.089 | 0.0014 |
| 303.14 | 17.774 | 17.788 | 0.082 | 8.5000 | 8.4933 | -0.079 | 0.0013 |
| 323.14 | 20.067 | 20.078 | 0.054 | 8.5000 | 8.4958 | -0.050 | 0.0011 |
| 348.14 | 22.919 | 22.925 | 0.025 | 8.5000 | 8.4982 | -0.022 | 0.0010 |
| 373.15 | 25.743 | 25.755 | 0.049 | 8.5000 | 8.4964 | -0.042 | 0.0009 |
| 398.16 | 28.576 | 28.571 | -0.017 | 8.5000 | 8.5012 | 0.014 | 0.0008 |
| 273.15 | 15.109 | 15.124 | 0.099 | 9.0000 | 8.9908 | -0.102 | 0.0016 |
| 298.14 | 18.247 | 18.262 | 0.084 | 9.0000 | 8.9928 | -0.080 | 0.0013 |
| 303.14 | 18.873 | 18.888 | 0.077 | 9.0000 | 8.9935 | -0.072 | 0.0012 |
| 323.14 | 21.376 | 21.381 | 0.023 | 9.0000 | 8.9981 | -0.021 | 0.0011 |
| 348.14 | 24.477 | 24.480 | 0.016 | 9.0000 | 8.9988 | -0.014 | 0.0009 |
| 373.15 | 27.543 | 27.562 | 0.069 | 9.0000 | 8.9949 | -0.057 | 0.0008 |
| 398.16 | 30.621 | 30.628 | 0.022 | 9.0000 | 8.9984 | -0.018 | 0.0007 |
| 273.15 | 15.931 | 15.949 | 0.113 | 9.5000 | 9.4893 | -0.112 | 0.0015 |
| 298.14 | 19.342 | 19.354 | 0.062 | 9.5000 | 9.4946 | -0.057 | 0.0012 |
| 303.14 | 20.012 | 20.033 | 0.109 | 9.5000 | 9.4907 | -0.098 | 0.0011 |
| 323.14 | 22.737 | 22.740 | 0.016 | 9.5000 | 9.4987 | -0.014 | 0.0010 |
| 348.14 | 26.102 | 26.106 | 0.013 | 9.5000 | 9.4990 | -0.011 | 0.0008 |
| 373.15 | 29.448 | 29.452 | 0.014 | 9.5000 | 9.4989 | -0.012 | 0.0007 |
| 398.16 | 32.786 | 32.780 | -0.020 | 9.5000 | 9.5015 | 0.016 | 0.0006 |
| 273.15 | 16.798 | 16.810 | 0.075 | 10.0000 | 9.9928 | -0.072 | 0.0014 |
| 298.14 | 20.483 | 20.498 | 0.078 | 10.0000 | 9.9932 | -0.068 | 0.0011 |
| 303.14 | 21.210 | 21.234 | 0.112 | 10.0000 | 9.9903 | -0.097 | 0.0010 |
| 323.14 | 24.153 | 24.166 | 0.051 | 10.0000 | 9.9958 | -0.042 | 0.0009 |
| 348.14 | 27.805 | 27.811 | 0.024 | 10.0000 | 9.9981 | -0.019 | 0.0008 |
| 373.15 | 31.425 | 31.436 | 0.034 | 10.0000 | 9.9974 | -0.026 | 0.0007 |
| 398.16 | 35.049 | 35.040 | -0.027 | 10.0000 | 10.0021 | 0.021 | 0.0059 |

Data from Douslin et al. [36] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 17.700 | 17.719 | 0.104 | 10.5000 | 10.4902 | -0.094 | 0.0013 |
| 298.14 | 21.694 | 21.704 | 0.047 | 10.5000 | 10.4959 | -0.039 | 0.0010 |
| 303.14 | 22.480 | 22.499 | 0.082 | 10.5000 | 10.4929 | -0.068 | 0.0010 |
| 323.14 | 25.657 | 25.668 | 0.042 | 10.5000 | 10.4965 | -0.033 | 0.0008 |
| 348.14 | 29.601 | 29.608 | 0.024 | 10.5000 | 10.4981 | -0.018 | 0.0007 |
| 373.15 | 33.510 | 33.525 | 0.045 | 10.5000 | 10.4965 | -0.034 | 0.0006 |
| 398.16 | 37.430 | 37.420 | -0.027 | 10.5000 | 10.5021 | 0.020 | 0.0054 |
| 273.15 | 18.678 | 18.682 | 0.023 | 11.0000 | 10.9978 | -0.020 | 0.0012 |
| 298.14 | 22.969 | 22.982 | 0.057 | 11.0000 | 10.9950 | -0.045 | 0.0009 |
| 303.14 | 23.829 | 23.840 | 0.043 | 11.0000 | 10.9963 | -0.034 | 0.0009 |
| 323.14 | 27.254 | 27.259 | 0.017 | 11.0000 | 10.9986 | -0.013 | 0.0008 |
| 348.14 | 31.503 | 31.509 | 0.020 | 11.0000 | 10.9984 | -0.015 | 0.0006 |
| 373.15 | 35.730 | 35.734 | 0.013 | 11.0000 | 10.9990 | -0.009 | 0.0055 |
| 398.16 | 39.952 | 39.935 | -0.044 | 11.0000 | 11.0034 | 0.031 | 0.0049 |
| 273.15 | 19.705 | 19.713 | 0.038 | 11.5000 | 11.4965 | -0.031 | 0.0011 |
| 298.14 | 24.345 | 24.344 | -0.006 | 11.5000 | 11.5005 | 0.004 | 0.0008 |
| 303.14 | 25.251 | 25.268 | 0.067 | 11.5000 | 11.4943 | -0.050 | 0.0008 |
| 323.14 | 28.954 | 28.950 | -0.014 | 11.5000 | 11.5011 | 0.010 | 0.0007 |
| 348.14 | 33.510 | 33.528 | 0.053 | 11.5000 | 11.4958 | -0.037 | 0.0006 |
| 373.15 | 38.087 | 38.077 | -0.025 | 11.5000 | 11.5020 | 0.017 | 0.0051 |
| 273.15 | 20.821 | 20.821 | 0.000 | 12.0000 | 12.0000 | 0.000 | 0.0010 |
| 298.14 | 25.795 | 25.803 | 0.029 | 12.0000 | 11.9975 | -0.021 | 0.0008 |
| 303.14 | 26.788 | 26.796 | 0.029 | 12.0000 | 11.9975 | -0.021 | 0.0007 |
| 323.14 | 30.755 | 30.757 | 0.004 | 12.0000 | 11.9997 | -0.003 | 0.0006 |
| 348.14 | 35.665 | 35.679 | 0.039 | 12.0000 | 11.9969 | -0.026 | 0.0053 |
| 373.15 | 40.593 | 40.569 | -0.059 | 12.0000 | 12.0047 | 0.039 | 0.0046 |
| 273.15 | 22.028 | 22.021 | -0.030 | 12.5000 | 12.5026 | 0.021 | 0.0009 |
| 298.14 | 27.379 | 27.373 | -0.023 | 12.5000 | 12.5019 | 0.015 | 0.0007 |
| 303.14 | 28.425 | 28.440 | 0.052 | 12.5000 | 12.4957 | -0.034 | 0.0007 |
| 323.14 | 32.697 | 32.693 | -0.012 | 12.5000 | 12.5010 | 0.008 | 0.0006 |
| 348.14 | 37.999 | 37.978 | -0.055 | 12.5000 | 12.5044 | 0.035 | 0.0048 |
| 473.19 | 3.924 | 3.924 | -0.006 | 1.0000 | 1.0001 | 0.006 | 0.0061 |
| 473.19 | 7.854 | 7.852 | -0.031 | 2.0000 | 2.0006 | 0.030 | 0.0031 |
| 473.19 | 11.832 | 11.826 | -0.056 | 3.0000 | 3.0017 | 0.055 | 0.0020 |
| 473.19 | 15.904 | 15.893 | -0.064 | 4.0000 | 4.0025 | 0.062 | 0.0015 |

Data from Douslin et al. [36] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 473.19 | 20.121 | 20.108 | -0.063 | 5.0000 | 5.0030 | 0.059 | 0.0012 |
| 473.19 | 24.542 | 24.528 | -0.055 | 6.0000 | 6.0030 | 0.050 | 0.0009 |
| 473.19 | 29.239 | 29.222 | -0.058 | 7.0000 | 7.0035 | 0.050 | 0.0008 |
| 473.19 | 34.287 | 34.263 | -0.072 | 8.0000 | 8.0047 | 0.059 | 0.0006 |
| 473.19 | 39.759 | 39.738 | -0.053 | 9.0000 | 9.0037 | 0.041 | 0.0052 |
| 523.21 | 4.363 | 4.363 | -0.012 | 1.0000 | 1.0001 | 0.012 | 0.0055 |
| 523.21 | 8.780 | 8.777 | -0.038 | 2.0000 | 2.0007 | 0.037 | 0.0027 |
| 523.21 | 13.294 | 13.287 | -0.054 | 3.0000 | 3.0016 | 0.052 | 0.0018 |
| 523.21 | 17.960 | 17.945 | -0.087 | 4.0000 | 4.0033 | 0.082 | 0.0013 |
| 523.21 | 22.835 | 22.808 | -0.119 | 5.0000 | 5.0054 | 0.109 | 0.0010 |
| 523.21 | 27.975 | 27.941 | -0.122 | 6.0000 | 6.0065 | 0.108 | 0.0008 |
| 523.21 | 33.457 | 33.419 | -0.114 | 7.0000 | 7.0067 | 0.096 | 0.0007 |
| 523.21 | 39.363 | 39.324 | -0.100 | 8.0000 | 8.0064 | 0.080 | 0.0054 |
| 573.22 | 4.802 | 4.801 | -0.017 | 1.0000 | 1.0002 | 0.017 | 0.0050 |
| 573.22 | 9.703 | 9.699 | -0.037 | 2.0000 | 2.0007 | 0.036 | 0.0024 |
| 573.22 | 14.751 | 14.743 | -0.055 | 3.0000 | 3.0016 | 0.053 | 0.0016 |
| 573.22 | 20.005 | 19.986 | -0.093 | 4.0000 | 4.0035 | 0.087 | 0.0012 |
| 573.22 | 25.527 | 25.493 | -0.131 | 5.0000 | 5.0059 | 0.118 | 0.0009 |
| 573.22 | 31.384 | 31.335 | -0.156 | 6.0000 | 6.0081 | 0.135 | 0.0007 |
| 573.22 | 37.639 | 37.592 | -0.125 | 7.0000 | 7.0072 | 0.103 | 0.0058 |
| 623.22 | 5.240 | 5.238 | -0.032 | 1.0000 | 1.0003 | 0.031 | 0.0046 |
| 623.22 | 10.625 | 10.619 | -0.056 | 2.0000 | 2.0011 | 0.055 | 0.0022 |
| 623.22 | 16.207 | 16.193 | -0.085 | 3.0000 | 3.0024 | 0.081 | 0.0014 |
| 623.22 | 22.049 | 22.020 | -0.133 | 4.0000 | 4.0049 | 0.123 | 0.0010 |
| 623.22 | 28.216 | 28.167 | -0.173 | 5.0000 | 5.0077 | 0.154 | 0.0008 |
| 623.22 | 34.777 | 34.713 | -0.183 | 6.0000 | 6.0094 | 0.156 | 0.0006 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.048 | BIAS-% | -0.009 | RMS-% | 0.059 | |
| | AAD | 0.009 | BIAS | -0.001 | RMS | 0.013 | MPa |
| DENSITY : | AAD-% | 0.046 | BIAS-% | 0.009 | RMS-% | 0.057 | |
| | AAD | 0.003 | BIAS | 0.000 | RMS | 0.004 | $mol \cdot dm^{-3}$ |

Data from Gammon and Douslin [37]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 323.15 | 24.595 | 24.602 | 0.027 | 10.1474 | 10.1452 | -0.022 | 0.0001 |
| 298.15 | 2.378 | 2.377 | -0.032 | 0.9998 | 1.0001 | 0.033 | 0.0010 |
| 298.15 | 5.627 | 5.623 | -0.061 | 2.5000 | 2.5017 | 0.067 | 0.0004 |
| 298.15 | 10.491 | 10.491 | -0.003 | 4.9996 | 4.9998 | 0.003 | 0.0002 |
| 298.15 | 15.205 | 15.216 | 0.072 | 7.5002 | 7.4946 | -0.075 | 0.0002 |
| 298.15 | 19.418 | 19.432 | 0.072 | 9.5344 | 9.5282 | -0.065 | 0.0001 |
| 298.15 | 20.702 | 20.715 | 0.061 | 10.0914 | 10.0860 | -0.053 | 0.0001 |
| 273.15 | 16.178 | 16.195 | 0.102 | 9.6452 | 9.6355 | -0.100 | 0.0001 |
| 248.15 | 12.816 | 12.870 | 0.423 | 9.8009 | 9.7544 | -0.474 | 0.0002 |
| 223.15 | 9.320 | 9.363 | 0.463 | 9.9547 | 9.8857 | -0.693 | 0.0003 |
| 198.15 | 5.704 | 5.711 | 0.118 | 10.1081 | 10.0518 | -0.557 | 0.0006 |
| 193.05 | 0.782 | 0.782 | 0.014 | 0.5168 | 0.5167 | -0.015 | 0.0032 |
| 193.05 | 1.563 | 1.565 | 0.069 | 1.1071 | 1.1062 | -0.079 | 0.0016 |
| 193.05 | 2.244 | 2.247 | 0.128 | 1.7074 | 1.7047 | -0.160 | 0.0012 |
| 193.05 | 2.820 | 2.824 | 0.142 | 2.3052 | 2.3007 | -0.197 | 0.0010 |
| 193.05 | 3.306 | 3.311 | 0.172 | 2.9109 | 2.9031 | -0.267 | 0.0009 |
| 193.05 | 3.703 | 3.710 | 0.195 | 3.5146 | 3.5025 | -0.346 | 0.0008 |
| 193.05 | 4.025 | 4.034 | 0.216 | 4.1234 | 4.1050 | -0.445 | 0.0008 |
| 193.05 | 4.281 | 4.290 | 0.215 | 4.7353 | 4.7103 | -0.527 | 0.0007 |
| 193.05 | 4.478 | 4.486 | 0.185 | 5.3479 | 5.3181 | -0.557 | 0.0007 |
| 193.05 | 4.626 | 4.634 | 0.166 | 5.9688 | 5.9310 | -0.633 | 0.0007 |
| 193.05 | 4.729 | 4.735 | 0.131 | 6.5599 | 6.5175 | -0.646 | 0.0007 |
| 193.05 | 4.806 | 4.810 | 0.089 | 7.1780 | 7.1360 | -0.585 | 0.0007 |
| 193.05 | 4.859 | 4.862 | 0.047 | 7.7943 | 7.7612 | -0.424 | 0.0007 |
| 193.05 | 4.897 | 4.897 | 0.010 | 8.4106 | 8.4004 | -0.122 | 0.0007 |
| 193.05 | 4.924 | 4.924 | -0.009 | 9.0278 | 9.0390 | 0.124 | 0.0007 |
| 193.05 | 4.946 | 4.946 | -0.004 | 9.6448 | 9.6509 | 0.063 | 0.0007 |
| 193.05 | 4.962 | 4.963 | 0.017 | 10.1433 | 10.1192 | -0.237 | 0.0007 |
| 193.05 | 4.966 | 4.967 | 0.020 | 10.2656 | 10.2373 | -0.276 | 0.0007 |
| 193.05 | 4.988 | 4.990 | 0.049 | 10.8790 | 10.8200 | -0.543 | 0.0007 |
| 193.05 | 5.016 | 5.020 | 0.089 | 11.4941 | 11.4142 | -0.695 | 0.0007 |
| 191.45 | 4.587 | 4.591 | 0.099 | 6.5658 | 6.5274 | -0.584 | 0.0000 |
| 191.45 | 4.646 | 4.649 | 0.053 | 7.1849 | 7.1510 | -0.471 | 0.0000 |
| 191.45 | 4.683 | 4.684 | 0.008 | 7.8031 | 7.7947 | -0.108 | 0.0000 |
| 191.45 | 4.705 | 4.704 | -0.019 | 8.4225 | 8.4593 | 0.437 | 0.0000 |

Data from Gammon and Douslin [37] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 191.45 | 4.717 | 4.716 | -0.026 | 9.0460 | 9.1297 | 0.926 | 0.0000 |
| 191.45 | 4.725 | 4.724 | -0.018 | 9.6692 | 9.7436 | 0.770 | 0.0000 |
| 191.45 | 4.730 | 4.730 | 0.002 | 10.1732 | 10.1671 | -0.060 | 0.0000 |
| 191.45 | 4.731 | 4.731 | 0.005 | 10.2951 | 10.2770 | -0.176 | 0.0000 |
| 191.45 | 4.738 | 4.739 | 0.031 | 10.9028 | 10.8054 | -0.893 | 0.0000 |
| 191.45 | 4.748 | 4.751 | 0.062 | 11.5131 | 11.3877 | -1.090 | 0.0000 |
| 190.85 | 4.533 | 4.537 | 0.087 | 6.5680 | 6.5310 | -0.564 | 0.0000 |
| 190.85 | 4.586 | 4.588 | 0.042 | 7.1876 | 7.1567 | -0.431 | 0.0000 |
| 190.85 | 4.616 | 4.616 | 0.001 | 7.8070 | 7.8050 | -0.026 | 0.0000 |
| 190.85 | 4.632 | 4.631 | -0.018 | 8.4302 | 8.4869 | 0.672 | 0.0000 |
| 190.85 | 4.638 | 4.637 | -0.019 | 9.0767 | 9.2125 | 1.496 | 0.0000 |
| 190.85 | 4.641 | 4.641 | -0.012 | 9.7495 | 9.8937 | 1.479 | 0.0000 |
| 190.85 | 4.643 | 4.643 | -0.002 | 10.2668 | 10.2893 | 0.220 | 0.0000 |
| 190.85 | 4.643 | 4.643 | 0.002 | 10.3899 | 10.3650 | -0.239 | 0.0000 |
| 190.85 | 4.646 | 4.646 | 0.015 | 10.9572 | 10.8366 | -1.101 | 0.0000 |
| 190.85 | 4.650 | 4.651 | 0.033 | 11.5304 | 11.4050 | -1.088 | 0.0000 |
| 190.63 | 4.513 | 4.517 | 0.078 | 6.5688 | 6.5346 | -0.520 | 0.0000 |
| 190.63 | 4.564 | 4.565 | 0.039 | 7.1886 | 7.1586 | -0.418 | 0.0000 |
| 190.63 | 4.592 | 4.592 | 0.000 | 7.8086 | 7.8086 | 0.000 | 0.0000 |
| 190.63 | 4.605 | 4.604 | -0.015 | 8.4349 | 8.4958 | 0.722 | 0.0000 |
| 190.63 | 4.609 | 4.609 | -0.009 | 9.1376 | 9.2686 | 1.433 | 0.0000 |
| 190.63 | 4.610 | 4.610 | 0.004 | 10.0202 | 9.8346 | -1.852 | 0.0000 |
| 190.63 | 4.611 | 4.611 | 0.005 | 10.6490 | 10.4918 | -1.476 | 0.0000 |
| 190.63 | 4.611 | 4.611 | 0.010 | 10.7652 | 10.4918 | -2.540 | 0.0000 |
| 190.63 | 4.612 | 4.612 | 0.002 | 11.1070 | 11.0773 | -0.267 | 0.0000 |
| 190.63 | 4.615 | 4.615 | 0.015 | 11.5501 | 11.4704 | -0.690 | 0.0000 |
| 190.56 | 4.507 | 4.510 | 0.083 | 6.5691 | 6.5324 | -0.558 | 0.0000 |
| 190.56 | 4.556 | 4.558 | 0.038 | 7.1890 | 7.1593 | -0.413 | 0.0000 |
| 190.56 | 4.584 | 4.584 | 0.000 | 7.8092 | 7.8088 | -0.005 | 0.0000 |
| 190.56 | 4.596 | 4.595 | -0.012 | 8.4377 | 8.4896 | 0.615 | 0.0000 |
| 190.56 | 4.600 | 4.600 | -0.003 | 9.1450 | 9.2024 | 0.628 | 0.0000 |
| 190.56 | 4.601 | 4.601 | 0.000 | 10.1650 | 10.1392 | -0.254 | 0.0000 |
| 190.56 | 4.601 | 4.601 | -0.010 | 10.4400 | 10.9536 | 4.919 | 0.0000 |
| 190.56 | 4.601 | 4.601 | -0.005 | 10.5100 | 10.8181 | 2.932 | 0.0000 |
| 190.56 | 4.602 | 4.601 | -0.012 | 11.0320 | 11.2174 | 1.680 | 0.0000 |

Data from Gammon and Douslin [37] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 190.56 | 4.603 | 4.604 | 0.006 | 11.5780 | 11.5414 | -0.316 | 0.0000 |
| 190.50 | 0.771 | 0.771 | 0.039 | 0.5172 | 0.5170 | -0.041 | 0.0032 |
| 190.50 | 1.538 | 1.539 | 0.085 | 1.1081 | 1.1070 | -0.098 | 0.0017 |
| 190.50 | 2.203 | 2.206 | 0.126 | 1.7090 | 1.7063 | -0.159 | 0.0012 |
| 190.50 | 2.760 | 2.765 | 0.161 | 2.3075 | 2.3023 | -0.226 | 0.0010 |
| 190.50 | 3.226 | 3.232 | 0.189 | 2.9139 | 2.9052 | -0.300 | 0.0000 |
| 190.50 | 3.603 | 3.610 | 0.203 | 3.5185 | 3.5054 | -0.372 | 0.0000 |
| 190.50 | 3.902 | 3.910 | 0.210 | 4.1282 | 4.1093 | -0.457 | 0.0000 |
| 190.50 | 4.133 | 4.141 | 0.195 | 4.7411 | 4.7164 | -0.521 | 0.0000 |
| 190.50 | 4.304 | 4.311 | 0.163 | 5.3548 | 5.3249 | -0.559 | 0.0000 |
| 190.50 | 4.425 | 4.430 | 0.124 | 5.9769 | 5.9421 | -0.582 | 0.0000 |
| 190.50 | 4.501 | 4.505 | 0.083 | 6.5693 | 6.5320 | -0.567 | 0.0000 |
| 190.50 | 4.550 | 4.552 | 0.037 | 7.1893 | 7.1598 | -0.411 | 0.0000 |
| 190.50 | 4.577 | 4.577 | 0.001 | 7.8097 | 7.8080 | -0.021 | 0.0000 |
| 190.50 | 4.589 | 4.588 | -0.010 | 8.4412 | 8.4898 | 0.575 | 0.0000 |
| 190.43 | 4.495 | 4.499 | 0.079 | 6.5696 | 6.5338 | -0.545 | 0.0000 |
| 190.43 | 4.543 | 4.545 | 0.035 | 7.1896 | 7.1607 | -0.402 | 0.0000 |
| 190.43 | 4.569 | 4.569 | 0.001 | 7.8103 | 7.8086 | -0.022 | 0.0000 |
| 190.43 | 4.580 | 4.579 | -0.008 | 8.4416 | 8.4823 | 0.483 | 0.0000 |
| 190.25 | 4.287 | 4.293 | 0.157 | 5.3555 | 5.3261 | -0.548 | 0.0000 |
| 190.25 | 4.405 | 4.410 | 0.118 | 5.9777 | 5.9436 | -0.570 | 0.0000 |
| 190.25 | 4.479 | 4.482 | 0.078 | 6.5703 | 6.5340 | -0.553 | 0.0000 |
| 190.25 | 4.525 | 4.526 | 0.034 | 7.1905 | 7.1610 | -0.410 | 0.0000 |
| 190.25 | 4.549 | 4.549 | 0.002 | 7.8122 | 7.8073 | -0.063 | 0.0000 |
| 189.65 | 3.861 | 3.869 | 0.202 | 4.1298 | 4.1112 | -0.450 | 0.0000 |
| 189.65 | 4.083 | 4.091 | 0.188 | 4.7430 | 4.7183 | -0.521 | 0.0000 |
| 189.65 | 4.245 | 4.252 | 0.148 | 5.3571 | 5.3283 | -0.537 | 0.0000 |
| 189.65 | 4.357 | 4.362 | 0.108 | 5.9796 | 5.9464 | -0.555 | 0.0000 |
| 189.65 | 4.424 | 4.427 | 0.069 | 6.5726 | 6.5365 | -0.549 | 0.0000 |
| 189.65 | 4.463 | 4.465 | 0.030 | 7.1938 | 7.1614 | -0.450 | 0.0000 |
| 188.15 | 0.761 | 0.761 | 0.062 | 0.5176 | 0.5173 | -0.066 | 0.0016 |
| 188.15 | 1.515 | 1.516 | 0.090 | 1.1089 | 1.1077 | -0.104 | 0.0008 |
| 188.15 | 2.164 | 2.168 | 0.158 | 1.7104 | 1.7070 | -0.201 | 0.0006 |
| 188.15 | 2.705 | 2.710 | 0.178 | 2.3096 | 2.3038 | -0.253 | 0.0005 |
| 188.15 | 3.153 | 3.159 | 0.204 | 2.9168 | 2.9071 | -0.333 | 0.0000 |

Data from Gammon and Douslin [37] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 188.15 | 3.509 | 3.516 | 0.215 | 3.5221 | 3.5077 | -0.409 | 0.0000 |
| 188.15 | 3.787 | 3.795 | 0.209 | 4.1327 | 4.1127 | -0.485 | 0.0000 |
| 188.15 | 3.995 | 4.002 | 0.177 | 4.7465 | 4.7217 | -0.522 | 0.0000 |
| 188.15 | 4.140 | 4.146 | 0.132 | 5.3612 | 5.3325 | -0.535 | 0.0000 |
| 188.15 | 4.235 | 4.239 | 0.086 | 5.9846 | 5.9525 | -0.536 | 0.0000 |
| 183.15 | 0.738 | 0.739 | 0.102 | 0.5184 | 0.5178 | -0.109 | 0.0017 |
| 183.15 | 1.465 | 1.466 | 0.104 | 1.1108 | 1.1095 | -0.121 | 0.0009 |
| 183.15 | 2.083 | 2.086 | 0.156 | 1.7135 | 1.7100 | -0.204 | 0.0006 |
| 183.15 | 2.587 | 2.592 | 0.200 | 2.3140 | 2.3072 | -0.296 | 0.0005 |
| 183.15 | 2.994 | 3.001 | 0.222 | 2.9228 | 2.9116 | -0.384 | 0.0005 |
| 183.15 | 3.307 | 3.314 | 0.215 | 3.5298 | 3.5138 | -0.454 | 0.0000 |
| 183.15 | 3.537 | 3.543 | 0.175 | 4.1424 | 4.1224 | -0.483 | 0.0000 |
| 173.15 | 0.694 | 0.694 | 0.048 | 0.5192 | 0.5189 | -0.052 | 0.0018 |
| 173.15 | 1.363 | 1.365 | 0.140 | 1.1143 | 1.1124 | -0.168 | 0.0010 |
| 173.15 | 1.914 | 1.918 | 0.206 | 1.7193 | 1.7145 | -0.282 | 0.0007 |
| 173.15 | 2.344 | 2.349 | 0.235 | 2.3220 | 2.3131 | -0.382 | 0.0006 |
| 163.15 | 0.649 | 0.650 | 0.053 | 0.5204 | 0.5201 | -0.058 | 0.0019 |
| 163.15 | 1.259 | 1.262 | 0.168 | 1.1175 | 1.1152 | -0.208 | 0.0011 |
| 163.15 | 1.740 | 1.743 | 0.190 | 1.7223 | 1.7175 | -0.280 | 0.0008 |
| 153.15 | 0.604 | 0.604 | 0.063 | 0.5215 | 0.5211 | -0.070 | 0.0021 |
| 143.15 | 0.557 | 0.558 | 0.068 | 0.5223 | 0.5219 | -0.077 | 0.0023 |
| 190.50 | 4.592 | 4.592 | -0.009 | 11.1700 | 11.3105 | 1.258 | 0.0000 |
| 190.50 | 4.594 | 4.594 | -0.005 | 11.5750 | 11.6031 | 0.242 | 0.0000 |
| 190.43 | 4.582 | 4.582 | -0.009 | 11.5100 | 11.5827 | 0.631 | 0.0000 |
| 190.43 | 4.584 | 4.582 | -0.032 | 11.5750 | 11.7644 | 1.636 | 0.0000 |
| 190.25 | 4.557 | 4.556 | -0.033 | 12.0406 | 12.1414 | 0.837 | 0.0000 |
| 189.65 | 4.472 | 4.469 | -0.076 | 12.9613 | 13.0260 | 0.499 | 0.0000 |
| 188.15 | 4.267 | 4.263 | -0.094 | 14.1950 | 14.2176 | 0.159 | 0.0000 |
| 185.91 | 3.977 | 3.981 | 0.111 | 15.3297 | 15.3186 | -0.072 | 0.0000 |
| 183.15 | 3.642 | 3.663 | 0.571 | 16.3353 | 16.3056 | -0.182 | 0.0000 |
| 183.15 | 3.642 | 3.663 | 0.563 | 16.3353 | 16.3061 | -0.179 | 0.0000 |
| 178.15 | 3.092 | 3.138 | 1.512 | 17.7013 | 17.6660 | -0.199 | 0.0001 |
| 173.15 | 2.606 | 2.668 | 2.360 | 18.7794 | 18.7493 | -0.160 | 0.0000 |
| 170.75 | 2.394 | 2.460 | 2.767 | 19.2357 | 19.2083 | -0.142 | 0.0000 |
| 163.15 | 1.804 | 1.883 | 4.381 | 20.5098 | 20.4886 | -0.103 | 0.0000 |

Data from Gammon and Douslin [37] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 155.44 | 1.321 | 1.412 | 6.862 | 21.6202 | 21.6029 | -0.080 | 0.0000 |
| 153.15 | 1.197 | 1.291 | 7.792 | 21.9245 | 21.9082 | -0.074 | 0.0000 |
| 143.15 | 0.753 | 0.849 | 12.744 | 23.1510 | 23.1390 | -0.052 | 0.0000 |
| 140.02 | 0.643 | 0.738 | 14.700 | 23.5070 | 23.4962 | -0.046 | 0.0000 |
| 133.15 | 0.443 | 0.529 | 19.524 | 24.2514 | 24.2432 | -0.034 | 0.0001 |
| 125.09 | 0.271 | 0.348 | 28.161 | 25.0715 | 25.0655 | -0.024 | 0.0001 |
| 123.15 | 0.239 | 0.313 | 30.974 | 25.2616 | 25.2561 | -0.022 | 0.0001 |
| 113.15 | 0.115 | 0.186 | 61.893 | 26.2044 | 26.2001 | -0.017 | 0.0001 |
| 190.37 | 4.572 | 4.572 | 0.000 | 8.4443 | 8.4441 | -0.003 | 0.0000 |
| 190.35 | 4.569 | 4.570 | 0.006 | 8.4332 | 8.4024 | -0.365 | 0.0000 |
| 190.03 | 4.523 | 4.524 | 0.011 | 7.8149 | 7.7887 | -0.335 | 0.0000 |
| 189.50 | 4.448 | 4.449 | 0.034 | 7.1947 | 7.1554 | -0.546 | 0.0000 |
| 188.70 | 4.336 | 4.339 | 0.063 | 6.5765 | 6.5362 | -0.614 | 0.0000 |
| 187.60 | 4.189 | 4.193 | 0.092 | 5.9865 | 5.9491 | -0.624 | 0.0000 |
| 186.10 | 3.993 | 3.999 | 0.137 | 5.3671 | 5.3312 | -0.669 | 0.0000 |
| 184.15 | 3.751 | 3.758 | 0.170 | 4.7560 | 4.7259 | -0.634 | 0.0000 |
| 181.55 | 3.451 | 3.456 | 0.142 | 4.1324 | 4.1151 | -0.418 | 0.0000 |
| 174.25 | 2.699 | 2.703 | 0.169 | 2.9218 | 2.9118 | -0.341 | 0.0006 |
| 169.15 | 2.241 | 2.245 | 0.190 | 2.3197 | 2.3121 | -0.326 | 0.0007 |
| 162.65 | 1.730 | 1.733 | 0.190 | 1.7217 | 1.7168 | -0.282 | 0.0008 |
| 155.05 | 1.173 | 1.175 | 0.172 | 1.1192 | 1.1167 | -0.221 | 0.0011 |
| 138.15 | 0.533 | 0.533 | 0.071 | 0.5217 | 0.5213 | -0.081 | 0.0024 |
| 190.85 | 4.533 | 4.537 | 0.089 | 6.5670 | 6.5291 | -0.577 | 0.0000 |
| 190.85 | 4.586 | 4.588 | 0.041 | 7.1850 | 7.1551 | -0.416 | 0.0000 |
| 190.85 | 4.616 | 4.616 | 0.001 | 7.8010 | 7.7989 | -0.027 | 0.0000 |
| 190.85 | 4.631 | 4.631 | -0.018 | 8.4170 | 8.4730 | 0.665 | 0.0000 |
| 190.85 | 4.638 | 4.637 | -0.021 | 9.0330 | 9.1792 | 1.619 | 0.0000 |
| 190.85 | 4.641 | 4.641 | -0.014 | 9.6500 | 9.8155 | 1.715 | 0.0000 |
| 190.85 | 4.643 | 4.642 | -0.005 | 10.1480 | 10.2117 | 0.628 | 0.0000 |
| 190.85 | 4.643 | 4.643 | -0.002 | 10.2700 | 10.2893 | 0.188 | 0.0000 |
| 190.85 | 4.645 | 4.646 | 0.013 | 10.8860 | 10.7816 | -0.959 | 0.0000 |
| 190.85 | 4.650 | 4.651 | 0.032 | 11.5030 | 11.3776 | -1.090 | 0.0000 |
| 190.43 | 4.495 | 4.498 | 0.080 | 6.5680 | 6.5318 | -0.551 | 0.0000 |
| 190.43 | 4.543 | 4.545 | 0.036 | 7.1870 | 7.1571 | -0.416 | 0.0000 |
| 190.43 | 4.569 | 4.569 | 0.001 | 7.8030 | 7.8008 | -0.028 | 0.0000 |

Data from Gammon and Douslin [37] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 190.43 | 4.580 | 4.579 | -0.008 | 8.4190 | 8.4589 | 0.474 | 0.0000 |
| 190.56 | 4.507 | 4.510 | 0.082 | 6.5680 | 6.5315 | -0.556 | 0.0000 |
| 190.56 | 4.556 | 4.558 | 0.036 | 7.1860 | 7.1576 | -0.396 | 0.0000 |
| 190.56 | 4.583 | 4.583 | 0.000 | 7.8020 | 7.8016 | -0.005 | 0.0000 |
| 190.56 | 4.596 | 4.595 | -0.012 | 8.4180 | 8.4701 | 0.619 | 0.0000 |
| 190.56 | 4.600 | 4.599 | -0.006 | 9.0350 | 9.1223 | 0.967 | 0.0000 |
| 190.56 | 4.600 | 4.600 | 0.004 | 9.6510 | 9.4440 | -2.145 | 0.0000 |
| 190.56 | 4.601 | 4.601 | -0.004 | 10.1500 | 10.7195 | 5.610 | 0.0000 |
| 190.56 | 4.601 | 4.601 | 0.000 | 10.2720 | 10.1392 | -1.293 | 0.0000 |
| 190.56 | 4.601 | 4.601 | -0.011 | 10.8880 | 11.1261 | 2.186 | 0.0000 |
| 190.56 | 4.603 | 4.603 | 0.001 | 11.5050 | 11.5014 | -0.031 | 0.0000 |
| 189.65 | 4.424 | 4.427 | 0.068 | 6.5710 | 6.5354 | -0.542 | 0.0000 |
| 189.65 | 4.463 | 4.464 | 0.031 | 7.1900 | 7.1567 | -0.463 | 0.0000 |
| 190.63 | 4.513 | 4.517 | 0.078 | 6.5670 | 6.5327 | -0.522 | 0.0000 |
| 190.63 | 4.563 | 4.565 | 0.038 | 7.1860 | 7.1569 | -0.405 | 0.0000 |
| 190.63 | 4.591 | 4.591 | 0.000 | 7.8020 | 7.8017 | -0.004 | 0.0000 |
| 190.63 | 4.604 | 4.604 | -0.015 | 8.4180 | 8.4778 | 0.710 | 0.0000 |
| 190.63 | 4.609 | 4.609 | -0.013 | 9.0350 | 9.2010 | 1.838 | 0.0000 |
| 190.63 | 4.610 | 4.610 | -0.001 | 9.6510 | 9.6743 | 0.241 | 0.0000 |
| 190.63 | 4.611 | 4.611 | -0.004 | 10.1490 | 10.3218 | 1.702 | 0.0000 |
| 190.63 | 4.611 | 4.611 | 0.001 | 10.2720 | 10.2259 | -0.449 | 0.0000 |
| 190.63 | 4.612 | 4.612 | -0.006 | 10.8870 | 10.9885 | 0.932 | 0.0000 |
| 190.63 | 4.614 | 4.615 | 0.013 | 11.5040 | 11.4316 | -0.629 | 0.0000 |
| 190.25 | 4.478 | 4.482 | 0.077 | 6.5690 | 6.5329 | -0.549 | 0.0000 |
| 190.25 | 4.525 | 4.526 | 0.032 | 7.1870 | 7.1591 | -0.388 | 0.0000 |
| 190.25 | 4.548 | 4.549 | 0.003 | 7.8040 | 7.7986 | -0.069 | 0.0000 |
| 191.45 | 4.587 | 4.591 | 0.098 | 6.5640 | 6.5258 | -0.583 | 0.0000 |
| 191.45 | 4.646 | 4.649 | 0.055 | 7.1830 | 7.1483 | -0.483 | 0.0000 |
| 191.45 | 4.683 | 4.683 | 0.008 | 7.7990 | 7.7900 | -0.115 | 0.0000 |
| 191.45 | 4.704 | 4.704 | -0.019 | 8.4140 | 8.4509 | 0.438 | 0.0000 |
| 191.45 | 4.717 | 4.715 | -0.027 | 9.0300 | 9.1159 | 0.951 | 0.0000 |
| 191.45 | 4.724 | 4.724 | -0.018 | 9.6460 | 9.7179 | 0.746 | 0.0000 |
| 191.45 | 4.729 | 4.729 | 0.001 | 10.1450 | 10.1415 | -0.035 | 0.0000 |
| 191.45 | 4.731 | 4.731 | 0.004 | 10.2670 | 10.2518 | -0.148 | 0.0000 |
| 191.45 | 4.738 | 4.739 | 0.030 | 10.8820 | 10.7848 | -0.893 | 0.0000 |

Data from Gammon and Douslin [37] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 191.45 | 4.748 | 4.751 | 0.061 | 11.4990 | 11.3741 | -1.087 | 0.0000 |
| 190.50 | 4.501 | 4.505 | 0.083 | 6.5680 | 6.5311 | -0.562 | 0.0000 |
| 190.50 | 4.550 | 4.552 | 0.037 | 7.1860 | 7.1563 | -0.414 | 0.0000 |
| 190.50 | 4.577 | 4.577 | 0.001 | 7.8030 | 7.8006 | -0.030 | 0.0000 |
| 190.50 | 4.588 | 4.588 | -0.011 | 8.4190 | 8.4685 | 0.588 | 0.0000 |
| 190.50 | 4.591 | 4.592 | 0.004 | 9.0350 | 8.9704 | -0.715 | 0.0000 |
| 190.50 | 4.594 | 4.593 | -0.006 | 11.5050 | 11.5478 | 0.372 | 0.0000 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.963 | BIAS-% | 0.956 | RMS-% | 5.384 | |
| | AAD | 0.007 | BIAS | 0.007 | RMS | 0.018 | MPa |
| DENSITY : | AAD-% | 0.533 | BIAS-% | -0.084 | RMS-% | 0.842 | |
| | AAD | 0.046 | BIAS | -0.001 | RMS | 0.084 | $mol \cdot dm^{-3}$ |

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Data from Goodwin [38]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 176.00 | 2.796 | 2.798 | 0.060 | 2.9954 | 2.9918 | -0.120 | 0.0544 |
| 180.00 | 2.933 | 2.935 | 0.066 | 2.9936 | 2.9899 | -0.123 | 0.0510 |
| 184.00 | 3.068 | 3.070 | 0.052 | 2.9918 | 2.9891 | -0.092 | 0.0000 |
| 188.00 | 3.201 | 3.202 | 0.042 | 2.9901 | 2.9880 | -0.070 | 0.0000 |
| 192.00 | 3.332 | 3.333 | 0.032 | 2.9883 | 2.9868 | -0.051 | 0.0000 |
| 196.00 | 3.461 | 3.462 | 0.022 | 2.9866 | 2.9856 | -0.033 | 24.7201 |
| 200.00 | 3.589 | 3.590 | 0.017 | 2.9848 | 2.9840 | -0.026 | 23.6115 |
| 204.00 | 3.716 | 3.716 | 0.016 | 2.9831 | 2.9823 | -0.024 | 22.6052 |
| 208.00 | 3.842 | 3.842 | 0.014 | 2.9813 | 2.9807 | -0.020 | 21.6863 |
| 212.00 | 3.967 | 3.967 | 0.017 | 2.9796 | 2.9789 | -0.023 | 20.8446 |
| 216.00 | 4.091 | 4.091 | 0.014 | 2.9779 | 2.9773 | -0.019 | 20.0692 |
| 220.00 | 4.214 | 4.215 | 0.010 | 2.9761 | 2.9757 | -0.013 | 19.3528 |
| 225.00 | 4.367 | 4.368 | 0.012 | 2.9739 | 2.9735 | -0.015 | 18.5313 |
| 230.00 | 4.520 | 4.520 | 0.009 | 2.9717 | 2.9714 | -0.011 | 17.7803 |
| 240.00 | 4.822 | 4.822 | -0.003 | 2.9675 | 2.9676 | 0.004 | 16.4562 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 250.00 | 5.120 | 5.120 | -0.004 | 2.9630 | 2.9632 | 0.005 | 15.3274 |
| 260.00 | 5.416 | 5.415 | -0.010 | 2.9585 | 2.9589 | 0.012 | 14.3516 |
| 270.00 | 5.709 | 5.708 | -0.012 | 2.9540 | 2.9544 | 0.014 | 0.0450 |
| 280.00 | 6.000 | 5.998 | -0.018 | 2.9495 | 2.9501 | 0.020 | 0.0425 |
| 290.00 | 6.287 | 6.287 | -0.005 | 2.9450 | 2.9452 | 0.006 | 0.0403 |
| 300.00 | 6.575 | 6.572 | -0.035 | 2.9402 | 2.9414 | 0.039 | 0.0383 |
| 184.00 | 3.516 | 3.531 | 0.444 | 3.9782 | 3.9350 | -1.085 | 0.0000 |
| 188.00 | 3.710 | 3.724 | 0.374 | 3.9756 | 3.9430 | -0.819 | 0.0000 |
| 192.00 | 3.899 | 3.912 | 0.327 | 3.9731 | 3.9469 | -0.657 | 0.0000 |
| 196.00 | 4.090 | 4.097 | 0.165 | 3.9705 | 3.9581 | -0.310 | 22.0316 |
| 200.00 | 4.275 | 4.280 | 0.110 | 3.9683 | 3.9605 | -0.195 | 20.8002 |
| 204.00 | 4.456 | 4.460 | 0.104 | 3.9654 | 3.9584 | -0.176 | 19.7117 |
| 208.00 | 4.635 | 4.639 | 0.094 | 3.9629 | 3.9568 | -0.153 | 18.7340 |
| 212.00 | 4.812 | 4.817 | 0.091 | 3.9604 | 3.9548 | -0.142 | 17.8526 |
| 216.00 | 4.988 | 4.993 | 0.087 | 3.9579 | 3.9526 | -0.132 | 17.0531 |
| 220.00 | 5.163 | 5.168 | 0.087 | 3.9554 | 3.9503 | -0.128 | 16.3251 |
| 225.00 | 5.380 | 5.385 | 0.085 | 3.9522 | 3.9474 | -0.121 | 15.5011 |
| 230.00 | 5.595 | 5.600 | 0.088 | 3.9491 | 3.9443 | -0.121 | 14.7598 |
| 240.00 | 6.020 | 6.026 | 0.089 | 3.9427 | 3.9381 | -0.116 | 13.4790 |
| 250.00 | 6.441 | 6.446 | 0.088 | 3.9364 | 3.9320 | -0.112 | 12.4111 |
| 260.00 | 6.857 | 6.862 | 0.082 | 3.9300 | 3.9260 | -0.100 | 11.5065 |
| 270.00 | 7.268 | 7.274 | 0.082 | 3.9235 | 3.9196 | -0.098 | 0.0358 |
| 280.00 | 7.676 | 7.682 | 0.083 | 3.9170 | 3.9132 | -0.096 | 0.0335 |
| 290.00 | 8.080 | 8.087 | 0.075 | 3.9104 | 3.9071 | -0.085 | 0.0316 |
| 300.00 | 8.482 | 8.488 | 0.068 | 3.9038 | 3.9008 | -0.075 | 0.0298 |
| 188.00 | 4.028 | 4.041 | 0.343 | 4.9304 | 4.8761 | -1.101 | 0.0000 |
| 192.00 | 4.277 | 4.292 | 0.354 | 4.9270 | 4.8800 | -0.952 | 0.0000 |
| 196.00 | 4.522 | 4.537 | 0.335 | 4.9236 | 4.8845 | -0.793 | 20.7942 |
| 200.00 | 4.764 | 4.778 | 0.297 | 4.9202 | 4.8888 | -0.638 | 19.4180 |
| 204.00 | 5.004 | 5.016 | 0.250 | 4.9169 | 4.8925 | -0.496 | 18.2088 |
| 208.00 | 5.241 | 5.251 | 0.200 | 4.9135 | 4.8953 | -0.371 | 17.1392 |
| 212.00 | 5.474 | 5.484 | 0.182 | 4.9102 | 4.8945 | -0.320 | 16.1910 |
| 216.00 | 5.705 | 5.715 | 0.178 | 4.9069 | 4.8922 | -0.298 | 15.3436 |
| 220.00 | 5.933 | 5.945 | 0.195 | 4.9035 | 4.8882 | -0.313 | 14.5828 |
| 225.00 | 6.218 | 6.229 | 0.176 | 4.8994 | 4.8862 | -0.270 | 13.7288 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 230.00 | 6.500 | 6.511 | 0.171 | 4.8952 | 4.8829 | -0.251 | 12.9716 |
| 240.00 | 7.056 | 7.068 | 0.166 | 4.8868 | 4.8757 | -0.228 | 11.6871 |
| 250.00 | 7.606 | 7.618 | 0.158 | 4.8784 | 4.8683 | -0.206 | 10.6391 |
| 260.00 | 8.149 | 8.162 | 0.153 | 4.8699 | 4.8606 | -0.191 | 9.7686 |
| 270.00 | 8.687 | 8.699 | 0.145 | 4.8614 | 4.8529 | -0.174 | 0.0301 |
| 280.00 | 9.219 | 9.232 | 0.137 | 4.8527 | 4.8450 | -0.160 | 0.0280 |
| 290.00 | 9.747 | 9.759 | 0.125 | 4.8441 | 4.8372 | -0.142 | 0.0262 |
| 300.00 | 10.270 | 10.282 | 0.117 | 4.8354 | 4.8291 | -0.130 | 0.0246 |
| 192.00 | 4.537 | 4.546 | 0.193 | 5.9478 | 5.9012 | -0.784 | 0.0000 |
| 196.00 | 4.849 | 4.860 | 0.216 | 5.9435 | 5.9027 | -0.686 | 20.0683 |
| 200.00 | 5.155 | 5.167 | 0.231 | 5.9392 | 5.9024 | -0.620 | 18.5422 |
| 204.00 | 5.458 | 5.470 | 0.230 | 5.9350 | 5.9028 | -0.542 | 17.2123 |
| 208.00 | 5.758 | 5.770 | 0.215 | 5.9307 | 5.9034 | -0.460 | 16.0467 |
| 212.00 | 6.054 | 6.067 | 0.213 | 5.9264 | 5.9016 | -0.419 | 15.0219 |
| 216.00 | 6.347 | 6.361 | 0.215 | 5.9222 | 5.8988 | -0.395 | 14.1148 |
| 220.00 | 6.638 | 6.653 | 0.225 | 5.9179 | 5.8949 | -0.389 | 13.3081 |
| 225.00 | 6.999 | 7.014 | 0.224 | 5.9126 | 5.8910 | -0.364 | 12.4163 |
| 230.00 | 7.357 | 7.373 | 0.225 | 5.9072 | 5.8867 | -0.347 | 11.6346 |
| 240.00 | 8.064 | 8.083 | 0.231 | 5.8965 | 5.8772 | -0.328 | 10.3317 |
| 250.00 | 8.763 | 8.783 | 0.228 | 5.8857 | 5.8680 | -0.302 | 9.2910 |
| 260.00 | 9.454 | 9.475 | 0.220 | 5.8749 | 5.8586 | -0.277 | 8.4427 |
| 270.00 | 10.138 | 10.160 | 0.209 | 5.8640 | 5.8493 | -0.251 | 0.0258 |
| 280.00 | 10.816 | 10.837 | 0.200 | 5.8531 | 5.8395 | -0.232 | 0.0238 |
| 290.00 | 11.487 | 11.509 | 0.184 | 5.8422 | 5.8300 | -0.208 | 0.0221 |
| 300.00 | 12.153 | 12.174 | 0.167 | 5.8312 | 5.8205 | -0.184 | 0.0207 |
| 192.00 | 4.685 | 4.687 | 0.050 | 6.9818 | 6.9571 | -0.354 | 0.0000 |
| 196.00 | 5.066 | 5.072 | 0.124 | 6.9765 | 6.9384 | -0.546 | 19.6268 |
| 200.00 | 5.441 | 5.450 | 0.168 | 6.9712 | 6.9321 | -0.561 | 17.9586 |
| 204.00 | 5.811 | 5.822 | 0.189 | 6.9659 | 6.9295 | -0.524 | 16.5074 |
| 208.00 | 6.177 | 6.190 | 0.203 | 6.9607 | 6.9267 | -0.489 | 15.2439 |
| 212.00 | 6.541 | 6.555 | 0.208 | 6.9555 | 6.9243 | -0.448 | 14.1394 |
| 216.00 | 6.901 | 6.917 | 0.220 | 6.9502 | 6.9202 | -0.432 | 13.1713 |
| 220.00 | 7.259 | 7.276 | 0.229 | 6.9450 | 6.9159 | -0.418 | 12.3179 |
| 225.00 | 7.703 | 7.722 | 0.239 | 6.9384 | 6.9104 | -0.403 | 11.3861 |
| 230.00 | 8.144 | 8.164 | 0.251 | 6.9317 | 6.9042 | -0.397 | 10.5795 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 240.00 | 9.016 | 9.040 | 0.272 | 6.9186 | 6.8917 | -0.388 | 9.2574 |
| 250.00 | 9.879 | 9.906 | 0.271 | 6.9053 | 6.8806 | -0.357 | 8.2230 |
| 260.00 | 10.732 | 10.761 | 0.272 | 6.8920 | 6.8688 | -0.337 | 7.3956 |
| 270.00 | 11.579 | 11.608 | 0.250 | 6.8786 | 6.8583 | -0.295 | 0.0224 |
| 280.00 | 12.417 | 12.446 | 0.234 | 6.8653 | 6.8471 | -0.265 | 0.0205 |
| 290.00 | 13.249 | 13.277 | 0.214 | 6.8521 | 6.8360 | -0.234 | 0.0190 |
| 300.00 | 14.074 | 14.101 | 0.191 | 6.8389 | 6.8250 | -0.204 | 0.0176 |
| 192.00 | 4.753 | 4.754 | 0.018 | 7.9789 | 7.9598 | -0.238 | 0.0000 |
| 196.00 | 5.201 | 5.206 | 0.101 | 7.9726 | 7.9253 | -0.593 | 19.3188 |
| 200.00 | 5.642 | 5.651 | 0.176 | 7.9664 | 7.9110 | -0.695 | 17.5209 |
| 204.00 | 6.078 | 6.092 | 0.223 | 7.9601 | 7.9055 | -0.687 | 15.9544 |
| 208.00 | 6.512 | 6.528 | 0.248 | 7.9539 | 7.9033 | -0.636 | 14.5935 |
| 212.00 | 6.944 | 6.962 | 0.250 | 7.9476 | 7.9031 | -0.560 | 13.4110 |
| 216.00 | 7.373 | 7.392 | 0.263 | 7.9413 | 7.8994 | -0.528 | 12.3843 |
| 220.00 | 7.800 | 7.821 | 0.273 | 7.9350 | 7.8952 | -0.502 | 11.4881 |
| 225.00 | 8.329 | 8.353 | 0.288 | 7.9271 | 7.8888 | -0.484 | 10.5213 |
| 230.00 | 8.857 | 8.882 | 0.291 | 7.9192 | 7.8832 | -0.454 | 9.6936 |
| 240.00 | 9.901 | 9.931 | 0.305 | 7.9034 | 7.8699 | -0.424 | 8.3608 |
| 250.00 | 10.936 | 10.969 | 0.303 | 7.8876 | 7.8570 | -0.387 | 7.3402 |
| 260.00 | 11.961 | 11.996 | 0.292 | 7.8718 | 7.8443 | -0.349 | 6.5379 |
| 270.00 | 12.978 | 13.014 | 0.276 | 7.8561 | 7.8315 | -0.313 | 0.0196 |
| 280.00 | 13.986 | 14.022 | 0.257 | 7.8405 | 7.8186 | -0.279 | 0.0179 |
| 290.00 | 14.985 | 15.021 | 0.237 | 7.8251 | 7.8056 | -0.249 | 0.0164 |
| 300.00 | 15.977 | 16.012 | 0.217 | 7.8100 | 7.7927 | -0.221 | 0.0152 |
| 192.00 | 4.789 | 4.788 | -0.012 | 9.0890 | 9.1140 | 0.274 | 0.0000 |
| 196.00 | 5.308 | 5.311 | 0.051 | 9.0817 | 9.0489 | -0.361 | 19.0038 |
| 200.00 | 5.824 | 5.831 | 0.118 | 9.0743 | 9.0286 | -0.504 | 17.0385 |
| 204.00 | 6.336 | 6.348 | 0.187 | 9.0669 | 9.0135 | -0.589 | 15.3320 |
| 208.00 | 6.850 | 6.864 | 0.205 | 9.0595 | 9.0121 | -0.523 | 13.8561 |
| 212.00 | 7.361 | 7.379 | 0.231 | 9.0520 | 9.0063 | -0.505 | 12.5916 |
| 216.00 | 7.871 | 7.891 | 0.254 | 9.0445 | 9.0000 | -0.492 | 11.5063 |
| 220.00 | 8.380 | 8.402 | 0.262 | 9.0369 | 8.9953 | -0.461 | 10.5709 |
| 225.00 | 9.013 | 9.038 | 0.280 | 9.0275 | 8.9873 | -0.445 | 9.5774 |
| 230.00 | 9.644 | 9.671 | 0.286 | 9.0180 | 8.9801 | -0.420 | 8.7405 |
| 240.00 | 10.897 | 10.930 | 0.300 | 8.9990 | 8.9638 | -0.392 | 7.4207 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | mol·dm$^{-3}$ | mol·dm$^{-3}$ | % | |
| 250.00 | 12.140 | 12.177 | 0.306 | 8.9801 | 8.9473 | -0.365 | 6.4348 |
| 260.00 | 13.373 | 13.413 | 0.304 | 8.9614 | 8.9310 | -0.339 | 5.6753 |
| 270.00 | 14.597 | 14.639 | 0.288 | 8.9429 | 8.9156 | -0.305 | 0.0169 |
| 280.00 | 15.811 | 15.855 | 0.274 | 8.9249 | 8.9001 | -0.278 | 0.0153 |
| 290.00 | 17.017 | 17.060 | 0.254 | 8.9072 | 8.8850 | -0.249 | 0.0140 |
| 300.00 | 18.215 | 18.256 | 0.228 | 8.8900 | 8.8707 | -0.216 | 0.0129 |
| 192.00 | 4.810 | 4.811 | 0.017 | 10.2380 | 10.1955 | -0.415 | 0.0000 |
| 196.00 | 5.402 | 5.404 | 0.031 | 10.2296 | 10.2096 | -0.196 | 18.6281 |
| 200.00 | 5.998 | 6.003 | 0.075 | 10.2210 | 10.1922 | -0.282 | 16.4207 |
| 204.00 | 6.598 | 6.606 | 0.118 | 10.2123 | 10.1790 | -0.326 | 14.5265 |
| 208.00 | 7.199 | 7.210 | 0.151 | 10.2036 | 10.1690 | -0.339 | 12.9269 |
| 212.00 | 7.801 | 7.815 | 0.175 | 10.1947 | 10.1604 | -0.336 | 11.5846 |
| 216.00 | 8.404 | 8.420 | 0.193 | 10.1858 | 10.1523 | -0.329 | 10.4578 |
| 220.00 | 9.006 | 9.024 | 0.199 | 10.1769 | 10.1454 | -0.309 | 9.5067 |
| 225.00 | 9.757 | 9.778 | 0.217 | 10.1657 | 10.1346 | -0.305 | 8.5167 |
| 230.00 | 10.507 | 10.530 | 0.224 | 10.1545 | 10.1248 | -0.292 | 7.6992 |
| 240.00 | 11.998 | 12.028 | 0.244 | 10.1321 | 10.1033 | -0.284 | 6.4401 |
| 250.00 | 13.481 | 13.516 | 0.257 | 10.1100 | 10.0822 | -0.275 | 5.5235 |
| 260.00 | 14.954 | 14.993 | 0.255 | 10.0882 | 10.0624 | -0.256 | 4.8311 |
| 270.00 | 16.417 | 16.458 | 0.255 | 10.0671 | 10.0425 | -0.244 | 0.0143 |
| 280.00 | 17.870 | 17.913 | 0.242 | 10.0466 | 10.0242 | -0.223 | 0.0129 |
| 290.00 | 19.313 | 19.358 | 0.229 | 10.0271 | 10.0066 | -0.204 | 0.0117 |
| 300.00 | 20.747 | 20.791 | 0.211 | 10.0081 | 9.9898 | -0.183 | 0.0107 |
| 192.00 | 4.832 | 4.831 | -0.026 | 11.1113 | 11.1567 | 0.408 | 0.0000 |
| 196.00 | 5.485 | 5.484 | -0.035 | 11.1019 | 11.1205 | 0.167 | 18.1729 |
| 200.00 | 6.151 | 6.150 | -0.018 | 11.0923 | 11.0983 | 0.054 | 15.6984 |
| 204.00 | 6.825 | 6.825 | -0.005 | 11.0825 | 11.0837 | 0.011 | 13.6401 |
| 208.00 | 7.502 | 7.503 | 0.021 | 11.0725 | 11.0682 | -0.039 | 11.9618 |
| 212.00 | 8.177 | 8.184 | 0.085 | 11.0625 | 11.0472 | -0.138 | 10.5985 |
| 216.00 | 8.861 | 8.866 | 0.061 | 11.0523 | 11.0424 | -0.089 | 9.4759 |
| 220.00 | 9.542 | 9.549 | 0.076 | 11.0422 | 11.0309 | -0.102 | 8.5500 |
| 225.00 | 10.391 | 10.401 | 0.098 | 11.0294 | 11.0162 | -0.120 | 7.6027 |
| 230.00 | 11.240 | 11.253 | 0.115 | 11.0167 | 11.0022 | -0.132 | 6.8329 |
| 240.00 | 12.934 | 12.951 | 0.133 | 10.9914 | 10.9763 | -0.138 | 5.6668 |
| 250.00 | 14.617 | 14.641 | 0.161 | 10.9667 | 10.9497 | -0.155 | 4.8327 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 260.00 | 16.291 | 16.319 | 0.175 | 10.9428 | 10.9254 | -0.159 | 4.2102 |
| 270.00 | 17.955 | 17.987 | 0.179 | 10.9198 | 10.9028 | -0.156 | 0.0124 |
| 280.00 | 19.607 | 19.643 | 0.182 | 10.8978 | 10.8811 | -0.154 | 0.0112 |
| 290.00 | 21.250 | 21.287 | 0.177 | 10.8769 | 10.8612 | -0.145 | 0.0101 |
| 300.00 | 22.883 | 22.920 | 0.164 | 10.8570 | 10.8428 | -0.131 | 0.0093 |
| 192.00 | 4.869 | 4.869 | 0.003 | 12.0697 | 12.0670 | -0.022 | 0.0000 |
| 196.00 | 5.603 | 5.604 | 0.021 | 12.0591 | 12.0517 | -0.062 | 17.2314 |
| 200.00 | 6.357 | 6.359 | 0.021 | 12.0482 | 12.0429 | -0.044 | 14.4081 |
| 204.00 | 7.122 | 7.123 | 0.027 | 12.0370 | 12.0317 | -0.044 | 12.2259 |
| 208.00 | 7.891 | 7.894 | 0.038 | 12.0256 | 12.0191 | -0.054 | 10.5450 |
| 212.00 | 8.665 | 8.669 | 0.039 | 12.0142 | 12.0083 | -0.049 | 9.2315 |
| 216.00 | 9.443 | 9.445 | 0.026 | 12.0026 | 11.9989 | -0.031 | 8.1869 |
| 220.00 | 10.220 | 10.223 | 0.029 | 11.9912 | 11.9874 | -0.032 | 7.3423 |
| 225.00 | 11.191 | 11.196 | 0.041 | 11.9767 | 11.9717 | -0.042 | 6.4936 |
| 230.00 | 12.162 | 12.168 | 0.054 | 11.9624 | 11.9562 | -0.052 | 5.8141 |
| 240.00 | 14.099 | 14.110 | 0.079 | 11.9342 | 11.9258 | -0.071 | 4.7997 |
| 250.00 | 16.026 | 16.043 | 0.109 | 11.9069 | 11.8960 | -0.091 | 4.0834 |
| 260.00 | 17.943 | 17.966 | 0.130 | 11.8808 | 11.8684 | -0.104 | 3.5529 |
| 270.00 | 19.849 | 19.877 | 0.142 | 11.8562 | 11.8432 | -0.110 | 0.0105 |
| 280.00 | 21.744 | 21.776 | 0.147 | 11.8330 | 11.8198 | -0.111 | 0.0094 |
| 290.00 | 23.629 | 23.663 | 0.143 | 11.8112 | 11.7988 | -0.105 | 0.0085 |
| 300.00 | 25.503 | 25.537 | 0.133 | 11.7906 | 11.7792 | -0.097 | 0.0078 |
| 192.00 | 4.946 | 4.948 | 0.052 | 12.9815 | 12.9612 | -0.157 | 0.0000 |
| 196.00 | 5.779 | 5.785 | 0.106 | 12.9695 | 12.9450 | -0.189 | 15.3489 |
| 200.00 | 6.633 | 6.640 | 0.111 | 12.9570 | 12.9371 | -0.154 | 12.4178 |
| 204.00 | 7.499 | 7.506 | 0.085 | 12.9442 | 12.9313 | -0.100 | 10.3465 |
| 208.00 | 8.373 | 8.377 | 0.058 | 12.9313 | 12.9234 | -0.061 | 8.8342 |
| 212.00 | 9.250 | 9.253 | 0.036 | 12.9184 | 12.9138 | -0.035 | 7.6910 |
| 216.00 | 10.130 | 10.132 | 0.011 | 12.9053 | 12.9040 | -0.010 | 6.8008 |
| 220.00 | 11.012 | 11.011 | -0.003 | 12.8923 | 12.8926 | 0.002 | 6.0902 |
| 225.00 | 12.111 | 12.112 | 0.004 | 12.8761 | 12.8757 | -0.003 | 5.3835 |
| 230.00 | 13.212 | 13.213 | 0.008 | 12.8600 | 12.8591 | -0.007 | 4.8216 |
| 240.00 | 15.406 | 15.411 | 0.032 | 12.8286 | 12.8255 | -0.024 | 3.9876 |
| 250.00 | 17.590 | 17.601 | 0.060 | 12.7988 | 12.7932 | -0.044 | 3.4004 |
| 260.00 | 19.764 | 19.779 | 0.079 | 12.7708 | 12.7637 | -0.056 | 2.9657 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 270.00 | 21.926 | 21.946 | 0.091 | 12.7448 | 12.7369 | -0.062 | 0.0088 |
| 280.00 | 24.075 | 24.099 | 0.099 | 12.7206 | 12.7121 | -0.066 | 0.0079 |
| 290.00 | 26.213 | 26.239 | 0.097 | 12.6980 | 12.6898 | -0.065 | 0.0072 |
| 300.00 | 28.339 | 28.363 | 0.087 | 12.6767 | 12.6694 | -0.057 | 0.0066 |
| 192.00 | 5.205 | 5.224 | 0.368 | 14.2336 | 14.1765 | -0.401 | 0.0000 |
| 196.00 | 6.221 | 6.235 | 0.223 | 14.2188 | 14.1907 | -0.198 | 10.8128 |
| 200.00 | 7.245 | 7.258 | 0.179 | 14.2038 | 14.1836 | -0.142 | 8.7028 |
| 204.00 | 8.279 | 8.289 | 0.130 | 14.1886 | 14.1750 | -0.096 | 7.2808 |
| 208.00 | 9.318 | 9.325 | 0.083 | 14.1733 | 14.1651 | -0.058 | 6.2584 |
| 212.00 | 10.361 | 10.365 | 0.039 | 14.1580 | 14.1543 | -0.026 | 5.4884 |
| 216.00 | 11.404 | 11.406 | 0.019 | 14.1427 | 14.1409 | -0.012 | 4.8884 |
| 220.00 | 12.448 | 12.449 | 0.006 | 14.1275 | 14.1269 | -0.004 | 4.4078 |
| 225.00 | 13.752 | 13.752 | 0.003 | 14.1089 | 14.1086 | -0.002 | 3.9272 |
| 230.00 | 15.053 | 15.055 | 0.009 | 14.0906 | 14.0898 | -0.005 | 3.5428 |
| 240.00 | 17.651 | 17.655 | 0.024 | 14.0557 | 14.0537 | -0.014 | 2.9670 |
| 250.00 | 20.235 | 20.244 | 0.045 | 14.0234 | 14.0196 | -0.027 | 2.5562 |
| 260.00 | 22.806 | 22.821 | 0.066 | 13.9939 | 13.9886 | -0.038 | 2.2482 |
| 270.00 | 25.363 | 25.383 | 0.076 | 13.9669 | 13.9607 | -0.044 | 0.0067 |
| 280.00 | 27.907 | 27.929 | 0.078 | 13.9421 | 13.9358 | -0.045 | 0.0061 |
| 290.00 | 30.433 | 30.458 | 0.080 | 13.9190 | 13.9126 | -0.046 | 0.0055 |
| 300.00 | 32.948 | 32.969 | 0.062 | 13.8972 | 13.8923 | -0.035 | 0.0051 |
| 190.00 | 5.187 | 5.211 | 0.473 | 15.3796 | 15.3396 | -0.260 | 0.0000 |
| 194.00 | 6.379 | 6.404 | 0.394 | 15.3621 | 15.3305 | -0.205 | 7.3227 |
| 198.00 | 7.586 | 7.607 | 0.275 | 15.3444 | 15.3231 | -0.139 | 6.0330 |
| 202.00 | 8.801 | 8.816 | 0.171 | 15.3267 | 15.3136 | -0.085 | 5.1393 |
| 206.00 | 10.020 | 10.029 | 0.091 | 15.3088 | 15.3019 | -0.045 | 4.4823 |
| 210.00 | 11.238 | 11.244 | 0.058 | 15.2911 | 15.2867 | -0.029 | 3.9786 |
| 215.00 | 12.760 | 12.764 | 0.037 | 15.2692 | 15.2665 | -0.018 | 3.4931 |
| 220.00 | 14.279 | 14.284 | 0.033 | 15.2478 | 15.2422 | -0.016 | 3.1171 |
| 230.00 | 17.313 | 17.318 | 0.030 | 15.2072 | 15.2049 | -0.015 | 2.5722 |
| 240.00 | 20.329 | 20.340 | 0.056 | 15.1701 | 15.1660 | -0.027 | 2.1958 |
| 250.00 | 23.331 | 23.348 | 0.070 | 15.1369 | 15.1317 | -0.034 | 1.9195 |
| 260.00 | 26.318 | 26.338 | 0.077 | 15.1069 | 15.1012 | -0.038 | 1.7078 |
| 270.00 | 29.286 | 29.309 | 0.079 | 15.0797 | 15.0738 | -0.039 | 0.0051 |
| 280.00 | 32.240 | 32.260 | 0.062 | 15.0546 | 15.0500 | -0.031 | 0.0047 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 290.00 | 35.168 | 35.189 | 0.061 | 15.0313 | 15.0268 | -0.030 | 0.0430 |
| 186.00 | 4.562 | 4.581 | 0.423 | 16.2733 | 16.2502 | -0.142 | 0.0000 |
| 190.00 | 5.908 | 5.931 | 0.396 | 16.2543 | 16.2319 | -0.138 | 0.0000 |
| 194.00 | 7.268 | 7.292 | 0.325 | 16.2348 | 16.2159 | -0.116 | 4.7079 |
| 198.00 | 8.636 | 8.658 | 0.251 | 16.2151 | 16.2002 | -0.092 | 4.0524 |
| 202.00 | 10.005 | 10.027 | 0.225 | 16.1953 | 16.1817 | -0.084 | 3.5641 |
| 206.00 | 11.375 | 11.398 | 0.198 | 16.1755 | 16.1633 | -0.076 | 3.1859 |
| 210.00 | 12.745 | 12.768 | 0.179 | 16.1562 | 16.1450 | -0.069 | 2.8837 |
| 215.00 | 14.440 | 14.480 | 0.276 | 16.1328 | 16.1152 | -0.109 | 2.5822 |
| 220.00 | 16.161 | 16.188 | 0.172 | 16.1098 | 16.0987 | -0.069 | 2.3408 |
| 230.00 | 19.563 | 19.595 | 0.166 | 16.0677 | 16.0567 | -0.068 | 1.9781 |
| 240.00 | 22.944 | 22.984 | 0.176 | 16.0302 | 16.0184 | -0.074 | 1.7178 |
| 250.00 | 26.311 | 26.354 | 0.162 | 15.9971 | 15.9861 | -0.069 | 1.5211 |
| 260.00 | 29.654 | 29.702 | 0.162 | 15.9676 | 15.9564 | -0.070 | 1.3671 |
| 270.00 | 32.976 | 33.026 | 0.153 | 15.9408 | 15.9301 | -0.067 | 0.0041 |
| 182.00 | 4.132 | 4.164 | 0.761 | 17.2858 | 17.2607 | -0.145 | 0.0000 |
| 186.00 | 5.695 | 5.724 | 0.505 | 17.2636 | 17.2444 | -0.111 | 0.0000 |
| 190.00 | 7.268 | 7.292 | 0.334 | 17.2416 | 17.2277 | -0.081 | 16.4604 |
| 194.00 | 8.835 | 8.863 | 0.325 | 17.2194 | 17.2048 | -0.085 | 2.8998 |
| 198.00 | 10.408 | 10.436 | 0.266 | 17.1973 | 17.1847 | -0.073 | 2.5967 |
| 202.00 | 11.977 | 12.007 | 0.245 | 17.1754 | 17.1633 | -0.071 | 2.3554 |
| 206.00 | 13.546 | 13.575 | 0.214 | 17.1539 | 17.1429 | -0.064 | 2.1583 |
| 210.00 | 15.108 | 15.141 | 0.219 | 17.1331 | 17.1215 | -0.068 | 1.9940 |
| 215.00 | 17.060 | 17.094 | 0.196 | 17.1084 | 17.0976 | -0.063 | 1.8231 |
| 220.00 | 19.003 | 19.040 | 0.192 | 17.0848 | 17.0740 | -0.063 | 1.6815 |
| 230.00 | 22.872 | 22.915 | 0.188 | 17.0424 | 17.0313 | -0.065 | 1.4589 |
| 240.00 | 26.719 | 26.766 | 0.176 | 17.0056 | 16.9948 | -0.063 | 1.2916 |
| 250.00 | 30.544 | 30.589 | 0.146 | 16.9731 | 16.9639 | -0.054 | 1.1609 |
| 260.00 | 34.336 | 34.382 | 0.136 | 16.9441 | 16.9353 | -0.052 | 1.0558 |
| 176.00 | 3.217 | 3.267 | 1.543 | 18.3840 | 18.3568 | -0.148 | 14.9925 |
| 180.00 | 5.044 | 5.087 | 0.848 | 18.3570 | 18.3368 | -0.110 | 0.0000 |
| 184.00 | 6.869 | 6.914 | 0.648 | 18.3320 | 18.3134 | -0.102 | 0.0000 |
| 188.00 | 8.691 | 8.740 | 0.572 | 18.3070 | 18.2883 | -0.102 | 10.2954 |
| 192.00 | 10.509 | 10.560 | 0.490 | 18.2810 | 18.2633 | -0.097 | 1.8752 |
| 196.00 | 12.323 | 12.377 | 0.440 | 18.2560 | 18.2389 | -0.094 | 1.7245 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 200.00 | 14.131 | 14.189 | 0.407 | 18.2320 | 18.2151 | -0.093 | 1.5985 |
| 205.00 | 16.386 | 16.444 | 0.353 | 18.2030 | 18.1874 | -0.086 | 1.4674 |
| 210.00 | 18.631 | 18.687 | 0.298 | 18.1750 | 18.1611 | -0.076 | 1.3585 |
| 215.00 | 20.869 | 20.925 | 0.270 | 18.1500 | 18.1368 | -0.073 | 1.2655 |
| 220.00 | 23.100 | 23.155 | 0.240 | 18.1270 | 18.1149 | -0.067 | 1.1854 |
| 225.00 | 25.324 | 25.379 | 0.217 | 18.1060 | 18.0947 | -0.063 | 1.1155 |
| 230.00 | 27.539 | 27.590 | 0.185 | 18.0860 | 18.0760 | -0.055 | 1.0542 |
| 235.00 | 29.748 | 29.796 | 0.163 | 18.0680 | 18.0590 | -0.050 | 0.9996 |
| 240.00 | 31.949 | 31.998 | 0.153 | 18.0520 | 18.0434 | -0.048 | 0.9506 |
| 245.00 | 34.140 | 34.184 | 0.128 | 18.0360 | 18.0286 | -0.041 | 0.9068 |
| 170.00 | 2.637 | 2.753 | 4.431 | 19.5060 | 19.4631 | -0.220 | 9.4880 |
| 174.00 | 4.774 | 4.887 | 2.363 | 19.4750 | 19.4379 | -0.190 | 8.5028 |
| 178.00 | 6.901 | 7.021 | 1.743 | 19.4460 | 19.4101 | -0.184 | 7.7238 |
| 182.00 | 9.012 | 9.146 | 1.487 | 19.4170 | 19.3802 | -0.189 | 7.0969 |
| 186.00 | 11.113 | 11.259 | 1.312 | 19.3880 | 19.3509 | -0.191 | 6.5806 |
| 190.00 | 13.206 | 13.357 | 1.144 | 19.3590 | 19.3231 | -0.186 | 6.1472 |
| 194.00 | 15.291 | 15.449 | 1.031 | 19.3320 | 19.2968 | -0.182 | 1.1547 |
| 198.00 | 17.367 | 17.534 | 0.963 | 19.3070 | 19.2717 | -0.183 | 1.0894 |
| 202.00 | 19.435 | 19.608 | 0.891 | 19.2830 | 19.2484 | -0.180 | 1.0320 |
| 205.00 | 20.984 | 21.158 | 0.831 | 19.2660 | 19.2324 | -0.174 | 0.9932 |
| 210.00 | 23.558 | 23.734 | 0.750 | 19.2400 | 19.2080 | -0.167 | 0.9351 |
| 215.00 | 26.121 | 26.297 | 0.677 | 19.2160 | 19.1857 | -0.158 | 0.8841 |
| 220.00 | 28.676 | 28.855 | 0.624 | 19.1950 | 19.1658 | -0.152 | 0.8385 |
| 225.00 | 31.221 | 31.397 | 0.562 | 19.1750 | 19.1478 | -0.142 | 0.7979 |
| 230.00 | 33.754 | 33.930 | 0.521 | 19.1570 | 19.1309 | -0.136 | 0.7612 |
| 164.00 | 2.029 | 2.115 | 4.230 | 20.4250 | 20.4016 | -0.115 | 6.7743 |
| 168.00 | 4.469 | 4.532 | 1.405 | 20.3890 | 20.3734 | -0.077 | 6.2045 |
| 172.00 | 6.882 | 6.949 | 0.975 | 20.3570 | 20.3416 | -0.076 | 5.7318 |
| 176.00 | 9.270 | 9.345 | 0.807 | 20.3240 | 20.3080 | -0.079 | 5.3435 |
| 180.00 | 11.639 | 11.724 | 0.733 | 20.2920 | 20.2748 | -0.085 | 5.0142 |
| 184.00 | 13.997 | 14.082 | 0.608 | 20.2600 | 20.2438 | -0.080 | 4.7326 |
| 188.00 | 16.342 | 16.432 | 0.553 | 20.2310 | 20.2147 | -0.080 | 4.4836 |
| 192.00 | 18.678 | 18.783 | 0.566 | 20.2060 | 20.1879 | -0.090 | 0.8519 |
| 196.00 | 21.008 | 21.095 | 0.411 | 20.1780 | 20.1639 | -0.070 | 0.8132 |
| 200.00 | 23.332 | 23.415 | 0.354 | 20.1550 | 20.1421 | -0.064 | 0.7773 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 204.00 | 25.649 | 25.727 | 0.303 | 20.1340 | 20.1224 | -0.058 | 0.7448 |
| 208.00 | 27.960 | 28.033 | 0.262 | 20.1150 | 20.1045 | -0.052 | 0.7149 |
| 212.00 | 30.263 | 30.327 | 0.212 | 20.0970 | 20.0881 | -0.044 | 0.6876 |
| 216.00 | 32.557 | 32.610 | 0.163 | 20.0800 | 20.0729 | -0.035 | 0.6626 |
| 220.00 | 34.843 | 34.890 | 0.135 | 20.0650 | 20.0589 | -0.030 | 0.6392 |
| 158.00 | 1.984 | 2.061 | 3.912 | 21.3710 | 21.3554 | -0.073 | 4.7922 |
| 162.00 | 4.754 | 4.809 | 1.155 | 21.3320 | 21.3217 | -0.048 | 4.4733 |
| 166.00 | 7.475 | 7.533 | 0.775 | 21.2940 | 21.2838 | -0.048 | 4.2049 |
| 170.00 | 10.160 | 10.238 | 0.769 | 21.2580 | 21.2450 | -0.061 | 3.9735 |
| 174.00 | 12.829 | 12.917 | 0.691 | 21.2230 | 21.2090 | -0.066 | 3.7727 |
| 178.00 | 15.481 | 15.571 | 0.585 | 21.1890 | 21.1754 | -0.064 | 3.5961 |
| 182.00 | 18.122 | 18.214 | 0.507 | 21.1580 | 21.1448 | -0.063 | 3.4368 |
| 186.00 | 20.756 | 20.839 | 0.402 | 21.1290 | 21.1175 | -0.054 | 3.2930 |
| 190.00 | 23.382 | 23.457 | 0.321 | 21.1030 | 21.0931 | -0.047 | 3.1609 |
| 194.00 | 26.003 | 26.070 | 0.258 | 21.0800 | 21.0715 | -0.041 | 0.6078 |
| 198.00 | 28.612 | 28.672 | 0.210 | 21.0590 | 21.0516 | -0.035 | 0.5853 |
| 202.00 | 31.214 | 31.265 | 0.165 | 21.0400 | 21.0339 | -0.029 | 0.5645 |
| 206.00 | 33.804 | 33.843 | 0.116 | 21.0220 | 21.0175 | -0.021 | 0.5453 |
| 152.00 | 1.459 | 1.545 | 5.871 | 22.1250 | 22.1110 | -0.063 | 3.7607 |
| 156.00 | 4.509 | 4.560 | 1.124 | 22.0800 | 22.0722 | -0.035 | 3.5533 |
| 160.00 | 7.492 | 7.566 | 0.987 | 22.0400 | 22.0292 | -0.049 | 3.3697 |
| 164.00 | 10.440 | 10.539 | 0.949 | 22.0010 | 21.9872 | -0.063 | 3.2104 |
| 168.00 | 13.369 | 13.471 | 0.760 | 21.9620 | 21.9485 | -0.061 | 3.0715 |
| 172.00 | 16.277 | 16.407 | 0.797 | 21.9290 | 21.9125 | -0.075 | 2.9423 |
| 176.00 | 19.176 | 19.271 | 0.498 | 21.8920 | 21.8803 | -0.053 | 2.8317 |
| 180.00 | 22.065 | 22.153 | 0.400 | 21.8620 | 21.8516 | -0.048 | 2.7257 |
| 184.00 | 24.952 | 25.033 | 0.325 | 21.8360 | 21.8268 | -0.042 | 2.6265 |
| 188.00 | 27.831 | 27.897 | 0.237 | 21.8120 | 21.8048 | -0.033 | 2.5348 |
| 192.00 | 30.702 | 30.756 | 0.178 | 21.7910 | 21.7852 | -0.027 | 0.4898 |
| 196.00 | 33.558 | 33.604 | 0.139 | 21.7720 | 21.7672 | -0.022 | 0.4738 |
| 146.00 | 1.313 | 1.383 | 5.358 | 22.8730 | 22.8636 | -0.041 | 2.9682 |
| 140.00 | 1.226 | 1.278 | 4.205 | 23.5700 | 23.5643 | -0.024 | 2.4063 |
| 150.00 | 4.670 | 4.690 | 0.427 | 22.8240 | 22.8215 | -0.011 | 2.8326 |
| 154.00 | 7.946 | 8.000 | 0.674 | 22.7820 | 22.7755 | -0.028 | 2.7080 |
| 158.00 | 11.174 | 11.248 | 0.671 | 22.7390 | 22.7303 | -0.038 | 2.6005 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 162.00 | 14.381 | 14.461 | 0.559 | 22.6980 | 22.6890 | -0.040 | 2.5038 |
| 166.00 | 17.571 | 17.649 | 0.444 | 22.6600 | 22.6516 | -0.037 | 2.4150 |
| 170.00 | 20.755 | 20.825 | 0.335 | 22.6260 | 22.6188 | -0.032 | 2.3320 |
| 174.00 | 23.933 | 23.993 | 0.250 | 22.5960 | 22.5900 | -0.027 | 2.2539 |
| 178.00 | 27.111 | 27.157 | 0.170 | 22.5700 | 22.5655 | -0.020 | 2.1800 |
| 182.00 | 30.277 | 30.302 | 0.082 | 22.5460 | 22.5436 | -0.010 | 2.1112 |
| 186.00 | 33.428 | 33.440 | 0.035 | 22.5250 | 22.5239 | -0.005 | 2.0461 |
| 144.00 | 4.891 | 4.882 | -0.181 | 23.5180 | 23.5189 | 0.004 | 2.3137 |
| 148.00 | 8.450 | 8.476 | 0.311 | 23.4720 | 23.4693 | -0.011 | 2.2280 |
| 152.00 | 11.953 | 12.005 | 0.438 | 23.4260 | 23.4208 | -0.022 | 2.1526 |
| 156.00 | 15.435 | 15.499 | 0.414 | 23.3830 | 23.3769 | -0.026 | 2.0832 |
| 160.00 | 18.907 | 18.962 | 0.291 | 23.3430 | 23.3379 | -0.022 | 2.0189 |
| 164.00 | 22.376 | 22.419 | 0.192 | 23.3080 | 23.3041 | -0.017 | 1.9573 |
| 168.00 | 25.844 | 25.877 | 0.128 | 23.2780 | 23.2751 | -0.012 | 1.8981 |
| 172.00 | 29.304 | 29.330 | 0.090 | 23.2520 | 23.2498 | -0.010 | 1.8416 |
| 176.00 | 32.758 | 32.760 | 0.005 | 23.2280 | 23.2279 | -0.001 | 1.7886 |
| 134.00 | 0.686 | 0.773 | 12.615 | 24.1830 | 24.1747 | -0.034 | 27.0410 |
| 138.00 | 4.638 | 4.625 | -0.286 | 24.1250 | 24.1262 | 0.005 | 1.9628 |
| 142.00 | 8.463 | 8.494 | 0.370 | 24.0760 | 24.0732 | -0.012 | 1.8992 |
| 146.00 | 12.224 | 12.286 | 0.505 | 24.0270 | 24.0216 | -0.022 | 1.8431 |
| 150.00 | 15.966 | 16.035 | 0.434 | 23.9810 | 23.9751 | -0.024 | 1.7911 |
| 154.00 | 19.704 | 19.770 | 0.335 | 23.9400 | 23.9346 | -0.023 | 1.7413 |
| 134.00 | 0.584 | 0.679 | 16.256 | 24.1740 | 24.1648 | -0.038 | 27.1442 |
| 136.00 | 2.577 | 2.572 | -0.207 | 24.1410 | 24.1415 | 0.002 | 2.0050 |
| 138.00 | 4.526 | 4.517 | -0.185 | 24.1150 | 24.1158 | 0.003 | 1.9707 |
| 140.00 | 6.451 | 6.454 | 0.049 | 24.0900 | 24.0897 | -0.001 | 1.9380 |
| 142.00 | 8.335 | 8.383 | 0.578 | 24.0660 | 24.0617 | -0.018 | 1.9066 |
| 144.00 | 10.213 | 10.292 | 0.773 | 24.0420 | 24.0350 | -0.029 | 1.8771 |
| 146.00 | 12.094 | 12.171 | 0.632 | 24.0170 | 24.0103 | -0.028 | 1.8501 |
| 148.00 | 13.970 | 14.053 | 0.594 | 23.9940 | 23.9869 | -0.030 | 1.8232 |
| 150.00 | 15.837 | 15.917 | 0.500 | 23.9710 | 23.9643 | -0.028 | 1.7977 |
| 152.00 | 17.705 | 17.785 | 0.451 | 23.9500 | 23.9433 | -0.028 | 1.7722 |
| 154.00 | 19.575 | 19.660 | 0.437 | 23.9310 | 23.9240 | -0.029 | 1.7468 |
| 156.00 | 21.442 | 21.518 | 0.357 | 23.9120 | 23.9058 | -0.026 | 1.7226 |
| 158.00 | 23.289 | 23.359 | 0.303 | 23.8930 | 23.8874 | -0.024 | 1.6996 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 160.00 | 25.164 | 25.222 | 0.231 | 23.8770 | 23.8724 | -0.019 | 1.6758 |
| 162.00 | 27.032 | 27.081 | 0.184 | 23.8620 | 23.8581 | -0.016 | 1.6525 |
| 164.00 | 28.896 | 28.952 | 0.194 | 23.8490 | 23.8447 | -0.018 | 1.6292 |
| 166.00 | 30.769 | 30.809 | 0.129 | 23.8360 | 23.8330 | -0.013 | 1.6068 |
| 168.00 | 32.639 | 32.665 | 0.080 | 23.8240 | 23.8220 | -0.008 | 1.5848 |
| 170.00 | 34.499 | 34.508 | 0.028 | 23.8120 | 23.8113 | -0.003 | 1.5636 |
| 130.00 | 0.729 | 0.760 | 4.250 | 24.6050 | 24.6023 | -0.011 | 1.8011 |
| 132.00 | 2.823 | 2.760 | -2.227 | 24.5720 | 24.5774 | 0.022 | 1.7764 |
| 134.00 | 4.878 | 4.820 | -1.195 | 24.5460 | 24.5509 | 0.020 | 1.7485 |
| 136.00 | 6.889 | 6.846 | -0.635 | 24.5190 | 24.5226 | 0.015 | 1.7232 |
| 138.00 | 8.864 | 8.874 | 0.111 | 24.4940 | 24.4932 | -0.003 | 1.6982 |
| 140.00 | 10.843 | 10.880 | 0.348 | 24.4690 | 24.4660 | -0.012 | 1.6746 |
| 142.00 | 12.818 | 12.852 | 0.272 | 24.4430 | 24.4402 | -0.011 | 1.6530 |
| 144.00 | 14.786 | 14.829 | 0.290 | 24.4190 | 24.4156 | -0.014 | 1.6314 |
| 146.00 | 16.752 | 16.796 | 0.267 | 24.3960 | 24.3925 | -0.014 | 1.6103 |
| 148.00 | 18.722 | 18.757 | 0.185 | 24.3740 | 24.3714 | -0.011 | 1.5898 |
| 150.00 | 20.692 | 20.724 | 0.153 | 24.3540 | 24.3516 | -0.010 | 1.5691 |
| 152.00 | 22.664 | 22.685 | 0.091 | 24.3350 | 24.3335 | -0.006 | 1.5489 |
| 154.00 | 24.612 | 24.641 | 0.120 | 24.3170 | 24.3148 | -0.009 | 1.5291 |
| 156.00 | 26.591 | 26.608 | 0.064 | 24.3010 | 24.2998 | -0.005 | 1.5091 |
| 158.00 | 28.567 | 28.570 | 0.012 | 24.2860 | 24.2858 | -0.001 | 1.4894 |
| 160.00 | 30.546 | 30.545 | -0.002 | 24.2730 | 24.2730 | 0.000 | 1.4697 |
| 162.00 | 32.515 | 32.505 | -0.033 | 24.2600 | 24.2607 | 0.003 | 1.4507 |
| 164.00 | 34.492 | 34.464 | -0.083 | 24.2480 | 24.2500 | 0.008 | 1.4319 |
| 126.00 | 0.479 | 0.549 | 14.402 | 24.9960 | 24.9905 | -0.022 | 21.6203 |
| 128.00 | 2.674 | 2.617 | -2.151 | 24.9600 | 24.9645 | 0.018 | 1.6028 |
| 130.00 | 4.828 | 4.774 | -1.109 | 24.9330 | 24.9371 | 0.017 | 1.5799 |
| 132.00 | 6.944 | 6.894 | -0.719 | 24.9050 | 24.9088 | 0.015 | 1.5591 |
| 134.00 | 9.021 | 9.017 | -0.044 | 24.8790 | 24.8793 | 0.001 | 1.5384 |
| 136.00 | 11.090 | 11.102 | 0.105 | 24.8520 | 24.8511 | -0.003 | 1.5196 |
| 138.00 | 13.149 | 13.176 | 0.209 | 24.8260 | 24.8240 | -0.008 | 1.5012 |
| 140.00 | 15.205 | 15.241 | 0.239 | 24.8010 | 24.7984 | -0.011 | 1.4834 |
| 142.00 | 17.262 | 17.296 | 0.200 | 24.7770 | 24.7745 | -0.010 | 1.4659 |
| 144.00 | 19.322 | 19.343 | 0.109 | 24.7540 | 24.7525 | -0.006 | 1.4488 |
| 146.00 | 21.386 | 21.411 | 0.119 | 24.7340 | 24.7322 | -0.007 | 1.4311 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 148.00 | 23.459 | 23.473 | 0.058 | 24.7150 | 24.7141 | -0.004 | 1.4137 |
| 148.00 | 23.456 | 23.458 | 0.008 | 24.7140 | 24.7139 | -0.001 | 1.4142 |
| 150.00 | 25.529 | 25.529 | -0.002 | 24.6970 | 24.6970 | 0.000 | 1.3966 |
| 152.00 | 27.602 | 27.595 | -0.026 | 24.6810 | 24.6815 | 0.002 | 1.3793 |
| 154.00 | 29.668 | 29.658 | -0.035 | 24.6660 | 24.6667 | 0.003 | 1.3623 |
| 156.00 | 31.735 | 31.718 | -0.052 | 24.6520 | 24.6531 | 0.004 | 1.3455 |
| 158.00 | 33.803 | 33.776 | -0.080 | 24.6390 | 24.6407 | 0.007 | 1.3290 |
| 122.00 | 0.348 | 0.471 | 35.275 | 25.3860 | 25.3771 | -0.035 | 19.4872 |
| 124.00 | 2.617 | 2.618 | 0.034 | 25.3480 | 25.3479 | 0.000 | 1.4471 |
| 126.00 | 4.881 | 4.876 | -0.116 | 25.3200 | 25.3204 | 0.002 | 1.4283 |
| 128.00 | 7.036 | 7.122 | 1.213 | 25.2930 | 25.2870 | -0.024 | 1.4102 |
| 130.00 | 9.222 | 9.341 | 1.297 | 25.2660 | 25.2577 | -0.033 | 1.3933 |
| 132.00 | 11.404 | 11.535 | 1.148 | 25.2390 | 25.2301 | -0.035 | 1.3774 |
| 134.00 | 13.579 | 13.702 | 0.910 | 25.2120 | 25.2037 | -0.033 | 1.3624 |
| 134.00 | 13.581 | 13.687 | 0.780 | 25.2110 | 25.2038 | -0.028 | 1.3629 |
| 136.00 | 15.717 | 15.828 | 0.707 | 25.1840 | 25.1766 | -0.029 | 1.3487 |
| 138.00 | 17.880 | 17.989 | 0.610 | 25.1600 | 25.1528 | -0.029 | 1.3339 |
| 140.00 | 20.043 | 20.141 | 0.487 | 25.1370 | 25.1306 | -0.025 | 1.3193 |
| 142.00 | 22.214 | 22.299 | 0.381 | 25.1160 | 25.1105 | -0.022 | 1.3046 |
| 144.00 | 24.387 | 24.466 | 0.326 | 25.0970 | 25.0919 | -0.020 | 1.2897 |
| 146.00 | 26.564 | 26.642 | 0.294 | 25.0800 | 25.0751 | -0.020 | 1.2745 |
| 148.00 | 28.746 | 28.814 | 0.236 | 25.0640 | 25.0598 | -0.017 | 1.2596 |
| 150.00 | 30.928 | 30.982 | 0.173 | 25.0490 | 25.0457 | -0.013 | 1.2449 |
| 152.00 | 33.099 | 33.146 | 0.143 | 25.0350 | 25.0321 | -0.012 | 1.2304 |
| 154.00 | 35.273 | 35.308 | 0.101 | 25.0220 | 25.0199 | -0.009 | 0.0081 |
| 118.00 | 0.474 | 0.575 | 21.302 | 25.7770 | 25.7703 | -0.026 | 17.5736 |
| 120.00 | 2.849 | 2.830 | -0.649 | 25.7390 | 25.7402 | 0.005 | 1.3061 |
| 122.00 | 5.181 | 5.192 | 0.204 | 25.7100 | 25.7093 | -0.003 | 1.2907 |
| 124.00 | 7.430 | 7.540 | 1.482 | 25.6820 | 25.6749 | -0.028 | 1.2760 |
| 126.00 | 9.720 | 9.860 | 1.446 | 25.6540 | 25.6451 | -0.035 | 1.2622 |
| 128.00 | 12.001 | 12.135 | 1.118 | 25.6250 | 25.6166 | -0.033 | 1.2497 |
| 130.00 | 14.285 | 14.413 | 0.902 | 25.5980 | 25.5900 | -0.031 | 1.2371 |
| 132.00 | 16.555 | 16.712 | 0.948 | 25.5740 | 25.5643 | -0.038 | 1.2239 |
| 134.00 | 18.832 | 18.984 | 0.808 | 25.5500 | 25.5407 | -0.036 | 1.2113 |
| 136.00 | 21.106 | 21.196 | 0.426 | 25.5240 | 25.5186 | -0.021 | 1.2002 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | mol·dm$^{-3}$ | mol·dm$^{-3}$ | % | |
| 138.00 | 23.385 | 23.465 | 0.340 | 25.5030 | 25.4983 | -0.019 | 1.1877 |
| 138.00 | 23.345 | 23.465 | 0.516 | 25.5030 | 25.4958 | -0.028 | 1.1877 |
| 140.00 | 25.633 | 25.743 | 0.427 | 25.4840 | 25.4775 | -0.025 | 1.1749 |
| 142.00 | 27.933 | 28.014 | 0.288 | 25.4660 | 25.4613 | -0.018 | 1.1623 |
| 144.00 | 30.221 | 30.296 | 0.248 | 25.4500 | 25.4457 | -0.017 | 1.1495 |
| 146.00 | 32.523 | 32.574 | 0.157 | 25.4350 | 25.4321 | -0.011 | 1.1369 |
| 148.00 | 34.815 | 34.866 | 0.146 | 25.4220 | 25.4191 | -0.011 | 1.1240 |
| 114.00 | 0.411 | 0.446 | 8.623 | 26.1420 | 26.1398 | -0.008 | 16.0215 |
| 116.00 | 2.890 | 2.794 | -3.317 | 26.1030 | 26.1088 | 0.022 | 1.1919 |
| 118.00 | 5.297 | 5.240 | -1.070 | 26.0720 | 26.0754 | 0.013 | 1.1795 |
| 120.00 | 7.636 | 7.705 | 0.908 | 26.0440 | 26.0399 | -0.016 | 1.1668 |
| 122.00 | 10.016 | 10.106 | 0.892 | 26.0140 | 26.0087 | -0.020 | 1.1557 |
| 124.00 | 12.393 | 12.491 | 0.795 | 25.9850 | 25.9792 | -0.022 | 1.1449 |
| 126.00 | 14.766 | 14.846 | 0.547 | 25.9560 | 25.9513 | -0.018 | 1.1348 |
| 128.00 | 17.134 | 17.205 | 0.417 | 25.9290 | 25.9249 | -0.016 | 1.1245 |
| 130.00 | 19.512 | 19.569 | 0.292 | 25.9040 | 25.9008 | -0.012 | 1.1140 |
| 132.00 | 21.896 | 21.940 | 0.203 | 25.8810 | 25.8785 | -0.010 | 1.1033 |
| 132.00 | 21.853 | 21.922 | 0.314 | 25.8800 | 25.8761 | -0.015 | 1.1037 |
| 134.00 | 24.244 | 24.300 | 0.232 | 25.8590 | 25.8559 | -0.012 | 1.0928 |
| 136.00 | 26.644 | 26.688 | 0.165 | 25.8400 | 25.8376 | -0.009 | 1.0816 |
| 138.00 | 29.047 | 29.068 | 0.071 | 25.8220 | 25.8209 | -0.004 | 1.0706 |
| 140.00 | 31.458 | 31.479 | 0.067 | 25.8070 | 25.8059 | -0.004 | 1.0591 |
| 142.00 | 33.859 | 33.866 | 0.020 | 25.7920 | 25.7916 | -0.001 | 1.0480 |
| 110.00 | 0.594 | 0.672 | 13.244 | 26.5190 | 26.5145 | -0.017 | 14.5524 |
| 112.00 | 3.184 | 3.134 | -1.578 | 26.4800 | 26.4828 | 0.011 | 1.0832 |
| 114.00 | 5.644 | 5.703 | 1.033 | 26.4490 | 26.4458 | -0.012 | 1.0727 |
| 116.00 | 8.105 | 8.256 | 1.857 | 26.4190 | 26.4107 | -0.031 | 1.0626 |
| 118.00 | 10.587 | 10.757 | 1.607 | 26.3880 | 26.3787 | -0.035 | 1.0536 |
| 120.00 | 13.066 | 13.224 | 1.211 | 26.3570 | 26.3484 | -0.033 | 1.0451 |
| 122.00 | 15.540 | 15.676 | 0.874 | 26.3270 | 26.3197 | -0.028 | 1.0369 |
| 124.00 | 18.015 | 18.132 | 0.645 | 26.2990 | 26.2928 | -0.023 | 1.0284 |
| 126.00 | 20.498 | 20.612 | 0.557 | 26.2740 | 26.2680 | -0.023 | 1.0194 |
| 128.00 | 22.989 | 23.099 | 0.476 | 26.2510 | 26.2453 | -0.022 | 1.0103 |
| 130.00 | 25.491 | 25.594 | 0.406 | 26.2300 | 26.2246 | -0.020 | 1.0009 |
| 132.00 | 28.002 | 28.100 | 0.347 | 26.2110 | 26.2060 | -0.019 | 0.9913 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 134.00 | 30.521 | 30.597 | 0.247 | 26.1930 | 26.1892 | -0.015 | 0.9818 |
| 134.00 | 30.497 | 30.577 | 0.263 | 26.1920 | 26.1879 | -0.016 | 0.9821 |
| 136.00 | 33.019 | 33.086 | 0.206 | 26.1760 | 26.1726 | -0.013 | 0.9724 |
| 106.00 | 1.202 | 1.190 | -1.023 | 26.9010 | 26.9016 | 0.002 | 0.9905 |
| 108.00 | 3.899 | 3.809 | -2.291 | 26.8640 | 26.8686 | 0.017 | 0.9830 |
| 110.00 | 6.459 | 6.507 | 0.749 | 26.8330 | 26.8305 | -0.009 | 0.9741 |
| 112.00 | 9.030 | 9.150 | 1.324 | 26.8010 | 26.7949 | -0.023 | 0.9662 |
| 114.00 | 11.612 | 11.735 | 1.056 | 26.7680 | 26.7618 | -0.023 | 0.9592 |
| 116.00 | 14.187 | 14.303 | 0.817 | 26.7360 | 26.7302 | -0.022 | 0.9524 |
| 118.00 | 16.765 | 16.875 | 0.652 | 26.7060 | 26.7006 | -0.020 | 0.9455 |
| 120.00 | 19.354 | 19.471 | 0.606 | 26.6790 | 26.6732 | -0.022 | 0.9380 |
| 122.00 | 21.954 | 22.054 | 0.452 | 26.6530 | 26.6482 | -0.018 | 0.9307 |
| 124.00 | 24.582 | 24.664 | 0.333 | 26.6300 | 26.6260 | -0.015 | 0.9229 |
| 124.00 | 24.568 | 24.684 | 0.475 | 26.6310 | 26.6254 | -0.021 | 0.9226 |
| 126.00 | 27.205 | 27.304 | 0.364 | 26.6100 | 26.6053 | -0.018 | 0.9146 |
| 128.00 | 29.851 | 29.955 | 0.349 | 26.5920 | 26.5871 | -0.019 | 0.9060 |
| 130.00 | 32.502 | 32.576 | 0.228 | 26.5740 | 26.5705 | -0.013 | 0.8979 |
| 132.00 | 35.142 | 35.232 | 0.256 | 26.5590 | 26.5548 | -0.016 | 0.0059 |
| 102.00 | 0.847 | 0.888 | 4.818 | 27.2320 | 27.2300 | -0.007 | 0.9166 |
| 104.00 | 3.649 | 3.565 | -2.295 | 27.1920 | 27.1961 | 0.015 | 0.9108 |
| 106.00 | 6.303 | 6.367 | 1.008 | 27.1600 | 27.1569 | -0.011 | 0.9031 |
| 108.00 | 8.951 | 9.109 | 1.756 | 27.1270 | 27.1195 | -0.028 | 0.8963 |
| 110.00 | 11.622 | 11.790 | 1.447 | 27.0930 | 27.0850 | -0.029 | 0.8904 |
| 112.00 | 14.294 | 14.453 | 1.113 | 27.0600 | 27.0525 | -0.028 | 0.8847 |
| 114.00 | 16.961 | 17.119 | 0.931 | 27.0290 | 27.0216 | -0.027 | 0.8788 |
| 116.00 | 19.648 | 19.812 | 0.833 | 27.0010 | 26.9934 | -0.028 | 0.8724 |
| 116.00 | 19.647 | 19.812 | 0.838 | 27.0010 | 26.9934 | -0.028 | 0.8724 |
| 118.00 | 22.357 | 22.532 | 0.785 | 26.9760 | 26.9679 | -0.030 | 0.8656 |
| 120.00 | 25.086 | 25.239 | 0.608 | 26.9520 | 26.9450 | -0.026 | 0.8589 |
| 122.00 | 27.828 | 27.977 | 0.535 | 26.9310 | 26.9243 | -0.025 | 0.8518 |
| 124.00 | 30.590 | 30.725 | 0.442 | 26.9120 | 26.9059 | -0.023 | 0.8444 |
| 126.00 | 33.342 | 33.486 | 0.432 | 26.8950 | 26.8886 | -0.024 | 0.8369 |
| 98.00 | 1.244 | 1.232 | -0.913 | 27.5880 | 27.5885 | 0.002 | 0.8411 |
| 100.00 | 4.141 | 4.034 | -2.568 | 27.5480 | 27.5528 | 0.017 | 0.8361 |
| 102.00 | 6.870 | 6.970 | 1.467 | 27.5160 | 27.5115 | -0.016 | 0.8294 |
| 104.00 | 9.627 | 9.797 | 1.765 | 27.4810 | 27.4734 | -0.027 | 0.8241 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 106.00 | 12.400 | 12.603 | 1.638 | 27.4470 | 27.4380 | -0.033 | 0.8190 |
| 108.00 | 15.176 | 15.367 | 1.264 | 27.4130 | 27.4046 | -0.031 | 0.8143 |
| 110.00 | 17.965 | 18.158 | 1.075 | 27.3820 | 27.3736 | -0.031 | 0.8092 |
| 112.00 | 20.779 | 20.954 | 0.839 | 27.3530 | 27.3454 | -0.028 | 0.8039 |
| 114.00 | 23.615 | 23.803 | 0.796 | 27.3280 | 27.3199 | -0.030 | 0.7980 |
| 116.00 | 26.475 | 26.660 | 0.698 | 27.3050 | 27.2971 | -0.029 | 0.7919 |
| 116.00 | 26.489 | 26.660 | 0.644 | 27.3050 | 27.2977 | -0.027 | 0.7919 |
| 118.00 | 29.361 | 29.551 | 0.647 | 27.2850 | 27.2770 | -0.029 | 0.7854 |
| 120.00 | 32.245 | 32.430 | 0.576 | 27.2660 | 27.2582 | -0.029 | 0.7790 |
| 94.00 | 0.751 | 0.722 | -3.843 | 27.9000 | 27.9012 | 0.004 | 0.7844 |
| 96.00 | 3.752 | 3.604 | -3.930 | 27.8580 | 27.8643 | 0.022 | 0.7804 |
| 98.00 | 6.552 | 6.650 | 1.496 | 27.8250 | 27.8209 | -0.015 | 0.7745 |
| 100.00 | 9.406 | 9.578 | 1.828 | 27.7890 | 27.7818 | -0.026 | 0.7699 |
| 102.00 | 12.273 | 12.460 | 1.531 | 27.7530 | 27.7452 | -0.028 | 0.7658 |
| 104.00 | 15.138 | 15.345 | 1.368 | 27.7190 | 27.7104 | -0.031 | 0.7615 |
| 106.00 | 18.022 | 18.210 | 1.042 | 27.6860 | 27.6783 | -0.028 | 0.7574 |
| 108.00 | 20.935 | 21.128 | 0.922 | 27.6570 | 27.6491 | -0.029 | 0.7526 |
| 110.00 | 23.873 | 24.053 | 0.755 | 27.6300 | 27.6227 | -0.027 | 0.7477 |
| 112.00 | 26.839 | 27.036 | 0.731 | 27.6070 | 27.5991 | -0.029 | 0.7421 |
| 114.00 | 29.826 | 30.028 | 0.678 | 27.5860 | 27.5779 | -0.029 | 0.7365 |
| 116.00 | 32.835 | 33.033 | 0.603 | 27.5670 | 27.5591 | -0.029 | 0.7306 |
| 92.00 | 4.412 | 4.258 | -3.488 | 28.2090 | 28.2151 | 0.022 | 0.7184 |
| 94.00 | 7.285 | 7.428 | 1.954 | 28.1750 | 28.1694 | -0.020 | 0.7135 |
| 96.00 | 10.254 | 10.443 | 1.840 | 28.1370 | 28.1296 | -0.026 | 0.7101 |
| 98.00 | 13.235 | 13.459 | 1.689 | 28.1010 | 28.0923 | -0.031 | 0.7065 |
| 100.00 | 16.218 | 16.451 | 1.437 | 28.0660 | 28.0570 | -0.032 | 0.7030 |
| 100.00 | 16.219 | 16.451 | 1.431 | 28.0660 | 28.0570 | -0.032 | 0.7030 |
| 102.00 | 19.224 | 19.473 | 1.293 | 28.0340 | 28.0244 | -0.034 | 0.6992 |
| 104.00 | 22.269 | 22.500 | 1.039 | 28.0040 | 27.9951 | -0.032 | 0.6953 |
| 106.00 | 25.355 | 25.587 | 0.913 | 27.9780 | 27.9692 | -0.032 | 0.6908 |
| 108.00 | 28.464 | 28.708 | 0.859 | 27.9550 | 27.9458 | -0.033 | 0.6859 |
| 110.00 | 31.602 | 31.868 | 0.842 | 27.9350 | 27.9250 | -0.036 | 0.6807 |
| 112.00 | 34.753 | 35.013 | 0.750 | 27.9160 | 27.9063 | -0.035 | 0.6756 |
| 94.00 | 12.813 | 13.088 | 2.141 | 28.3910 | 28.3808 | -0.036 | 0.6644 |
| 96.00 | 15.889 | 16.157 | 1.682 | 28.3540 | 28.3441 | -0.035 | 0.6617 |

Data from Goodwin [38] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 98.00 | 18.989 | 19.282 | 1.545 | 28.3210 | 28.3102 | -0.038 | 0.6584 |
| 100.00 | 22.134 | 22.412 | 1.256 | 28.2900 | 28.2798 | -0.036 | 0.6550 |
| 102.00 | 25.322 | 25.631 | 1.219 | 28.2640 | 28.2528 | -0.040 | 0.6508 |
| 104.00 | 28.544 | 28.859 | 1.102 | 28.2400 | 28.2287 | -0.040 | 0.6465 |
| 106.00 | 31.805 | 32.125 | 1.006 | 28.2190 | 28.2075 | -0.041 | 0.6419 |
| 108.00 | 35.057 | 35.404 | 0.991 | 28.2000 | 28.1877 | -0.044 | 0.0042 |
| 96.50 | 22.494 | 22.708 | 0.954 | 28.5520 | 28.5445 | -0.026 | 0.6194 |
| 97.00 | 23.313 | 23.534 | 0.950 | 28.5450 | 28.5373 | -0.027 | 0.6185 |
| 98.00 | 24.964 | 25.177 | 0.850 | 28.5310 | 28.5236 | -0.026 | 0.6168 |
| 100.00 | 28.284 | 28.539 | 0.902 | 28.5070 | 28.4982 | -0.031 | 0.6128 |
| 100.00 | 28.293 | 28.539 | 0.869 | 28.5070 | 28.4985 | -0.030 | 0.6128 |
| 102.00 | 31.643 | 31.942 | 0.943 | 28.4860 | 28.4758 | -0.036 | 0.6085 |
| 104.00 | 35.009 | 35.327 | 0.908 | 28.4660 | 28.4552 | -0.038 | 0.0040 |

Number of Points (Ref. 38) 554

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.717 | BIAS-% | 0.585 | RMS-% | 2.258 | |
| | AAD | 0.060 | BIAS | 0.055 | RMS | 0.071 | MPa |
| DENSITY : | AAD-% | 0.117 | BIAS-% | -0.112 | RMS-% | 0.170 | |
| | AAD | 0.012 | BIAS | -0.012 | RMS | 0.012 | $mol \cdot dm^{-3}$ |

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Data from Goodwin [39]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 150.00 | 1.026 | 1.025 | -0.054 | 1.0000 | 1.0007 | 0.069 | 52.0934 |
| 155.00 | 1.074 | 1.074 | -0.029 | 1.0000 | 1.0004 | 0.036 | 49.2938 |
| 160.00 | 1.122 | 1.122 | -0.014 | 1.0000 | 1.0002 | 0.017 | 46.8494 |
| 165.00 | 1.170 | 1.170 | -0.004 | 1.0000 | 1.0000 | 0.004 | 44.6701 |
| 170.00 | 1.217 | 1.217 | 0.019 | 1.0000 | 0.9998 | -0.022 | 42.7086 |
| 175.00 | 1.263 | 1.264 | 0.032 | 1.0000 | 0.9996 | -0.038 | 40.9250 |
| 180.00 | 1.310 | 1.310 | 0.049 | 1.0000 | 0.9994 | -0.056 | 39.2963 |
| 185.00 | 1.356 | 1.357 | 0.055 | 1.0000 | 0.9994 | -0.063 | 37.7994 |
| 190.00 | 1.402 | 1.403 | 0.061 | 1.0000 | 0.9993 | -0.069 | 36.4197 |
| 195.00 | 1.448 | 1.449 | 0.068 | 1.0000 | 0.9992 | -0.077 | 35.1437 |

Data from Goodwin [39] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 200.00 | 1.494 | 1.495 | 0.071 | 1.0000 | 0.9992 | -0.079 | 33.9585 |
| 205.00 | 1.539 | 1.540 | 0.071 | 1.0000 | 0.9992 | -0.079 | 32.8545 |
| 210.00 | 1.585 | 1.586 | 0.063 | 1.0000 | 0.9993 | -0.069 | 31.8223 |
| 215.00 | 1.631 | 1.632 | 0.060 | 1.0000 | 0.9993 | -0.066 | 30.8569 |
| 220.00 | 1.676 | 1.677 | 0.052 | 1.0000 | 0.9994 | -0.057 | 29.9501 |
| 225.00 | 1.722 | 1.722 | 0.044 | 1.0000 | 0.9995 | -0.048 | 29.0973 |
| 230.00 | 1.767 | 1.767 | 0.038 | 1.0000 | 0.9996 | -0.041 | 28.2939 |
| 235.00 | 1.812 | 1.813 | 0.033 | 1.0000 | 0.9996 | -0.036 | 27.5355 |
| 240.00 | 1.857 | 1.858 | 0.024 | 1.0000 | 0.9997 | -0.026 | 26.8176 |
| 245.00 | 1.902 | 1.903 | 0.018 | 1.0000 | 0.9998 | -0.020 | 26.1377 |
| 250.00 | 1.947 | 1.948 | 0.009 | 1.0000 | 0.9999 | -0.010 | 25.4921 |
| 255.00 | 1.992 | 1.992 | 0.003 | 1.0000 | 1.0000 | -0.003 | 24.8789 |
| 260.00 | 2.037 | 2.037 | -0.001 | 1.0000 | 1.0000 | 0.001 | 24.2957 |
| 265.00 | 2.082 | 2.082 | -0.007 | 1.0000 | 1.0001 | 0.007 | 23.7397 |
| 270.00 | 2.127 | 2.127 | -0.015 | 1.0000 | 1.0002 | 0.016 | 0.1160 |
| 170.00 | 2.062 | 2.067 | 0.260 | 2.0000 | 1.9921 | -0.393 | 27.5425 |
| 175.00 | 2.166 | 2.172 | 0.276 | 2.0000 | 1.9920 | -0.400 | 25.8633 |
| 180.00 | 2.270 | 2.276 | 0.277 | 2.0000 | 1.9922 | -0.389 | 24.4071 |
| 185.00 | 2.372 | 2.378 | 0.272 | 2.0000 | 1.9926 | -0.371 | 23.1233 |
| 190.00 | 2.474 | 2.480 | 0.262 | 2.0000 | 1.9930 | -0.349 | 21.9789 |
| 195.00 | 2.575 | 2.581 | 0.254 | 2.0000 | 1.9934 | -0.330 | 20.9509 |
| 200.00 | 2.675 | 2.681 | 0.240 | 2.0000 | 1.9939 | -0.306 | 20.0206 |
| 205.00 | 2.775 | 2.781 | 0.223 | 2.0000 | 1.9944 | -0.281 | 19.1741 |
| 210.00 | 2.874 | 2.880 | 0.207 | 2.0000 | 1.9949 | -0.256 | 18.4006 |
| 215.00 | 2.973 | 2.978 | 0.187 | 2.0000 | 1.9955 | -0.227 | 17.6899 |
| 220.00 | 3.072 | 3.077 | 0.166 | 2.0000 | 1.9960 | -0.200 | 17.0351 |
| 225.00 | 3.170 | 3.174 | 0.145 | 2.0000 | 1.9965 | -0.173 | 16.4292 |
| 230.00 | 3.268 | 3.272 | 0.127 | 2.0000 | 1.9970 | -0.150 | 15.8672 |
| 235.00 | 3.365 | 3.369 | 0.107 | 2.0000 | 1.9975 | -0.124 | 15.3439 |
| 240.00 | 3.463 | 3.466 | 0.085 | 2.0000 | 1.9980 | -0.099 | 14.8554 |
| 245.00 | 3.560 | 3.563 | 0.066 | 2.0000 | 1.9985 | -0.076 | 14.3984 |
| 250.00 | 3.657 | 3.659 | 0.050 | 2.0000 | 1.9989 | -0.057 | 13.9699 |
| 255.00 | 3.754 | 3.755 | 0.034 | 2.0000 | 1.9992 | -0.039 | 13.5672 |
| 260.00 | 3.850 | 3.851 | 0.020 | 2.0000 | 1.9996 | -0.022 | 13.1879 |
| 265.00 | 3.947 | 3.947 | 0.006 | 2.0000 | 1.9999 | -0.006 | 12.8300 |
| 270.00 | 4.043 | 4.042 | -0.006 | 2.0000 | 2.0001 | 0.007 | 0.0625 |

Data from Goodwin [39] (continued)

Number of Points (Ref. 39) 46

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.091 | BIAS-% | 0.085 | RMS-% | 0.095 | |
| | AAD | 0.002 | BIAS | 0.002 | RMS | 0.002 | MPa |
| DENSITY : | AAD-% | 0.114 | BIAS-% | -0.108 | RMS-% | 0.130 | |
| | AAD | 0.002 | BIAS | -0.002 | RMS | 0.003 | $mol \cdot dm^{-3}$ |

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Data from Kleinrahm et al. [7]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 180.00 | 3.286 | 3.286 | 0.000 | 3.8273 | 3.8272 | -0.001 | 1.4536 |
| 180.00 | 3.282 | 3.282 | 0.001 | 3.8140 | 3.8139 | -0.002 | 1.4542 |
| 182.00 | 3.508 | 3.508 | 0.007 | 4.2332 | 4.2323 | -0.022 | 1.3828 |
| 184.00 | 3.741 | 3.742 | 0.016 | 4.7252 | 4.7223 | -0.060 | 1.3163 |
| 186.00 | 3.986 | 3.987 | 0.022 | 5.3386 | 5.3329 | -0.106 | 1.2529 |
| 186.00 | 3.989 | 3.981 | -0.184 | 15.2634 | 15.2826 | 0.125 | 0.7225 |
| 186.00 | 3.989 | 3.982 | -0.184 | 15.2647 | 15.2838 | 0.125 | 0.7219 |
| 187.00 | 4.114 | 4.115 | 0.022 | 5.7225 | 5.7149 | -0.133 | 1.2218 |
| 188.00 | 4.246 | 4.247 | 0.020 | 6.1997 | 6.1897 | -0.161 | 1.1906 |
| 188.00 | 4.245 | 4.246 | 0.020 | 6.1893 | 6.1796 | -0.157 | 1.1907 |
| 189.00 | 4.381 | 4.382 | 0.014 | 6.8197 | 6.8077 | -0.175 | 1.1590 |
| 189.00 | 4.381 | 4.382 | 0.014 | 6.8158 | 6.8040 | -0.172 | 1.1590 |
| 189.00 | 4.380 | 4.381 | 0.014 | 6.8030 | 6.7915 | -0.169 | 1.1591 |
| 189.00 | 4.383 | 4.377 | -0.118 | 13.5833 | 13.6338 | 0.372 | 1.1076 |
| 189.00 | 4.380 | 4.381 | 0.014 | 6.8028 | 6.7911 | -0.171 | 1.1591 |
| 189.00 | 4.383 | 4.378 | -0.119 | 13.5905 | 13.6406 | 0.368 | 1.1064 |
| 189.00 | 4.380 | 4.381 | 0.014 | 6.7987 | 6.7875 | -0.165 | 1.1591 |
| 189.00 | 4.385 | 4.379 | -0.118 | 13.6039 | 13.6526 | 0.358 | 1.1040 |
| 189.00 | 4.379 | 4.380 | 0.014 | 6.7843 | 6.7735 | -0.160 | 1.1592 |
| 189.00 | 4.386 | 4.381 | -0.116 | 13.6144 | 13.6617 | 0.348 | 1.1022 |
| 189.00 | 4.379 | 4.380 | 0.014 | 6.7838 | 6.7729 | -0.161 | 1.1592 |
| 189.00 | 4.379 | 4.380 | 0.014 | 6.7823 | 6.7715 | -0.160 | 1.1592 |
| 189.00 | 4.379 | 4.379 | 0.014 | 6.7688 | 6.7583 | -0.156 | 1.1593 |
| 189.00 | 4.378 | 4.379 | 0.014 | 6.7665 | 6.7556 | -0.160 | 1.1593 |
| 189.00 | 4.378 | 4.378 | 0.013 | 6.7543 | 6.7442 | -0.149 | 1.1593 |

Data from Kleinrahm et al. [7] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 189.00 | 4.377 | 4.378 | 0.014 | 6.7486 | 6.7384 | -0.150 | 1.1594 |
| 189.00 | 4.376 | 4.377 | 0.014 | 6.7307 | 6.7205 | -0.150 | 1.1595 |
| 189.50 | 4.450 | 4.450 | 0.009 | 7.2303 | 7.2199 | -0.145 | 1.1429 |
| 189.50 | 4.450 | 4.450 | 0.008 | 7.2124 | 7.2034 | -0.125 | 1.1429 |
| 189.50 | 4.449 | 4.449 | 0.007 | 7.1939 | 7.1860 | -0.109 | 1.1430 |
| 189.50 | 4.451 | 4.448 | -0.074 | 13.1312 | 13.1832 | 0.396 | 1.1232 |
| 189.50 | 4.452 | 4.448 | -0.075 | 13.1386 | 13.1902 | 0.393 | 1.1226 |
| 189.80 | 4.492 | 4.492 | 0.004 | 7.5430 | 7.5357 | -0.098 | 1.1330 |
| 189.80 | 4.491 | 4.491 | 0.003 | 7.5151 | 7.5095 | -0.073 | 1.1331 |
| 189.80 | 4.491 | 4.491 | 0.003 | 7.5131 | 7.5077 | -0.071 | 1.1331 |
| 189.80 | 4.493 | 4.491 | -0.046 | 12.7972 | 12.8460 | 0.382 | 1.1234 |
| 189.80 | 4.490 | 4.490 | 0.003 | 7.4848 | 7.4803 | -0.060 | 1.1332 |
| 189.80 | 4.494 | 4.491 | -0.047 | 12.8086 | 12.8566 | 0.375 | 1.1229 |
| 190.00 | 4.520 | 4.520 | 0.003 | 7.8171 | 7.8109 | -0.079 | 1.1262 |
| 190.00 | 4.520 | 4.520 | 0.002 | 7.8018 | 7.7972 | -0.058 | 1.1263 |
| 190.00 | 4.519 | 4.519 | 0.001 | 7.7588 | 7.7562 | -0.034 | 1.1264 |
| 190.00 | 4.521 | 4.520 | -0.028 | 12.5246 | 12.5673 | 0.341 | 1.1208 |
| 190.00 | 4.519 | 4.519 | 0.001 | 7.7547 | 7.7529 | -0.023 | 1.1264 |
| 190.00 | 4.522 | 4.521 | -0.028 | 12.5478 | 12.5888 | 0.326 | 1.1203 |
| 190.00 | 4.519 | 4.519 | 0.000 | 7.7206 | 7.7202 | -0.005 | 1.1265 |
| 190.00 | 4.517 | 4.517 | -0.001 | 7.6754 | 7.6765 | 0.014 | 1.1267 |
| 190.00 | 4.517 | 4.517 | -0.001 | 7.6746 | 7.6761 | 0.020 | 1.1267 |
| 190.00 | 4.517 | 4.517 | -0.001 | 7.6390 | 7.6409 | 0.025 | 1.1268 |
| 190.00 | 4.515 | 4.515 | -0.002 | 7.5902 | 7.5934 | 0.042 | 1.1270 |
| 190.10 | 4.534 | 4.534 | 0.000 | 7.9530 | 7.9516 | -0.018 | 1.1229 |
| 190.10 | 4.533 | 4.533 | -0.001 | 7.9038 | 7.9056 | 0.024 | 1.1230 |
| 190.10 | 4.533 | 4.533 | -0.002 | 7.8535 | 7.8579 | 0.057 | 1.1232 |
| 190.10 | 4.536 | 4.535 | -0.018 | 12.3832 | 12.4172 | 0.275 | 1.1185 |
| 190.10 | 4.536 | 4.535 | -0.018 | 12.4007 | 12.4339 | 0.268 | 1.1182 |
| 190.20 | 4.549 | 4.549 | -0.001 | 8.1454 | 8.1492 | 0.047 | 1.1194 |
| 190.20 | 4.548 | 4.548 | -0.003 | 8.0911 | 8.0998 | 0.107 | 1.1195 |
| 190.20 | 4.549 | 4.549 | -0.011 | 12.1679 | 12.1958 | 0.230 | 1.1166 |
| 190.20 | 4.548 | 4.547 | -0.004 | 8.0542 | 8.0661 | 0.147 | 1.1196 |
| 190.20 | 4.549 | 4.549 | -0.010 | 12.1930 | 12.2179 | 0.204 | 1.1164 |
| 190.20 | 4.550 | 4.550 | -0.009 | 12.2303 | 12.2521 | 0.178 | 1.1159 |
| 190.30 | 4.563 | 4.563 | -0.003 | 8.3497 | 8.3653 | 0.187 | 1.1160 |

Data from Kleinrahm et al. [7] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 190.30 | 4.562 | 4.562 | -0.005 | 8.2945 | 8.3159 | 0.259 | 1.1161 |
| 190.30 | 4.563 | 4.563 | -0.003 | 11.9523 | 11.9637 | 0.096 | 1.1139 |
| 190.30 | 4.562 | 4.562 | -0.005 | 8.2935 | 8.3149 | 0.258 | 1.1161 |
| 190.30 | 4.564 | 4.564 | -0.002 | 11.9815 | 11.9896 | 0.068 | 1.1137 |
| 190.30 | 4.562 | 4.562 | -0.006 | 8.2513 | 8.2751 | 0.289 | 1.1162 |
| 190.30 | 4.564 | 4.564 | -0.002 | 12.0102 | 12.0169 | 0.056 | 1.1135 |
| 190.30 | 4.561 | 4.561 | -0.007 | 8.1952 | 8.2227 | 0.337 | 1.1163 |
| 190.40 | 4.577 | 4.577 | -0.004 | 8.6113 | 8.6423 | 0.360 | 1.1125 |
| 190.40 | 4.577 | 4.577 | -0.005 | 8.5691 | 8.6054 | 0.424 | 1.1125 |
| 190.40 | 4.578 | 4.578 | 0.003 | 11.6797 | 11.6626 | -0.146 | 1.1109 |
| 190.40 | 4.577 | 4.577 | -0.005 | 8.5692 | 8.6037 | 0.403 | 1.1125 |
| 190.40 | 4.578 | 4.578 | 0.003 | 11.6847 | 11.6656 | -0.164 | 1.1109 |
| 190.40 | 4.577 | 4.576 | -0.005 | 8.5346 | 8.5700 | 0.415 | 1.1126 |
| 190.40 | 4.578 | 4.578 | 0.003 | 11.7123 | 11.6921 | -0.173 | 1.1108 |
| 190.40 | 4.576 | 4.576 | -0.007 | 8.4785 | 8.5178 | 0.464 | 1.1127 |
| 190.40 | 4.578 | 4.578 | 0.003 | 11.7585 | 11.7425 | -0.136 | 1.1106 |
| 190.45 | 4.585 | 4.584 | -0.004 | 8.8037 | 8.8536 | 0.568 | 1.1107 |
| 190.45 | 4.584 | 4.584 | -0.005 | 8.7457 | 8.8017 | 0.640 | 1.1108 |
| 190.45 | 4.585 | 4.585 | 0.005 | 11.5101 | 11.4657 | -0.386 | 1.1094 |
| 190.45 | 4.584 | 4.584 | -0.007 | 8.6968 | 8.7582 | 0.707 | 1.1108 |
| 190.45 | 4.585 | 4.585 | 0.006 | 11.5532 | 11.5069 | -0.401 | 1.1093 |
| 190.45 | 4.584 | 4.583 | -0.009 | 8.6074 | 8.6764 | 0.801 | 1.1109 |
| 190.45 | 4.585 | 4.586 | 0.007 | 11.6058 | 11.5590 | -0.403 | 1.1092 |
| 190.50 | 4.592 | 4.592 | -0.003 | 9.0651 | 9.1299 | 0.715 | 1.1089 |
| 190.50 | 4.592 | 4.592 | 0.004 | 11.2133 | 11.1347 | -0.701 | 1.1080 |
| 190.50 | 4.592 | 4.591 | -0.004 | 8.9909 | 9.0650 | 0.824 | 1.1089 |
| 190.50 | 4.592 | 4.592 | 0.006 | 11.3065 | 11.2207 | -0.759 | 1.1078 |
| 190.50 | 4.591 | 4.591 | -0.006 | 8.9139 | 9.0038 | 1.009 | 1.1090 |
| 190.50 | 4.592 | 4.593 | 0.007 | 11.3787 | 11.2962 | -0.725 | 1.1077 |
| 190.50 | 4.591 | 4.591 | -0.007 | 8.8552 | 8.9428 | 0.989 | 1.1090 |
| 190.50 | 4.592 | 4.593 | 0.008 | 11.4310 | 11.3476 | -0.729 | 1.1076 |
| 190.50 | 4.591 | 4.591 | -0.009 | 8.7960 | 8.8903 | 1.072 | 1.1091 |
| 190.53 | 4.596 | 4.596 | -0.002 | 9.2923 | 9.3855 | 1.004 | 1.1078 |
| 190.53 | 4.596 | 4.596 | 0.004 | 11.0271 | 10.9014 | -1.140 | 1.1070 |
| 190.53 | 4.596 | 4.596 | -0.004 | 9.1939 | 9.2931 | 1.079 | 1.1078 |

Data from Kleinrahm et al. [7] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 190.53 | 4.596 | 4.597 | 0.005 | 11.1245 | 10.9995 | -1.124 | 1.1069 |
| 190.53 | 4.596 | 4.596 | -0.005 | 9.1130 | 9.2232 | 1.210 | 1.1079 |
| 190.53 | 4.597 | 4.597 | 0.007 | 11.2014 | 11.0814 | -1.071 | 1.1068 |
| 190.53 | 4.596 | 4.595 | -0.006 | 9.0545 | 9.1660 | 1.231 | 1.1079 |
| 190.53 | 4.597 | 4.597 | 0.008 | 11.3041 | 11.1964 | -0.953 | 1.1067 |
| 189.00 | 3.669 | 3.670 | 0.015 | 3.7558 | 3.7547 | -0.031 | 4.1515 |
| 189.00 | 3.935 | 3.937 | 0.045 | 4.3927 | 4.3877 | -0.113 | 4.0086 |
| 189.00 | 3.935 | 3.937 | 0.044 | 4.3931 | 4.3882 | -0.111 | 4.0086 |
| 189.00 | 3.937 | 3.938 | 0.045 | 4.3966 | 4.3917 | -0.112 | 4.0080 |
| 189.00 | 4.115 | 4.117 | 0.046 | 4.9766 | 4.9693 | -0.147 | 3.9381 |
| 189.00 | 4.246 | 4.247 | 0.036 | 5.5754 | 5.5668 | -0.154 | 3.8992 |
| 189.00 | 4.332 | 4.333 | 0.019 | 6.1936 | 6.1860 | -0.123 | 3.8769 |
| 189.00 | 4.363 | 4.363 | 0.010 | 6.5300 | 6.5242 | -0.088 | 3.8686 |
| 189.00 | 4.398 | 4.393 | -0.117 | 13.7266 | 13.7680 | 0.301 | 3.5996 |
| 189.00 | 4.424 | 4.419 | -0.108 | 13.9141 | 13.9447 | 0.220 | 3.4452 |
| 189.00 | 4.460 | 4.456 | -0.094 | 14.1253 | 14.1465 | 0.150 | 3.2276 |
| 189.00 | 4.526 | 4.523 | -0.067 | 14.4189 | 14.4303 | 0.079 | 2.8674 |
| 189.00 | 4.704 | 4.704 | -0.004 | 14.9556 | 14.9561 | 0.003 | 2.1654 |
| 189.00 | 4.729 | 4.729 | 0.002 | 15.0158 | 15.0156 | -0.002 | 2.0910 |
| 189.00 | 5.006 | 5.009 | 0.053 | 15.5378 | 15.5337 | -0.027 | 1.5272 |
| 189.00 | 5.061 | 5.064 | 0.059 | 15.6221 | 15.6177 | -0.028 | 1.4506 |
| 189.00 | 5.062 | 5.065 | 0.059 | 15.6243 | 15.6199 | -0.029 | 1.4486 |
| 189.00 | 5.063 | 5.067 | 0.059 | 15.6260 | 15.6216 | -0.028 | 1.4471 |
| 189.00 | 5.505 | 5.511 | 0.094 | 16.1752 | 16.1698 | -0.034 | 1.0390 |
| 190.55 | 3.736 | 3.736 | 0.019 | 3.7521 | 3.7507 | -0.038 | 4.0531 |
| 190.55 | 4.015 | 4.017 | 0.045 | 4.3825 | 4.3778 | -0.107 | 3.9002 |
| 190.55 | 4.016 | 4.018 | 0.046 | 4.3840 | 4.3792 | -0.109 | 3.9000 |
| 190.55 | 4.017 | 4.019 | 0.043 | 4.3862 | 4.3817 | -0.101 | 3.8995 |
| 190.55 | 4.217 | 4.220 | 0.052 | 4.9880 | 4.9803 | -0.155 | 3.8172 |
| 190.55 | 4.368 | 4.370 | 0.047 | 5.6108 | 5.6006 | -0.182 | 3.7685 |
| 190.55 | 4.463 | 4.464 | 0.027 | 6.1780 | 6.1691 | -0.144 | 3.7411 |
| 190.55 | 4.535 | 4.535 | 0.005 | 6.8560 | 6.8533 | -0.039 | 3.7194 |
| 190.55 | 4.573 | 4.572 | -0.013 | 7.4905 | 7.5055 | 0.201 | 3.7052 |
| 190.55 | 4.593 | 4.592 | -0.016 | 8.2224 | 8.2710 | 0.591 | 3.6952 |
| 190.55 | 4.593 | 4.592 | -0.015 | 8.2268 | 8.2745 | 0.580 | 3.6951 |

Data from Kleinrahm et al. [7] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 190.55 | 4.594 | 4.593 | -0.016 | 8.2945 | 8.3503 | 0.673 | 3.6945 |
| 190.55 | 4.595 | 4.595 | -0.015 | 8.4257 | 8.4923 | 0.790 | 3.6934 |
| 190.55 | 4.597 | 4.596 | -0.012 | 8.5869 | 8.6570 | 0.816 | 3.6924 |
| 190.55 | 4.598 | 4.597 | -0.008 | 8.7544 | 8.8219 | 0.771 | 3.6916 |
| 190.55 | 4.599 | 4.599 | 0.000 | 9.3499 | 9.3421 | -0.084 | 3.6898 |
| 190.55 | 4.600 | 4.600 | 0.001 | 9.8684 | 9.7154 | -1.550 | 3.6889 |
| 190.55 | 4.600 | 4.600 | 0.001 | 10.4590 | 10.0083 | -4.309 | 3.6882 |
| 190.55 | 4.600 | 4.600 | 0.003 | 10.5041 | 9.7155 | -7.507 | 3.6881 |
| 190.55 | 4.600 | 4.600 | 0.003 | 10.7635 | 10.5900 | -1.612 | 3.6877 |
| 190.55 | 4.601 | 4.601 | 0.009 | 11.3080 | 11.1972 | -0.979 | 3.6857 |
| 190.55 | 4.601 | 4.601 | 0.010 | 11.3083 | 11.1972 | -0.982 | 3.6857 |
| 190.55 | 4.601 | 4.601 | 0.009 | 11.3101 | 11.2030 | -0.947 | 3.6857 |
| 190.55 | 4.606 | 4.607 | 0.016 | 11.8901 | 11.8407 | -0.415 | 3.6777 |
| 190.55 | 4.609 | 4.610 | 0.018 | 12.0818 | 12.0438 | -0.315 | 3.6714 |
| 190.55 | 4.627 | 4.628 | 0.009 | 12.5952 | 12.5864 | -0.069 | 3.6302 |
| 190.55 | 4.672 | 4.672 | -0.003 | 13.1974 | 13.1987 | 0.009 | 3.4780 |
| 190.55 | 4.764 | 4.764 | -0.002 | 13.8216 | 13.8222 | 0.004 | 3.0837 |
| 190.55 | 4.896 | 4.896 | 0.010 | 14.3460 | 14.3444 | -0.011 | 2.5578 |
| 190.55 | 4.925 | 4.926 | 0.017 | 14.4376 | 14.4351 | -0.017 | 2.4568 |
| 190.55 | 5.135 | 5.137 | 0.044 | 14.9548 | 14.9502 | -0.031 | 1.8966 |
| 190.55 | 5.441 | 5.444 | 0.066 | 15.4796 | 15.4744 | -0.034 | 1.4155 |
| 190.55 | 5.442 | 5.445 | 0.066 | 15.4813 | 15.4761 | -0.034 | 1.4141 |
| 190.55 | 5.442 | 5.446 | 0.067 | 15.4818 | 15.4766 | -0.034 | 1.4137 |
| 190.55 | 5.977 | 5.981 | 0.073 | 16.1186 | 16.1142 | -0.027 | 0.9846 |
| 193.00 | 3.839 | 3.840 | 0.017 | 3.7459 | 3.7447 | -0.032 | 3.9082 |
| 193.00 | 4.140 | 4.142 | 0.044 | 4.3693 | 4.3650 | -0.098 | 3.7420 |
| 193.00 | 4.141 | 4.143 | 0.045 | 4.3708 | 4.3665 | -0.099 | 3.7417 |
| 193.00 | 4.141 | 4.143 | 0.045 | 4.3710 | 4.3666 | -0.100 | 3.7416 |
| 193.00 | 4.368 | 4.371 | 0.060 | 4.9772 | 4.9692 | -0.160 | 3.6437 |
| 193.00 | 4.543 | 4.546 | 0.061 | 5.5930 | 5.5816 | -0.204 | 3.5816 |
| 193.00 | 4.663 | 4.665 | 0.051 | 6.1558 | 6.1426 | -0.214 | 3.5437 |
| 193.00 | 4.769 | 4.771 | 0.030 | 6.8657 | 6.8539 | -0.172 | 3.5095 |
| 193.00 | 4.835 | 4.835 | 0.003 | 7.5080 | 7.5063 | -0.023 | 3.4856 |
| 193.00 | 4.880 | 4.879 | -0.018 | 8.1773 | 8.1939 | 0.203 | 3.4651 |
| 193.00 | 4.906 | 4.904 | -0.030 | 8.7009 | 8.7366 | 0.410 | 3.4513 |

Data from Kleinrahm et al. [7] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 193.00 | 4.928 | 4.926 | -0.032 | 9.2741 | 9.3200 | 0.495 | 3.4375 |
| 193.00 | 4.930 | 4.928 | -0.034 | 9.3316 | 9.3806 | 0.525 | 3.4361 |
| 193.00 | 4.944 | 4.942 | -0.026 | 9.7518 | 9.7913 | 0.406 | 3.4261 |
| 193.00 | 4.954 | 4.953 | -0.015 | 10.0802 | 10.1024 | 0.221 | 3.4180 |
| 193.00 | 4.968 | 4.968 | -0.001 | 10.5090 | 10.5104 | 0.014 | 3.4057 |
| 193.00 | 4.996 | 4.997 | 0.023 | 11.2215 | 11.1975 | -0.214 | 3.3760 |
| 193.00 | 4.996 | 4.998 | 0.025 | 11.2217 | 11.1956 | -0.233 | 3.3760 |
| 193.00 | 4.997 | 4.998 | 0.025 | 11.2253 | 11.1994 | -0.230 | 3.3758 |
| 193.00 | 5.029 | 5.031 | 0.037 | 11.8110 | 11.7831 | -0.236 | 3.3303 |
| 193.00 | 5.042 | 5.044 | 0.043 | 11.9880 | 11.9596 | -0.237 | 3.3094 |
| 193.00 | 5.089 | 5.091 | 0.046 | 12.4960 | 12.4747 | -0.170 | 3.2159 |
| 193.00 | 5.173 | 5.175 | 0.048 | 13.1022 | 13.0878 | -0.110 | 3.0004 |
| 193.00 | 5.330 | 5.333 | 0.056 | 13.8020 | 13.7915 | -0.076 | 2.5546 |
| 193.00 | 5.522 | 5.526 | 0.064 | 14.3568 | 14.3483 | -0.059 | 2.0887 |
| 193.00 | 5.522 | 5.526 | 0.068 | 14.3570 | 14.3479 | -0.063 | 2.0885 |
| 193.00 | 5.816 | 5.820 | 0.066 | 14.9440 | 14.9376 | -0.043 | 1.5960 |
| 193.00 | 6.109 | 6.113 | 0.060 | 15.3769 | 15.3721 | -0.031 | 1.2821 |
| 193.00 | 6.123 | 6.127 | 0.061 | 15.3958 | 15.3909 | -0.032 | 1.2697 |
| 193.00 | 6.123 | 6.127 | 0.070 | 15.3963 | 15.3907 | -0.036 | 1.2694 |
| 193.00 | 6.127 | 6.130 | 0.063 | 15.4002 | 15.3953 | -0.032 | 1.2668 |
| 193.00 | 6.704 | 6.707 | 0.042 | 16.0263 | 16.0237 | -0.016 | 0.9138 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.026 | BIAS-% | 0.005 | RMS-% | 0.041 | |
| | AAD | 0.001 | BIAS | 0.000 | RMS | 0.002 | MPa |
| DENSITY : | AAD-% | 0.347 | BIAS-% | -0.043 | RMS-% | 0.766 | |
| | AAD | 0.035 | BIAS | -0.005 | RMS | 0.079 | $mol \cdot dm^{-3}$ |

Data from Kvalnes and Gaddy [40]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 203.08 | 0.101 | 0.101 | -0.022 | 0.0604 | 0.0604 | 0.023 | 0.2381 |
| 223.25 | 0.101 | 0.101 | 0.079 | 0.0549 | 0.0548 | -0.080 | 0.2378 |
| 248.18 | 0.101 | 0.101 | 0.051 | 0.0493 | 0.0493 | -0.051 | 0.2377 |
| 273.15 | 0.101 | 0.101 | 0.020 | 0.0447 | 0.0447 | -0.020 | 0.2376 |
| 298.14 | 0.101 | 0.101 | 0.032 | 0.0410 | 0.0409 | -0.032 | 0.2375 |
| 323.14 | 0.101 | 0.101 | 0.020 | 0.0378 | 0.0378 | -0.020 | 0.2375 |
| 373.15 | 0.101 | 0.101 | 0.022 | 0.0327 | 0.0327 | -0.022 | 0.2374 |
| 423.17 | 0.101 | 0.101 | 0.033 | 0.0288 | 0.0288 | -0.033 | 0.2373 |
| 473.19 | 0.101 | 0.101 | 0.038 | 0.0258 | 0.0258 | -0.038 | 0.2373 |
| 203.08 | 2.026 | 2.022 | -0.214 | 1.3818 | 1.3853 | 0.251 | 0.0128 |
| 223.25 | 2.026 | 2.026 | -0.010 | 1.2084 | 1.2085 | 0.011 | 0.0125 |
| 298.14 | 2.026 | 2.029 | 0.100 | 0.8479 | 0.8470 | -0.103 | 0.0121 |
| 203.08 | 3.040 | 3.026 | -0.465 | 2.2701 | 2.2841 | 0.616 | 0.0089 |
| 223.25 | 3.040 | 3.033 | -0.211 | 1.9191 | 1.9239 | 0.251 | 0.0086 |
| 248.18 | 3.040 | 3.039 | -0.037 | 1.6396 | 1.6402 | 0.041 | 0.0083 |
| 273.15 | 3.040 | 3.039 | -0.013 | 1.4422 | 1.4424 | 0.014 | 0.0082 |
| 323.14 | 3.040 | 3.040 | 0.013 | 1.1757 | 1.1755 | -0.013 | 0.0081 |
| 373.15 | 3.040 | 3.044 | 0.137 | 1.0004 | 0.9990 | -0.139 | 0.0080 |
| 423.17 | 3.040 | 3.044 | 0.150 | 0.8729 | 0.8716 | -0.151 | 0.0079 |
| 473.19 | 3.040 | 3.042 | 0.076 | 0.7750 | 0.7744 | -0.076 | 0.0079 |
| 203.08 | 4.053 | 4.030 | -0.573 | 3.4113 | 3.4421 | 0.905 | 0.0071 |
| 223.25 | 4.053 | 4.041 | -0.298 | 2.7324 | 2.7429 | 0.385 | 0.0066 |
| 248.18 | 4.053 | 4.048 | -0.120 | 2.2722 | 2.2753 | 0.139 | 0.0064 |
| 273.15 | 4.053 | 4.053 | 0.000 | 1.9734 | 1.9734 | 0.000 | 0.0062 |
| 298.14 | 4.053 | 4.051 | -0.040 | 1.7541 | 1.7549 | 0.043 | 0.0061 |
| 323.14 | 4.053 | 4.050 | -0.073 | 1.5853 | 1.5865 | 0.077 | 0.0061 |
| 203.08 | 5.066 | 5.028 | -0.755 | 5.0533 | 5.1342 | 1.600 | 0.0061 |
| 223.25 | 5.066 | 5.052 | -0.284 | 3.6845 | 3.6992 | 0.400 | 0.0055 |
| 273.15 | 5.066 | 5.066 | 0.002 | 2.5315 | 2.5315 | -0.002 | 0.0050 |
| 373.15 | 5.066 | 5.070 | 0.080 | 1.6853 | 1.6839 | -0.082 | 0.0048 |
| 423.17 | 5.066 | 5.068 | 0.033 | 1.4597 | 1.4592 | -0.033 | 0.0048 |
| 473.19 | 5.066 | 5.068 | 0.034 | 1.2919 | 1.2914 | -0.034 | 0.0047 |
| 203.08 | 6.079 | 5.994 | -1.413 | 7.9718 | 8.3547 | 4.804 | 0.0000 |
| 223.25 | 6.079 | 6.076 | -0.066 | 4.8339 | 4.8389 | 0.102 | 0.0047 |
| 248.18 | 6.079 | 6.070 | -0.152 | 3.7047 | 3.7118 | 0.191 | 0.0044 |

Data from Kvalnes and Gaddy [40] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 6.079 | 6.078 | -0.019 | 3.1161 | 3.1168 | 0.022 | 0.0042 |
| 298.14 | 6.079 | 6.069 | -0.164 | 2.7184 | 2.7233 | 0.181 | 0.0041 |
| 323.14 | 6.079 | 6.079 | -0.010 | 2.4349 | 2.4352 | 0.010 | 0.0041 |
| 423.17 | 6.079 | 6.076 | -0.054 | 1.7532 | 1.7542 | 0.054 | 0.0040 |
| 473.19 | 6.079 | 6.083 | 0.058 | 1.5505 | 1.5496 | -0.058 | 0.0040 |
| 203.08 | 6.586 | 6.418 | -2.554 | 9.9825 | 10.7430 | 7.618 | 0.0000 |
| 203.08 | 7.093 | 6.898 | -2.739 | 11.8896 | 12.4424 | 4.649 | 0.0000 |
| 223.25 | 7.093 | 7.076 | -0.237 | 6.1880 | 6.2129 | 0.401 | 0.0041 |
| 203.08 | 8.106 | 7.910 | -2.415 | 13.9974 | 14.2613 | 1.885 | 0.0027 |
| 223.25 | 8.106 | 8.073 | -0.412 | 7.7710 | 7.8270 | 0.721 | 0.0036 |
| 248.18 | 8.106 | 8.091 | -0.180 | 5.3793 | 5.3922 | 0.241 | 0.0034 |
| 273.15 | 8.106 | 8.103 | -0.040 | 4.3636 | 4.3657 | 0.048 | 0.0032 |
| 298.14 | 8.106 | 8.092 | -0.168 | 3.7389 | 3.7459 | 0.188 | 0.0031 |
| 323.14 | 8.106 | 8.099 | -0.085 | 3.3109 | 3.3139 | 0.091 | 0.0031 |
| 223.25 | 9.119 | 9.057 | -0.680 | 9.4350 | 9.5372 | 1.084 | 0.0032 |
| 203.08 | 10.132 | 9.971 | -1.591 | 15.9266 | 16.0292 | 0.644 | 0.0013 |
| 223.25 | 10.132 | 10.035 | -0.961 | 10.9398 | 11.0745 | 1.231 | 0.0027 |
| 248.18 | 10.132 | 10.110 | -0.219 | 7.2518 | 7.2729 | 0.291 | 0.0027 |
| 273.15 | 10.132 | 10.127 | -0.051 | 5.6949 | 5.6983 | 0.061 | 0.0026 |
| 298.14 | 10.132 | 10.114 | -0.186 | 4.7990 | 4.8090 | 0.209 | 0.0025 |
| 323.14 | 10.132 | 10.113 | -0.191 | 4.2048 | 4.2134 | 0.206 | 0.0025 |
| 203.08 | 12.159 | 11.801 | -2.941 | 16.9027 | 17.0572 | 0.914 | 0.0009 |
| 223.25 | 12.159 | 11.974 | -1.520 | 13.1053 | 13.2641 | 1.212 | 0.0018 |
| 248.18 | 12.159 | 12.113 | -0.376 | 9.1316 | 9.1728 | 0.452 | 0.0021 |
| 273.15 | 12.159 | 12.144 | -0.120 | 7.0576 | 7.0675 | 0.140 | 0.0021 |
| 298.14 | 12.159 | 12.139 | -0.163 | 5.8806 | 5.8912 | 0.181 | 0.0021 |
| 323.14 | 12.159 | 12.138 | -0.176 | 5.1120 | 5.1216 | 0.188 | 0.0020 |
| 203.08 | 14.185 | 13.801 | -2.713 | 17.6716 | 17.7979 | 0.715 | 0.0006 |
| 223.25 | 14.185 | 13.983 | -1.425 | 14.5471 | 14.6645 | 0.807 | 0.0012 |
| 248.18 | 14.185 | 14.097 | -0.624 | 10.7931 | 10.8604 | 0.624 | 0.0017 |
| 273.15 | 14.185 | 14.168 | -0.122 | 8.3962 | 8.4074 | 0.133 | 0.0018 |
| 298.14 | 14.185 | 14.164 | -0.155 | 6.9544 | 6.9659 | 0.165 | 0.0018 |
| 323.14 | 14.185 | 14.165 | -0.145 | 6.0156 | 6.0247 | 0.151 | 0.0017 |
| 203.08 | 16.212 | 15.811 | -2.475 | 18.2771 | 18.3842 | 0.586 | 0.0005 |
| 223.25 | 16.212 | 15.959 | -1.560 | 15.5520 | 15.6617 | 0.705 | 0.0009 |

Data from Kvalnes and Gaddy [40] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 248.18 | 16.212 | 16.064 | -0.911 | 12.1465 | 12.2367 | 0.743 | 0.0013 |
| 273.15 | 16.212 | 16.181 | -0.193 | 9.6370 | 9.6553 | 0.190 | 0.0015 |
| 298.14 | 16.212 | 16.192 | -0.125 | 7.9959 | 8.0060 | 0.127 | 0.0015 |
| 323.14 | 16.212 | 16.197 | -0.094 | 6.9022 | 6.9087 | 0.095 | 0.0015 |
| 203.08 | 18.238 | 17.796 | -2.427 | 18.7731 | 18.8735 | 0.534 | 0.0004 |
| 223.25 | 18.238 | 17.996 | -1.331 | 16.3483 | 16.4319 | 0.511 | 0.0007 |
| 248.18 | 18.238 | 18.046 | -1.057 | 13.2422 | 13.3369 | 0.715 | 0.0011 |
| 273.15 | 18.238 | 18.210 | -0.155 | 10.7591 | 10.7737 | 0.136 | 0.0012 |
| 298.14 | 18.238 | 18.207 | -0.171 | 8.9743 | 8.9888 | 0.162 | 0.0013 |
| 323.14 | 18.238 | 18.236 | -0.012 | 7.7605 | 7.7613 | 0.011 | 0.0013 |
| 373.15 | 18.238 | 18.222 | -0.093 | 6.1946 | 6.2002 | 0.090 | 0.0013 |
| 203.08 | 20.265 | 19.834 | -2.128 | 19.2104 | 19.2956 | 0.443 | 0.0003 |
| 223.25 | 20.265 | 19.970 | -1.455 | 16.9754 | 17.0600 | 0.498 | 0.0005 |
| 248.18 | 20.265 | 20.077 | -0.927 | 14.1547 | 14.2305 | 0.536 | 0.0008 |
| 273.15 | 20.265 | 20.192 | -0.359 | 11.7211 | 11.7539 | 0.280 | 0.0010 |
| 298.14 | 20.265 | 20.231 | -0.167 | 9.8855 | 9.9000 | 0.147 | 0.0011 |
| 323.14 | 20.265 | 20.257 | -0.039 | 8.5699 | 8.5730 | 0.036 | 0.0011 |
| 373.15 | 20.265 | 20.226 | -0.193 | 6.8403 | 6.8527 | 0.181 | 0.0011 |
| 423.17 | 20.265 | 20.223 | -0.209 | 5.7691 | 5.7804 | 0.196 | 0.0011 |
| 473.19 | 20.265 | 20.264 | -0.004 | 5.0362 | 5.0364 | 0.004 | 0.0011 |
| 203.08 | 25.331 | 24.836 | -1.957 | 20.0834 | 20.1587 | 0.375 | 0.0003 |
| 223.25 | 25.331 | 25.035 | -1.169 | 18.2033 | 18.2634 | 0.331 | 0.0004 |
| 248.18 | 25.331 | 25.075 | -1.013 | 15.8229 | 15.8932 | 0.444 | 0.0005 |
| 273.15 | 25.331 | 25.244 | -0.345 | 13.6614 | 13.6897 | 0.207 | 0.0007 |
| 298.14 | 25.331 | 25.228 | -0.407 | 11.8074 | 11.8424 | 0.296 | 0.0008 |
| 323.14 | 25.331 | 25.286 | -0.180 | 10.3753 | 10.3903 | 0.144 | 0.0008 |
| 373.15 | 25.331 | 25.284 | -0.186 | 8.3661 | 8.3795 | 0.161 | 0.0009 |
| 473.19 | 25.331 | 25.327 | -0.019 | 6.1747 | 6.1757 | 0.017 | 0.0009 |
| 203.08 | 30.398 | 29.824 | -1.887 | 20.7751 | 20.8465 | 0.344 | 0.0002 |
| 223.25 | 30.398 | 29.983 | -1.365 | 19.0983 | 19.1644 | 0.346 | 0.0003 |
| 248.18 | 30.398 | 30.131 | -0.878 | 17.0282 | 17.0832 | 0.323 | 0.0004 |
| 273.15 | 30.398 | 30.351 | -0.154 | 15.0985 | 15.1100 | 0.076 | 0.0005 |
| 298.14 | 30.398 | 30.281 | -0.382 | 13.3339 | 13.3649 | 0.233 | 0.0006 |
| 323.14 | 30.398 | 30.340 | -0.188 | 11.8878 | 11.9033 | 0.130 | 0.0006 |
| 373.15 | 30.398 | 30.363 | -0.114 | 9.7327 | 9.7415 | 0.090 | 0.0007 |

Data from Kvalnes and Gaddy [40] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 423.17 | 30.398 | 30.321 | -0.252 | 8.2645 | 8.2818 | 0.209 | 0.0007 |
| 473.19 | 30.398 | 30.391 | -0.021 | 7.2389 | 7.2402 | 0.018 | 0.0007 |
| 203.08 | 40.530 | 39.804 | -1.792 | 21.8555 | 21.9233 | 0.310 | 0.0014 |
| 223.25 | 40.530 | 40.012 | -1.279 | 20.4443 | 20.5027 | 0.286 | 0.0018 |
| 248.18 | 40.530 | 40.102 | -1.055 | 18.7101 | 18.7693 | 0.316 | 0.0024 |
| 273.15 | 40.530 | 40.410 | -0.296 | 17.0890 | 17.1083 | 0.113 | 0.0030 |
| 298.14 | 40.530 | 40.425 | -0.259 | 15.5568 | 15.5757 | 0.121 | 0.0036 |
| 323.14 | 40.530 | 40.427 | -0.255 | 14.1884 | 14.2081 | 0.139 | 0.0040 |
| 373.15 | 40.530 | 40.479 | -0.125 | 11.9825 | 11.9924 | 0.082 | 0.0046 |
| 423.17 | 40.530 | 40.529 | -0.001 | 10.3595 | 10.3596 | 0.001 | 0.0049 |
| 473.19 | 40.530 | 40.506 | -0.058 | 9.1334 | 9.1375 | 0.045 | 0.0051 |
| 203.08 | 50.662 | 49.319 | -2.651 | 22.6623 | 22.7642 | 0.449 | 0.0011 |
| 223.25 | 50.662 | 49.860 | -1.584 | 21.4329 | 21.5039 | 0.332 | 0.0014 |
| 248.18 | 50.662 | 50.183 | -0.947 | 19.9277 | 19.9781 | 0.253 | 0.0017 |
| 273.15 | 50.662 | 50.566 | -0.190 | 18.5015 | 18.5131 | 0.063 | 0.0021 |
| 298.14 | 50.662 | 50.485 | -0.351 | 17.1164 | 17.1403 | 0.139 | 0.0025 |
| 323.14 | 50.662 | 50.455 | -0.410 | 15.8521 | 15.8819 | 0.189 | 0.0028 |
| 373.15 | 50.662 | 50.647 | -0.030 | 13.7377 | 13.7401 | 0.017 | 0.0033 |
| 423.17 | 50.662 | 50.652 | -0.021 | 12.0596 | 12.0612 | 0.013 | 0.0036 |
| 473.19 | 50.662 | 50.667 | 0.010 | 10.7489 | 10.7482 | -0.007 | 0.0038 |
| 203.08 | 60.795 | 59.213 | -2.603 | 23.3595 | 23.4610 | 0.434 | 0.0009 |
| 223.25 | 60.795 | 59.670 | -1.851 | 22.2294 | 22.3120 | 0.372 | 0.0011 |
| 248.18 | 60.795 | 60.029 | -1.260 | 20.8623 | 20.9275 | 0.313 | 0.0014 |
| 273.15 | 60.795 | 60.540 | -0.419 | 19.5733 | 19.5978 | 0.125 | 0.0016 |
| 298.14 | 60.795 | 60.439 | -0.585 | 18.3049 | 18.3427 | 0.207 | 0.0019 |
| 323.14 | 60.795 | 60.499 | -0.487 | 17.1425 | 17.1763 | 0.198 | 0.0021 |
| 373.15 | 60.795 | 60.800 | 0.009 | 15.1351 | 15.1345 | -0.004 | 0.0025 |
| 423.17 | 60.795 | 60.738 | -0.093 | 13.4603 | 13.4675 | 0.054 | 0.0028 |
| 473.19 | 60.795 | 60.847 | 0.085 | 12.1247 | 12.1182 | -0.054 | 0.0030 |
| 203.08 | 70.928 | 69.131 | -2.533 | 23.9593 | 24.0597 | 0.419 | 0.0008 |
| 223.25 | 70.928 | 69.689 | -1.746 | 22.9158 | 22.9937 | 0.340 | 0.0009 |
| 248.18 | 70.928 | 69.916 | -1.427 | 21.6406 | 21.7134 | 0.336 | 0.0011 |
| 203.08 | 81.060 | 78.381 | -3.305 | 24.4532 | 24.5866 | 0.546 | 0.0007 |
| 223.25 | 81.060 | 78.917 | -2.643 | 23.4668 | 23.5857 | 0.507 | 0.0008 |
| 248.18 | 81.060 | 79.631 | -1.764 | 22.2968 | 22.3861 | 0.401 | 0.0009 |

Data from Kvalnes and Gaddy [40] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 273.15 | 81.060 | 80.241 | -1.010 | 21.1776 | 21.2342 | 0.267 | 0.0011 |
| 298.14 | 81.060 | 80.515 | -0.672 | 20.0986 | 20.1396 | 0.204 | 0.0012 |
| 323.14 | 81.060 | 80.330 | -0.901 | 19.0498 | 19.1089 | 0.310 | 0.0014 |
| 373.15 | 81.060 | 81.013 | -0.058 | 17.2471 | 17.2513 | 0.024 | 0.0016 |
| 423.17 | 81.060 | 81.168 | 0.134 | 15.6726 | 15.6626 | -0.064 | 0.0018 |
| 473.19 | 81.060 | 81.307 | 0.305 | 14.3402 | 14.3169 | -0.163 | 0.0020 |
| 203.08 | 91.192 | 88.026 | -3.472 | 24.9162 | 25.0585 | 0.571 | 0.0006 |
| 223.25 | 91.192 | 88.642 | -2.797 | 23.9838 | 24.1105 | 0.528 | 0.0007 |
| 248.18 | 91.192 | 89.104 | -2.291 | 22.8600 | 22.9759 | 0.507 | 0.0008 |
| 203.08 | 101.325 | 97.494 | -3.781 | 25.3295 | 25.4869 | 0.621 | 0.0006 |
| 223.25 | 101.325 | 98.496 | -2.792 | 24.4555 | 24.5827 | 0.520 | 0.0006 |
| 248.18 | 101.325 | 99.324 | -1.975 | 23.4023 | 23.5018 | 0.425 | 0.0007 |
| 273.15 | 101.325 | 99.432 | -1.869 | 22.3609 | 22.4640 | 0.461 | 0.0008 |
| 298.14 | 101.325 | 100.156 | -1.154 | 21.4062 | 21.4747 | 0.320 | 0.0009 |
| 323.14 | 101.325 | 100.284 | -1.027 | 20.4723 | 20.5374 | 0.318 | 0.0010 |
| 373.15 | 101.325 | 101.337 | 0.012 | 18.8247 | 18.8238 | -0.005 | 0.0012 |
| 423.17 | 101.325 | 101.519 | 0.192 | 17.3361 | 17.3220 | -0.081 | 0.0013 |
| 473.19 | 101.325 | 101.808 | 0.476 | 16.0518 | 16.0158 | -0.224 | 0.0014 |

Number of Points (Ref. 40) 158

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.714 | BIAS-% | -0.686 | RMS-% | 0.925 | |
| | AAD | 0.331 | BIAS | -0.317 | RMS | 0.666 | MPa |
| DENSITY : | AAD-% | 0.379 | BIAS-% | 0.359 | RMS-% | 0.827 | |
| | AAD | 0.049 | BIAS | 0.047 | RMS | 0.089 | $mol\cdot dm^{-3}$ |

Data from Mollerup [41]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 310.00 | 0.154 | 0.154 | 0.001 | 0.0600 | 0.0600 | -0.001 | 1.5600 |
| 310.00 | 0.435 | 0.435 | -0.006 | 0.1700 | 0.1700 | 0.006 | 0.5541 |
| 310.00 | 0.714 | 0.714 | -0.013 | 0.2800 | 0.2800 | 0.013 | 0.3385 |
| 310.00 | 0.990 | 0.990 | -0.017 | 0.3900 | 0.3901 | 0.018 | 0.2445 |
| 310.00 | 2.484 | 2.483 | -0.045 | 1.0000 | 1.0005 | 0.047 | 0.0985 |

Data from Mollerup [41] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | mol·dm$^{-3}$ | mol·dm$^{-3}$ | % | |
| 310.00 | 4.806 | 4.802 | -0.076 | 2.0000 | 2.0016 | 0.081 | 0.0516 |
| 310.00 | 7.000 | 6.995 | -0.081 | 3.0000 | 3.0027 | 0.088 | 0.0358 |
| 310.00 | 9.105 | 9.099 | -0.061 | 4.0000 | 4.0027 | 0.067 | 0.0276 |
| 310.00 | 11.158 | 11.155 | -0.023 | 5.0000 | 5.0013 | 0.025 | 0.0225 |
| 310.00 | 13.200 | 13.202 | 0.019 | 6.0000 | 5.9988 | -0.020 | 0.0188 |
| 310.00 | 15.276 | 15.284 | 0.053 | 7.0000 | 6.9962 | -0.054 | 0.0160 |
| 310.00 | 17.434 | 17.447 | 0.070 | 8.0000 | 7.9945 | -0.068 | 0.0137 |
| 310.00 | 19.731 | 19.744 | 0.066 | 9.0000 | 8.9946 | -0.060 | 0.0117 |
| 310.00 | 22.231 | 22.241 | 0.042 | 10.0000 | 9.9964 | -0.036 | 0.0099 |
| 310.00 | 25.013 | 25.014 | 0.005 | 11.0000 | 10.9996 | -0.004 | 0.0083 |
| 310.00 | 28.168 | 28.157 | -0.040 | 12.0000 | 12.0033 | 0.028 | 0.0069 |
| 310.00 | 31.809 | 31.782 | -0.086 | 13.0000 | 13.0070 | 0.054 | 0.0057 |
| 310.00 | 36.073 | 36.024 | -0.134 | 14.0000 | 14.0105 | 0.075 | 0.0461 |
| 310.00 | 41.123 | 41.045 | -0.190 | 15.0000 | 15.0142 | 0.095 | 0.0371 |
| 310.00 | 47.157 | 47.034 | -0.262 | 16.0000 | 16.0188 | 0.118 | 0.0296 |
| 310.00 | 54.412 | 54.216 | -0.360 | 17.0000 | 17.0249 | 0.146 | 0.0236 |
| 310.00 | 63.170 | 62.857 | -0.495 | 18.0000 | 18.0329 | 0.183 | 0.0187 |
| 310.00 | 73.762 | 73.269 | -0.668 | 19.0000 | 19.0430 | 0.226 | 0.0148 |

Number of Points (Ref. 41) 23

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.122 | BIAS-% | -0.100 | RMS-% | 0.181 | |
| | AAD | 0.059 | BIAS | -0.055 | RMS | 0.121 | MPa |
| DENSITY : | AAD-% | 0.066 | BIAS-% | 0.045 | RMS-% | 0.074 | |
| | AAD | 0.008 | BIAS | 0.006 | RMS | 0.012 | mol·dm$^{-3}$ |

Data from Morris [42]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | mol·dm$^{-3}$ | mol·dm$^{-3}$ | % | |
| 250.00 | 171.797 | 168.904 | -1.684 | 26.0000 | 26.0864 | 0.332 | 0.0038 |
| 250.00 | 208.651 | 205.372 | -1.572 | 27.0000 | 27.0816 | 0.302 | 0.0031 |
| 250.00 | 252.321 | 249.031 | -1.304 | 28.0000 | 28.0687 | 0.245 | 0.0025 |
| 250.00 | 303.683 | 300.983 | -0.889 | 29.0000 | 29.0476 | 0.164 | 0.0020 |
| 250.00 | 363.664 | 362.425 | -0.341 | 30.0000 | 30.0186 | 0.062 | 0.0017 |

Data from Morris [42] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 250.00 | 433.220 | 434.637 | 0.327 | 31.0000 | 30.9818 | -0.059 | 0.0014 |
| 250.00 | 513.328 | 518.973 | 1.100 | 32.0000 | 31.9376 | -0.195 | 0.0011 |
| 265.91 | 189.546 | 186.791 | -1.453 | 26.0000 | 26.0778 | 0.299 | 0.0036 |
| 265.91 | 228.152 | 225.295 | -1.253 | 27.0000 | 27.0676 | 0.250 | 0.0029 |
| 265.91 | 273.660 | 271.212 | -0.894 | 28.0000 | 28.0488 | 0.174 | 0.0024 |
| 265.91 | 326.938 | 325.678 | -0.385 | 29.0000 | 29.0213 | 0.073 | 0.0019 |
| 265.91 | 388.902 | 389.929 | 0.264 | 30.0000 | 29.9852 | -0.049 | 0.0016 |
| 265.91 | 460.501 | 465.293 | 1.041 | 31.0000 | 30.9409 | -0.191 | 0.0013 |
| 265.91 | 542.705 | 553.181 | 1.930 | 32.0000 | 31.8884 | -0.349 | 0.0011 |
| 281.82 | 206.953 | 204.514 | -1.179 | 26.0000 | 26.0654 | 0.252 | 0.0034 |
| 281.82 | 247.258 | 245.062 | -0.888 | 27.0000 | 27.0495 | 0.183 | 0.0028 |
| 281.82 | 294.549 | 293.257 | -0.439 | 28.0000 | 28.0246 | 0.088 | 0.0023 |
| 281.82 | 349.689 | 350.267 | 0.165 | 29.0000 | 28.9907 | -0.032 | 0.0018 |
| 281.82 | 413.585 | 417.367 | 0.915 | 30.0000 | 29.9477 | -0.174 | 0.0015 |
| 281.82 | 487.179 | 495.937 | 1.798 | 31.0000 | 30.8959 | -0.336 | 0.0013 |
| 281.82 | 571.437 | 587.447 | 2.802 | 32.0000 | 31.8355 | -0.514 | 0.0011 |
| 297.73 | 188.335 | 186.301 | -1.080 | 25.0000 | 25.0618 | 0.247 | 0.0040 |
| 297.73 | 224.024 | 222.104 | -0.857 | 26.0000 | 26.0490 | 0.188 | 0.0033 |
| 297.73 | 265.977 | 264.708 | -0.477 | 27.0000 | 27.0273 | 0.101 | 0.0026 |
| 297.73 | 315.000 | 315.199 | 0.063 | 28.0000 | 27.9964 | -0.013 | 0.0022 |
| 297.73 | 371.949 | 374.779 | 0.761 | 29.0000 | 28.9560 | -0.152 | 0.0018 |
| 297.73 | 437.726 | 444.767 | 1.609 | 30.0000 | 29.9063 | -0.312 | 0.0015 |
| 297.73 | 513.267 | 526.592 | 2.596 | 31.0000 | 30.8472 | -0.493 | 0.0012 |
| 297.73 | 599.534 | 621.785 | 3.711 | 32.0000 | 31.7792 | -0.690 | 0.0010 |
| 313.64 | 145.261 | 143.802 | -1.005 | 23.0000 | 23.0600 | 0.261 | 0.0059 |
| 313.64 | 171.962 | 170.302 | -0.965 | 24.0000 | 24.0571 | 0.238 | 0.0047 |
| 313.64 | 203.566 | 201.936 | -0.801 | 25.0000 | 25.0471 | 0.188 | 0.0038 |
| 313.64 | 240.772 | 239.589 | -0.491 | 26.0000 | 26.0288 | 0.111 | 0.0031 |
| 313.64 | 284.327 | 284.258 | -0.024 | 27.0000 | 27.0014 | 0.005 | 0.0025 |
| 313.64 | 335.034 | 337.062 | 0.605 | 28.0000 | 27.9645 | -0.127 | 0.0021 |
| 313.64 | 393.743 | 399.239 | 1.396 | 29.0000 | 28.9178 | -0.283 | 0.0017 |
| 313.64 | 461.351 | 472.149 | 2.340 | 30.0000 | 29.8614 | -0.462 | 0.0014 |
| 313.64 | 538.790 | 557.273 | 3.430 | 31.0000 | 30.7954 | -0.660 | 0.0012 |
| 313.64 | 627.020 | 656.206 | 4.655 | 32.0000 | 31.7200 | -0.875 | 0.0010 |
| 329.55 | 157.527 | 156.197 | -0.845 | 23.0000 | 23.0517 | 0.225 | 0.0056 |

Data from Morris [42] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 329.55 | 185.533 | 184.185 | -0.726 | 24.0000 | 24.0440 | 0.183 | 0.0045 |
| 329.55 | 218.529 | 217.480 | -0.480 | 25.0000 | 25.0289 | 0.116 | 0.0036 |
| 329.55 | 257.213 | 256.988 | -0.088 | 26.0000 | 26.0052 | 0.020 | 0.0030 |
| 329.55 | 302.329 | 303.734 | 0.465 | 27.0000 | 26.9722 | -0.103 | 0.0024 |
| 329.55 | 354.675 | 358.867 | 1.182 | 28.0000 | 27.9294 | -0.252 | 0.0020 |
| 329.55 | 415.099 | 423.664 | 2.063 | 29.0000 | 28.8766 | -0.425 | 0.0016 |
| 329.55 | 484.492 | 499.528 | 3.103 | 30.0000 | 29.8138 | -0.621 | 0.0013 |
| 329.55 | 563.783 | 587.993 | 4.294 | 31.0000 | 30.7410 | -0.835 | 0.0011 |
| 329.55 | 653.930 | 690.716 | 5.625 | 32.0000 | 31.6585 | -1.067 | 0.0009 |
| 345.45 | 169.604 | 168.516 | -0.641 | 23.0000 | 23.0401 | 0.174 | 0.0053 |
| 345.45 | 198.885 | 197.993 | -0.448 | 24.0000 | 24.0277 | 0.116 | 0.0043 |
| 345.45 | 233.242 | 232.950 | -0.125 | 25.0000 | 25.0077 | 0.031 | 0.0035 |
| 345.45 | 273.368 | 274.319 | 0.348 | 26.0000 | 25.9788 | -0.082 | 0.0028 |
| 345.45 | 320.006 | 323.152 | 0.983 | 27.0000 | 26.9403 | -0.221 | 0.0023 |
| 345.45 | 373.952 | 380.631 | 1.786 | 28.0000 | 27.8917 | -0.387 | 0.0019 |
| 345.45 | 436.048 | 448.069 | 2.757 | 29.0000 | 28.8329 | -0.576 | 0.0016 |
| 345.45 | 507.182 | 526.917 | 3.891 | 30.0000 | 29.7638 | -0.787 | 0.0013 |
| 345.45 | 588.281 | 618.760 | 5.181 | 31.0000 | 30.6845 | -1.018 | 0.0011 |
| 345.45 | 680.299 | 725.319 | 6.618 | 32.0000 | 31.5952 | -1.265 | 0.0009 |
| 361.36 | 155.482 | 154.623 | -0.552 | 22.0000 | 22.0357 | 0.162 | 0.0062 |
| 361.36 | 181.501 | 180.770 | -0.403 | 23.0000 | 23.0257 | 0.112 | 0.0050 |
| 361.36 | 212.032 | 211.735 | -0.140 | 24.0000 | 24.0088 | 0.037 | 0.0041 |
| 361.36 | 247.720 | 248.358 | 0.258 | 25.0000 | 24.9839 | -0.064 | 0.0033 |
| 361.36 | 289.256 | 291.594 | 0.808 | 26.0000 | 25.9499 | -0.193 | 0.0027 |
| 361.36 | 337.383 | 342.525 | 1.524 | 27.0000 | 26.9061 | -0.348 | 0.0022 |
| 361.36 | 392.890 | 402.364 | 2.411 | 28.0000 | 27.8519 | -0.529 | 0.0018 |
| 361.36 | 456.619 | 472.464 | 3.470 | 29.0000 | 28.7873 | -0.734 | 0.0015 |
| 361.36 | 529.454 | 554.321 | 4.697 | 30.0000 | 29.7121 | -0.960 | 0.0013 |
| 361.36 | 612.319 | 649.577 | 6.085 | 31.0000 | 30.6265 | -1.205 | 0.0010 |
| 377.27 | 123.138 | 122.570 | -0.461 | 20.0000 | 20.0313 | 0.157 | 0.0089 |
| 377.27 | 142.890 | 142.241 | -0.454 | 21.0000 | 21.0303 | 0.144 | 0.0072 |
| 377.27 | 166.066 | 165.492 | -0.346 | 22.0000 | 22.0227 | 0.103 | 0.0059 |
| 377.27 | 193.231 | 192.969 | -0.135 | 23.0000 | 23.0088 | 0.038 | 0.0048 |
| 377.27 | 224.988 | 225.424 | 0.194 | 24.0000 | 23.9876 | -0.052 | 0.0039 |
| 377.27 | 261.980 | 263.716 | 0.662 | 25.0000 | 24.9581 | -0.168 | 0.0032 |

Data from Morris [42] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 377.27 | 304.898 | 308.825 | 1.288 | 26.0000 | 25.9191 | -0.311 | 0.0026 |
| 377.27 | 354.480 | 361.862 | 2.083 | 27.0000 | 26.8701 | -0.481 | 0.0021 |
| 377.27 | 411.515 | 424.076 | 3.052 | 28.0000 | 27.8104 | -0.677 | 0.0018 |
| 377.27 | 476.842 | 496.858 | 4.198 | 29.0000 | 28.7401 | -0.896 | 0.0015 |
| 377.27 | 551.340 | 581.750 | 5.516 | 30.0000 | 29.6590 | -1.137 | 0.0012 |
| 377.27 | 635.931 | 680.448 | 7.000 | 31.0000 | 30.5673 | -1.396 | 0.0010 |
| 393.18 | 131.568 | 131.135 | -0.329 | 20.0000 | 20.0226 | 0.113 | 0.0084 |
| 393.18 | 152.288 | 151.874 | -0.272 | 21.0000 | 21.0184 | 0.088 | 0.0068 |
| 393.18 | 176.513 | 176.314 | -0.112 | 22.0000 | 22.0075 | 0.034 | 0.0056 |
| 393.18 | 204.805 | 205.123 | 0.155 | 23.0000 | 22.9898 | -0.044 | 0.0045 |
| 393.18 | 237.766 | 239.068 | 0.548 | 24.0000 | 23.9645 | -0.148 | 0.0037 |
| 393.18 | 276.039 | 279.032 | 1.085 | 25.0000 | 24.9305 | -0.278 | 0.0030 |
| 393.18 | 320.311 | 326.021 | 1.783 | 26.0000 | 25.8867 | -0.436 | 0.0025 |
| 393.18 | 371.320 | 381.175 | 2.654 | 27.0000 | 26.8326 | -0.620 | 0.0020 |
| 393.18 | 429.852 | 445.776 | 3.704 | 28.0000 | 27.7677 | -0.830 | 0.0017 |
| 393.18 | 496.743 | 521.257 | 4.935 | 29.0000 | 28.6918 | -1.063 | 0.0014 |
| 393.18 | 572.870 | 609.208 | 6.343 | 30.0000 | 29.6050 | -1.317 | 0.0012 |
| 393.18 | 659.151 | 711.378 | 7.923 | 31.0000 | 30.5074 | -1.589 | 0.0010 |
| 409.09 | 139.898 | 139.665 | -0.167 | 20.0000 | 20.0116 | 0.058 | 0.0080 |
| 409.09 | 161.574 | 161.468 | -0.066 | 21.0000 | 21.0045 | 0.021 | 0.0065 |
| 409.09 | 186.832 | 187.098 | 0.142 | 22.0000 | 21.9904 | -0.044 | 0.0053 |
| 409.09 | 216.234 | 217.238 | 0.464 | 23.0000 | 22.9692 | -0.134 | 0.0043 |
| 409.09 | 250.380 | 252.676 | 0.917 | 24.0000 | 23.9399 | -0.250 | 0.0036 |
| 409.09 | 289.910 | 294.316 | 1.520 | 25.0000 | 24.9015 | -0.394 | 0.0029 |
| 409.09 | 335.512 | 343.190 | 2.288 | 26.0000 | 25.8531 | -0.565 | 0.0024 |
| 409.09 | 387.922 | 400.469 | 3.234 | 27.0000 | 26.7940 | -0.763 | 0.0020 |
| 409.09 | 447.923 | 467.471 | 4.364 | 28.0000 | 27.7240 | -0.986 | 0.0016 |
| 409.09 | 516.347 | 545.668 | 5.678 | 29.0000 | 28.6428 | -1.232 | 0.0014 |
| 409.09 | 594.071 | 636.698 | 7.175 | 30.0000 | 29.5504 | -1.499 | 0.0011 |
| 409.09 | 682.008 | 742.367 | 8.850 | 31.0000 | 30.4470 | -1.784 | 0.0009 |

Number of Points (Ref. 42) 105

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 1.920 | BIAS-% | 1.448 | RMS-% | 2.381 | |
| | AAD | 9.234 | BIAS | 8.254 | RMS | 13.539 | MPa |
| DENSITY : | AAD-% | 0.404 | BIAS-% | -0.296 | RMS-% | 0.490 | |
| | AAD | 0.117 | BIAS | -0.090 | RMS | 0.146 | $mol\cdot dm^{-3}$ |

Data from Robertson and Babb [43]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 308.15 | 150.000 | 146.393 | -2.404 | 23.2830 | 23.4257 | 0.613 | 0.0565 |
| 308.15 | 200.000 | 196.116 | -1.942 | 24.9870 | 25.1008 | 0.455 | 0.0390 |
| 308.15 | 250.000 | 246.617 | -1.353 | 26.3150 | 26.3940 | 0.300 | 0.0295 |
| 308.15 | 300.000 | 298.063 | -0.646 | 27.4150 | 27.4527 | 0.137 | 0.0236 |
| 308.15 | 350.000 | 350.634 | 0.181 | 28.3630 | 28.3524 | -0.037 | 0.0195 |
| 308.15 | 400.000 | 404.294 | 1.073 | 29.2000 | 29.1370 | -0.216 | 0.0166 |
| 308.15 | 450.000 | 458.607 | 1.913 | 29.9470 | 29.8343 | -0.376 | 0.0144 |
| 308.15 | 500.000 | 513.768 | 2.754 | 30.6260 | 30.4630 | -0.532 | 0.0126 |
| 308.15 | 550.000 | 570.413 | 3.711 | 31.2570 | 31.0365 | -0.706 | 0.0113 |
| 308.15 | 600.000 | 627.104 | 4.517 | 31.8340 | 31.5643 | -0.847 | 0.0102 |
| 308.15 | 650.000 | 685.244 | 5.422 | 32.3790 | 32.0538 | -1.004 | 0.0092 |
| 308.15 | 700.000 | 743.943 | 6.278 | 32.8890 | 32.5107 | -1.150 | 0.0084 |
| 308.15 | 750.000 | 803.580 | 7.144 | 33.3720 | 32.9396 | -1.296 | 0.0078 |
| 308.15 | 800.000 | 863.680 | 7.960 | 33.8280 | 33.3439 | -1.431 | 0.0072 |
| 308.15 | 850.000 | 924.468 | 8.761 | 34.2620 | 33.7267 | -1.562 | 0.0067 |
| 308.15 | 900.000 | 986.160 | 9.573 | 34.6780 | 34.0904 | -1.695 | 0.0063 |
| 308.15 | 950.000 | 1048.447 | 10.363 | 35.0760 | 34.4370 | -1.822 | 0.0059 |
| 308.15 | 1000.000 | 1111.850 | 11.185 | 35.4610 | 34.7683 | -1.954 | 0.0055 |
| 373.15 | 150.000 | 148.343 | -1.105 | 21.3950 | 21.4682 | 0.342 | 0.0673 |
| 373.15 | 200.000 | 198.476 | -0.762 | 23.2870 | 23.3361 | 0.211 | 0.0454 |
| 373.15 | 250.000 | 250.036 | 0.014 | 24.7590 | 24.7581 | -0.004 | 0.0336 |
| 373.15 | 300.000 | 302.723 | 0.908 | 25.9660 | 25.9091 | -0.219 | 0.0264 |
| 373.15 | 350.000 | 356.570 | 1.877 | 26.9950 | 26.8782 | -0.433 | 0.0215 |
| 373.15 | 400.000 | 411.449 | 2.862 | 27.8940 | 27.7167 | -0.636 | 0.0181 |
| 373.15 | 450.000 | 467.275 | 3.839 | 28.6940 | 28.4570 | -0.826 | 0.0155 |
| 373.15 | 500.000 | 524.219 | 4.844 | 29.4190 | 29.1205 | -1.015 | 0.0136 |
| 373.15 | 550.000 | 582.028 | 5.823 | 30.0810 | 29.7225 | -1.192 | 0.0120 |
| 373.15 | 600.000 | 641.355 | 6.893 | 30.6980 | 30.2740 | -1.381 | 0.0107 |
| 373.15 | 650.000 | 701.979 | 7.997 | 31.2750 | 30.7833 | -1.572 | 0.0097 |
| 373.15 | 700.000 | 763.076 | 9.011 | 31.8110 | 31.2569 | -1.742 | 0.0088 |
| 373.15 | 750.000 | 825.771 | 10.103 | 32.3210 | 31.6997 | -1.922 | 0.0080 |
| 373.15 | 800.000 | 888.271 | 11.034 | 32.7950 | 32.1159 | -2.071 | 0.0074 |
| 373.15 | 850.000 | 952.608 | 12.072 | 33.2520 | 32.5085 | -2.236 | 0.0069 |
| 373.15 | 900.000 | 1016.834 | 12.982 | 33.6810 | 32.8805 | -2.377 | 0.0064 |
| 373.15 | 950.000 | 1082.015 | 13.896 | 34.0920 | 33.2340 | -2.517 | 0.0060 |

Data from Robertson and Babb [43] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 473.15 | 400.000 | 418.622 | 4.655 | 26.1050 | 25.7974 | -1.178 | 0.0203 |
| 473.15 | 450.000 | 476.456 | 5.879 | 26.9770 | 26.5925 | -1.425 | 0.0172 |
| 473.15 | 500.000 | 535.369 | 7.074 | 27.7600 | 27.3012 | -1.653 | 0.0149 |
| 473.15 | 550.000 | 595.615 | 8.294 | 28.4750 | 27.9409 | -1.876 | 0.0131 |
| 473.15 | 600.000 | 657.070 | 9.512 | 29.1330 | 28.5242 | -2.090 | 0.0116 |
| 473.15 | 650.000 | 719.455 | 10.685 | 29.7410 | 29.0605 | -2.288 | 0.0104 |
| 473.15 | 700.000 | 784.058 | 12.008 | 30.3180 | 29.5572 | -2.509 | 0.0094 |
| 473.15 | 750.000 | 849.146 | 13.220 | 30.8540 | 30.0199 | -2.703 | 0.0085 |
| 473.15 | 800.000 | 915.944 | 14.493 | 31.3640 | 30.4532 | -2.904 | 0.0078 |
| 473.15 | 850.000 | 983.869 | 15.749 | 31.8470 | 30.8608 | -3.097 | 0.0072 |
| 473.15 | 900.000 | 1052.419 | 16.935 | 32.3030 | 31.2456 | -3.273 | 0.0066 |
| 473.15 | 950.000 | 1121.878 | 18.092 | 32.7370 | 31.6103 | -3.442 | 0.0061 |
| 473.15 | 1000.000 | 1192.522 | 19.252 | 33.1530 | 31.9570 | -3.608 | 0.0057 |

Number of Points (Ref. 43) 53

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 7.024 | BIAS-% | 6.714 | RMS-% | 5.581 | |
| | AAD | 52.863 | BIAS | 52.260 | RMS | 51.540 | MPa |
| DENSITY : | AAD-% | 1.394 | BIAS-% | -1.317 | RMS-% | 1.070 | |
| | AAD | 0.437 | BIAS | -0.418 | RMS | 0.347 | $mol \cdot dm^{-3}$ |

Data from Sivaraman and Gammon [44]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 193.05 | 1.456 | 1.454 | -0.077 | 1.0186 | 1.0195 | 0.088 | 0.0000 |
| 193.05 | 3.446 | 3.443 | -0.090 | 3.0974 | 3.1019 | 0.145 | 0.0000 |
| 193.05 | 4.429 | 4.427 | -0.051 | 5.1435 | 5.1509 | 0.144 | 0.0000 |
| 193.05 | 4.818 | 4.821 | 0.046 | 7.2853 | 7.2617 | -0.324 | 0.0000 |
| 193.05 | 4.937 | 4.978 | 0.834 | 10.5749 | 9.3913 | -11.193 | 0.0000 |
| 193.05 | 5.019 | 5.016 | -0.058 | 11.4240 | 11.4766 | 0.460 | 0.0000 |
| 193.05 | 5.174 | 5.173 | -0.032 | 13.0245 | 13.0344 | 0.076 | 0.0000 |
| 193.05 | 5.643 | 5.604 | -0.696 | 14.5064 | 14.5900 | 0.577 | 0.0000 |
| 195.15 | 1.475 | 1.474 | -0.072 | 1.0183 | 1.0191 | 0.082 | 0.0000 |
| 195.15 | 3.517 | 3.514 | -0.099 | 3.0961 | 3.1010 | 0.157 | 0.0000 |

Data from Sivaraman and Gammon [44] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 193.05 | 5.019 | 5.016 | -0.058 | 11.4240 | 11.4766 | 0.460 | 0.0000 |
| 193.05 | 5.174 | 5.173 | -0.032 | 13.0245 | 13.0344 | 0.076 | 0.0000 |
| 193.05 | 5.643 | 5.604 | -0.696 | 14.5064 | 14.5900 | 0.577 | 0.0000 |
| 195.15 | 1.475 | 1.474 | -0.072 | 1.0183 | 1.0191 | 0.082 | 0.0000 |
| 195.15 | 3.517 | 3.514 | -0.099 | 3.0961 | 3.1010 | 0.157 | 0.0000 |
| 195.15 | 4.564 | 4.564 | -0.015 | 5.1447 | 5.1467 | 0.039 | 0.0000 |
| 195.15 | 5.028 | 5.035 | 0.126 | 7.2887 | 7.2401 | -0.667 | 0.0000 |
| 195.15 | 5.217 | 5.244 | 0.510 | 9.7392 | 9.3377 | -4.122 | 0.0000 |
| 195.15 | 5.379 | 5.398 | 0.347 | 11.6649 | 11.4880 | -1.516 | 0.0000 |
| 195.15 | 5.617 | 5.604 | -0.232 | 12.9654 | 13.0226 | 0.441 | 0.0000 |
| 195.15 | 6.197 | 6.155 | -0.683 | 14.4934 | 14.5701 | 0.529 | 0.0000 |
| 200.15 | 1.520 | 1.519 | -0.070 | 1.0171 | 1.0179 | 0.079 | 0.0000 |
| 200.15 | 3.683 | 3.680 | -0.093 | 3.0919 | 3.0963 | 0.142 | 0.0000 |
| 200.15 | 4.882 | 4.883 | 0.026 | 5.1398 | 5.1368 | -0.059 | 0.0000 |
| 200.15 | 5.344 | 5.352 | 0.140 | 6.5245 | 6.4968 | -0.424 | 0.0000 |
| 200.15 | 5.884 | 5.902 | 0.299 | 9.4139 | 9.2974 | -1.237 | 0.0000 |
| 200.15 | 6.252 | 6.250 | -0.033 | 11.4638 | 11.4734 | 0.084 | 0.0000 |
| 200.15 | 6.684 | 6.654 | -0.451 | 12.9066 | 12.9870 | 0.623 | 0.0000 |
| 200.15 | 7.523 | 7.480 | -0.572 | 14.4680 | 14.5259 | 0.400 | 0.0000 |
| 210.15 | 1.610 | 1.608 | -0.065 | 1.0147 | 1.0154 | 0.072 | 0.0000 |
| 210.15 | 3.982 | 3.978 | -0.097 | 3.0540 | 3.0582 | 0.137 | 0.0000 |
| 210.15 | 5.498 | 5.500 | 0.040 | 5.1195 | 5.1157 | -0.074 | 0.0000 |
| 210.15 | 6.475 | 6.489 | 0.211 | 7.2171 | 7.1821 | -0.486 | 0.0000 |
| 210.15 | 7.202 | 7.215 | 0.176 | 9.2742 | 9.2367 | -0.404 | 0.0000 |
| 210.15 | 7.973 | 7.959 | -0.175 | 11.2795 | 11.3115 | 0.284 | 0.0000 |
| 210.15 | 8.839 | 8.802 | -0.427 | 12.8555 | 12.9119 | 0.439 | 0.0000 |
| 210.15 | 10.170 | 10.137 | -0.331 | 14.4030 | 14.4332 | 0.210 | 0.0000 |
| 223.15 | 1.725 | 1.724 | -0.049 | 1.0117 | 1.0122 | 0.054 | 0.0000 |
| 223.15 | 4.378 | 4.373 | -0.096 | 3.0313 | 3.0351 | 0.127 | 0.0000 |
| 223.15 | 6.273 | 6.275 | 0.034 | 5.0921 | 5.0894 | -0.053 | 0.0000 |
| 223.15 | 7.678 | 7.692 | 0.185 | 7.1588 | 7.1357 | -0.322 | 0.0000 |
| 223.15 | 8.859 | 8.872 | 0.152 | 9.1478 | 9.1251 | -0.248 | 0.0000 |
| 223.15 | 10.227 | 10.216 | -0.113 | 11.2105 | 11.2260 | 0.138 | 0.0000 |
| 223.15 | 11.815 | 11.784 | -0.264 | 12.9553 | 12.9837 | 0.220 | 0.0000 |
| 248.15 | 1.942 | 1.941 | -0.041 | 1.0056 | 1.0060 | 0.044 | 0.0000 |

Data from Sivaraman and Gammon [44] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 248.15 | 5.107 | 5.103 | -0.086 | 2.9907 | 2.9938 | 0.104 | 0.0000 |
| 248.15 | 7.644 | 7.645 | 0.016 | 4.9901 | 4.9891 | -0.021 | 0.0000 |
| 248.15 | 9.877 | 9.891 | 0.146 | 7.0451 | 7.0314 | -0.195 | 0.0000 |
| 248.15 | 11.983 | 12.001 | 0.151 | 9.0327 | 9.0162 | -0.183 | 0.0000 |
| 248.15 | 14.470 | 14.474 | 0.022 | 11.0784 | 11.0761 | -0.021 | 0.0000 |
| 273.15 | 2.155 | 2.154 | -0.029 | 0.9997 | 1.0000 | 0.030 | 0.0000 |
| 273.15 | 5.883 | 5.878 | -0.074 | 2.9984 | 3.0009 | 0.085 | 0.0000 |
| 273.15 | 9.037 | 9.037 | 0.004 | 4.9698 | 4.9696 | -0.004 | 0.0000 |
| 273.15 | 11.986 | 11.999 | 0.105 | 6.9596 | 6.9511 | -0.122 | 0.0000 |
| 273.15 | 15.110 | 15.130 | 0.135 | 9.0038 | 8.9912 | -0.140 | 0.0000 |
| 273.15 | 18.678 | 18.685 | 0.036 | 11.0011 | 10.9977 | -0.031 | 0.0000 |
| 298.15 | 2.377 | 2.378 | 0.030 | 1.0000 | 0.9997 | -0.031 | 0.0000 |
| 298.15 | 4.581 | 4.578 | -0.055 | 2.0000 | 2.0012 | 0.059 | 0.0000 |
| 298.15 | 6.641 | 6.638 | -0.048 | 3.0000 | 3.0016 | 0.053 | 0.0000 |
| 298.15 | 8.599 | 8.596 | -0.035 | 3.9999 | 4.0015 | 0.039 | 0.0000 |
| 298.15 | 10.493 | 10.491 | -0.011 | 4.9998 | 5.0004 | 0.012 | 0.0000 |
| 298.15 | 12.360 | 12.362 | 0.016 | 5.9994 | 5.9984 | -0.017 | 0.0000 |
| 298.15 | 14.242 | 14.249 | 0.048 | 6.9988 | 6.9952 | -0.051 | 0.0000 |
| 298.15 | 16.188 | 16.201 | 0.080 | 8.0002 | 7.9937 | -0.081 | 0.0000 |
| 298.15 | 18.247 | 18.264 | 0.090 | 9.0002 | 8.9925 | -0.085 | 0.0000 |
| 298.15 | 20.484 | 20.500 | 0.080 | 10.0003 | 9.9933 | -0.070 | 0.0000 |
| 298.15 | 22.973 | 22.985 | 0.051 | 11.0005 | 10.9960 | -0.041 | 0.0000 |
| 323.15 | 2.600 | 2.602 | 0.068 | 1.0006 | 0.9999 | -0.070 | 0.0000 |
| 323.15 | 5.052 | 5.052 | -0.002 | 2.0007 | 2.0007 | 0.002 | 0.0000 |
| 323.15 | 7.392 | 7.391 | -0.015 | 3.0008 | 3.0013 | 0.016 | 0.0000 |
| 323.15 | 9.659 | 9.658 | -0.001 | 4.0016 | 4.0016 | 0.001 | 0.0000 |
| 323.15 | 11.891 | 11.894 | 0.024 | 5.0026 | 5.0013 | -0.025 | 0.0000 |
| 323.15 | 14.126 | 14.135 | 0.066 | 6.0023 | 5.9982 | -0.068 | 0.0000 |
| 323.15 | 16.421 | 16.434 | 0.078 | 7.0036 | 6.9981 | -0.079 | 0.0000 |
| 323.15 | 18.815 | 18.834 | 0.104 | 8.0042 | 7.9962 | -0.099 | 0.0000 |
| 323.15 | 21.377 | 21.395 | 0.082 | 9.0047 | 8.9981 | -0.073 | 0.0000 |
| 323.15 | 24.156 | 24.183 | 0.112 | 10.0053 | 9.9960 | -0.093 | 0.0000 |
| 348.15 | 2.821 | 2.822 | 0.034 | 1.0002 | 0.9998 | -0.035 | 0.0000 |
| 348.15 | 5.522 | 5.525 | 0.062 | 2.0015 | 2.0002 | -0.064 | 0.0000 |
| 348.15 | 11.993 | 12.000 | 0.058 | 4.5045 | 4.5018 | -0.060 | 0.0000 |

Data from Sivaraman and Gammon [44] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 348.15 | 13.280 | 13.288 | 0.060 | 5.0052 | 5.0021 | -0.061 | 0.0000 |
| 348.15 | 15.891 | 15.902 | 0.074 | 6.0066 | 6.0022 | -0.074 | 0.0000 |
| 348.15 | 18.588 | 18.607 | 0.101 | 7.0077 | 7.0009 | -0.097 | 0.0000 |
| 348.15 | 21.423 | 21.456 | 0.155 | 8.0089 | 7.9976 | -0.141 | 0.0000 |
| 348.15 | 24.479 | 24.513 | 0.138 | 9.0099 | 8.9993 | -0.118 | 0.0000 |
| 373.15 | 3.043 | 3.046 | 0.085 | 1.0011 | 1.0002 | -0.087 | 0.0000 |
| 373.15 | 5.993 | 5.996 | 0.051 | 2.0023 | 2.0012 | -0.053 | 0.0000 |
| 373.15 | 8.884 | 8.891 | 0.085 | 3.0043 | 3.0017 | -0.088 | 0.0000 |
| 373.15 | 11.760 | 11.770 | 0.087 | 4.0064 | 4.0029 | -0.088 | 0.0000 |
| 373.15 | 14.663 | 14.679 | 0.108 | 5.0087 | 5.0033 | -0.108 | 0.0000 |
| 373.15 | 17.631 | 17.662 | 0.176 | 6.0109 | 6.0007 | -0.170 | 0.0000 |
| 373.15 | 20.742 | 20.773 | 0.146 | 7.0126 | 7.0031 | -0.135 | 0.0000 |
| 373.15 | 24.007 | 24.070 | 0.264 | 8.0144 | 7.9958 | -0.232 | 0.0000 |
| 373.15 | 27.542 | 27.620 | 0.281 | 9.0155 | 8.9945 | -0.232 | 0.0000 |
| 398.15 | 3.234 | 3.267 | 1.037 | 1.0012 | 0.9908 | -1.040 | 0.0000 |
| 398.15 | 6.458 | 6.468 | 0.156 | 2.0037 | 2.0005 | -0.158 | 0.0000 |
| 398.15 | 9.623 | 9.639 | 0.170 | 3.0064 | 3.0012 | -0.172 | 0.0000 |
| 398.15 | 12.800 | 12.823 | 0.178 | 4.0095 | 4.0024 | -0.178 | 0.0000 |
| 398.15 | 16.037 | 16.066 | 0.184 | 5.0128 | 5.0038 | -0.180 | 0.0000 |
| 398.15 | 19.368 | 19.418 | 0.257 | 6.0156 | 6.0010 | -0.242 | 0.0000 |
| 398.15 | 22.875 | 22.933 | 0.252 | 7.0180 | 7.0020 | -0.227 | 0.0000 |
| 398.15 | 26.602 | 26.675 | 0.273 | 8.0199 | 8.0012 | -0.234 | 0.0000 |
| 423.15 | 3.484 | 3.491 | 0.193 | 1.0020 | 1.0001 | -0.194 | 0.0000 |
| 423.15 | 6.925 | 6.939 | 0.207 | 2.0049 | 2.0007 | -0.209 | 0.0000 |
| 423.15 | 10.361 | 10.386 | 0.241 | 3.0087 | 3.0015 | -0.241 | 0.0000 |
| 423.15 | 13.838 | 13.874 | 0.260 | 4.0129 | 4.0026 | -0.256 | 0.0000 |
| 423.15 | 17.401 | 17.453 | 0.298 | 5.0173 | 5.0030 | -0.285 | 0.0000 |
| 423.15 | 21.100 | 21.171 | 0.335 | 6.0209 | 6.0023 | -0.310 | 0.0000 |
| 423.15 | 24.997 | 25.088 | 0.366 | 7.0236 | 7.0009 | -0.323 | 0.0000 |

Number of Points (Ref. 44) 104

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.158 | BIAS-% | 0.055 | RMS-% | 0.229 | |
| | AAD | 0.016 | BIAS | 0.010 | RMS | 0.023 | MPa |
| DENSITY : | AAD-% | 0.337 | BIAS-% | -0.218 | RMS-% | 1.189 | |
| | AAD | 0.030 | BIAS | -0.018 | RMS | 0.125 | $mol \cdot dm^{-3}$ |

Data from Trappeniers et al. [45]

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 1.794 | 1.794 | -0.007 | 0.8250 | 0.8251 | 0.008 | 102.6723 |
| 285.65 | 1.885 | 1.885 | -0.003 | 0.8250 | 0.8250 | 0.004 | 97.4853 |
| 298.15 | 1.976 | 1.976 | -0.002 | 0.8250 | 0.8250 | 0.003 | 92.8060 |
| 323.15 | 2.157 | 2.157 | 0.005 | 0.8250 | 0.8250 | -0.005 | 84.7006 |
| 348.15 | 2.338 | 2.338 | 0.005 | 0.8250 | 0.8250 | -0.006 | 77.9150 |
| 373.15 | 2.518 | 2.518 | 0.012 | 0.8250 | 0.8249 | -0.013 | 72.1521 |
| 398.15 | 2.698 | 2.698 | 0.011 | 0.8250 | 0.8249 | -0.011 | 67.1909 |
| 423.15 | 2.878 | 2.878 | 0.012 | 0.8250 | 0.8249 | -0.012 | 62.8762 |
| 273.15 | 2.226 | 2.224 | -0.065 | 1.0340 | 1.0347 | 0.069 | 83.1956 |
| 285.65 | 2.341 | 2.340 | -0.060 | 1.0340 | 1.0347 | 0.063 | 78.8476 |
| 298.15 | 2.457 | 2.455 | -0.057 | 1.0340 | 1.0346 | 0.059 | 74.9408 |
| 323.15 | 2.687 | 2.686 | -0.050 | 1.0340 | 1.0345 | 0.052 | 68.2048 |
| 348.15 | 2.917 | 2.915 | -0.043 | 1.0340 | 1.0345 | 0.045 | 62.5998 |
| 373.15 | 3.146 | 3.144 | -0.042 | 1.0340 | 1.0344 | 0.042 | 57.8583 |
| 398.15 | 3.374 | 3.373 | -0.041 | 1.0340 | 1.0344 | 0.042 | 53.7940 |
| 423.15 | 3.603 | 3.601 | -0.046 | 1.0340 | 1.0345 | 0.046 | 50.2694 |
| 273.15 | 2.648 | 2.646 | -0.082 | 1.2430 | 1.2441 | 0.088 | 70.2786 |
| 285.65 | 2.789 | 2.787 | -0.082 | 1.2430 | 1.2441 | 0.087 | 66.4800 |
| 298.15 | 2.930 | 2.927 | -0.080 | 1.2430 | 1.2440 | 0.084 | 63.0814 |
| 323.15 | 3.210 | 3.208 | -0.072 | 1.2430 | 1.2439 | 0.074 | 57.2518 |
| 348.15 | 3.490 | 3.487 | -0.065 | 1.2430 | 1.2438 | 0.067 | 52.4271 |
| 373.15 | 3.769 | 3.766 | -0.066 | 1.2430 | 1.2438 | 0.067 | 48.3639 |
| 398.15 | 4.047 | 4.044 | -0.062 | 1.2430 | 1.2438 | 0.063 | 44.8957 |
| 423.15 | 4.325 | 4.322 | -0.067 | 1.2430 | 1.2438 | 0.068 | 41.8972 |
| 273.15 | 3.050 | 3.047 | -0.105 | 1.4460 | 1.4476 | 0.113 | 61.2998 |
| 285.65 | 3.216 | 3.213 | -0.099 | 1.4460 | 1.4475 | 0.106 | 57.8828 |
| 298.15 | 3.382 | 3.379 | -0.096 | 1.4460 | 1.4475 | 0.101 | 54.8358 |
| 323.15 | 3.712 | 3.709 | -0.084 | 1.4460 | 1.4473 | 0.088 | 49.6336 |
| 348.15 | 4.042 | 4.038 | -0.083 | 1.4460 | 1.4472 | 0.085 | 45.3493 |
| 373.15 | 4.370 | 4.367 | -0.081 | 1.4460 | 1.4472 | 0.083 | 41.7586 |
| 398.15 | 4.698 | 4.694 | -0.083 | 1.4460 | 1.4472 | 0.084 | 38.7035 |
| 423.15 | 5.025 | 5.021 | -0.092 | 1.4460 | 1.4473 | 0.093 | 36.0704 |
| 273.15 | 3.463 | 3.461 | -0.054 | 1.6600 | 1.6610 | 0.059 | 54.2274 |
| 285.65 | 3.656 | 3.655 | -0.047 | 1.6600 | 1.6608 | 0.051 | 51.1061 |
| 298.15 | 3.849 | 3.848 | -0.045 | 1.6600 | 1.6608 | 0.048 | 48.3328 |
| 323.15 | 4.233 | 4.232 | -0.036 | 1.6600 | 1.6606 | 0.038 | 43.6213 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 348.15 | 4.616 | 4.615 | -0.028 | 1.6600 | 1.6605 | 0.029 | 39.7645 |
| 373.15 | 4.997 | 4.996 | -0.022 | 1.6600 | 1.6604 | 0.023 | 36.5463 |
| 398.15 | 5.378 | 5.377 | -0.025 | 1.6600 | 1.6604 | 0.025 | 33.8178 |
| 423.15 | 5.758 | 5.756 | -0.036 | 1.6600 | 1.6606 | 0.036 | 31.4736 |
| 273.15 | 3.867 | 3.863 | -0.082 | 1.8720 | 1.8737 | 0.090 | 48.7882 |
| 285.65 | 4.075 | 4.085 | 0.235 | 1.8720 | 1.8672 | -0.254 | 0.0000 |
| 298.15 | 4.308 | 4.305 | -0.071 | 1.8720 | 1.8734 | 0.076 | 43.3282 |
| 323.15 | 4.747 | 4.744 | -0.058 | 1.8720 | 1.8731 | 0.061 | 38.9941 |
| 348.15 | 5.183 | 5.181 | -0.041 | 1.8720 | 1.8728 | 0.043 | 35.4665 |
| 373.15 | 5.619 | 5.616 | -0.041 | 1.8720 | 1.8728 | 0.042 | 32.5336 |
| 398.15 | 6.053 | 6.050 | -0.045 | 1.8720 | 1.8729 | 0.045 | 30.0568 |
| 423.15 | 6.487 | 6.483 | -0.059 | 1.8720 | 1.8731 | 0.060 | 27.9352 |
| 273.15 | 4.153 | 4.149 | -0.110 | 2.0250 | 2.0275 | 0.121 | 45.5632 |
| 285.65 | 4.395 | 4.390 | -0.104 | 2.0250 | 2.0273 | 0.114 | 42.7980 |
| 298.15 | 4.635 | 4.631 | -0.095 | 2.0250 | 2.0271 | 0.103 | 40.3591 |
| 323.15 | 5.115 | 5.110 | -0.084 | 2.0250 | 2.0268 | 0.089 | 36.2472 |
| 348.15 | 5.592 | 5.587 | -0.079 | 2.0250 | 2.0267 | 0.082 | 32.9115 |
| 373.15 | 6.067 | 6.062 | -0.082 | 2.0250 | 2.0267 | 0.085 | 30.1484 |
| 398.15 | 6.542 | 6.536 | -0.090 | 2.0250 | 2.0269 | 0.092 | 27.8210 |
| 423.15 | 7.015 | 7.008 | -0.097 | 2.0250 | 2.0270 | 0.098 | 25.8334 |
| 273.15 | 4.248 | 4.243 | -0.108 | 2.0760 | 2.0785 | 0.120 | 44.5954 |
| 285.65 | 4.496 | 4.491 | -0.101 | 2.0760 | 2.0783 | 0.111 | 41.8698 |
| 298.15 | 4.744 | 4.739 | -0.101 | 2.0760 | 2.0783 | 0.109 | 39.4658 |
| 323.15 | 5.236 | 5.232 | -0.082 | 2.0760 | 2.0778 | 0.087 | 35.4221 |
| 348.15 | 5.726 | 5.722 | -0.074 | 2.0760 | 2.0776 | 0.077 | 32.1450 |
| 373.15 | 6.215 | 6.211 | -0.076 | 2.0760 | 2.0776 | 0.079 | 29.4331 |
| 398.15 | 6.703 | 6.697 | -0.081 | 2.0760 | 2.0777 | 0.083 | 27.1511 |
| 423.15 | 7.190 | 7.183 | -0.094 | 2.0760 | 2.0780 | 0.095 | 25.2026 |
| 273.15 | 4.526 | 4.522 | -0.096 | 2.2280 | 2.2304 | 0.107 | 41.9729 |
| 285.65 | 4.795 | 4.790 | -0.089 | 2.2280 | 2.2302 | 0.098 | 39.3525 |
| 298.15 | 5.063 | 5.059 | -0.086 | 2.2280 | 2.2301 | 0.093 | 37.0484 |
| 323.15 | 5.596 | 5.592 | -0.075 | 2.2280 | 2.2298 | 0.080 | 33.1831 |
| 348.15 | 6.128 | 6.123 | -0.073 | 2.2280 | 2.2297 | 0.076 | 30.0630 |
| 373.15 | 6.657 | 6.652 | -0.073 | 2.2280 | 2.2297 | 0.075 | 27.4901 |
| 398.15 | 7.185 | 7.179 | -0.081 | 2.2280 | 2.2298 | 0.083 | 25.3299 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 423.15 | 7.711 | 7.704 | -0.088 | 2.2280 | 2.2300 | 0.088 | 23.4906 |
| 273.15 | 4.633 | 4.628 | -0.090 | 2.2870 | 2.2893 | 0.101 | 41.0478 |
| 285.65 | 4.910 | 4.906 | -0.082 | 2.2870 | 2.2891 | 0.090 | 38.4648 |
| 298.15 | 5.186 | 5.182 | -0.079 | 2.2870 | 2.2890 | 0.086 | 36.1953 |
| 323.15 | 5.735 | 5.731 | -0.063 | 2.2870 | 2.2885 | 0.067 | 32.3941 |
| 348.15 | 6.282 | 6.278 | -0.055 | 2.2870 | 2.2883 | 0.058 | 29.3305 |
| 373.15 | 6.827 | 6.823 | -0.059 | 2.2870 | 2.2884 | 0.060 | 26.8058 |
| 398.15 | 7.370 | 7.366 | -0.063 | 2.2870 | 2.2885 | 0.064 | 24.6892 |
| 423.15 | 7.912 | 7.907 | -0.074 | 2.2870 | 2.2887 | 0.074 | 22.8875 |
| 273.15 | 4.893 | 4.889 | -0.074 | 2.4320 | 2.4340 | 0.083 | 38.9627 |
| 285.65 | 5.190 | 5.187 | -0.065 | 2.4320 | 2.4338 | 0.072 | 36.4623 |
| 298.15 | 5.486 | 5.483 | -0.060 | 2.4320 | 2.4336 | 0.066 | 34.2712 |
| 323.15 | 6.075 | 6.072 | -0.052 | 2.4320 | 2.4333 | 0.055 | 30.6113 |
| 348.15 | 6.662 | 6.659 | -0.054 | 2.4320 | 2.4334 | 0.056 | 27.6716 |
| 373.15 | 7.247 | 7.242 | -0.059 | 2.4320 | 2.4335 | 0.061 | 25.2574 |
| 398.15 | 7.829 | 7.824 | -0.063 | 2.4320 | 2.4336 | 0.064 | 23.2384 |
| 423.15 | 8.421 | 8.404 | -0.206 | 2.4320 | 2.4371 | 0.208 | 21.5089 |
| 273.15 | 5.248 | 5.244 | -0.081 | 2.6320 | 2.6344 | 0.092 | 36.4508 |
| 285.65 | 5.574 | 5.569 | -0.077 | 2.6320 | 2.6343 | 0.086 | 34.0478 |
| 298.15 | 5.898 | 5.894 | -0.071 | 2.6320 | 2.6341 | 0.078 | 31.9507 |
| 323.15 | 6.543 | 6.539 | -0.065 | 2.6320 | 2.6338 | 0.069 | 28.4619 |
| 348.15 | 7.186 | 7.181 | -0.065 | 2.6320 | 2.6338 | 0.068 | 25.6739 |
| 373.15 | 7.825 | 7.820 | -0.065 | 2.6320 | 2.6338 | 0.067 | 23.3937 |
| 398.15 | 8.462 | 8.456 | -0.074 | 2.6320 | 2.6340 | 0.075 | 21.4919 |
| 423.15 | 9.099 | 9.090 | -0.091 | 2.6320 | 2.6344 | 0.091 | 19.8809 |
| 273.15 | 5.601 | 5.596 | -0.094 | 2.8340 | 2.8370 | 0.107 | 34.2644 |
| 285.65 | 5.956 | 5.951 | -0.087 | 2.8340 | 2.8368 | 0.098 | 31.9463 |
| 298.15 | 6.310 | 6.304 | -0.086 | 2.8340 | 2.8367 | 0.095 | 29.9290 |
| 323.15 | 7.013 | 7.007 | -0.090 | 2.8340 | 2.8367 | 0.096 | 26.5876 |
| 348.15 | 7.713 | 7.706 | -0.091 | 2.8340 | 2.8367 | 0.095 | 23.9317 |
| 373.15 | 8.410 | 8.401 | -0.099 | 2.8340 | 2.8369 | 0.102 | 21.7673 |
| 398.15 | 9.104 | 9.094 | -0.103 | 2.8340 | 2.8370 | 0.105 | 19.9692 |
| 423.15 | 9.796 | 9.785 | -0.119 | 2.8340 | 2.8374 | 0.120 | 18.4499 |
| 273.15 | 5.828 | 5.825 | -0.064 | 2.9670 | 2.9692 | 0.073 | 32.9898 |
| 285.65 | 6.204 | 6.199 | -0.076 | 2.9670 | 2.9695 | 0.085 | 30.7169 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 348.15 | 8.243 | 8.237 | -0.071 | 3.0390 | 3.0413 | 0.075 | 22.3971 |
| 373.15 | 8.998 | 8.991 | -0.081 | 3.0390 | 3.0415 | 0.083 | 20.3353 |
| 398.15 | 9.750 | 9.742 | -0.086 | 3.0390 | 3.0417 | 0.087 | 18.6283 |
| 423.15 | 10.501 | 10.491 | -0.095 | 3.0390 | 3.0419 | 0.095 | 17.1905 |
| 273.15 | 6.306 | 6.302 | -0.058 | 3.2490 | 3.2512 | 0.067 | 30.6103 |
| 285.65 | 6.723 | 6.719 | -0.062 | 3.2490 | 3.2513 | 0.070 | 28.4281 |
| 298.15 | 7.138 | 7.134 | -0.064 | 3.2490 | 3.2513 | 0.072 | 26.5433 |
| 323.15 | 7.964 | 7.959 | -0.064 | 3.2490 | 3.2513 | 0.069 | 23.4503 |
| 348.15 | 8.785 | 8.778 | -0.069 | 3.2490 | 3.2514 | 0.073 | 21.0150 |
| 373.15 | 9.601 | 9.594 | -0.071 | 3.2490 | 3.2514 | 0.073 | 19.0472 |
| 398.15 | 10.415 | 10.406 | -0.084 | 3.2490 | 3.2517 | 0.085 | 17.4218 |
| 423.15 | 11.226 | 11.215 | -0.098 | 3.2490 | 3.2522 | 0.098 | 16.0567 |
| 273.15 | 6.330 | 6.327 | -0.050 | 3.2640 | 3.2659 | 0.058 | 30.4962 |
| 285.65 | 6.750 | 6.746 | -0.060 | 3.2640 | 3.2662 | 0.068 | 28.3171 |
| 298.15 | 7.168 | 7.163 | -0.066 | 3.2640 | 3.2664 | 0.073 | 26.4360 |
| 323.15 | 7.998 | 7.993 | -0.068 | 3.2640 | 3.2664 | 0.073 | 23.3505 |
| 348.15 | 8.823 | 8.817 | -0.072 | 3.2640 | 3.2665 | 0.075 | 20.9225 |
| 373.15 | 9.644 | 9.637 | -0.073 | 3.2640 | 3.2664 | 0.075 | 18.9609 |
| 398.15 | 10.463 | 10.454 | -0.084 | 3.2640 | 3.2668 | 0.085 | 17.3412 |
| 423.15 | 11.278 | 11.267 | -0.094 | 3.2640 | 3.2671 | 0.094 | 15.9814 |
| 273.15 | 6.622 | 6.618 | -0.054 | 3.4390 | 3.4412 | 0.063 | 29.2175 |
| 285.65 | 7.068 | 7.064 | -0.062 | 3.4390 | 3.4414 | 0.070 | 27.0861 |
| 298.15 | 7.513 | 7.508 | -0.062 | 3.4390 | 3.4414 | 0.069 | 25.2520 |
| 323.15 | 8.397 | 8.390 | -0.075 | 3.4390 | 3.4418 | 0.080 | 22.2517 |
| 348.15 | 9.275 | 9.267 | -0.080 | 3.4390 | 3.4419 | 0.084 | 19.9013 |
| 373.15 | 10.148 | 10.140 | -0.080 | 3.4390 | 3.4418 | 0.082 | 18.0090 |
| 398.15 | 11.018 | 11.008 | -0.089 | 3.4390 | 3.4421 | 0.090 | 16.4507 |
| 423.15 | 11.885 | 11.873 | -0.103 | 3.4390 | 3.4425 | 0.103 | 15.1450 |
| 273.15 | 6.824 | 6.821 | -0.043 | 3.5620 | 3.5638 | 0.050 | 28.3923 |
| 285.65 | 7.290 | 7.286 | -0.055 | 3.5620 | 3.5642 | 0.063 | 26.2901 |
| 298.15 | 7.754 | 7.749 | -0.063 | 3.5620 | 3.5645 | 0.070 | 24.4847 |
| 323.15 | 8.674 | 8.669 | -0.062 | 3.5620 | 3.5644 | 0.067 | 21.5420 |
| 348.15 | 9.590 | 9.583 | -0.072 | 3.5620 | 3.5647 | 0.076 | 19.2414 |
| 373.15 | 10.501 | 10.493 | -0.079 | 3.5620 | 3.5649 | 0.081 | 17.3932 |
| 398.15 | 11.408 | 11.398 | -0.088 | 3.5620 | 3.5652 | 0.089 | 15.8748 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 423.15 | 12.313 | 12.300 | -0.105 | 3.5620 | 3.5657 | 0.104 | 14.6042 |
| 273.15 | 7.300 | 7.298 | -0.027 | 3.8560 | 3.8572 | 0.031 | 26.6178 |
| 285.65 | 7.813 | 7.810 | -0.039 | 3.8560 | 3.8577 | 0.044 | 24.5797 |
| 298.15 | 8.323 | 8.319 | -0.045 | 3.8560 | 3.8579 | 0.050 | 22.8378 |
| 323.15 | 9.336 | 9.332 | -0.047 | 3.8560 | 3.8579 | 0.050 | 20.0151 |
| 348.15 | 10.343 | 10.337 | -0.055 | 3.8560 | 3.8582 | 0.058 | 17.8234 |
| 373.15 | 11.346 | 11.338 | -0.075 | 3.8560 | 3.8589 | 0.076 | 16.0710 |
| 398.15 | 12.344 | 12.333 | -0.086 | 3.8560 | 3.8593 | 0.087 | 14.6384 |
| 423.15 | 13.338 | 13.325 | -0.101 | 3.8560 | 3.8599 | 0.100 | 13.4444 |
| 273.15 | 7.771 | 7.770 | -0.015 | 4.1520 | 4.1527 | 0.018 | 25.0653 |
| 285.65 | 8.333 | 8.330 | -0.032 | 4.1520 | 4.1535 | 0.037 | 23.0816 |
| 298.15 | 8.891 | 8.888 | -0.042 | 4.1520 | 4.1540 | 0.047 | 21.3945 |
| 348.15 | 11.102 | 11.096 | -0.059 | 4.1520 | 4.1546 | 0.062 | 16.5816 |
| 323.15 | 10.000 | 9.996 | -0.048 | 4.1520 | 4.1541 | 0.052 | 18.6773 |
| 373.15 | 12.200 | 12.190 | -0.078 | 4.1520 | 4.1553 | 0.080 | 14.9151 |
| 398.15 | 13.292 | 13.279 | -0.095 | 4.1520 | 4.1560 | 0.095 | 13.5583 |
| 423.15 | 14.381 | 14.363 | -0.119 | 4.1520 | 4.1568 | 0.117 | 12.4314 |
| 273.15 | 8.192 | 8.192 | 0.004 | 4.4210 | 4.4208 | -0.004 | 23.8185 |
| 285.65 | 8.799 | 8.798 | -0.011 | 4.4210 | 4.4216 | 0.013 | 21.8790 |
| 298.15 | 9.401 | 9.400 | -0.018 | 4.4210 | 4.4219 | 0.020 | 20.2367 |
| 323.15 | 10.600 | 10.597 | -0.030 | 4.4210 | 4.4224 | 0.033 | 17.6040 |
| 348.15 | 11.790 | 11.785 | -0.043 | 4.4210 | 4.4230 | 0.045 | 15.5862 |
| 373.15 | 12.975 | 12.967 | -0.061 | 4.4210 | 4.4237 | 0.062 | 13.9894 |
| 398.15 | 14.155 | 14.143 | -0.082 | 4.4210 | 4.4246 | 0.082 | 12.6941 |
| 423.15 | 15.328 | 15.315 | -0.088 | 4.4210 | 4.4248 | 0.086 | 11.6229 |
| 273.15 | 8.240 | 8.241 | 0.008 | 4.4520 | 4.4516 | -0.010 | 23.6838 |
| 285.65 | 8.852 | 8.851 | -0.008 | 4.4520 | 4.4524 | 0.010 | 21.7487 |
| 298.15 | 9.461 | 9.459 | -0.020 | 4.4520 | 4.4530 | 0.022 | 20.1106 |
| 323.15 | 10.669 | 10.666 | -0.030 | 4.4520 | 4.4534 | 0.032 | 17.4876 |
| 348.15 | 11.870 | 11.865 | -0.045 | 4.4520 | 4.4541 | 0.047 | 15.4781 |
| 373.15 | 13.066 | 13.057 | -0.068 | 4.4520 | 4.4550 | 0.068 | 13.8887 |
| 398.15 | 14.256 | 14.243 | -0.085 | 4.4520 | 4.4558 | 0.085 | 12.6003 |
| 423.15 | 15.441 | 15.425 | -0.103 | 4.4520 | 4.4565 | 0.101 | 11.5344 |
| 273.15 | 8.714 | 8.715 | 0.017 | 4.7590 | 4.7581 | -0.020 | 22.4271 |
| 285.65 | 9.378 | 9.378 | 0.002 | 4.7590 | 4.7589 | -0.002 | 20.5363 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 298.15 | 10.040 | 10.039 | -0.015 | 4.7590 | 4.7598 | 0.017 | 18.9427 |
| 323.15 | 11.354 | 11.351 | -0.027 | 4.7590 | 4.7604 | 0.029 | 16.4069 |
| 348.15 | 12.660 | 12.654 | -0.047 | 4.7590 | 4.7613 | 0.049 | 14.4768 |
| 373.15 | 13.958 | 13.949 | -0.068 | 4.7590 | 4.7623 | 0.069 | 12.9588 |
| 398.15 | 15.252 | 15.238 | -0.095 | 4.7590 | 4.7634 | 0.093 | 11.7330 |
| 423.15 | 16.540 | 16.521 | -0.113 | 4.7590 | 4.7642 | 0.110 | 10.7229 |
| 273.15 | 8.740 | 8.743 | 0.029 | 4.7770 | 4.7753 | -0.035 | 22.3593 |
| 285.65 | 9.408 | 9.409 | 0.009 | 4.7770 | 4.7765 | -0.010 | 20.4701 |
| 298.15 | 10.073 | 10.073 | -0.003 | 4.7770 | 4.7772 | 0.004 | 18.8794 |
| 323.15 | 11.393 | 11.391 | -0.018 | 4.7770 | 4.7779 | 0.019 | 16.3481 |
| 348.15 | 12.705 | 12.700 | -0.036 | 4.7770 | 4.7788 | 0.037 | 14.4225 |
| 373.15 | 14.008 | 14.001 | -0.050 | 4.7770 | 4.7794 | 0.051 | 12.9087 |
| 398.15 | 15.307 | 15.296 | -0.071 | 4.7770 | 4.7803 | 0.070 | 11.6866 |
| 423.15 | 16.600 | 16.586 | -0.088 | 4.7770 | 4.7811 | 0.085 | 10.6796 |
| 273.15 | 9.136 | 9.141 | 0.046 | 5.0380 | 5.0352 | -0.056 | 21.4016 |
| 285.65 | 9.851 | 9.854 | 0.025 | 5.0380 | 5.0366 | -0.028 | 19.5460 |
| 298.15 | 10.562 | 10.563 | 0.013 | 5.0380 | 5.0373 | -0.014 | 17.9899 |
| 323.15 | 11.974 | 11.973 | -0.009 | 5.0380 | 5.0385 | 0.009 | 15.5254 |
| 348.15 | 13.377 | 13.373 | -0.033 | 5.0380 | 5.0397 | 0.034 | 13.6613 |
| 373.15 | 14.773 | 14.765 | -0.059 | 5.0380 | 5.0410 | 0.059 | 12.2019 |
| 398.15 | 16.162 | 16.149 | -0.082 | 5.0380 | 5.0420 | 0.080 | 11.0285 |
| 423.15 | 17.546 | 17.528 | -0.104 | 5.0380 | 5.0430 | 0.100 | 10.0644 |
| 273.15 | 9.282 | 9.286 | 0.039 | 5.1340 | 5.1316 | -0.046 | 21.0679 |
| 285.65 | 10.015 | 10.017 | 0.016 | 5.1340 | 5.1331 | -0.018 | 19.2241 |
| 298.15 | 10.743 | 10.743 | 0.002 | 5.1340 | 5.1339 | -0.003 | 17.6802 |
| 323.15 | 12.189 | 12.187 | -0.018 | 5.1340 | 5.1350 | 0.019 | 15.2397 |
| 348.15 | 13.627 | 13.621 | -0.043 | 5.1340 | 5.1362 | 0.044 | 13.3974 |
| 373.15 | 15.056 | 15.046 | -0.062 | 5.1340 | 5.1372 | 0.062 | 11.9578 |
| 398.15 | 16.478 | 16.465 | -0.080 | 5.1340 | 5.1380 | 0.078 | 10.8018 |
| 423.15 | 17.894 | 17.877 | -0.097 | 5.1340 | 5.1388 | 0.093 | 9.8529 |
| 273.15 | 9.832 | 9.839 | 0.072 | 5.5020 | 5.4973 | -0.086 | 19.8837 |
| 285.65 | 10.633 | 10.638 | 0.047 | 5.5020 | 5.4990 | -0.054 | 18.0820 |
| 298.15 | 11.428 | 11.432 | 0.034 | 5.5020 | 5.4999 | -0.038 | 16.5821 |
| 323.15 | 13.009 | 13.010 | 0.009 | 5.5020 | 5.5015 | -0.009 | 14.2269 |
| 348.15 | 14.580 | 14.577 | -0.022 | 5.5020 | 5.5032 | 0.022 | 12.4625 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 373.15 | 16.142 | 16.135 | -0.045 | 5.5020 | 5.5044 | 0.044 | 11.0923 |
| 398.15 | 17.696 | 17.684 | -0.065 | 5.5020 | 5.5055 | 0.063 | 9.9975 |
| 423.15 | 19.244 | 19.227 | -0.087 | 5.5020 | 5.5065 | 0.082 | 9.1023 |
| 273.15 | 10.364 | 10.373 | 0.084 | 5.8600 | 5.8541 | -0.100 | 18.8412 |
| 285.65 | 11.233 | 11.239 | 0.059 | 5.8600 | 5.8561 | -0.067 | 17.0782 |
| 298.15 | 12.096 | 12.101 | 0.042 | 5.8600 | 5.8573 | -0.046 | 15.6179 |
| 323.15 | 13.813 | 13.814 | 0.012 | 5.8600 | 5.8593 | -0.013 | 13.3403 |
| 348.15 | 15.519 | 15.515 | -0.023 | 5.8600 | 5.8613 | 0.023 | 11.6465 |
| 373.15 | 17.215 | 17.206 | -0.048 | 5.8600 | 5.8628 | 0.047 | 10.3388 |
| 398.15 | 18.902 | 18.888 | -0.071 | 5.8600 | 5.8640 | 0.068 | 9.2987 |
| 423.15 | 20.583 | 20.563 | -0.099 | 5.8600 | 5.8654 | 0.093 | 8.4514 |
| 273.15 | 10.861 | 10.873 | 0.116 | 6.1980 | 6.1895 | -0.137 | 17.9411 |
| 285.65 | 11.796 | 11.806 | 0.087 | 6.1980 | 6.1919 | -0.099 | 16.2124 |
| 298.15 | 12.725 | 12.734 | 0.071 | 6.1980 | 6.1932 | -0.077 | 14.7880 |
| 323.15 | 14.574 | 14.579 | 0.036 | 6.1980 | 6.1957 | -0.037 | 12.5795 |
| 348.15 | 16.412 | 16.411 | -0.005 | 6.1980 | 6.1983 | 0.005 | 10.9481 |
| 373.15 | 18.237 | 18.232 | -0.029 | 6.1980 | 6.1998 | 0.028 | 9.6957 |
| 398.15 | 20.053 | 20.043 | -0.051 | 6.1980 | 6.2010 | 0.048 | 8.7037 |
| 423.15 | 21.864 | 21.846 | -0.080 | 6.1980 | 6.2026 | 0.074 | 7.8983 |
| 273.15 | 10.993 | 11.005 | 0.108 | 6.2870 | 6.2790 | -0.128 | 17.7137 |
| 285.65 | 11.945 | 11.956 | 0.090 | 6.2870 | 6.2806 | -0.101 | 15.9951 |
| 298.15 | 12.892 | 12.901 | 0.072 | 6.2870 | 6.2820 | -0.079 | 14.5800 |
| 323.15 | 14.777 | 14.782 | 0.034 | 6.2870 | 6.2848 | -0.035 | 12.3892 |
| 348.15 | 16.649 | 16.649 | -0.005 | 6.2870 | 6.2873 | 0.005 | 10.7740 |
| 373.15 | 18.511 | 18.504 | -0.035 | 6.2870 | 6.2891 | 0.034 | 9.5353 |
| 398.15 | 20.361 | 20.351 | -0.054 | 6.2870 | 6.2902 | 0.050 | 8.5557 |
| 423.15 | 22.205 | 22.188 | -0.076 | 6.2870 | 6.2914 | 0.070 | 7.7611 |
| 273.15 | 11.358 | 11.371 | 0.122 | 6.5350 | 6.5256 | -0.144 | 17.1058 |
| 285.65 | 12.360 | 12.372 | 0.097 | 6.5350 | 6.5279 | -0.109 | 15.4115 |
| 298.15 | 13.358 | 13.368 | 0.076 | 6.5350 | 6.5296 | -0.082 | 14.0217 |
| 323.15 | 15.343 | 15.349 | 0.038 | 6.5350 | 6.5324 | -0.039 | 11.8801 |
| 348.15 | 17.315 | 17.315 | 0.004 | 6.5350 | 6.5348 | -0.003 | 10.3089 |
| 373.15 | 19.276 | 19.270 | -0.032 | 6.5350 | 6.5370 | 0.030 | 9.1081 |
| 398.15 | 21.227 | 21.215 | -0.061 | 6.5350 | 6.5387 | 0.056 | 8.1611 |
| 423.15 | 23.170 | 23.150 | -0.084 | 6.5350 | 6.5400 | 0.077 | 7.3951 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 273.15 | 11.738 | 11.753 | 0.128 | 6.7930 | 6.7829 | -0.149 | 16.5030 |
| 285.65 | 12.793 | 12.807 | 0.108 | 6.7930 | 6.7848 | -0.120 | 14.8353 |
| 298.15 | 13.846 | 13.857 | 0.081 | 6.7930 | 6.7871 | -0.087 | 13.4715 |
| 323.15 | 15.937 | 15.944 | 0.044 | 6.7930 | 6.7900 | -0.044 | 11.3799 |
| 348.15 | 18.017 | 18.017 | 0.000 | 6.7930 | 6.7930 | 0.000 | 9.8526 |
| 373.15 | 20.084 | 20.077 | -0.035 | 6.7930 | 6.7952 | 0.032 | 8.6902 |
| 398.15 | 22.139 | 22.126 | -0.058 | 6.7930 | 6.7966 | 0.053 | 7.7764 |
| 423.15 | 24.186 | 24.166 | -0.081 | 6.7930 | 6.7979 | 0.072 | 7.0389 |
| 273.15 | 11.839 | 11.855 | 0.133 | 6.8620 | 6.8514 | -0.155 | 16.3469 |
| 285.65 | 12.911 | 12.924 | 0.099 | 6.8620 | 6.8544 | -0.111 | 14.6850 |
| 298.15 | 13.977 | 13.988 | 0.081 | 6.8620 | 6.8561 | -0.086 | 13.3289 |
| 323.15 | 16.097 | 16.104 | 0.044 | 6.8620 | 6.8590 | -0.044 | 11.2506 |
| 348.15 | 18.205 | 18.206 | 0.006 | 6.8620 | 6.8616 | -0.006 | 9.7353 |
| 373.15 | 20.300 | 20.295 | -0.028 | 6.8620 | 6.8638 | 0.027 | 8.5829 |
| 398.15 | 22.385 | 22.372 | -0.056 | 6.8620 | 6.8655 | 0.051 | 7.6776 |
| 423.15 | 24.462 | 24.441 | -0.087 | 6.8620 | 6.8673 | 0.078 | 6.9473 |
| 273.15 | 12.489 | 12.508 | 0.147 | 7.3020 | 7.2897 | -0.168 | 15.3909 |
| 285.65 | 13.654 | 13.672 | 0.133 | 7.3020 | 7.2914 | -0.145 | 13.7754 |
| 298.15 | 14.816 | 14.831 | 0.105 | 7.3020 | 7.2939 | -0.111 | 12.4635 |
| 323.15 | 17.126 | 17.137 | 0.062 | 7.3020 | 7.2975 | -0.061 | 10.4685 |
| 348.15 | 19.424 | 19.427 | 0.017 | 7.3020 | 7.3008 | -0.016 | 9.0257 |
| 373.15 | 21.761 | 21.703 | -0.265 | 7.3020 | 7.3197 | 0.243 | 7.9266 |
| 398.15 | 23.976 | 23.967 | -0.034 | 7.3020 | 7.3042 | 0.031 | 7.0837 |
| 423.15 | 26.237 | 26.221 | -0.062 | 7.3020 | 7.3060 | 0.055 | 6.3990 |
| 273.15 | 13.271 | 13.293 | 0.167 | 7.8250 | 7.8104 | -0.187 | 14.3315 |
| 285.65 | 14.554 | 14.575 | 0.146 | 7.8250 | 7.8128 | -0.155 | 12.7714 |
| 298.15 | 15.833 | 15.853 | 0.127 | 7.8250 | 7.8148 | -0.130 | 11.5144 |
| 323.15 | 18.380 | 18.395 | 0.081 | 7.8250 | 7.8189 | -0.078 | 9.6183 |
| 348.15 | 20.912 | 20.919 | 0.034 | 7.8250 | 7.8226 | -0.031 | 8.2597 |
| 373.15 | 23.431 | 23.429 | -0.008 | 7.8250 | 7.8256 | 0.007 | 7.2401 |
| 398.15 | 25.931 | 25.926 | -0.022 | 7.8250 | 7.8265 | 0.019 | 6.4480 |
| 423.15 | 28.422 | 28.410 | -0.041 | 7.8250 | 7.8277 | 0.035 | 5.8143 |
| 273.15 | 14.050 | 14.073 | 0.166 | 8.3350 | 8.3200 | -0.180 | 13.3587 |
| 285.65 | 15.454 | 15.477 | 0.151 | 8.3350 | 8.3220 | -0.157 | 11.8574 |
| 298.15 | 16.855 | 16.876 | 0.128 | 8.3350 | 8.3244 | -0.128 | 10.6554 |
| 323.15 | 19.643 | 19.660 | 0.087 | 8.3350 | 8.3282 | -0.081 | 8.8572 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 348.15 | 22.417 | 22.426 | 0.038 | 8.3350 | 8.3321 | -0.034 | 7.5793 |
| 373.15 | 25.176 | 25.176 | -0.003 | 8.3350 | 8.3352 | 0.003 | 6.6265 |
| 398.15 | 27.916 | 27.910 | -0.020 | 8.3350 | 8.3364 | 0.017 | 5.8896 |
| 423.15 | 30.642 | 30.632 | -0.036 | 8.3350 | 8.3375 | 0.029 | 5.3025 |
| 273.15 | 14.802 | 14.826 | 0.159 | 8.8140 | 8.7992 | -0.168 | 12.4877 |
| 285.65 | 16.326 | 16.350 | 0.146 | 8.8140 | 8.8011 | -0.146 | 11.0456 |
| 298.15 | 17.847 | 17.869 | 0.122 | 8.8140 | 8.8036 | -0.118 | 9.8981 |
| 323.15 | 20.874 | 20.891 | 0.083 | 8.8140 | 8.8073 | -0.075 | 8.1934 |
| 348.15 | 23.887 | 23.895 | 0.034 | 8.8140 | 8.8114 | -0.030 | 6.9909 |
| 373.15 | 26.882 | 26.881 | -0.003 | 8.8140 | 8.8142 | 0.003 | 6.0991 |
| 398.15 | 29.860 | 29.851 | -0.029 | 8.8140 | 8.8161 | 0.024 | 5.4119 |
| 423.15 | 32.823 | 32.806 | -0.052 | 8.8140 | 8.8177 | 0.042 | 4.8661 |
| 273.15 | 15.535 | 15.560 | 0.166 | 9.2670 | 9.2514 | -0.169 | 11.6951 |
| 285.65 | 17.177 | 17.203 | 0.153 | 9.2670 | 9.2533 | -0.148 | 10.3134 |
| 298.15 | 18.816 | 18.841 | 0.130 | 9.2670 | 9.2558 | -0.121 | 9.2199 |
| 323.15 | 22.079 | 22.100 | 0.097 | 9.2670 | 9.2591 | -0.085 | 7.6057 |
| 348.15 | 25.327 | 25.340 | 0.053 | 9.2670 | 9.2629 | -0.045 | 6.4741 |
| 373.15 | 28.558 | 28.561 | 0.010 | 9.2670 | 9.2662 | -0.008 | 5.6385 |
| 398.15 | 31.773 | 31.763 | -0.030 | 9.2670 | 9.2692 | 0.024 | 4.9965 |
| 423.15 | 34.971 | 34.950 | -0.062 | 9.2670 | 9.2715 | 0.048 | 4.4881 |
| 273.15 | 15.582 | 15.607 | 0.156 | 9.2950 | 9.2803 | -0.158 | 11.6463 |
| 285.65 | 17.232 | 17.257 | 0.146 | 9.2950 | 9.2819 | -0.141 | 10.2687 |
| 298.15 | 18.877 | 18.902 | 0.130 | 9.2950 | 9.2838 | -0.120 | 9.1791 |
| 323.15 | 22.156 | 22.177 | 0.093 | 9.2950 | 9.2874 | -0.081 | 7.5704 |
| 348.15 | 25.419 | 25.431 | 0.049 | 9.2950 | 9.2912 | -0.041 | 6.4432 |
| 373.15 | 28.663 | 28.667 | 0.012 | 9.2950 | 9.2941 | -0.010 | 5.6111 |
| 398.15 | 31.891 | 31.884 | -0.022 | 9.2950 | 9.2966 | 0.017 | 4.9721 |
| 423.15 | 35.102 | 35.085 | -0.047 | 9.2950 | 9.2984 | 0.036 | 2.9773 |
| 273.15 | 16.369 | 16.392 | 0.136 | 9.7600 | 9.7471 | -0.132 | 10.8579 |
| 285.65 | 18.147 | 18.170 | 0.125 | 9.7600 | 9.7487 | -0.116 | 9.5477 |
| 298.15 | 19.921 | 19.943 | 0.112 | 9.7600 | 9.7502 | -0.100 | 8.5169 |
| 323.15 | 23.455 | 23.474 | 0.080 | 9.7600 | 9.7534 | -0.068 | 7.0035 |
| 348.15 | 26.973 | 26.983 | 0.039 | 9.7600 | 9.7569 | -0.031 | 5.9489 |
| 373.15 | 30.470 | 30.471 | 0.002 | 9.7600 | 9.7599 | -0.001 | 5.1735 |
| 398.15 | 33.950 | 33.939 | -0.031 | 9.7600 | 9.7623 | 0.024 | 4.5797 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 423.15 | 37.408 | 37.390 | -0.048 | 9.7600 | 9.7635 | 0.036 | 2.7403 |
| 273.15 | 16.812 | 16.833 | 0.130 | 10.0130 | 10.0007 | -0.123 | 10.4388 |
| 285.65 | 18.661 | 18.684 | 0.123 | 10.0130 | 10.0018 | -0.112 | 9.1675 |
| 298.15 | 20.509 | 20.530 | 0.105 | 10.0130 | 10.0038 | -0.092 | 8.1695 |
| 323.15 | 24.187 | 24.205 | 0.074 | 10.0130 | 10.0069 | -0.061 | 6.7088 |
| 348.15 | 27.848 | 27.858 | 0.035 | 10.0130 | 10.0103 | -0.027 | 5.6936 |
| 373.15 | 31.487 | 31.489 | 0.005 | 10.0130 | 10.0126 | -0.004 | 4.9487 |
| 398.15 | 35.111 | 35.099 | -0.035 | 10.0130 | 10.0157 | 0.027 | 2.9191 |
| 423.15 | 38.713 | 38.690 | -0.058 | 10.0130 | 10.0173 | 0.043 | 2.6191 |
| 273.15 | 18.199 | 18.218 | 0.102 | 10.7630 | 10.7534 | -0.089 | 9.2324 |
| 285.65 | 20.275 | 20.295 | 0.102 | 10.7630 | 10.7538 | -0.086 | 8.0848 |
| 298.15 | 22.347 | 22.368 | 0.091 | 10.7630 | 10.7550 | -0.074 | 7.1896 |
| 323.15 | 26.479 | 26.495 | 0.060 | 10.7630 | 10.7580 | -0.047 | 5.8874 |
| 348.15 | 30.586 | 30.596 | 0.032 | 10.7630 | 10.7604 | -0.024 | 4.9883 |
| 373.15 | 34.672 | 34.672 | -0.003 | 10.7630 | 10.7632 | 0.002 | 4.3308 |
| 398.15 | 38.736 | 38.723 | -0.031 | 10.7630 | 10.7654 | 0.023 | 2.5528 |
| 423.15 | 42.777 | 42.754 | -0.054 | 10.7630 | 10.7671 | 0.038 | 2.2893 |
| 273.15 | 19.771 | 19.785 | 0.075 | 11.5340 | 11.5271 | -0.060 | 8.0511 |
| 285.65 | 22.098 | 22.116 | 0.080 | 11.5340 | 11.5269 | -0.062 | 7.0412 |
| 298.15 | 24.423 | 24.441 | 0.077 | 11.5340 | 11.5274 | -0.057 | 6.2565 |
| 323.15 | 29.055 | 29.071 | 0.056 | 11.5340 | 11.5294 | -0.040 | 5.1193 |
| 348.15 | 33.661 | 33.671 | 0.030 | 11.5340 | 11.5316 | -0.021 | 4.3363 |
| 373.15 | 38.241 | 38.242 | 0.001 | 11.5340 | 11.5339 | -0.001 | 2.5098 |
| 398.15 | 42.799 | 42.784 | -0.034 | 11.5340 | 11.5367 | 0.023 | 2.2193 |
| 423.15 | 47.325 | 47.301 | -0.051 | 11.5340 | 11.5379 | 0.034 | 1.9905 |
| 273.15 | 21.491 | 21.498 | 0.031 | 12.2870 | 12.2843 | -0.022 | 6.9641 |
| 285.65 | 24.088 | 24.097 | 0.040 | 12.2870 | 12.2835 | -0.028 | 6.0938 |
| 298.15 | 26.680 | 26.691 | 0.042 | 12.2870 | 12.2834 | -0.029 | 5.4183 |
| 323.15 | 31.837 | 31.853 | 0.051 | 12.2870 | 12.2829 | -0.034 | 4.4398 |
| 348.15 | 36.971 | 36.981 | 0.027 | 12.2870 | 12.2848 | -0.018 | 2.5103 |
| 373.15 | 42.073 | 42.074 | 0.001 | 12.2870 | 12.2869 | -0.001 | 2.1817 |
| 398.15 | 47.151 | 47.134 | -0.036 | 12.2870 | 12.2898 | 0.023 | 1.9310 |
| 423.15 | 52.196 | 52.165 | -0.060 | 12.2870 | 12.2916 | 0.038 | 1.7332 |
| 273.15 | 23.308 | 23.310 | 0.010 | 12.9940 | 12.9931 | -0.007 | 6.0171 |
| 285.65 | 26.178 | 26.184 | 0.022 | 12.9940 | 12.9922 | -0.014 | 5.2764 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 298.15 | 29.043 | 29.050 | 0.023 | 12.9940 | 12.9921 | -0.015 | 4.7004 |
| 323.15 | 34.746 | 34.753 | 0.021 | 12.9940 | 12.9923 | -0.013 | 3.8634 |
| 348.15 | 40.417 | 40.415 | -0.006 | 12.9940 | 12.9945 | 0.003 | 2.1897 |
| 373.15 | 46.053 | 46.036 | -0.036 | 12.9940 | 12.9969 | 0.022 | 1.9068 |
| 398.15 | 51.648 | 51.620 | -0.056 | 12.9940 | 12.9983 | 0.033 | 1.6903 |
| 423.15 | 57.210 | 57.170 | -0.069 | 12.9940 | 12.9994 | 0.041 | 1.5191 |
| 273.15 | 24.678 | 24.677 | -0.004 | 13.4740 | 13.4744 | 0.003 | 5.4204 |
| 285.65 | 27.745 | 27.749 | 0.015 | 13.4740 | 13.4728 | -0.009 | 4.7642 |
| 298.15 | 30.809 | 30.813 | 0.012 | 13.4740 | 13.4731 | -0.007 | 4.2522 |
| 323.15 | 36.907 | 36.906 | -0.003 | 13.4740 | 13.4742 | 0.002 | 2.3372 |
| 348.15 | 42.958 | 42.953 | -0.011 | 13.4740 | 13.4749 | 0.007 | 1.9917 |
| 373.15 | 48.980 | 48.956 | -0.050 | 13.4740 | 13.4779 | 0.029 | 1.7374 |
| 398.15 | 54.953 | 54.917 | -0.066 | 13.4740 | 13.4791 | 0.038 | 1.5423 |
| 423.15 | 60.890 | 60.842 | -0.080 | 13.4740 | 13.4801 | 0.046 | 1.3877 |
| 273.15 | 25.373 | 25.373 | 0.000 | 13.7030 | 13.7030 | 0.000 | 5.1501 |
| 285.65 | 28.542 | 28.544 | 0.004 | 13.7030 | 13.7027 | -0.002 | 4.5323 |
| 298.15 | 31.704 | 31.705 | 0.004 | 13.7030 | 13.7027 | -0.002 | 4.0498 |
| 323.15 | 37.994 | 37.992 | -0.007 | 13.7030 | 13.7035 | 0.004 | 2.2297 |
| 348.15 | 44.243 | 44.230 | -0.031 | 13.7030 | 13.7054 | 0.018 | 1.9024 |
| 373.15 | 50.449 | 50.421 | -0.056 | 13.7030 | 13.7074 | 0.032 | 1.6612 |
| 398.15 | 56.614 | 56.569 | -0.080 | 13.7030 | 13.7092 | 0.045 | 1.4758 |
| 423.15 | 62.732 | 62.678 | -0.086 | 13.7030 | 13.7096 | 0.048 | 1.3286 |
| 273.15 | 28.274 | 28.265 | -0.029 | 14.5600 | 14.5622 | 0.015 | 4.2232 |
| 285.65 | 31.837 | 31.828 | -0.027 | 14.5600 | 14.5620 | 0.014 | 3.7389 |
| 298.15 | 35.391 | 35.378 | -0.038 | 14.5600 | 14.5629 | 0.020 | 2.2381 |
| 323.15 | 42.458 | 42.431 | -0.063 | 14.5600 | 14.5648 | 0.033 | 1.8624 |
| 348.15 | 49.462 | 49.424 | -0.076 | 14.5600 | 14.5658 | 0.040 | 1.5979 |
| 373.15 | 56.415 | 56.361 | -0.095 | 14.5600 | 14.5672 | 0.050 | 1.4012 |
| 398.15 | 63.315 | 63.248 | -0.106 | 14.5600 | 14.5681 | 0.056 | 1.2489 |
| 423.15 | 70.160 | 70.090 | -0.099 | 14.5600 | 14.5676 | 0.052 | 1.1274 |
| 273.15 | 32.762 | 32.750 | -0.038 | 15.6530 | 15.6557 | 0.018 | 3.2389 |
| 285.65 | 36.889 | 36.868 | -0.058 | 15.6530 | 15.6572 | 0.027 | 1.9296 |
| 298.15 | 40.998 | 40.966 | -0.078 | 15.6530 | 15.6587 | 0.036 | 1.7459 |
| 323.15 | 49.160 | 49.102 | -0.118 | 15.6530 | 15.6616 | 0.055 | 1.4698 |
| 348.15 | 57.235 | 57.160 | -0.131 | 15.6530 | 15.6627 | 0.062 | 1.2718 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 373.15 | 65.243 | 65.149 | -0.145 | 15.6530 | 15.6638 | 0.069 | 1.1225 |
| 398.15 | 73.175 | 73.076 | -0.135 | 15.6530 | 15.6631 | 0.065 | 1.0055 |
| 423.15 | 81.041 | 80.951 | -0.111 | 15.6530 | 15.6614 | 0.054 | 0.9113 |
| 273.15 | 38.578 | 38.545 | -0.086 | 16.7770 | 16.7828 | 0.034 | 1.6288 |
| 285.65 | 43.355 | 43.305 | -0.114 | 16.7770 | 16.7847 | 0.046 | 1.4711 |
| 298.15 | 48.110 | 48.037 | -0.151 | 16.7770 | 16.7874 | 0.062 | 1.3427 |
| 323.15 | 57.533 | 57.421 | -0.196 | 16.7770 | 16.7908 | 0.082 | 1.1455 |
| 348.15 | 66.849 | 66.705 | -0.214 | 16.7770 | 16.7924 | 0.092 | 1.0008 |
| 373.15 | 76.067 | 75.905 | -0.213 | 16.7770 | 16.7925 | 0.092 | 0.8897 |
| 398.15 | 85.185 | 85.031 | -0.180 | 16.7770 | 16.7902 | 0.079 | 0.8016 |
| 423.15 | 94.210 | 94.096 | -0.121 | 16.7770 | 16.7860 | 0.053 | 0.7299 |
| 273.15 | 39.645 | 39.600 | -0.112 | 16.9560 | 16.9634 | 0.044 | 1.5566 |
| 285.65 | 44.532 | 44.470 | -0.139 | 16.9560 | 16.9653 | 0.055 | 1.4083 |
| 298.15 | 49.396 | 49.310 | -0.175 | 16.9560 | 16.9679 | 0.070 | 1.2871 |
| 323.15 | 59.033 | 58.905 | -0.217 | 16.9560 | 16.9712 | 0.090 | 1.1005 |
| 348.15 | 68.564 | 68.398 | -0.241 | 16.9560 | 16.9732 | 0.102 | 0.9630 |
| 373.15 | 77.991 | 77.804 | -0.240 | 16.9560 | 16.9734 | 0.103 | 0.8572 |
| 398.15 | 87.304 | 87.134 | -0.195 | 16.9560 | 16.9702 | 0.084 | 0.7730 |
| 273.15 | 45.790 | 45.689 | -0.221 | 17.8750 | 17.8889 | 0.078 | 1.2322 |
| 285.65 | 51.285 | 51.151 | -0.261 | 17.8750 | 17.8918 | 0.094 | 1.1246 |
| 298.15 | 56.750 | 56.577 | -0.305 | 17.8750 | 17.8950 | 0.112 | 1.0351 |
| 323.15 | 67.554 | 67.324 | -0.340 | 17.8750 | 17.8981 | 0.129 | 0.8949 |
| 348.15 | 78.223 | 77.951 | -0.349 | 17.8750 | 17.8993 | 0.136 | 0.7895 |
| 373.15 | 88.749 | 88.476 | -0.308 | 17.8750 | 17.8968 | 0.122 | 0.7071 |
| 398.15 | 99.153 | 98.916 | -0.239 | 17.8750 | 17.8921 | 0.096 | 0.6408 |
| 423.15 | 109.438 | 109.287 | -0.139 | 17.8750 | 17.8851 | 0.056 | 0.5863 |
| 273.15 | 52.050 | 51.879 | -0.329 | 18.6570 | 18.6769 | 0.107 | 1.0103 |
| 285.65 | 58.119 | 57.891 | -0.393 | 18.6570 | 18.6815 | 0.131 | 0.9285 |
| 298.15 | 64.122 | 63.858 | -0.412 | 18.6570 | 18.6833 | 0.141 | 0.8597 |
| 323.15 | 76.008 | 75.673 | -0.441 | 18.6570 | 18.6862 | 0.156 | 0.7500 |
| 348.15 | 87.717 | 87.351 | -0.417 | 18.6570 | 18.6854 | 0.152 | 0.6662 |
| 373.15 | 99.272 | 98.917 | -0.358 | 18.6570 | 18.6819 | 0.133 | 0.5998 |
| 398.15 | 110.653 | 110.390 | -0.238 | 18.6570 | 18.6739 | 0.090 | 0.5459 |
| 273.15 | 54.294 | 54.090 | -0.375 | 18.9080 | 18.9304 | 0.119 | 0.9481 |
| 285.65 | 60.544 | 60.287 | -0.424 | 18.9080 | 18.9342 | 0.138 | 0.8732 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 298.15 | 66.744 | 66.437 | -0.460 | 18.9080 | 18.9371 | 0.154 | 0.8100 |
| 323.15 | 78.994 | 78.613 | -0.482 | 18.9080 | 18.9397 | 0.168 | 0.7086 |
| 348.15 | 91.058 | 90.648 | -0.451 | 18.9080 | 18.9385 | 0.161 | 0.6308 |
| 373.15 | 102.949 | 102.566 | -0.373 | 18.9080 | 18.9338 | 0.136 | 0.5689 |
| 398.15 | 114.685 | 114.388 | -0.259 | 18.9080 | 18.9262 | 0.096 | 0.5184 |
| 423.15 | 126.275 | 126.133 | -0.112 | 18.9080 | 18.9160 | 0.042 | 0.4764 |
| 273.15 | 64.911 | 64.537 | -0.576 | 19.9440 | 19.9773 | 0.167 | 0.7308 |
| 285.65 | 72.005 | 71.549 | -0.633 | 19.9440 | 19.9818 | 0.189 | 0.6788 |
| 298.15 | 79.018 | 78.505 | -0.649 | 19.9440 | 19.9838 | 0.200 | 0.6341 |
| 323.15 | 92.860 | 92.272 | -0.634 | 19.9440 | 19.9846 | 0.203 | 0.5610 |
| 348.15 | 106.475 | 105.877 | -0.562 | 19.9440 | 19.9812 | 0.186 | 0.5036 |
| 373.15 | 119.862 | 119.351 | -0.427 | 19.9440 | 19.9729 | 0.145 | 0.4572 |
| 398.15 | 133.045 | 132.721 | -0.244 | 19.9440 | 19.9608 | 0.084 | 0.4189 |
| 423.15 | 146.052 | 146.006 | -0.031 | 19.9440 | 19.9462 | 0.011 | 0.3866 |
| 273.15 | 70.125 | 69.657 | -0.668 | 20.3810 | 20.4191 | 0.187 | 0.6556 |
| 285.65 | 77.578 | 77.037 | -0.697 | 20.3810 | 20.4221 | 0.202 | 0.6109 |
| 298.15 | 84.960 | 84.359 | -0.707 | 20.3810 | 20.4239 | 0.210 | 0.5722 |
| 323.15 | 99.515 | 98.848 | -0.670 | 20.3810 | 20.4234 | 0.208 | 0.5085 |
| 348.15 | 113.813 | 113.168 | -0.567 | 20.3810 | 20.4181 | 0.182 | 0.4581 |
| 373.15 | 127.867 | 127.352 | -0.402 | 20.3810 | 20.4080 | 0.133 | 0.4170 |
| 398.15 | 141.711 | 141.428 | -0.200 | 20.3810 | 20.3947 | 0.067 | 0.3829 |
| 273.15 | 95.434 | 94.444 | -1.036 | 22.0790 | 22.1362 | 0.259 | 0.4334 |
| 285.65 | 104.481 | 103.419 | -1.016 | 22.0790 | 22.1369 | 0.262 | 0.4083 |
| 298.15 | 113.423 | 112.323 | -0.970 | 22.0790 | 22.1359 | 0.258 | 0.3861 |
| 323.15 | 131.013 | 129.949 | -0.812 | 22.0790 | 22.1288 | 0.226 | 0.3485 |
| 348.15 | 148.245 | 147.381 | -0.583 | 22.0790 | 22.1160 | 0.168 | 0.3177 |
| 373.15 | 165.122 | 164.662 | -0.279 | 22.0790 | 22.0972 | 0.082 | 0.2920 |
| 398.15 | 181.755 | 181.825 | 0.038 | 22.0790 | 22.0764 | -0.012 | 0.2702 |
| 273.15 | 132.872 | 131.161 | -1.288 | 23.8640 | 23.9340 | 0.293 | 0.2851 |
| 285.15 | 143.821 | 141.692 | -1.481 | 23.8640 | 23.9470 | 0.348 | 0.2715 |
| 298.15 | 154.629 | 153.018 | -1.042 | 23.8640 | 23.9239 | 0.251 | 0.2583 |
| 323.15 | 175.817 | 174.600 | -0.692 | 23.8640 | 23.9056 | 0.174 | 0.2362 |
| 348.15 | 196.524 | 195.978 | -0.278 | 23.8640 | 23.8813 | 0.072 | 0.2176 |
| 373.15 | 216.792 | 217.200 | 0.188 | 23.8640 | 23.8520 | -0.050 | 0.2018 |
| 398.15 | 236.696 | 238.305 | 0.680 | 23.8640 | 23.8197 | -0.186 | 0.1881 |

Data from Trappeniers et al. [45] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 273.15 | 183.811 | 181.441 | -1.289 | 25.6140 | 25.6841 | 0.274 | 0.1924 |
| 285.65 | 196.882 | 194.750 | -1.083 | 25.6140 | 25.6745 | 0.236 | 0.1841 |
| 298.15 | 209.721 | 207.981 | -0.830 | 25.6140 | 25.6614 | 0.185 | 0.1766 |
| 323.15 | 234.829 | 234.252 | -0.246 | 25.6140 | 25.6286 | 0.057 | 0.1631 |
| 348.15 | 259.361 | 260.330 | 0.374 | 25.6140 | 25.5911 | -0.089 | 0.1516 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.123 | BIAS-% | -0.084 | RMS-% | 0.209 | |
| | AAD | 0.088 | BIAS | -0.070 | RMS | 0.284 | MPa |
| DENSITY : | AAD-% | 0.074 | BIAS-% | 0.039 | RMS-% | 0.082 | |
| | AAD | 0.007 | BIAS | 0.004 | RMS | 0.013 | $mol\cdot dm^{-3}$ |

Data from Van Itterbeek et al. [46]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol\cdot dm^{-3}$ | $mol\cdot dm^{-3}$ | % | |
| 114.52 | 0.894 | 1.160 | 29.684 | 26.1376 | 26.1213 | -0.062 | 0.0001 |
| 114.52 | 4.752 | 4.946 | 4.082 | 26.3609 | 26.3498 | -0.042 | 0.0001 |
| 114.52 | 7.542 | 7.638 | 1.275 | 26.5104 | 26.5052 | -0.020 | 0.0001 |
| 114.52 | 10.382 | 10.424 | 0.398 | 26.6581 | 26.6560 | -0.008 | 0.0001 |
| 114.52 | 13.326 | 13.312 | -0.100 | 26.8046 | 26.8053 | 0.002 | 0.0001 |
| 114.52 | 16.344 | 16.378 | 0.211 | 26.9535 | 26.9518 | -0.006 | 0.0001 |
| 114.52 | 19.666 | 19.599 | -0.338 | 27.1032 | 27.1062 | 0.011 | 0.0001 |
| 114.52 | 23.245 | 23.219 | -0.111 | 27.2643 | 27.2654 | 0.004 | 0.0001 |
| 114.52 | 27.155 | 27.140 | -0.056 | 27.4311 | 27.4317 | 0.002 | 0.0001 |
| 114.52 | 31.299 | 31.523 | 0.718 | 27.6091 | 27.6001 | -0.032 | 0.0000 |
| 119.42 | 0.833 | 1.149 | 37.950 | 25.6812 | 25.6598 | -0.083 | 0.0001 |
| 119.42 | 3.027 | 3.477 | 14.846 | 25.8345 | 25.8055 | -0.112 | 0.0001 |
| 119.42 | 6.215 | 6.638 | 6.817 | 26.0308 | 26.0052 | -0.098 | 0.0001 |
| 119.42 | 10.401 | 10.733 | 3.194 | 26.2681 | 26.2495 | -0.071 | 0.0001 |
| 119.42 | 14.909 | 15.100 | 1.279 | 26.5034 | 26.4935 | -0.037 | 0.0001 |

Data from Van Itterbeek et al. [46] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 119.42 | 19.837 | 19.972 | 0.682 | 26.7480 | 26.7414 | -0.025 | 0.0001 |
| 119.42 | 25.375 | 25.475 | 0.394 | 27.0051 | 27.0006 | -0.017 | 0.0001 |
| 119.42 | 31.691 | 31.198 | -1.556 | 27.2546 | 27.2754 | 0.076 | 0.0001 |
| 124.92 | 0.980 | 1.819 | 85.668 | 25.2010 | 25.1375 | -0.252 | 0.0001 |
| 124.92 | 4.496 | 5.182 | 15.250 | 25.4421 | 25.3945 | -0.187 | 0.0001 |
| 124.92 | 8.419 | 8.952 | 6.335 | 25.6911 | 25.6571 | -0.132 | 0.0001 |
| 124.92 | 12.519 | 13.004 | 3.872 | 25.9383 | 25.9097 | -0.110 | 0.0001 |
| 124.92 | 16.883 | 17.136 | 1.498 | 26.1725 | 26.1587 | -0.053 | 0.0001 |
| 124.92 | 21.799 | 21.948 | 0.687 | 26.4264 | 26.4187 | -0.029 | 0.0001 |
| 124.92 | 27.364 | 27.467 | 0.378 | 26.6966 | 26.6917 | -0.018 | 0.0001 |
| 130.99 | 1.502 | 1.792 | 19.298 | 24.5924 | 24.5673 | -0.102 | 0.0001 |
| 130.99 | 4.625 | 4.754 | 2.803 | 24.8361 | 24.8258 | -0.041 | 0.0001 |
| 130.99 | 7.934 | 8.684 | 9.448 | 25.1307 | 25.0767 | -0.215 | 0.0001 |
| 130.99 | 11.520 | 11.904 | 3.331 | 25.3524 | 25.3268 | -0.101 | 0.0001 |
| 130.99 | 15.774 | 15.495 | -1.770 | 25.5826 | 25.5999 | 0.067 | 0.0001 |
| 130.99 | 20.071 | 19.558 | -2.558 | 25.8251 | 25.8545 | 0.114 | 0.0001 |
| 130.99 | 24.931 | 24.300 | -2.530 | 26.0879 | 26.1214 | 0.128 | 0.0001 |
| 130.99 | 30.287 | 29.714 | -1.895 | 26.3658 | 26.3940 | 0.107 | 0.0001 |
| 134.33 | 0.689 | 1.266 | 83.767 | 24.1949 | 24.1394 | -0.229 | 0.0013 |
| 134.33 | 2.712 | 3.289 | 21.270 | 24.3807 | 24.3290 | -0.212 | 0.0001 |
| 134.33 | 5.783 | 6.388 | 10.464 | 24.6433 | 24.5939 | -0.200 | 0.0001 |
| 134.33 | 9.130 | 9.740 | 6.686 | 24.9029 | 24.8572 | -0.183 | 0.0001 |
| 134.33 | 12.783 | 13.258 | 3.716 | 25.1534 | 25.1208 | -0.130 | 0.0001 |
| 134.33 | 16.625 | 17.093 | 2.813 | 25.4059 | 25.3761 | -0.117 | 0.0001 |
| 134.33 | 20.947 | 21.320 | 1.783 | 25.6634 | 25.6414 | -0.086 | 0.0001 |
| 134.33 | 25.768 | 26.084 | 1.229 | 25.9323 | 25.9150 | -0.067 | 0.0001 |
| 134.33 | 31.029 | 31.541 | 1.650 | 26.2171 | 26.1913 | -0.098 | 0.0001 |
| 139.06 | 1.252 | 1.820 | 45.318 | 23.7344 | 23.6737 | -0.256 | 0.0002 |
| 139.06 | 3.825 | 4.420 | 15.546 | 23.9958 | 23.9382 | -0.240 | 0.0001 |
| 139.06 | 6.749 | 7.333 | 8.658 | 24.2618 | 24.2104 | -0.212 | 0.0001 |
| 139.06 | 9.876 | 10.475 | 6.061 | 24.5236 | 24.4755 | -0.196 | 0.0001 |
| 139.06 | 13.230 | 13.827 | 4.515 | 24.7801 | 24.7359 | -0.178 | 0.0001 |
| 139.06 | 16.900 | 17.415 | 3.045 | 25.0332 | 24.9981 | -0.140 | 0.0001 |
| 139.06 | 20.966 | 21.404 | 2.087 | 25.2934 | 25.2658 | -0.109 | 0.0001 |
| 139.06 | 25.497 | 25.770 | 1.073 | 25.5572 | 25.5412 | -0.062 | 0.0001 |

Data from Van Itterbeek et al. [46] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 139.06 | 30.600 | 30.952 | 1.149 | 25.8465 | 25.8276 | -0.073 | 0.0001 |
| 145.56 | 1.300 | 1.826 | 40.516 | 22.9848 | 22.9165 | -0.297 | 0.0001 |
| 145.56 | 3.528 | 4.119 | 16.770 | 23.2623 | 23.1936 | -0.296 | 0.0002 |
| 145.56 | 6.037 | 6.627 | 9.784 | 23.5355 | 23.4736 | -0.263 | 0.0001 |
| 145.56 | 8.736 | 9.460 | 8.288 | 23.8146 | 23.7458 | -0.289 | 0.0001 |
| 145.56 | 11.719 | 12.461 | 6.333 | 24.0836 | 24.0193 | -0.267 | 0.0001 |
| 145.56 | 14.913 | 15.735 | 5.509 | 24.3522 | 24.2870 | -0.268 | 0.0001 |
| 145.56 | 18.402 | 19.290 | 4.829 | 24.6202 | 24.5553 | -0.264 | 0.0001 |
| 145.56 | 22.258 | 23.265 | 4.525 | 24.8961 | 24.8283 | -0.272 | 0.0001 |
| 145.56 | 26.589 | 27.697 | 4.168 | 25.1794 | 25.1107 | -0.273 | 0.0001 |
| 145.56 | 31.458 | 32.637 | 3.746 | 25.4706 | 25.4032 | -0.264 | 0.0001 |
| 150.75 | 3.102 | 3.779 | 21.826 | 22.6157 | 22.5220 | -0.414 | 0.0001 |
| 150.75 | 5.188 | 5.938 | 14.450 | 22.8933 | 22.8002 | -0.406 | 0.0002 |
| 150.75 | 7.511 | 8.297 | 10.462 | 23.1664 | 23.0784 | -0.380 | 0.0002 |
| 150.75 | 10.039 | 10.879 | 8.363 | 23.4373 | 23.3520 | -0.364 | 0.0001 |
| 150.75 | 12.807 | 13.617 | 6.322 | 23.6995 | 23.6243 | -0.317 | 0.0001 |
| 150.75 | 15.745 | 16.618 | 5.542 | 23.9630 | 23.8887 | -0.310 | 0.0001 |
| 150.75 | 19.000 | 19.859 | 4.520 | 24.2248 | 24.1575 | -0.278 | 0.0001 |
| 150.75 | 22.614 | 23.517 | 3.997 | 24.4972 | 24.4319 | -0.266 | 0.0001 |
| 150.75 | 26.640 | 27.539 | 3.371 | 24.7733 | 24.7135 | -0.241 | 0.0001 |
| 150.75 | 30.986 | 32.023 | 3.346 | 25.0576 | 24.9939 | -0.254 | 0.0001 |
| 158.24 | 2.289 | 3.073 | 34.213 | 21.5318 | 21.3814 | -0.698 | 0.0001 |
| 158.24 | 3.963 | 4.812 | 21.438 | 21.8341 | 21.6913 | -0.654 | 0.0003 |
| 158.24 | 5.895 | 6.788 | 15.154 | 22.1371 | 22.0047 | -0.598 | 0.0002 |
| 158.24 | 8.025 | 8.989 | 12.005 | 22.4371 | 22.3099 | -0.567 | 0.0002 |
| 158.24 | 10.390 | 11.379 | 9.520 | 22.7293 | 22.6121 | -0.516 | 0.0002 |
| 158.24 | 12.936 | 13.985 | 8.111 | 23.0171 | 22.9046 | -0.489 | 0.0002 |
| 158.24 | 15.762 | 16.813 | 6.667 | 23.3008 | 23.1984 | -0.439 | 0.0001 |
| 158.24 | 18.908 | 19.904 | 5.269 | 23.5838 | 23.4953 | -0.375 | 0.0001 |
| 158.24 | 22.362 | 23.344 | 4.389 | 23.8721 | 23.7923 | -0.334 | 0.0001 |
| 158.24 | 26.172 | 27.213 | 3.977 | 24.1692 | 24.0918 | -0.320 | 0.0001 |
| 158.24 | 30.459 | 31.495 | 3.401 | 24.4708 | 24.4002 | -0.289 | 0.0001 |
| 165.82 | 3.056 | 3.428 | 12.197 | 20.4637 | 20.3671 | -0.472 | 0.0002 |
| 165.82 | 4.220 | 4.701 | 11.393 | 20.7641 | 20.6554 | -0.523 | 0.0004 |
| 165.82 | 5.627 | 6.145 | 9.204 | 21.0624 | 20.9598 | -0.487 | 0.0003 |

Data from Van Itterbeek et al. [46] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 165.82 | 7.146 | 7.760 | 8.591 | 21.3570 | 21.2492 | -0.505 | 0.0003 |
| 165.82 | 8.784 | 9.569 | 8.939 | 21.6507 | 21.5273 | -0.570 | 0.0002 |
| 165.82 | 10.628 | 11.527 | 8.466 | 21.9356 | 21.8084 | -0.580 | 0.0002 |
| 165.82 | 12.548 | 13.687 | 9.073 | 22.2193 | 22.0733 | -0.657 | 0.0002 |
| 165.82 | 14.671 | 16.054 | 9.427 | 22.5012 | 22.3398 | -0.718 | 0.0002 |
| 165.82 | 16.984 | 18.612 | 9.589 | 22.7790 | 22.6051 | -0.763 | 0.0002 |
| 165.82 | 19.490 | 21.436 | 9.983 | 23.0595 | 22.8689 | -0.827 | 0.0001 |
| 165.82 | 22.218 | 24.545 | 10.473 | 23.3427 | 23.1331 | -0.898 | 0.0001 |
| 165.82 | 25.243 | 27.980 | 10.841 | 23.6301 | 23.4031 | -0.960 | 0.0001 |
| 165.82 | 28.886 | 31.669 | 9.634 | 23.9143 | 23.7020 | -0.888 | 0.0001 |
| 171.02 | 3.051 | 3.192 | 4.632 | 19.4606 | 19.4090 | -0.265 | 0.0003 |
| 171.02 | 3.962 | 4.085 | 3.117 | 19.7578 | 19.7192 | -0.195 | 0.0005 |
| 171.02 | 4.988 | 5.167 | 3.588 | 20.0678 | 20.0196 | -0.241 | 0.0005 |
| 171.02 | 6.186 | 6.398 | 3.437 | 20.3741 | 20.3241 | -0.245 | 0.0004 |
| 171.02 | 7.532 | 7.792 | 3.455 | 20.6778 | 20.6240 | -0.260 | 0.0003 |
| 171.02 | 9.017 | 9.363 | 3.830 | 20.9802 | 20.9167 | -0.302 | 0.0003 |
| 171.02 | 10.629 | 11.079 | 4.230 | 21.2743 | 21.2004 | -0.348 | 0.0003 |
| 171.02 | 12.408 | 12.955 | 4.407 | 21.5629 | 21.4818 | -0.376 | 0.0002 |
| 171.02 | 14.286 | 15.010 | 5.070 | 21.8484 | 21.7510 | -0.446 | 0.0002 |
| 171.02 | 16.366 | 17.222 | 5.226 | 22.1273 | 22.0225 | -0.474 | 0.0002 |
| 171.02 | 18.630 | 19.697 | 5.727 | 22.4120 | 22.2925 | -0.533 | 0.0002 |
| 171.02 | 21.083 | 22.342 | 5.969 | 22.6901 | 22.5608 | -0.570 | 0.0002 |
| 171.02 | 23.817 | 25.314 | 6.287 | 22.9769 | 22.8355 | -0.615 | 0.0001 |
| 171.02 | 26.800 | 28.592 | 6.688 | 23.2672 | 23.1115 | -0.669 | 0.0001 |
| 171.02 | 30.081 | 32.194 | 7.025 | 23.5605 | 23.3913 | -0.718 | 0.0001 |
| 172.81 | 2.692 | 2.762 | 2.606 | 18.9036 | 18.8712 | -0.172 | 0.0004 |
| 172.81 | 3.418 | 3.510 | 2.709 | 19.2171 | 19.1811 | -0.187 | 0.0003 |
| 172.81 | 4.311 | 4.432 | 2.801 | 19.5431 | 19.5033 | -0.203 | 0.0006 |
| 172.81 | 5.364 | 5.511 | 2.735 | 19.8681 | 19.8267 | -0.208 | 0.0005 |
| 172.81 | 6.553 | 6.740 | 2.855 | 20.1873 | 20.1416 | -0.227 | 0.0004 |
| 172.81 | 7.894 | 8.130 | 2.984 | 20.5019 | 20.4514 | -0.246 | 0.0004 |
| 172.81 | 9.396 | 9.690 | 3.127 | 20.8125 | 20.7569 | -0.267 | 0.0003 |
| 172.81 | 11.031 | 11.402 | 3.366 | 21.1153 | 21.0525 | -0.297 | 0.0003 |
| 172.81 | 12.896 | 13.293 | 3.078 | 21.4142 | 21.3540 | -0.281 | 0.0002 |
| 172.81 | 14.873 | 15.388 | 3.462 | 21.7122 | 21.6418 | -0.324 | 0.0002 |

Data from Van Itterbeek et al. [46] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 172.81 | 16.946 | 17.676 | 4.311 | 22.0066 | 21.9157 | -0.413 | 0.0002 |
| 172.81 | 19.340 | 20.202 | 4.457 | 22.3015 | 22.2039 | -0.438 | 0.0002 |
| 172.81 | 21.909 | 23.007 | 5.012 | 22.5999 | 22.4864 | -0.502 | 0.0002 |
| 172.81 | 24.749 | 26.093 | 5.429 | 22.8995 | 22.7724 | -0.555 | 0.0001 |
| 172.81 | 27.916 | 29.514 | 5.725 | 23.2035 | 23.0648 | -0.598 | 0.0001 |
| 172.81 | 31.343 | 33.285 | 6.197 | 23.5106 | 23.3557 | -0.659 | 0.0001 |
| 179.53 | 3.829 | 3.941 | 2.941 | 17.8514 | 17.7783 | -0.409 | 0.0012 |
| 179.53 | 4.391 | 4.519 | 2.906 | 18.1841 | 18.1158 | -0.376 | 0.0010 |
| 179.53 | 5.037 | 5.212 | 3.465 | 18.5168 | 18.4383 | -0.424 | 0.0008 |
| 179.53 | 5.837 | 6.014 | 3.045 | 18.8423 | 18.7746 | -0.360 | 0.0007 |
| 179.53 | 6.735 | 6.951 | 3.204 | 19.1674 | 19.0967 | -0.369 | 0.0006 |
| 179.53 | 7.761 | 8.010 | 3.208 | 19.4852 | 19.4144 | -0.363 | 0.0005 |
| 179.53 | 8.912 | 9.218 | 3.435 | 19.8016 | 19.7253 | -0.385 | 0.0004 |
| 179.53 | 10.223 | 10.561 | 3.307 | 20.1110 | 20.0366 | -0.370 | 0.0004 |
| 179.53 | 11.656 | 12.063 | 3.494 | 20.4182 | 20.3384 | -0.391 | 0.0003 |
| 179.53 | 13.222 | 13.733 | 3.860 | 20.7228 | 20.6332 | -0.432 | 0.0003 |
| 179.53 | 14.960 | 15.562 | 4.023 | 21.0225 | 20.9274 | -0.453 | 0.0003 |
| 179.53 | 16.854 | 17.575 | 4.276 | 21.3201 | 21.2170 | -0.484 | 0.0002 |
| 179.53 | 18.944 | 19.797 | 4.500 | 21.6179 | 21.5070 | -0.513 | 0.0002 |
| 179.53 | 21.248 | 22.247 | 4.702 | 21.9164 | 21.7980 | -0.540 | 0.0002 |
| 179.53 | 23.756 | 24.947 | 5.013 | 22.2163 | 22.0874 | -0.580 | 0.0002 |
| 179.53 | 26.506 | 27.912 | 5.306 | 22.5175 | 22.3780 | -0.620 | 0.0001 |
| 179.53 | 29.518 | 31.194 | 5.677 | 22.8227 | 22.6702 | -0.668 | 0.0001 |
| 188.22 | 5.326 | 5.388 | 1.160 | 16.3228 | 16.2594 | -0.388 | 0.0000 |
| 188.22 | 5.703 | 5.760 | 0.986 | 16.6622 | 16.6149 | -0.284 | 0.0000 |
| 188.22 | 6.139 | 6.208 | 1.137 | 17.0016 | 16.9527 | -0.288 | 0.0000 |
| 188.22 | 6.663 | 6.740 | 1.159 | 17.3388 | 17.2933 | -0.263 | 0.0000 |
| 188.22 | 7.275 | 7.363 | 1.205 | 17.6728 | 17.6289 | -0.249 | 0.0009 |
| 188.22 | 7.965 | 8.082 | 1.474 | 18.0034 | 17.9528 | -0.281 | 0.0008 |
| 188.22 | 8.768 | 8.909 | 1.609 | 18.3308 | 18.2781 | -0.287 | 0.0007 |
| 188.22 | 8.844 | 8.990 | 1.649 | 18.3604 | 18.3066 | -0.293 | 0.0007 |
| 188.22 | 9.743 | 9.941 | 2.033 | 18.6839 | 18.6200 | -0.342 | 0.0006 |
| 188.22 | 10.795 | 11.003 | 1.921 | 19.0009 | 18.9421 | -0.309 | 0.0005 |
| 188.22 | 11.951 | 12.194 | 2.036 | 19.3151 | 19.2539 | -0.317 | 0.0004 |
| 188.22 | 13.134 | 13.539 | 3.079 | 19.6298 | 19.5389 | -0.463 | 0.0004 |

Data from Van Itterbeek et al. [46] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 188.22 | 14.506 | 15.018 | 3.529 | 19.9390 | 19.8358 | -0.518 | 0.0003 |
| 188.22 | 16.146 | 16.683 | 3.326 | 20.2511 | 20.1541 | -0.479 | 0.0003 |
| 188.22 | 17.851 | 18.406 | 3.107 | 20.5427 | 20.4519 | -0.442 | 0.0003 |
| 188.22 | 19.721 | 20.387 | 3.376 | 20.8468 | 20.7479 | -0.475 | 0.0002 |
| 188.22 | 21.779 | 22.559 | 3.581 | 21.1497 | 21.0442 | -0.499 | 0.0002 |
| 188.22 | 24.026 | 24.964 | 3.903 | 21.4551 | 21.3393 | -0.539 | 0.0002 |
| 188.22 | 26.498 | 27.576 | 4.068 | 21.7581 | 21.6363 | -0.560 | 0.0002 |
| 188.22 | 29.174 | 30.366 | 4.084 | 22.0546 | 21.9310 | -0.560 | 0.0002 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 7.170 | BIAS-% | 7.037 | RMS-% | 11.241 | |
| | AAD | 0.636 | BIAS | 0.604 | RMS | 0.548 | MPa |
| DENSITY : | AAD-% | 0.323 | BIAS-% | -0.317 | RMS-% | 0.217 | |
| | AAD | 0.071 | BIAS | -0.070 | RMS | 0.049 | $mol \cdot dm^{-3}$ |

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Data from Vennix [47]

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 172.53 | 2.466 | 2.469 | 0.130 | 2.5593 | 2.5533 | -0.233 | 0.0602 |
| 174.69 | 2.528 | 2.532 | 0.128 | 2.5593 | 2.5536 | -0.222 | 0.0583 |
| 177.20 | 2.599 | 2.602 | 0.119 | 2.5586 | 2.5535 | -0.200 | 0.0562 |
| 183.18 | 2.767 | 2.769 | 0.080 | 2.5580 | 2.5548 | -0.125 | 0.0518 |
| 191.85 | 3.004 | 3.005 | 0.037 | 2.5568 | 2.5554 | -0.054 | 0.0000 |
| 203.08 | 3.305 | 3.305 | 0.000 | 2.5555 | 2.5555 | 0.000 | 0.0831 |
| 213.04 | 3.567 | 3.566 | -0.026 | 2.5543 | 2.5552 | 0.035 | 0.0758 |
| 217.86 | 3.693 | 3.692 | -0.038 | 2.5537 | 2.5549 | 0.048 | 0.0727 |
| 223.83 | 3.848 | 3.846 | -0.053 | 2.5530 | 2.5547 | 0.067 | 0.0692 |
| 233.55 | 4.099 | 4.095 | -0.089 | 2.5518 | 2.5546 | 0.109 | 0.0643 |
| 239.80 | 4.259 | 4.255 | -0.096 | 2.5512 | 2.5541 | 0.115 | 0.0614 |
| 252.83 | 4.590 | 4.585 | -0.094 | 2.5499 | 2.5527 | 0.111 | 0.0563 |
| 263.40 | 4.856 | 4.851 | -0.100 | 2.5487 | 2.5516 | 0.115 | 0.0528 |
| 273.38 | 5.106 | 5.100 | -0.108 | 2.5474 | 2.5505 | 0.122 | 0.0499 |
| 190.43 | 4.472 | 4.488 | 0.358 | 6.4670 | 6.3251 | -2.193 | 0.0000 |

Data from Vennix [47] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 208.57 | 6.027 | 6.045 | 0.304 | 6.4614 | 6.4174 | -0.682 | 0.0515 |
| 223.23 | 7.235 | 7.254 | 0.271 | 6.4571 | 6.4274 | -0.461 | 0.0405 |
| 234.44 | 8.143 | 8.163 | 0.240 | 6.4539 | 6.4307 | -0.360 | 0.0347 |
| 243.73 | 8.891 | 8.908 | 0.191 | 6.4508 | 6.4337 | -0.265 | 0.0310 |
| 243.77 | 8.894 | 8.911 | 0.198 | 6.4508 | 6.4331 | -0.274 | 0.0310 |
| 251.38 | 9.502 | 9.517 | 0.160 | 6.4483 | 6.4348 | -0.210 | 0.0285 |
| 262.19 | 10.360 | 10.373 | 0.122 | 6.4452 | 6.4354 | -0.152 | 0.0255 |
| 272.15 | 11.148 | 11.156 | 0.072 | 6.4421 | 6.4366 | -0.085 | 0.0233 |
| 272.18 | 11.149 | 11.158 | 0.079 | 6.4421 | 6.4361 | -0.093 | 0.0233 |
| 190.05 | 4.499 | 4.508 | 0.203 | 7.2329 | 7.0527 | -2.491 | 0.0000 |
| 190.75 | 4.571 | 4.580 | 0.203 | 7.2329 | 7.0830 | -2.072 | 0.0000 |
| 193.32 | 4.834 | 4.843 | 0.199 | 7.2316 | 7.1396 | -1.272 | 0.0695 |
| 197.74 | 5.272 | 5.285 | 0.233 | 7.2304 | 7.1617 | -0.951 | 0.0626 |
| 202.75 | 5.763 | 5.777 | 0.248 | 7.2285 | 7.1743 | -0.750 | 0.0560 |
| 208.22 | 6.291 | 6.307 | 0.260 | 7.2266 | 7.1808 | -0.634 | 0.0500 |
| 212.16 | 6.669 | 6.686 | 0.257 | 7.2254 | 7.1850 | -0.559 | 0.0463 |
| 217.14 | 7.142 | 7.161 | 0.259 | 7.2235 | 7.1872 | -0.502 | 0.0423 |
| 222.93 | 7.691 | 7.710 | 0.247 | 7.2217 | 7.1906 | -0.431 | 0.0384 |
| 230.05 | 8.361 | 8.381 | 0.234 | 7.2192 | 7.1926 | -0.369 | 0.0343 |
| 237.34 | 9.043 | 9.063 | 0.216 | 7.2167 | 7.1940 | -0.314 | 0.0310 |
| 242.71 | 9.543 | 9.563 | 0.203 | 7.2148 | 7.1945 | -0.282 | 0.0289 |
| 248.44 | 10.076 | 10.094 | 0.186 | 7.2129 | 7.1951 | -0.247 | 0.0269 |
| 250.19 | 10.238 | 10.256 | 0.183 | 7.2123 | 7.1951 | -0.239 | 0.0264 |
| 253.45 | 10.538 | 10.556 | 0.175 | 7.2111 | 7.1949 | -0.224 | 0.0254 |
| 258.64 | 11.017 | 11.035 | 0.157 | 7.2092 | 7.1952 | -0.194 | 0.0240 |
| 263.05 | 11.423 | 11.439 | 0.143 | 7.2079 | 7.1954 | -0.174 | 0.0229 |
| 268.30 | 11.905 | 11.920 | 0.126 | 7.2061 | 7.1954 | -0.148 | 0.0218 |
| 273.17 | 12.350 | 12.364 | 0.110 | 7.2042 | 7.1951 | -0.127 | 0.0208 |
| 191.55 | 4.732 | 4.740 | 0.176 | 9.8370 | 9.2264 | -6.207 | 0.0000 |
| 192.94 | 4.928 | 4.936 | 0.164 | 9.8364 | 9.5852 | -2.554 | 0.0000 |
| 195.24 | 5.256 | 5.264 | 0.141 | 9.8351 | 9.7252 | -1.117 | 0.0641 |
| 197.56 | 5.587 | 5.595 | 0.136 | 9.8345 | 9.7629 | -0.728 | 0.0598 |
| 200.41 | 5.998 | 6.003 | 0.082 | 9.8333 | 9.8022 | -0.316 | 0.0548 |
| 202.83 | 6.342 | 6.350 | 0.127 | 9.8320 | 9.7922 | -0.405 | 0.0511 |
| 206.37 | 6.850 | 6.859 | 0.130 | 9.8301 | 9.7972 | -0.335 | 0.0462 |

Data from Vennix [47] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 213.50 | 7.877 | 7.888 | 0.137 | 9.8270 | 9.8011 | -0.264 | 0.0383 |
| 223.65 | 9.339 | 9.352 | 0.139 | 9.8220 | 9.8014 | -0.210 | 0.0303 |
| 236.40 | 11.177 | 11.190 | 0.122 | 9.8158 | 9.8008 | -0.153 | 0.0238 |
| 248.15 | 12.867 | 12.881 | 0.105 | 9.8108 | 9.7993 | -0.118 | 0.0197 |
| 255.16 | 13.875 | 13.887 | 0.089 | 9.8071 | 9.7978 | -0.095 | 0.0179 |
| 273.17 | 16.450 | 16.462 | 0.067 | 9.7990 | 9.7926 | -0.065 | 0.0144 |
| 190.84 | 4.634 | 4.641 | 0.149 | 10.2128 | 8.8339 | -13.501 | 0.0000 |
| 191.04 | 4.662 | 4.670 | 0.184 | 10.2128 | 9.0079 | -11.798 | 0.0000 |
| 191.23 | 4.690 | 4.698 | 0.170 | 10.2128 | 9.3273 | -8.670 | 0.0000 |
| 191.43 | 4.719 | 4.727 | 0.174 | 10.2128 | 9.4927 | -7.051 | 0.0000 |
| 191.82 | 4.776 | 4.784 | 0.171 | 10.2128 | 9.7203 | -4.822 | 0.0000 |
| 192.08 | 4.813 | 4.822 | 0.182 | 10.2128 | 9.7765 | -4.272 | 0.0000 |
| 193.52 | 5.026 | 5.035 | 0.165 | 10.2115 | 10.0120 | -1.954 | 0.0673 |
| 195.16 | 5.270 | 5.277 | 0.130 | 10.2109 | 10.1103 | -0.985 | 0.0639 |
| 197.93 | 5.684 | 5.690 | 0.107 | 10.2096 | 10.1575 | -0.510 | 0.0585 |
| 200.57 | 6.081 | 6.087 | 0.098 | 10.2084 | 10.1726 | -0.351 | 0.0538 |
| 204.04 | 6.604 | 6.610 | 0.093 | 10.2065 | 10.1804 | -0.256 | 0.0484 |
| 207.85 | 7.180 | 7.188 | 0.116 | 10.2047 | 10.1781 | -0.261 | 0.0433 |
| 207.85 | 7.183 | 7.188 | 0.068 | 10.2047 | 10.1890 | -0.154 | 0.0432 |
| 213.04 | 7.969 | 7.977 | 0.098 | 10.2022 | 10.1837 | -0.181 | 0.0375 |
| 233.39 | 11.069 | 11.078 | 0.081 | 10.1922 | 10.1819 | -0.101 | 0.0239 |
| 252.89 | 14.039 | 14.048 | 0.063 | 10.1829 | 10.1762 | -0.066 | 0.0175 |
| 273.02 | 17.093 | 17.098 | 0.035 | 10.1729 | 10.1696 | -0.033 | 0.0136 |
| 273.06 | 17.099 | 17.105 | 0.036 | 10.1729 | 10.1695 | -0.034 | 0.0136 |
| 191.85 | 4.798 | 4.808 | 0.194 | 11.1543 | 10.7425 | -3.692 | 0.0000 |
| 191.87 | 4.801 | 4.812 | 0.224 | 11.1543 | 10.6811 | -4.243 | 0.0000 |
| 193.25 | 5.025 | 5.035 | 0.199 | 11.1537 | 10.9489 | -1.836 | 0.0671 |
| 195.11 | 5.334 | 5.341 | 0.133 | 11.1531 | 11.0706 | -0.740 | 0.0626 |
| 197.30 | 5.699 | 5.706 | 0.119 | 11.1518 | 11.0999 | -0.466 | 0.0577 |
| 199.22 | 6.023 | 6.028 | 0.094 | 11.1506 | 11.1178 | -0.294 | 0.0537 |
| 200.90 | 6.309 | 6.314 | 0.077 | 11.1500 | 11.1269 | -0.207 | 0.0505 |
| 203.06 | 6.678 | 6.683 | 0.066 | 11.1487 | 11.1315 | -0.155 | 0.0467 |
| 207.56 | 7.452 | 7.455 | 0.045 | 11.1462 | 11.1369 | -0.083 | 0.0401 |
| 213.20 | 8.427 | 8.429 | 0.032 | 11.1431 | 11.1376 | -0.049 | 0.0338 |
| 213.20 | 8.428 | 8.431 | 0.028 | 11.1431 | 11.1384 | -0.042 | 0.0338 |

Data from Vennix [47] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 213.21 | 8.429 | 8.432 | 0.031 | 11.1431 | 11.1378 | -0.047 | 0.0337 |
| 223.18 | 10.166 | 10.168 | 0.014 | 11.1375 | 11.1355 | -0.018 | 0.0260 |
| 233.16 | 11.912 | 11.912 | -0.003 | 11.1325 | 11.1329 | 0.003 | 0.0210 |
| 243.14 | 13.660 | 13.658 | -0.013 | 11.1269 | 11.1283 | 0.013 | 0.0175 |
| 253.15 | 15.412 | 15.413 | 0.002 | 11.1219 | 11.1217 | -0.002 | 0.0150 |
| 263.12 | 17.155 | 17.156 | 0.002 | 11.1163 | 11.1161 | -0.002 | 0.0131 |
| 273.09 | 18.898 | 18.895 | -0.012 | 11.1113 | 11.1124 | 0.010 | 0.0116 |
| 273.15 | 18.893 | 18.906 | 0.068 | 11.1113 | 11.1049 | -0.057 | 0.0116 |
| 192.50 | 4.929 | 4.940 | 0.214 | 11.7625 | 11.5548 | -1.766 | 0.0000 |
| 195.84 | 5.526 | 5.533 | 0.124 | 11.7607 | 11.7079 | -0.449 | 0.0592 |
| 198.18 | 5.951 | 5.956 | 0.082 | 11.7594 | 11.7331 | -0.224 | 0.0535 |
| 203.43 | 6.919 | 6.922 | 0.037 | 11.7563 | 11.7483 | -0.068 | 0.0433 |
| 212.03 | 8.531 | 8.530 | -0.005 | 11.7513 | 11.7521 | 0.007 | 0.0321 |
| 212.04 | 8.531 | 8.531 | -0.005 | 11.7513 | 11.7521 | 0.007 | 0.0321 |
| 222.63 | 10.541 | 10.536 | -0.041 | 11.7451 | 11.7505 | 0.046 | 0.0239 |
| 233.40 | 12.596 | 12.589 | -0.050 | 11.7395 | 11.7453 | 0.049 | 0.0188 |
| 233.40 | 12.597 | 12.589 | -0.062 | 11.7395 | 11.7466 | 0.061 | 0.0188 |
| 237.03 | 13.292 | 13.282 | -0.074 | 11.7370 | 11.7451 | 0.069 | 0.0175 |
| 237.03 | 13.292 | 13.283 | -0.071 | 11.7370 | 11.7448 | 0.067 | 0.0175 |
| 243.38 | 14.505 | 14.495 | -0.069 | 11.7332 | 11.7405 | 0.062 | 0.0157 |
| 243.38 | 14.505 | 14.496 | -0.063 | 11.7332 | 11.7399 | 0.057 | 0.0157 |
| 253.28 | 16.399 | 16.391 | -0.047 | 11.7283 | 11.7330 | 0.040 | 0.0134 |
| 263.45 | 18.340 | 18.332 | -0.042 | 11.7220 | 11.7260 | 0.034 | 0.0117 |
| 268.30 | 19.268 | 19.259 | -0.051 | 11.7195 | 11.7242 | 0.040 | 0.0110 |
| 268.30 | 19.268 | 19.259 | -0.048 | 11.7195 | 11.7240 | 0.038 | 0.0110 |
| 272.69 | 20.105 | 20.096 | -0.045 | 11.7170 | 11.7211 | 0.035 | 0.0104 |
| 272.70 | 20.105 | 20.096 | -0.044 | 11.7170 | 11.7210 | 0.034 | 0.0104 |
| 272.70 | 20.105 | 20.097 | -0.039 | 11.7170 | 11.7206 | 0.031 | 0.0104 |
| 190.70 | 4.660 | 4.673 | 0.280 | 12.8636 | 12.6660 | -1.536 | 0.0000 |
| 191.45 | 4.810 | 4.824 | 0.287 | 12.8636 | 12.7111 | -1.186 | 0.0000 |
| 192.40 | 4.997 | 5.014 | 0.350 | 12.8630 | 12.7163 | -1.140 | 0.0000 |
| 196.51 | 5.852 | 5.865 | 0.212 | 12.8605 | 12.8106 | -0.388 | 0.0507 |
| 203.57 | 7.364 | 7.371 | 0.089 | 12.8562 | 12.8421 | -0.110 | 0.0358 |
| 209.29 | 8.611 | 8.612 | 0.017 | 12.8524 | 12.8501 | -0.018 | 0.0286 |
| 218.62 | 10.668 | 10.662 | -0.062 | 12.8468 | 12.8539 | 0.055 | 0.0213 |

Data from Vennix [47] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 228.10 | 12.775 | 12.764 | -0.090 | 12.8406 | 12.8500 | 0.073 | 0.0168 |
| 238.55 | 15.109 | 15.094 | -0.099 | 12.8343 | 12.8440 | 0.076 | 0.0136 |
| 245.92 | 16.755 | 16.741 | -0.079 | 12.8294 | 12.8368 | 0.058 | 0.0120 |
| 252.97 | 18.335 | 18.319 | -0.087 | 12.8250 | 12.8330 | 0.062 | 0.0108 |
| 260.11 | 19.930 | 19.914 | -0.080 | 12.8206 | 12.8278 | 0.056 | 0.0098 |
| 267.31 | 21.537 | 21.523 | -0.067 | 12.8163 | 12.8222 | 0.046 | 0.0089 |
| 274.15 | 23.058 | 23.047 | -0.048 | 12.8119 | 12.8160 | 0.032 | 0.0082 |
| 188.97 | 4.386 | 4.389 | 0.083 | 13.7516 | 13.7216 | -0.218 | 0.0000 |
| 189.26 | 4.450 | 4.455 | 0.098 | 13.7510 | 13.7181 | -0.239 | 0.0000 |
| 189.77 | 4.564 | 4.570 | 0.140 | 13.7510 | 13.7088 | -0.307 | 0.0000 |
| 190.17 | 4.655 | 4.663 | 0.168 | 13.7504 | 13.7033 | -0.342 | 0.0000 |
| 190.45 | 4.718 | 4.726 | 0.171 | 13.7504 | 13.7046 | -0.333 | 0.0000 |
| 190.74 | 4.784 | 4.793 | 0.182 | 13.7504 | 13.7040 | -0.338 | 0.0000 |
| 191.07 | 4.862 | 4.870 | 0.181 | 13.7497 | 13.7058 | -0.320 | 0.0000 |
| 192.89 | 5.282 | 5.293 | 0.213 | 13.7485 | 13.7064 | -0.306 | 0.0000 |
| 195.05 | 5.789 | 5.801 | 0.211 | 13.7473 | 13.7121 | -0.256 | 0.0450 |
| 195.07 | 5.793 | 5.806 | 0.220 | 13.7473 | 13.7106 | -0.267 | 0.0450 |
| 197.10 | 6.279 | 6.291 | 0.195 | 13.7460 | 13.7169 | -0.212 | 0.0396 |
| 200.01 | 6.981 | 6.992 | 0.155 | 13.7441 | 13.7234 | -0.150 | 0.0338 |
| 203.32 | 7.790 | 7.797 | 0.092 | 13.7416 | 13.7305 | -0.081 | 0.0288 |
| 207.20 | 8.744 | 8.748 | 0.051 | 13.7392 | 13.7335 | -0.042 | 0.0246 |
| 213.32 | 10.271 | 10.264 | -0.060 | 13.7348 | 13.7410 | 0.045 | 0.0199 |
| 222.79 | 12.643 | 12.631 | -0.095 | 13.7286 | 13.7376 | 0.065 | 0.0153 |
| 227.85 | 13.917 | 13.903 | -0.106 | 13.7254 | 13.7352 | 0.071 | 0.0136 |
| 233.27 | 15.288 | 15.271 | -0.113 | 13.7217 | 13.7318 | 0.074 | 0.0122 |
| 238.51 | 16.611 | 16.594 | -0.101 | 13.7180 | 13.7269 | 0.065 | 0.0111 |
| 242.99 | 17.743 | 17.726 | -0.094 | 13.7148 | 13.7229 | 0.059 | 0.0102 |
| 248.77 | 19.203 | 19.190 | -0.067 | 13.7111 | 13.7169 | 0.042 | 0.0094 |
| 253.11 | 20.301 | 20.290 | -0.051 | 13.7086 | 13.7129 | 0.032 | 0.0088 |
| 258.31 | 21.615 | 21.605 | -0.043 | 13.7049 | 13.7085 | 0.026 | 0.0082 |
| 262.93 | 22.781 | 22.772 | -0.041 | 13.7018 | 13.7052 | 0.025 | 0.0077 |
| 267.82 | 24.012 | 24.005 | -0.028 | 13.6986 | 13.7009 | 0.017 | 0.0073 |
| 267.89 | 24.029 | 24.022 | -0.028 | 13.6986 | 13.7009 | 0.017 | 0.0073 |
| 273.15 | 25.355 | 25.348 | -0.027 | 13.6949 | 13.6971 | 0.016 | 0.0069 |
| 187.65 | 4.327 | 4.336 | 0.199 | 14.9705 | 14.9463 | -0.162 | 0.0000 |

Data from Vennix [47] (continued)

| T | P,exp | P,cal | Dev | ρ,exp | ρ,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 188.93 | 4.677 | 4.689 | 0.264 | 14.9699 | 14.9402 | -0.199 | 0.0000 |
| 191.45 | 5.379 | 5.396 | 0.324 | 14.9680 | 14.9350 | -0.220 | 0.0000 |
| 194.80 | 6.326 | 6.347 | 0.332 | 14.9655 | 14.9344 | -0.207 | 0.0282 |
| 199.61 | 7.710 | 7.729 | 0.240 | 14.9618 | 14.9409 | -0.140 | 0.0220 |
| 203.05 | 8.714 | 8.729 | 0.181 | 14.9593 | 14.9441 | -0.101 | 0.0191 |
| 207.63 | 10.057 | 10.068 | 0.106 | 14.9562 | 14.9476 | -0.058 | 0.0161 |
| 212.93 | 11.627 | 11.633 | 0.056 | 14.9524 | 14.9480 | -0.030 | 0.0137 |
| 221.36 | 14.131 | 14.134 | 0.022 | 14.9462 | 14.9445 | -0.011 | 0.0111 |
| 228.64 | 16.302 | 16.305 | 0.019 | 14.9406 | 14.9391 | -0.010 | 0.0095 |
| 236.60 | 18.680 | 18.687 | 0.035 | 14.9350 | 14.9323 | -0.018 | 0.0083 |
| 245.09 | 21.214 | 21.226 | 0.057 | 14.9287 | 14.9244 | -0.029 | 0.0072 |
| 253.07 | 23.597 | 23.611 | 0.060 | 14.9225 | 14.9180 | -0.030 | 0.0065 |
| 260.84 | 25.904 | 25.928 | 0.094 | 14.9169 | 14.9098 | -0.048 | 0.0059 |
| 268.82 | 28.272 | 28.304 | 0.116 | 14.9113 | 14.9026 | -0.059 | 0.0054 |
| 275.15 | 30.147 | 30.180 | 0.107 | 14.9063 | 14.8982 | -0.054 | 0.0051 |
| 183.35 | 3.825 | 3.877 | 1.346 | 16.5234 | 16.4599 | -0.385 | 0.0000 |
| 185.27 | 4.488 | 4.548 | 1.328 | 16.5215 | 16.4568 | -0.391 | 0.0000 |
| 189.26 | 5.897 | 5.964 | 1.139 | 16.5184 | 16.4601 | -0.353 | 0.0000 |
| 194.42 | 7.751 | 7.819 | 0.878 | 16.5140 | 16.4669 | -0.286 | 0.0134 |
| 198.42 | 9.196 | 9.271 | 0.818 | 16.5109 | 16.4657 | -0.274 | 0.0116 |
| 201.04 | 10.164 | 10.228 | 0.634 | 16.5084 | 16.4728 | -0.216 | 0.0107 |
| 207.77 | 12.617 | 12.695 | 0.619 | 16.5028 | 16.4668 | -0.218 | 0.0089 |
| 213.67 | 14.788 | 14.869 | 0.547 | 16.4978 | 16.4652 | -0.197 | 0.0078 |
| 222.89 | 18.182 | 18.279 | 0.531 | 16.4903 | 16.4576 | -0.198 | 0.0065 |
| 232.81 | 21.835 | 21.946 | 0.510 | 16.4822 | 16.4500 | -0.195 | 0.0056 |
| 241.29 | 24.958 | 25.076 | 0.476 | 16.4754 | 16.4448 | -0.186 | 0.0049 |
| 254.53 | 29.803 | 29.938 | 0.454 | 16.4648 | 16.4348 | -0.182 | 0.0042 |
| 261.83 | 32.459 | 32.601 | 0.437 | 16.4586 | 16.4294 | -0.177 | 0.0039 |
| 267.88 | 34.658 | 34.804 | 0.420 | 16.4536 | 16.4253 | -0.172 | 0.0037 |
| 272.98 | 36.500 | 36.650 | 0.413 | 16.4492 | 16.4212 | -0.170 | 0.1773 |
| 179.14 | 3.304 | 3.368 | 1.913 | 17.5640 | 17.5143 | -0.283 | 0.1481 |
| 179.83 | 3.585 | 3.650 | 1.818 | 17.5634 | 17.5140 | -0.281 | 0.0143 |
| 181.01 | 4.065 | 4.134 | 1.689 | 17.5622 | 17.5132 | -0.279 | 0.0000 |
| 184.44 | 5.477 | 5.554 | 1.402 | 17.5590 | 17.5120 | -0.268 | 0.0000 |
| 196.38 | 10.460 | 10.577 | 1.118 | 17.5485 | 17.4999 | -0.277 | 0.0077 |

Data from Vennix [47] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 200.54 | 12.224 | 12.340 | 0.949 | 17.5447 | 17.5012 | -0.248 | 0.0070 |
| 208.82 | 15.743 | 15.872 | 0.821 | 17.5379 | 17.4971 | -0.232 | 0.0058 |
| 217.04 | 19.228 | 19.378 | 0.781 | 17.5304 | 17.4893 | -0.234 | 0.0051 |
| 225.02 | 22.597 | 22.775 | 0.787 | 17.5235 | 17.4802 | -0.247 | 0.0045 |
| 233.08 | 25.996 | 26.192 | 0.755 | 17.5160 | 17.4729 | -0.246 | 0.0040 |
| 241.00 | 29.322 | 29.538 | 0.736 | 17.5092 | 17.4660 | -0.247 | 0.0037 |
| 250.74 | 33.392 | 33.628 | 0.705 | 17.5005 | 17.4578 | -0.244 | 0.0033 |
| 258.65 | 36.660 | 36.930 | 0.737 | 17.4936 | 17.4480 | -0.261 | 0.1540 |
| 266.75 | 40.009 | 40.295 | 0.713 | 17.4868 | 17.4419 | -0.257 | 0.1436 |
| 274.30 | 43.114 | 43.408 | 0.683 | 17.4799 | 17.4362 | -0.250 | 0.1351 |
| 182.83 | 6.552 | 6.741 | 2.882 | 18.4888 | 18.4116 | -0.417 | 0.0000 |
| 182.83 | 6.549 | 6.741 | 2.925 | 18.4888 | 18.4105 | -0.423 | 0.0000 |
| 175.63 | 3.138 | 3.303 | 5.268 | 18.4956 | 18.4080 | -0.474 | 0.0946 |
| 178.08 | 4.293 | 4.466 | 4.028 | 18.4931 | 18.4100 | -0.449 | 0.0086 |
| 188.29 | 9.165 | 9.372 | 2.258 | 18.4838 | 18.4112 | -0.393 | 0.0063 |
| 193.63 | 11.730 | 11.957 | 1.928 | 18.4788 | 18.4089 | -0.379 | 0.0055 |
| 198.67 | 14.156 | 14.399 | 1.719 | 18.4738 | 18.4059 | -0.368 | 0.0050 |
| 203.16 | 16.318 | 16.577 | 1.587 | 18.4695 | 18.4028 | -0.361 | 0.0046 |
| 208.21 | 18.751 | 19.031 | 1.491 | 18.4651 | 18.3989 | -0.359 | 0.0042 |
| 212.42 | 20.769 | 21.066 | 1.430 | 18.4607 | 18.3946 | -0.358 | 0.0039 |
| 218.76 | 23.805 | 24.125 | 1.346 | 18.2251 | 18.3897 | -0.354 | 0.0036 |
| 223.74 | 26.187 | 26.521 | 1.275 | 18.4501 | 18.3860 | -0.348 | 0.0034 |
| 229.13 | 28.748 | 29.106 | 1.242 | 18.4452 | 18.3807 | -0.350 | 0.0032 |
| 233.40 | 30.768 | 31.140 | 1.209 | 18.4414 | 18.3772 | -0.348 | 0.0030 |
| 237.61 | 32.760 | 33.146 | 1.178 | 18.4377 | 18.3739 | -0.346 | 0.0029 |
| 243.05 | 35.325 | 35.724 | 1.128 | 18.4321 | 18.3695 | -0.339 | 0.1378 |
| 248.04 | 37.659 | 38.076 | 1.109 | 18.4277 | 18.3650 | -0.340 | 0.1316 |
| 253.13 | 40.035 | 40.464 | 1.071 | 18.4227 | 18.3611 | -0.335 | 0.1259 |
| 263.28 | 44.752 | 45.203 | 1.007 | 18.4134 | 18.3536 | -0.325 | 0.1160 |
| 272.93 | 49.184 | 49.666 | 0.980 | 18.4047 | 18.3450 | -0.324 | 0.1080 |
| 172.57 | 5.501 | 5.835 | 6.070 | 19.9962 | 19.9059 | -0.452 | 0.0045 |
| 178.48 | 9.008 | 9.383 | 4.159 | 19.9899 | 19.9012 | -0.444 | 0.0039 |
| 186.85 | 13.976 | 14.405 | 3.065 | 19.9812 | 19.8944 | -0.434 | 0.0034 |
| 196.09 | 19.431 | 19.925 | 2.540 | 19.9719 | 19.8849 | -0.436 | 0.0029 |
| 204.18 | 24.179 | 24.721 | 2.243 | 19.9631 | 19.8769 | -0.432 | 0.0026 |
| 211.52 | 28.463 | 29.044 | 2.041 | 19.9557 | 19.8707 | -0.426 | 0.0024 |

Data from Vennix [47] (continued)

| T | P,exp | P,cal | Dev | $\rho$,exp | $\rho$,cal | Dev | Wt |
|---|---|---|---|---|---|---|---|
| K | MPa | MPa | % | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | % | |
| 219.06 | 32.825 | 33.441 | 1.877 | 19.9476 | 19.8641 | -0.419 | 0.0022 |
| 227.10 | 37.434 | 38.096 | 1.768 | 19.9395 | 19.8562 | -0.418 | 0.1034 |
| 235.30 | 42.100 | 42.797 | 1.655 | 19.9314 | 19.8495 | -0.411 | 0.0964 |
| 244.17 | 47.089 | 47.834 | 1.581 | 19.9220 | 19.8402 | -0.411 | 0.0899 |
| 253.83 | 52.486 | 53.260 | 1.475 | 19.9120 | 19.8326 | -0.399 | 0.0839 |
| 259.34 | 55.544 | 56.336 | 1.426 | 19.9064 | 19.8280 | -0.394 | 0.0808 |
| 267.73 | 60.105 | 60.981 | 1.456 | 19.8977 | 19.8154 | -0.413 | 0.0766 |
| 274.49 | 63.813 | 64.695 | 1.383 | 19.8909 | 19.8112 | -0.401 | 0.0736 |
| 172.77 | 11.383 | 11.966 | 5.119 | 21.2132 | 21.1176 | -0.451 | 0.0026 |
| 176.89 | 14.280 | 14.906 | 4.377 | 21.2088 | 21.1124 | -0.454 | 0.0024 |
| 181.67 | 17.634 | 18.294 | 3.745 | 21.2032 | 21.1079 | -0.450 | 0.0023 |
| 189.78 | 23.252 | 24.001 | 3.218 | 21.1939 | 21.0960 | -0.462 | 0.0020 |
| 197.32 | 28.439 | 29.245 | 2.836 | 21.1858 | 21.0885 | -0.459 | 0.0019 |
| 204.17 | 33.127 | 33.968 | 2.540 | 21.1783 | 21.0833 | -0.449 | 0.0018 |
| 212.64 | 38.858 | 39.743 | 2.278 | 21.1689 | 21.0761 | -0.438 | 0.0817 |
| 228.43 | 49.346 | 50.311 | 1.956 | 21.1509 | 21.0613 | -0.424 | 0.0722 |
| 235.78 | 54.155 | 55.158 | 1.851 | 21.1428 | 21.0542 | -0.419 | 0.0686 |
| 247.38 | 61.653 | 62.722 | 1.734 | 21.1303 | 21.0425 | -0.415 | 0.0636 |
| 252.99 | 65.231 | 66.342 | 1.703 | 21.1241 | 21.0359 | -0.418 | 0.0615 |
| 168.75 | 16.942 | 17.767 | 4.870 | 22.4109 | 22.3163 | -0.422 | 0.0017 |
| 180.12 | 26.268 | 27.188 | 3.500 | 22.3972 | 22.3039 | -0.416 | 0.0015 |
| 188.53 | 33.045 | 34.037 | 3.003 | 22.3872 | 22.2941 | -0.416 | 0.0014 |
| 196.79 | 39.639 | 40.662 | 2.579 | 22.3772 | 22.2876 | -0.400 | 0.0650 |
| 204.37 | 45.592 | 46.648 | 2.316 | 22.3679 | 22.2806 | -0.390 | 0.0613 |
| 211.26 | 50.940 | 52.030 | 2.138 | 22.3598 | 22.2740 | -0.384 | 0.0583 |
| 218.29 | 56.352 | 57.469 | 1.983 | 22.3517 | 22.2677 | -0.376 | 0.0556 |
| 226.29 | 62.408 | 63.563 | 1.852 | 22.3417 | 22.2590 | -0.370 | 0.0528 |
| 234.42 | 68.503 | 69.708 | 1.758 | 22.3324 | 22.2502 | -0.368 | 0.0503 |

Number of Points (Ref. 47) 254

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.676 | BIAS-% | 0.653 | RMS-% | 1.068 | |
| | AAD | 0.154 | BIAS | 0.151 | RMS | 0.287 | MPa |
| DENSITY : | AAD-% | 0.552 | BIAS-% | -0.533 | RMS-% | 1.467 | |
| | AAD | 0.066 | BIAS | -0.064 | RMS | 0.150 | $mol \cdot dm^{-3}$ |

Total Points 2777

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 1.028 | BIAS-% | 0.811 | RMS-% | 3.917 | |
| | AAD | 1.484 | BIAS | 1.345 | RMS | 10.521 | MPa |
| DENSITY : | AAD-% | 0.260 | BIAS-% | -0.115 | RMS-% | 0.703 | |
| | AAD | 0.038 | BIAS | -0.021 | RMS | 0.107 | $mol \cdot dm^{-3}$ |

Total Points 2574 with pressures less than 100 MPa

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PRESSURE: | AAD-% | 0.871 | BIAS-% | 0.690 | RMS-% | 3.856 | |
| | AAD | 0.116 | BIAS | 0.053 | RMS | 0.381 | MPa |
| DENSITY : | AAD-% | 0.232 | BIAS-% | -0.088 | RMS-% | 0.683 | |
| | AAD | 0.026 | BIAS | -0.011 | RMS | 0.073 | $mol \cdot dm^{-3}$ |

TABLE A5

COMPARISONS FOR SECOND VIRIAL COEFFICIENTS

Notes for Table A5. Data reported from Ref.[51] were from a correlation and are not direct experimental measurements.

| REF | T | B,exp | B,cal | Dev | Wt |
|---|---|---|---|---|---|
| | K | $dm^3 \cdot mol^{-1}$ | $dm^3 \cdot mol^{-1}$ | % | |
| 48 | 110.830 | -0.330 10 | -0.328 62 | -0.448 | 3514.1 |
| 48 | 112.430 | -0.319 90 | -0.319 41 | -0.153 | 3626.1 |
| 48 | 114.440 | -0.307 80 | -0.308 41 | 0.197 | 3768.7 |
| 48 | 116.780 | -0.295 50 | -0.296 33 | 0.281 | 3925.5 |
| 48 | 121.240 | -0.274 50 | -0.275 30 | 0.292 | 4225.9 |
| 49 | 126.571 | -0.242 27 | -0.253 14 | 4.488 | 0.0 |
| 48 | 128.830 | -0.244 30 | -0.244 61 | 0.125 | 4748.3 |
| 50 | 131.920 | -0.224 00 | -0.233 65 | 4.310 | 0.0 |
| 49 | 135.984 | -0.215 20 | -0.220 40 | 2.418 | 0.0 |
| 49 | 147.581 | -0.185 00 | -0.188 51 | 1.898 | 627.0 |
| 49 | 158.916 | -0.161 51 | -0.163 80 | 1.417 | 718.2 |
| 51 | 168.000 | -0.147 50 | -0.147 38 | -0.080 | 7864.4 |
| 49 | 173.507 | -0.137 63 | -0.138 59 | 0.699 | 842.8 |
| 51 | 176.000 | -0.134 90 | -0.134 86 | -0.028 | 8599.0 |
| 48 | 178.444 | -0.132 20 | -0.131 35 | -0.646 | 8774.6 |
| 51 | 184.000 | -0.123 80 | -0.123 82 | 0.017 | 9369.9 |
| 50 | 191.090 | -0.116 31 | -0.115 07 | -1.068 | 997.3 |
| 49 | 191.129 | -0.114 29 | -0.115 02 | 0.641 | 1015.0 |
| 51 | 192.000 | -0.113 90 | -0.114 01 | 0.094 | 10184.4 |
| 51 | 200.000 | -0.105 10 | -0.105 23 | 0.119 | 11037.1 |
| 50 | 200.030 | -0.106 68 | -0.105 19 | -1.393 | 1087.4 |
| 48 | 202.520 | -0.103 40 | -0.102 65 | -0.728 | 11218.6 |
| 51 | 210.000 | -0.095 30 | -0.095 47 | 0.173 | 12172.1 |
| 50 | 215.030 | -0.092 59 | -0.091 00 | -1.722 | 0.0 |
| 51 | 220.000 | -0.086 60 | -0.086 84 | 0.271 | 13394.9 |
| 48 | 221.130 | -0.085 80 | -0.085 92 | 0.142 | 13519.8 |
| 51 | 230.000 | -0.078 90 | -0.079 15 | 0.316 | 14702.1 |
| 51 | 240.000 | -0.072 00 | -0.072 26 | 0.362 | 16111.1 |
| 50 | 240.020 | -0.072 72 | -0.072 25 | -0.649 | 1595.2 |
| 48 | 243.820 | -0.070 30 | -0.069 82 | -0.691 | 16500.7 |
| 51 | 260.000 | -0.060 20 | -0.060 43 | 0.381 | 7225.9 |
| 36 | 273.150 | -0.053 35 | -0.053 80 | 0.835 | 8153.7 |
| 50 | 273.150 | -0.053 28 | -0.053 80 | 0.967 | 816.4 |
| 48 | 273.170 | -0.053 70 | -0.053 79 | 0.160 | 8100.6 |
| 51 | 280.000 | -0.050 50 | -0.050 64 | 0.275 | 8613.9 |

Table A5 (continued)

| REF | T | B,exp | B,cal | Dev | Wt |
|---|---|---|---|---|---|
| | K | $dm^3 \cdot mol^{-1}$ | $dm^3 \cdot mol^{-1}$ | % | |
| 36 | 298.142 | -0.042 82 | -0.043 12 | 0.701 | 10158.8 |
| 51 | 300.000 | -0.042 30 | -0.042 41 | 0.264 | 10283.7 |
| 36 | 303.141 | -0.040 91 | -0.041 24 | 0.802 | 10633.1 |
| 51 | 320.000 | -0.035 40 | -0.035 41 | 0.026 | 1228.8 |
| 36 | 323.140 | -0.034 23 | -0.034 40 | 0.508 | 12708.1 |
| 51 | 340.000 | -0.029 40 | -0.029 38 | -0.053 | 1479.6 |
| 36 | 348.143 | -0.027 06 | -0.027 17 | 0.396 | 16075.4 |
| 51 | 360.000 | -0.024 20 | -0.024 15 | -0.198 | 1797.5 |
| 36 | 373.150 | -0.021 00 | -0.021 07 | 0.354 | 20714.3 |
| 51 | 380.000 | -0.019 70 | -0.019 57 | -0.653 | 2208.1 |
| 36 | 398.160 | -0.015 87 | -0.015 88 | 0.087 | 27410.2 |
| 51 | 400.000 | -0.015 70 | -0.015 53 | -1.067 | 2770.7 |
| 36 | 423.170 | -0.011 40 | -0.011 42 | 0.153 | 38157.9 |
| 36 | 448.182 | -0.007 56 | -0.007 54 | -0.270 | 57539.6 |
| 51 | 450.000 | -0.007 40 | -0.007 28 | -1.652 | 5878.4 |
| 36 | 473.193 | -0.004 16 | -0.004 15 | -0.318 | 104566.8 |
| 36 | 498.203 | -0.001 16 | -0.001 16 | -0.219 | 374982.4 |
| 36 | 523.211 | 0.001 49 | 0.001 49 | 0.179 | 291939.7 |
| 36 | 548.218 | 0.003 89 | 0.003 86 | -0.888 | 111824.9 |
| 36 | 573.223 | 0.005 98 | 0.005 97 | -0.120 | 72742.4 |
| 36 | 598.226 | 0.007 88 | 0.007 88 | -0.012 | 55203.0 |
| 36 | 623.227 | 0.009 66 | 0.009 60 | -0.594 | 45031.0 |

Number of Points (Total) 57

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.667 | BIAS-% | 0.188 | RMS-% | 1.086 | |
| AAD | 0.001 | BIAS | -0.001 | RMS | 0.002 | $dm^3 \cdot mol^{-1}$ |

TABLE A6

COMPARISONS FOR ISOCHORIC SPECIFIC HEAT CAPACITY

Notes for Table A6. Since the experiment directly measured neither the pressure nor density, but calculated both from a filling pressure and the equation of state of Goodwin (Ref.[3]), we have included 5 types of deviations in the tables. Our tabulated temperatures, densities, pressures, and experimental heat capacities are identical to those given by Roder [53]. The column Dev refers to deviations between the experimental isochoric specific heat capacity and that calculated from the tabulated temperature and density; this latter quantity is presented in our table as $C_v$,cal. The column marked Dev1 measures deviations between the densities tabulated by Roder [53] and those calculated from our SWEOS from his tabulated temperature and pressure. Dev2 similarly compares pressures tabulated in Ref.[53] and those calculated from the tabulated temperature and density. These two deviations represent direct comparisons between the current SWEOS and the equation of state in Ref.[3]. Dev3 gives the deviations between the experimental heat capacities and those calculated form the tabulated temperature and pressure. Finally, Dev4 gives the deviations between the heat capacities calculated from tabulated temperature and density and those calculated from the tabulated temperature and pressure.

Data are from Younglove [52] and Roder [53] as adjusted by Roder [53]

| T | $\rho$ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | % | | MPa | % | % | % | % |
| 273.601 | 7.992 | 29.341 | 29.203 | -0.469 | 38.5 | 13.5573 | -0.30 | 0.27 | -0.481 | -0.013 |
| 266.349 | 7.996 | 29.282 | 29.199 | -0.282 | 1828.1 | 12.7921 | -0.34 | 0.30 | -0.297 | -0.015 |
| 259.066 | 8.000 | 29.486 | 29.251 | -0.796 | 1704.7 | 12.0212 | -0.39 | 0.32 | -0.813 | -0.018 |
| 252.815 | 8.003 | 29.560 | 29.347 | -0.720 | 1614.4 | 11.3576 | -0.42 | 0.34 | -0.740 | -0.020 |
| 245.476 | 8.007 | 29.555 | 29.530 | -0.084 | 1521.3 | 10.5762 | -0.47 | 0.35 | -0.108 | -0.024 |
| 244.733 | 8.007 | 29.514 | 29.553 | 0.133 | 1516.1 | 10.4969 | -0.47 | 0.35 | 0.109 | -0.024 |
| 238.128 | 8.010 | 29.637 | 29.801 | 0.553 | 1422.5 | 9.7912 | -0.50 | 0.35 | 0.526 | -0.028 |
| 237.534 | 8.011 | 29.854 | 29.827 | -0.089 | 1395.1 | 9.7276 | -0.51 | 0.36 | -0.118 | -0.028 |
| 230.453 | 8.014 | 29.853 | 30.197 | 1.152 | 1312.0 | 8.9684 | -0.53 | 0.34 | 1.119 | -0.032 |
| 230.373 | 8.014 | 30.094 | 30.202 | 0.358 | 1290.5 | 8.9599 | -0.53 | 0.34 | 0.325 | -0.032 |
| 222.937 | 8.018 | 30.399 | 30.727 | 1.080 | 1183.5 | 8.1593 | -0.55 | 0.32 | 1.042 | -0.037 |
| 222.993 | 8.018 | 30.413 | 30.723 | 1.018 | 1183.1 | 8.1654 | -0.55 | 0.32 | 0.980 | -0.037 |
| 215.402 | 8.022 | 31.042 | 31.474 | 1.393 | 1059.1 | 7.3443 | -0.55 | 0.27 | 1.349 | -0.043 |
| 207.854 | 8.025 | 32.420 | 32.656 | 0.728 | 904.4 | 6.5226 | -0.47 | 0.18 | 0.679 | -0.049 |
| 208.168 | 8.025 | 32.410 | 32.592 | 0.562 | 907.7 | 6.5569 | -0.48 | 0.19 | 0.513 | -0.049 |
| 295.822 | 10.119 | 29.665 | 29.744 | 0.265 | 44.1 | 20.4199 | -0.05 | 0.06 | 0.263 | -0.002 |
| 289.146 | 10.124 | 29.524 | 29.615 | 0.308 | 42.5 | 19.4252 | -0.07 | 0.08 | 0.306 | -0.002 |
| 282.516 | 10.129 | 29.531 | 29.517 | -0.048 | 40.5 | 18.4348 | -0.09 | 0.10 | -0.051 | -0.003 |
| 266.154 | 10.141 | 29.232 | 29.427 | 0.668 | 1831.5 | 15.9810 | -0.13 | 0.14 | 0.665 | -0.003 |
| 259.403 | 10.145 | 29.307 | 29.468 | 0.549 | 1729.9 | 14.9654 | -0.14 | 0.14 | 0.547 | -0.002 |

Table A6 (continued)

| T | ρ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | J·mol$^{-1}$·K$^{-1}$ | | % | | MPa | % | % | % | % |
| 251.488 | 10.151 | 29.316 | 29.588 | 0.927 | 1623.6 | 13.7727 | -0.15 | 0.15 | 0.925 | -0.002 |
| 244.636 | 10.156 | 29.506 | 29.764 | 0.875 | 1515.7 | 12.7389 | -0.16 | 0.15 | 0.875 | -0.001 |
| 237.756 | 10.161 | 29.623 | 30.021 | 1.344 | 1419.3 | 11.7001 | -0.16 | 0.13 | 1.344 | 0.000 |
| 230.790 | 10.166 | 30.028 | 30.376 | 1.158 | 1300.9 | 10.6480 | -0.14 | 0.11 | 1.159 | 0.001 |
| 223.396 | 10.171 | 30.879 | 30.881 | 0.005 | 1152.4 | 9.5315 | -0.09 | 0.06 | 0.007 | 0.002 |
| 216.467 | 10.176 | 31.281 | 31.527 | 0.786 | 1053.8 | 8.4860 | 0.00 | 0.00 | 0.786 | 0.000 |
| 216.813 | 10.176 | 31.717 | 31.489 | -0.719 | 1028.8 | 8.5382 | -0.01 | 0.00 | -0.718 | 0.000 |
| 214.044 | 10.178 | 31.996 | 31.815 | -0.567 | 985.1 | 8.1207 | 0.05 | -0.03 | -0.569 | -0.002 |
| 209.853 | 10.180 | 32.524 | 32.437 | -0.267 | 916.3 | 7.4892 | 0.17 | -0.08 | -0.278 | -0.011 |
| 209.057 | 10.181 | 32.947 | 32.580 | -1.115 | 886.5 | 7.3695 | 0.19 | -0.09 | -1.128 | -0.014 |
| 209.526 | 10.181 | 32.381 | 32.494 | 0.350 | 921.4 | 7.4401 | 0.17 | -0.08 | 0.338 | -0.012 |
| 208.704 | 10.182 | 32.577 | 32.646 | 0.212 | 903.3 | 7.3164 | 0.20 | -0.09 | 0.197 | -0.015 |
| 203.375 | 10.185 | 34.274 | 33.984 | -0.846 | 775.5 | 6.5152 | 0.46 | -0.16 | -0.901 | -0.055 |
| 203.731 | 10.185 | 33.864 | 33.869 | 0.015 | 796.9 | 6.5686 | 0.43 | -0.15 | -0.035 | -0.050 |
| 202.601 | 10.185 | 34.297 | 34.251 | -0.135 | 768.5 | 6.3990 | 0.52 | -0.17 | -0.201 | -0.067 |
| 296.364 | 11.741 | 29.712 | 29.909 | 0.664 | 44.1 | 24.7179 | 0.07 | -0.10 | 0.667 | 0.003 |
| 276.534 | 11.759 | 29.448 | 29.561 | 0.383 | 39.0 | 20.9399 | 0.04 | -0.05 | 0.384 | 0.001 |
| 266.957 | 11.768 | 29.402 | 29.494 | 0.313 | 1821.8 | 19.1060 | 0.03 | -0.03 | 0.314 | 0.000 |
| 257.453 | 11.777 | 29.307 | 29.514 | 0.705 | 1703.6 | 17.2822 | 0.02 | -0.02 | 0.705 | 0.000 |
| 217.783 | 11.786 | 31.121 | 31.045 | -0.244 | 1077.7 | 9.6540 | 0.14 | -0.12 | -0.260 | -0.016 |
| 248.734 | 11.786 | 29.365 | 29.623 | 0.878 | 1582.5 | 15.6069 | 0.01 | -0.01 | 0.878 | 0.000 |
| 212.330 | 11.791 | 31.627 | 31.567 | -0.190 | 991.5 | 8.6216 | 0.21 | -0.16 | -0.222 | -0.032 |
| 212.697 | 11.791 | 31.557 | 31.527 | -0.097 | 999.4 | 8.6908 | 0.20 | -0.15 | -0.126 | -0.029 |
| 240.923 | 11.793 | 29.393 | 29.810 | 1.419 | 1480.5 | 14.1057 | 0.02 | -0.02 | 1.419 | -0.001 |
| 239.625 | 11.794 | 29.780 | 29.851 | 0.237 | 1427.1 | 13.8564 | 0.02 | -0.03 | 0.236 | -0.001 |
| 208.095 | 11.795 | 32.238 | 32.109 | -0.400 | 916.6 | 7.8235 | 0.29 | -0.19 | -0.455 | -0.055 |
| 208.469 | 11.795 | 32.162 | 32.054 | -0.336 | 924.2 | 7.8939 | 0.28 | -0.19 | -0.388 | -0.052 |
| 204.724 | 11.798 | 32.865 | 32.692 | -0.526 | 853.7 | 7.1915 | 0.37 | -0.21 | -0.615 | -0.090 |
| 205.115 | 11.798 | 32.768 | 32.615 | -0.468 | 862.0 | 7.2646 | 0.35 | -0.21 | -0.551 | -0.084 |
| 233.566 | 11.800 | 29.846 | 30.078 | 0.777 | 1348.9 | 12.6929 | 0.04 | -0.04 | 0.775 | -0.002 |
| 202.217 | 11.801 | 33.410 | 33.269 | -0.422 | 806.1 | 6.7237 | 0.42 | -0.22 | -0.550 | -0.129 |
| 202.608 | 11.801 | 33.469 | 33.168 | -0.899 | 806.4 | 6.7965 | 0.41 | -0.22 | -1.018 | -0.120 |
| 231.675 | 11.801 | 29.864 | 30.163 | 1.001 | 1325.2 | 12.3302 | 0.05 | -0.05 | 0.998 | -0.003 |
| 200.564 | 11.802 | 34.091 | 33.749 | -1.004 | 761.9 | 6.4166 | 0.47 | -0.22 | -1.169 | -0.167 |
| 200.945 | 11.802 | 34.008 | 33.630 | -1.113 | 768.5 | 6.4874 | 0.46 | -0.22 | -1.269 | -0.158 |

Table A6 (continued)

| T | ρ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | J·mol$^{-1}$·K$^{-1}$ | | % | | MPa | % | % | % | % |
| 198.915 | 11.804 | 34.646 | 34.333 | -0.902 | 725.8 | 6.1116 | 0.51 | -0.21 | -1.112 | -0.211 |
| 197.280 | 11.805 | 35.386 | 35.052 | -0.944 | 0.0 | 5.8105 | 0.53 | -0.19 | -1.203 | -0.261 |
| 226.191 | 11.806 | 30.035 | 30.451 | 1.384 | 1248.1 | 11.2792 | 0.08 | -0.07 | 1.378 | -0.006 |
| 223.653 | 11.808 | 30.288 | 30.607 | 1.053 | 1199.9 | 10.7937 | 0.10 | -0.09 | 1.045 | -0.008 |
| 218.787 | 11.813 | 30.582 | 30.955 | 1.221 | 1125.8 | 9.8645 | 0.13 | -0.11 | 1.207 | -0.014 |
| 215.626 | 11.815 | 30.797 | 31.225 | 1.390 | 1078.0 | 9.2626 | 0.17 | -0.14 | 1.368 | -0.022 |
| 211.370 | 11.819 | 31.543 | 31.665 | 0.387 | 987.6 | 8.4547 | 0.23 | -0.17 | 0.351 | -0.036 |
| 203.924 | 11.826 | 32.837 | 32.840 | 0.010 | 848.3 | 7.0511 | 0.38 | -0.22 | -0.091 | -0.101 |
| 297.427 | 13.094 | 30.056 | 30.070 | 0.046 | 43.4 | 29.2487 | 0.02 | -0.04 | 0.047 | 0.001 |
| 290.591 | 13.101 | 29.801 | 29.904 | 0.344 | 42.1 | 27.6775 | 0.01 | -0.02 | 0.345 | 0.000 |
| 283.783 | 13.109 | 29.617 | 29.762 | 0.489 | 40.6 | 26.1074 | -0.01 | 0.02 | 0.489 | 0.000 |
| 276.944 | 13.117 | 29.613 | 29.646 | 0.112 | 38.7 | 24.5256 | -0.03 | 0.05 | 0.111 | -0.001 |
| 276.780 | 13.117 | 29.807 | 29.644 | -0.548 | 38.2 | 24.4876 | -0.03 | 0.05 | -0.548 | -0.001 |
| 262.566 | 13.133 | 29.446 | 29.508 | 0.209 | 1756.4 | 21.1874 | -0.07 | 0.10 | 0.208 | 0.000 |
| 248.387 | 13.149 | 29.481 | 29.549 | 0.229 | 1565.8 | 17.8847 | -0.10 | 0.14 | 0.232 | 0.003 |
| 241.245 | 13.157 | 29.485 | 29.656 | 0.579 | 1475.4 | 16.2201 | -0.11 | 0.15 | 0.584 | 0.005 |
| 234.072 | 13.164 | 29.642 | 29.835 | 0.651 | 1373.2 | 14.5496 | -0.11 | 0.15 | 0.659 | 0.008 |
| 226.524 | 13.173 | 29.927 | 30.114 | 0.623 | 1260.8 | 12.7957 | -0.12 | 0.16 | 0.637 | 0.013 |
| 219.265 | 13.180 | 30.289 | 30.486 | 0.649 | 1152.4 | 11.1153 | -0.13 | 0.16 | 0.668 | 0.019 |
| 212.016 | 13.188 | 30.879 | 30.990 | 0.360 | 1036.2 | 9.4478 | -0.15 | 0.16 | 0.388 | 0.028 |
| 204.751 | 13.196 | 31.761 | 31.729 | -0.100 | 913.2 | 7.7933 | -0.17 | 0.16 | -0.053 | 0.047 |
| 280.167 | 13.402 | 29.622 | 29.719 | 0.329 | 39.6 | 26.1595 | -0.03 | 0.05 | 0.328 | -0.001 |
| 272.763 | 13.411 | 29.475 | 29.606 | 0.446 | 37.9 | 24.3748 | -0.05 | 0.09 | 0.445 | -0.001 |
| 265.168 | 13.420 | 29.421 | 29.529 | 0.368 | 1794.8 | 22.5388 | -0.08 | 0.12 | 0.367 | -0.001 |
| 257.310 | 13.429 | 29.215 | 29.497 | 0.966 | 1712.3 | 20.6355 | -0.09 | 0.15 | 0.967 | 0.000 |
| 249.756 | 13.437 | 29.470 | 29.521 | 0.173 | 1584.5 | 18.8031 | -0.11 | 0.16 | 0.176 | 0.002 |
| 242.161 | 13.446 | 29.393 | 29.609 | 0.733 | 1496.0 | 16.9600 | -0.12 | 0.18 | 0.739 | 0.006 |
| 234.527 | 13.455 | 29.418 | 29.772 | 1.205 | 1399.4 | 15.1083 | -0.14 | 0.20 | 1.215 | 0.010 |
| 226.091 | 13.464 | 29.853 | 30.059 | 0.690 | 1262.0 | 13.0669 | -0.15 | 0.21 | 0.707 | 0.017 |
| 218.423 | 13.473 | 30.077 | 30.435 | 1.189 | 1159.3 | 11.2192 | -0.17 | 0.22 | 1.215 | 0.026 |
| 212.499 | 13.479 | 30.501 | 30.822 | 1.053 | 1066.5 | 9.8001 | -0.18 | 0.22 | 1.089 | 0.035 |
| 210.717 | 13.481 | 30.583 | 30.961 | 1.235 | 1042.8 | 9.3752 | -0.19 | 0.23 | 1.275 | 0.039 |
| 203.443 | 13.489 | 31.440 | 31.699 | 0.825 | 919.6 | 7.6538 | -0.23 | 0.23 | 0.893 | 0.067 |
| 202.980 | 13.490 | 31.670 | 31.760 | 0.284 | 902.3 | 7.5453 | -0.23 | 0.23 | 0.355 | 0.071 |
| 194.862 | 13.498 | 33.868 | 33.421 | -1.319 | 0.0 | 5.6658 | -0.31 | 0.21 | -1.138 | 0.184 |

Table A6 (continued)

| T | ρ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | % | | MPa | % | % | % | % |
| 289.349 | 14.301 | 30.189 | 30.001 | -0.622 | 40.7 | 31.7855 | -0.02 | 0.03 | -0.623 | -0.001 |
| 281.439 | 14.311 | 29.734 | 29.826 | 0.309 | 39.7 | 29.6385 | -0.04 | 0.07 | 0.307 | -0.002 |
| 277.494 | 14.317 | 29.565 | 29.750 | 0.625 | 39.0 | 28.5645 | -0.06 | 0.11 | 0.623 | -0.003 |
| 273.495 | 14.322 | 29.585 | 29.681 | 0.325 | 37.8 | 27.4733 | -0.07 | 0.13 | 0.323 | -0.003 |
| 269.538 | 14.327 | 29.398 | 29.622 | 0.763 | 1858.1 | 26.3919 | -0.08 | 0.15 | 0.761 | -0.003 |
| 265.537 | 14.333 | 29.395 | 29.573 | 0.605 | 1803.0 | 25.2966 | -0.10 | 0.18 | 0.602 | -0.003 |
| 262.143 | 14.338 | 29.372 | 29.539 | 0.568 | 1759.4 | 24.3660 | -0.11 | 0.21 | 0.566 | -0.002 |
| 255.197 | 14.347 | 29.214 | 29.496 | 0.965 | 1684.0 | 22.4587 | -0.13 | 0.24 | 0.964 | -0.001 |
| 248.293 | 14.356 | 29.190 | 29.493 | 1.037 | 1595.5 | 20.5599 | -0.15 | 0.27 | 1.039 | 0.002 |
| 242.493 | 14.363 | 29.277 | 29.525 | 0.848 | 1511.9 | 18.9632 | -0.16 | 0.29 | 0.854 | 0.005 |
| 241.372 | 14.365 | 29.337 | 29.536 | 0.678 | 1491.7 | 18.6545 | -0.17 | 0.30 | 0.684 | 0.006 |
| 234.287 | 14.373 | 29.495 | 29.636 | 0.479 | 1389.3 | 16.7043 | -0.18 | 0.31 | 0.491 | 0.012 |
| 234.417 | 14.374 | 29.475 | 29.634 | 0.539 | 1392.8 | 16.7399 | -0.19 | 0.33 | 0.551 | 0.012 |
| 227.167 | 14.383 | 29.714 | 29.805 | 0.306 | 1286.0 | 14.7466 | -0.20 | 0.34 | 0.326 | 0.020 |
| 225.394 | 14.385 | 29.674 | 29.859 | 0.623 | 1269.0 | 14.2599 | -0.20 | 0.35 | 0.646 | 0.023 |
| 220.066 | 14.392 | 29.777 | 30.054 | 0.930 | 1200.6 | 12.8000 | -0.22 | 0.36 | 0.961 | 0.031 |
| 217.103 | 14.395 | 29.907 | 30.186 | 0.932 | 1157.9 | 11.9904 | -0.22 | 0.36 | 0.968 | 0.035 |
| 212.954 | 14.401 | 30.188 | 30.403 | 0.711 | 1093.1 | 10.8603 | -0.24 | 0.38 | 0.756 | 0.045 |
| 208.733 | 14.406 | 30.531 | 30.671 | 0.457 | 1026.4 | 9.7159 | -0.25 | 0.39 | 0.513 | 0.056 |
| 205.816 | 14.410 | 30.756 | 30.891 | 0.440 | 983.1 | 8.9293 | -0.26 | 0.40 | 0.507 | 0.066 |
| 200.323 | 14.416 | 31.434 | 31.428 | -0.020 | 891.4 | 7.4605 | -0.27 | 0.38 | 0.069 | 0.089 |
| 198.638 | 14.419 | 31.571 | 31.638 | 0.212 | 868.7 | 7.0140 | -0.28 | 0.37 | 0.314 | 0.102 |
| 195.039 | 14.422 | 32.331 | 32.208 | -0.380 | 798.8 | 6.0693 | -0.25 | 0.30 | -0.260 | 0.121 |
| 191.539 | 14.427 | 33.603 | 33.005 | -1.779 | 0.0 | 5.1655 | -0.19 | 0.20 | -1.651 | 0.130 |
| 265.198 | 15.950 | 29.596 | 29.712 | 0.390 | 1774.3 | 31.3546 | -0.09 | 0.20 | 0.385 | -0.006 |
| 259.333 | 15.960 | 29.610 | 29.627 | 0.056 | 1694.2 | 29.3643 | -0.11 | 0.25 | 0.049 | -0.006 |
| 253.443 | 15.969 | 29.479 | 29.559 | 0.273 | 1631.3 | 27.3593 | -0.13 | 0.29 | 0.267 | -0.006 |
| 249.308 | 15.973 | 28.662 | 29.524 | 3.009 | 0.0 | 25.9480 | -0.12 | 0.28 | 3.004 | -0.004 |
| 247.521 | 15.979 | 29.445 | 29.513 | 0.230 | 1558.5 | 25.3373 | -0.15 | 0.34 | 0.226 | -0.005 |
| 239.424 | 15.989 | 29.394 | 29.488 | 0.319 | 1461.8 | 22.5652 | -0.15 | 0.35 | 0.318 | -0.001 |
| 241.503 | 15.989 | 29.466 | 29.489 | 0.080 | 1480.5 | 23.2777 | -0.16 | 0.38 | 0.077 | -0.002 |
| 270.623 | 16.003 | 29.602 | 29.813 | 0.714 | 37.0 | 33.4902 | -0.06 | 0.14 | 0.710 | -0.004 |
| 229.421 | 16.005 | 29.529 | 29.532 | 0.010 | 1328.3 | 19.1327 | -0.16 | 0.40 | 0.015 | 0.006 |
| 229.453 | 16.008 | 29.483 | 29.531 | 0.164 | 1332.8 | 19.1436 | -0.18 | 0.44 | 0.170 | 0.006 |
| 264.035 | 16.014 | 29.704 | 29.701 | -0.011 | 1746.0 | 31.2435 | -0.08 | 0.20 | -0.016 | -0.006 |

Table A6 (continued)

| T | $\rho$ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | % | | MPa | % | % | % | % |
| 223.903 | 16.017 | 29.506 | 29.600 | 0.317 | 1266.1 | 17.2378 | -0.19 | 0.47 | 0.330 | 0.012 |
| 223.224 | 16.018 | 29.500 | 29.611 | 0.375 | 1258.8 | 17.0049 | -0.19 | 0.46 | 0.388 | 0.013 |
| 257.424 | 16.025 | 29.450 | 29.609 | 0.540 | 1687.0 | 28.9799 | -0.11 | 0.25 | 0.534 | -0.006 |
| 217.884 | 16.026 | 29.449 | 29.718 | 0.912 | 1202.3 | 15.1722 | -0.19 | 0.47 | 0.932 | 0.019 |
| 250.777 | 16.036 | 29.381 | 29.540 | 0.543 | 1607.2 | 26.6958 | -0.13 | 0.30 | 0.537 | -0.005 |
| 209.230 | 16.037 | 29.880 | 29.989 | 0.365 | 1075.9 | 12.2102 | -0.17 | 0.43 | 0.394 | 0.029 |
| 244.048 | 16.047 | 29.337 | 29.499 | 0.552 | 1525.5 | 24.3763 | -0.15 | 0.35 | 0.548 | -0.004 |
| 200.031 | 16.052 | 30.364 | 30.460 | 0.316 | 951.2 | 9.0844 | -0.16 | 0.41 | 0.358 | 0.043 |
| 199.628 | 16.058 | 30.448 | 30.484 | 0.117 | 942.2 | 8.9482 | -0.19 | 0.50 | 0.169 | 0.052 |
| 237.251 | 16.058 | 29.456 | 29.490 | 0.114 | 1429.0 | 22.0273 | -0.16 | 0.39 | 0.114 | 0.000 |
| 197.622 | 16.061 | 30.772 | 30.625 | -0.477 | 904.0 | 8.2721 | -0.19 | 0.48 | -0.422 | 0.055 |
| 195.615 | 16.064 | 30.656 | 30.785 | 0.420 | 891.9 | 7.5981 | -0.18 | 0.46 | 0.479 | 0.058 |
| 192.871 | 16.065 | 31.025 | 31.041 | 0.052 | 0.0 | 6.6817 | -0.14 | 0.36 | 0.105 | 0.053 |
| 193.605 | 16.067 | 30.778 | 30.966 | 0.612 | 866.6 | 6.9263 | -0.16 | 0.42 | 0.672 | 0.060 |
| 230.437 | 16.069 | 29.349 | 29.520 | 0.581 | 1356.5 | 19.6687 | -0.18 | 0.43 | 0.586 | 0.005 |
| 191.595 | 16.070 | 31.347 | 31.174 | -0.551 | 0.0 | 6.2582 | -0.14 | 0.37 | -0.492 | 0.059 |
| 189.591 | 16.073 | 31.445 | 31.415 | -0.097 | 0.0 | 5.5958 | -0.12 | 0.31 | -0.040 | 0.056 |
| 187.587 | 16.076 | 31.801 | 31.697 | -0.328 | 0.0 | 4.9389 | -0.08 | 0.22 | -0.283 | 0.045 |
| 185.501 | 16.079 | 32.221 | 32.048 | -0.537 | 0.0 | 4.2614 | -0.02 | 0.07 | -0.520 | 0.016 |
| 223.900 | 16.080 | 29.472 | 29.593 | 0.409 | 1268.9 | 17.4046 | -0.19 | 0.46 | 0.420 | 0.011 |
| 223.352 | 16.081 | 29.495 | 29.601 | 0.359 | 1260.7 | 17.2150 | -0.19 | 0.46 | 0.371 | 0.012 |
| 216.494 | 16.091 | 29.582 | 29.740 | 0.533 | 1176.3 | 14.8411 | -0.18 | 0.46 | 0.553 | 0.020 |
| 216.509 | 16.091 | 29.546 | 29.739 | 0.655 | 1179.3 | 14.8464 | -0.18 | 0.46 | 0.675 | 0.020 |
| 209.569 | 16.102 | 29.912 | 29.956 | 0.147 | 1077.2 | 12.4502 | -0.18 | 0.46 | 0.176 | 0.029 |
| 209.408 | 16.102 | 29.858 | 29.962 | 0.349 | 1079.3 | 12.3948 | -0.18 | 0.46 | 0.378 | 0.029 |
| 202.632 | 16.113 | 30.083 | 30.274 | 0.634 | 994.6 | 10.0671 | -0.17 | 0.45 | 0.674 | 0.040 |
| 202.277 | 16.113 | 30.311 | 30.294 | -0.057 | 976.5 | 9.9456 | -0.17 | 0.44 | -0.017 | 0.039 |
| 199.140 | 16.118 | 30.308 | 30.486 | 0.587 | 946.0 | 8.8745 | -0.16 | 0.42 | 0.631 | 0.044 |
| 195.637 | 16.124 | 30.676 | 30.746 | 0.227 | 891.0 | 7.6852 | -0.15 | 0.40 | 0.276 | 0.049 |
| 195.118 | 16.124 | 30.702 | 30.789 | 0.285 | 884.7 | 7.5098 | -0.14 | 0.38 | 0.332 | 0.047 |
| 191.577 | 16.130 | 31.179 | 31.128 | -0.162 | 0.0 | 6.3184 | -0.12 | 0.32 | -0.114 | 0.048 |
| 188.669 | 16.134 | 31.621 | 31.480 | -0.446 | 0.0 | 5.3493 | -0.08 | 0.21 | -0.407 | 0.039 |
| 187.947 | 16.135 | 31.669 | 31.581 | -0.279 | 0.0 | 5.1103 | -0.06 | 0.18 | -0.245 | 0.034 |
| 259.304 | 16.612 | 29.709 | 29.707 | -0.008 | 1682.7 | 32.3473 | -0.08 | 0.20 | -0.014 | -0.006 |
| 253.921 | 16.622 | 29.624 | 29.634 | 0.033 | 1621.8 | 30.3550 | -0.10 | 0.26 | 0.026 | -0.007 |

Table A6 (continued)

| T | ρ | $C_V$,exp | $C_V$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | % | | MPa | % | % | % | % |
| 248.519 | 16.632 | 29.472 | 29.575 | 0.351 | 1568.4 | 28.3488 | -0.12 | 0.31 | 0.344 | -0.007 |
| 243.097 | 16.641 | 29.579 | 29.533 | -0.156 | 1489.1 | 26.3288 | -0.13 | 0.34 | -0.162 | -0.006 |
| 237.657 | 16.651 | 29.416 | 29.508 | 0.314 | 1437.8 | 24.2969 | -0.15 | 0.39 | 0.309 | -0.005 |
| 232.337 | 16.661 | 29.337 | 29.504 | 0.570 | 1380.5 | 22.3052 | -0.16 | 0.43 | 0.568 | -0.002 |
| 230.407 | 16.664 | 29.196 | 29.508 | 1.070 | 1370.2 | 21.5817 | -0.16 | 0.43 | 1.069 | -0.001 |
| 227.102 | 16.670 | 29.097 | 29.523 | 1.462 | 1339.4 | 20.3420 | -0.17 | 0.45 | 1.464 | 0.002 |
| 225.003 | 16.673 | 29.481 | 29.537 | 0.189 | 1280.9 | 19.5541 | -0.16 | 0.45 | 0.193 | 0.003 |
| 219.582 | 16.683 | 29.444 | 29.595 | 0.512 | 1221.9 | 17.5183 | -0.17 | 0.48 | 0.521 | 0.009 |
| 216.658 | 16.688 | 29.633 | 29.640 | 0.025 | 1174.1 | 16.4203 | -0.17 | 0.49 | 0.037 | 0.012 |
| 215.024 | 16.691 | 29.546 | 29.671 | 0.422 | 1162.9 | 15.8067 | -0.17 | 0.49 | 0.436 | 0.014 |
| 214.143 | 16.692 | 29.551 | 29.689 | 0.466 | 1152.8 | 15.4759 | -0.17 | 0.48 | 0.480 | 0.015 |
| 211.348 | 16.697 | 29.684 | 29.753 | 0.232 | 1112.5 | 14.4271 | -0.17 | 0.49 | 0.250 | 0.018 |
| 210.401 | 16.699 | 29.578 | 29.777 | 0.674 | 1110.1 | 14.0717 | -0.17 | 0.49 | 0.694 | 0.020 |
| 208.680 | 16.701 | 29.876 | 29.826 | -0.166 | 1070.4 | 13.4263 | -0.16 | 0.48 | -0.145 | 0.021 |
| 206.062 | 16.706 | 29.891 | 29.911 | 0.066 | 1042.2 | 12.4457 | -0.16 | 0.48 | 0.091 | 0.025 |
| 206.122 | 16.707 | 29.711 | 29.908 | 0.664 | 1055.2 | 12.4681 | -0.17 | 0.50 | 0.690 | 0.026 |
| 202.937 | 16.710 | 29.921 | 30.030 | 0.366 | 1008.2 | 11.2772 | -0.15 | 0.45 | 0.393 | 0.027 |
| 201.094 | 16.714 | 29.875 | 30.111 | 0.791 | 992.6 | 10.5894 | -0.15 | 0.46 | 0.821 | 0.030 |
| 195.445 | 16.723 | 30.354 | 30.421 | 0.220 | 907.8 | 8.4891 | -0.13 | 0.41 | 0.256 | 0.036 |
| 194.733 | 16.723 | 30.360 | 30.468 | 0.356 | 900.7 | 8.2252 | -0.12 | 0.39 | 0.391 | 0.034 |
| 190.103 | 16.732 | 30.829 | 30.826 | -0.010 | 0.0 | 6.5191 | -0.10 | 0.36 | 0.029 | 0.039 |
| 187.826 | 16.735 | 31.032 | 31.046 | 0.046 | 0.0 | 5.6863 | -0.08 | 0.30 | 0.082 | 0.036 |
| 184.764 | 16.741 | 31.395 | 31.403 | 0.026 | 0.0 | 4.5748 | -0.06 | 0.24 | 0.060 | 0.034 |
| 252.926 | 16.894 | 29.489 | 29.657 | 0.571 | 1623.5 | 31.2877 | -0.08 | 0.21 | 0.565 | -0.006 |
| 245.293 | 16.908 | 29.446 | 29.576 | 0.442 | 1530.1 | 28.3488 | -0.10 | 0.27 | 0.436 | -0.007 |
| 235.598 | 16.926 | 29.533 | 29.519 | -0.046 | 1401.6 | 24.5973 | -0.13 | 0.35 | -0.051 | -0.005 |
| 227.768 | 16.940 | 29.468 | 29.520 | 0.175 | 1314.3 | 21.5545 | -0.14 | 0.39 | 0.174 | -0.001 |
| 219.901 | 16.954 | 29.531 | 29.572 | 0.138 | 1218.4 | 18.4899 | -0.14 | 0.42 | 0.142 | 0.004 |
| 211.988 | 16.968 | 29.763 | 29.692 | -0.238 | 1113.6 | 15.4046 | -0.14 | 0.43 | -0.226 | 0.012 |
| 203.953 | 16.982 | 29.834 | 29.909 | 0.251 | 1024.4 | 12.2749 | -0.13 | 0.41 | 0.271 | 0.020 |
| 196.587 | 16.996 | 30.106 | 30.225 | 0.395 | 933.5 | 9.4174 | -0.11 | 0.40 | 0.422 | 0.028 |
| 193.924 | 17.001 | 30.219 | 30.377 | 0.522 | 901.2 | 8.3890 | -0.11 | 0.39 | 0.553 | 0.030 |
| 187.325 | 17.011 | 30.929 | 30.880 | -0.157 | 0.0 | 5.8591 | -0.07 | 0.30 | -0.127 | 0.031 |
| 240.990 | 17.941 | 29.691 | 29.682 | -0.029 | 1452.2 | 31.7566 | -0.07 | 0.21 | -0.036 | -0.007 |
| 234.304 | 17.955 | 29.518 | 29.626 | 0.365 | 1387.4 | 28.8038 | -0.08 | 0.26 | 0.358 | -0.007 |

Table A6 (continued)

| T | $\rho$ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | % | | MPa | % | % | % | % |
| 228.488 | 17.967 | 29.563 | 29.594 | 0.105 | 1314.4 | 26.2230 | -0.09 | 0.30 | 0.098 | -0.007 |
| 222.620 | 17.979 | 29.618 | 29.581 | -0.125 | 1242.1 | 23.6084 | -0.10 | 0.34 | -0.130 | -0.005 |
| 216.641 | 17.992 | 29.533 | 29.592 | 0.199 | 1181.8 | 20.9345 | -0.10 | 0.38 | 0.196 | -0.003 |
| 210.370 | 18.005 | 29.581 | 29.634 | 0.180 | 1109.6 | 18.1216 | -0.10 | 0.40 | 0.180 | 0.001 |
| 204.379 | 18.017 | 29.725 | 29.713 | -0.041 | 1036.2 | 15.4279 | -0.10 | 0.40 | -0.036 | 0.005 |
| 198.354 | 18.029 | 29.850 | 29.841 | -0.031 | 966.8 | 12.7163 | -0.09 | 0.38 | -0.022 | 0.010 |
| 192.299 | 18.041 | 30.133 | 30.035 | -0.325 | 890.8 | 9.9914 | -0.08 | 0.37 | -0.310 | 0.014 |
| 186.224 | 18.053 | 30.360 | 30.322 | -0.125 | 1233.1 | 7.2642 | -0.07 | 0.40 | -0.105 | 0.020 |
| 181.649 | 18.065 | 30.767 | 30.621 | -0.474 | 0.0 | 5.2194 | -0.09 | 0.62 | -0.439 | 0.036 |
| 178.581 | 18.071 | 31.036 | 30.878 | -0.509 | 10.8 | 3.8554 | -0.11 | 0.85 | -0.459 | 0.050 |
| 222.829 | 19.346 | 29.543 | 29.809 | 0.900 | 1250.7 | 31.3168 | -0.02 | 0.10 | 0.897 | -0.004 |
| 223.411 | 19.348 | 29.637 | 29.814 | 0.596 | 1249.5 | 31.6548 | -0.02 | 0.07 | 0.594 | -0.003 |
| 221.388 | 19.349 | 29.333 | 29.800 | 1.591 | 1251.7 | 30.5529 | -0.02 | 0.09 | 1.588 | -0.003 |
| 220.207 | 19.352 | 29.696 | 29.793 | 0.326 | 1208.6 | 29.9262 | -0.02 | 0.10 | 0.322 | -0.004 |
| 220.387 | 19.356 | 29.677 | 29.795 | 0.397 | 1212.1 | 30.0506 | -0.02 | 0.10 | 0.393 | -0.004 |
| 217.303 | 19.360 | 29.709 | 29.778 | 0.232 | 1175.3 | 28.3806 | -0.03 | 0.14 | 0.228 | -0.005 |
| 217.573 | 19.363 | 29.586 | 29.780 | 0.656 | 1188.0 | 28.5526 | -0.03 | 0.12 | 0.652 | -0.004 |
| 215.238 | 19.364 | 29.794 | 29.769 | -0.084 | 1146.3 | 27.2787 | -0.03 | 0.12 | -0.087 | -0.004 |
| 214.493 | 19.366 | 29.584 | 29.766 | 0.617 | 1154.1 | 26.8804 | -0.03 | 0.13 | 0.613 | -0.004 |
| 214.522 | 19.370 | 29.610 | 29.767 | 0.532 | 1152.4 | 26.9228 | -0.03 | 0.12 | 0.528 | -0.004 |
| 211.785 | 19.373 | 29.560 | 29.759 | 0.673 | 1126.4 | 25.4300 | -0.03 | 0.15 | 0.669 | -0.004 |
| 211.480 | 19.378 | 29.665 | 29.759 | 0.317 | 1115.3 | 25.2928 | -0.03 | 0.15 | 0.313 | -0.004 |
| 209.060 | 19.379 | 29.638 | 29.755 | 0.394 | 1091.4 | 23.9668 | -0.03 | 0.14 | 0.390 | -0.004 |
| 208.755 | 19.380 | 29.659 | 29.754 | 0.322 | 1086.6 | 23.8025 | -0.03 | 0.15 | 0.318 | -0.004 |
| 208.615 | 19.385 | 29.669 | 29.755 | 0.291 | 1084.4 | 23.7528 | -0.03 | 0.16 | 0.287 | -0.004 |
| 205.568 | 19.393 | 29.607 | 29.756 | 0.503 | 1056.7 | 22.1095 | -0.04 | 0.18 | 0.500 | -0.004 |
| 202.844 | 19.395 | 29.583 | 29.761 | 0.601 | 1030.0 | 20.6130 | -0.04 | 0.18 | 0.598 | -0.003 |
| 202.557 | 19.395 | 29.748 | 29.762 | 0.046 | 1015.9 | 20.4578 | -0.03 | 0.16 | 0.043 | -0.003 |
| 202.661 | 19.400 | 29.781 | 29.762 | -0.064 | 1014.7 | 20.5377 | -0.04 | 0.18 | -0.067 | -0.003 |
| 199.616 | 19.407 | 29.719 | 29.775 | 0.187 | 987.8 | 18.8860 | -0.03 | 0.17 | 0.185 | -0.002 |
| 196.210 | 19.411 | 29.755 | 29.797 | 0.143 | 951.5 | 17.0112 | -0.03 | 0.18 | 0.141 | -0.001 |
| 195.819 | 19.412 | 29.778 | 29.801 | 0.076 | 946.2 | 16.7984 | -0.03 | 0.18 | 0.075 | -0.001 |
| 196.693 | 19.414 | 29.778 | 29.794 | 0.053 | 954.8 | 17.2961 | -0.03 | 0.17 | 0.052 | -0.001 |
| 193.640 | 19.422 | 29.818 | 29.822 | 0.015 | 922.3 | 15.6310 | -0.03 | 0.18 | 0.014 | -0.001 |
| 189.912 | 19.426 | 29.755 | 29.872 | 0.392 | 1335.1 | 13.5728 | -0.03 | 0.16 | 0.392 | 0.000 |

Table A6 (continued)

| T | $\rho$ | $C_V$,exp | $C_V$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | % | | MPa | % | % | % | % |
| 189.464 | 19.427 | 29.826 | 29.879 | 0.177 | 1322.5 | 13.3278 | -0.03 | 0.16 | 0.177 | 0.000 |
| 189.446 | 19.427 | 29.896 | 29.879 | -0.057 | 1316.2 | 13.3178 | -0.03 | 0.16 | -0.056 | 0.000 |
| 190.680 | 19.429 | 29.878 | 29.860 | -0.060 | 890.2 | 14.0129 | -0.03 | 0.18 | -0.060 | 0.000 |
| 187.628 | 19.436 | 29.890 | 29.911 | 0.069 | 1290.9 | 12.3409 | -0.02 | 0.16 | 0.070 | 0.001 |
| 183.556 | 19.441 | 30.224 | 30.002 | -0.736 | 1207.7 | 10.0867 | -0.02 | 0.17 | -0.734 | 0.002 |
| 183.084 | 19.442 | 30.061 | 30.014 | -0.156 | 1214.1 | 9.8271 | -0.02 | 0.17 | -0.154 | 0.002 |
| 183.063 | 19.442 | 30.107 | 30.015 | -0.306 | 1210.2 | 9.8159 | -0.02 | 0.16 | -0.304 | 0.002 |
| 184.637 | 19.443 | 30.060 | 29.974 | -0.285 | 1235.4 | 10.6985 | -0.02 | 0.16 | -0.284 | 0.002 |
| 181.613 | 19.451 | 30.105 | 30.055 | -0.166 | 1190.8 | 9.0348 | -0.03 | 0.22 | -0.163 | 0.003 |
| 180.587 | 19.453 | 30.258 | 30.087 | -0.565 | 1165.5 | 8.4696 | -0.03 | 0.23 | -0.562 | 0.004 |
| 177.160 | 19.456 | 30.226 | 30.214 | -0.041 | 1122.9 | 6.5659 | -0.03 | 0.31 | -0.035 | 0.006 |
| 176.684 | 19.457 | 30.313 | 30.234 | -0.262 | 1110.5 | 6.3037 | -0.03 | 0.33 | -0.255 | 0.007 |
| 176.618 | 19.457 | 30.236 | 30.236 | 0.002 | 1115.1 | 6.2669 | -0.03 | 0.33 | 0.008 | 0.007 |
| 178.550 | 19.458 | 30.384 | 30.158 | -0.745 | 1129.5 | 7.3475 | -0.03 | 0.29 | -0.740 | 0.005 |
| 174.095 | 19.464 | 30.202 | 30.354 | 0.504 | 1085.1 | 4.8760 | -0.05 | 0.62 | 0.517 | 0.013 |
| 174.742 | 19.467 | 30.416 | 30.320 | -0.315 | 1078.4 | 5.2466 | -0.05 | 0.55 | -0.303 | 0.012 |
| 172.603 | 19.472 | 30.453 | 30.432 | -0.068 | 10.5 | 4.0666 | -0.06 | 0.86 | -0.050 | 0.018 |
| 182.089 | 20.470 | 30.087 | 30.015 | -0.238 | 1198.6 | 13.9877 | -0.01 | 0.05 | -0.239 | 0.000 |
| 178.506 | 20.479 | 30.163 | 30.058 | -0.347 | 1145.1 | 11.7168 | 0.00 | 0.02 | -0.347 | 0.000 |
| 174.898 | 20.489 | 30.217 | 30.120 | -0.321 | 1094.3 | 9.4196 | -0.01 | 0.06 | -0.321 | 0.000 |
| 172.193 | 20.499 | 30.325 | 30.181 | -0.474 | 1052.5 | 7.6896 | -0.02 | 0.31 | -0.473 | 0.001 |
| 170.403 | 20.504 | 30.295 | 30.230 | -0.214 | 1032.1 | 6.5423 | -0.03 | 0.44 | -0.212 | 0.003 |
| 200.078 | 21.167 | 29.929 | 30.201 | 0.908 | 978.9 | 31.0692 | 0.03 | -0.16 | 0.915 | 0.007 |
| 198.229 | 21.171 | 29.957 | 30.192 | 0.784 | 958.8 | 29.8244 | 0.04 | -0.21 | 0.793 | 0.009 |
| 194.626 | 21.184 | 30.043 | 30.179 | 0.453 | 918.4 | 27.3861 | 0.03 | -0.16 | 0.459 | 0.006 |
| 191.734 | 21.191 | 29.987 | 30.170 | 0.610 | 893.9 | 25.4175 | 0.04 | -0.23 | 0.618 | 0.008 |
| 189.153 | 21.201 | 30.047 | 30.165 | 0.392 | 1299.1 | 23.6514 | 0.03 | -0.18 | 0.398 | 0.006 |
| 185.182 | 21.211 | 30.004 | 30.161 | 0.522 | 1247.4 | 20.9182 | 0.04 | -0.28 | 0.530 | 0.008 |
| 183.640 | 21.218 | 30.035 | 30.162 | 0.422 | 1223.8 | 19.8512 | 0.03 | -0.21 | 0.427 | 0.006 |
| 178.582 | 21.231 | 30.088 | 30.173 | 0.281 | 1151.7 | 16.3306 | 0.04 | -0.36 | 0.288 | 0.007 |
| 178.091 | 21.234 | 30.120 | 30.175 | 0.182 | 1142.8 | 15.9873 | 0.03 | -0.30 | 0.188 | 0.006 |
| 172.488 | 21.251 | 30.155 | 30.214 | 0.197 | 1067.8 | 12.0442 | 0.03 | -0.36 | 0.201 | 0.004 |
| 171.921 | 21.252 | 30.323 | 30.220 | -0.339 | 1049.2 | 11.6427 | 0.04 | -0.41 | -0.335 | 0.004 |
| 166.828 | 21.269 | 30.358 | 30.294 | -0.210 | 984.1 | 8.0183 | 0.02 | -0.30 | -0.209 | 0.001 |
| 165.189 | 21.272 | 30.406 | 30.327 | -0.258 | 961.4 | 6.8445 | 0.02 | -0.40 | -0.258 | 0.000 |

Table A6 (continued)

| T | ρ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | J·mol$^{-1}$·K$^{-1}$ | | % | | MPa | % | % | % | % |
| 161.140 | 21.286 | 30.358 | 30.436 | 0.256 | 9.2 | 3.9294 | -0.01 | 0.19 | 0.257 | 0.000 |
| 187.701 | 21.988 | 30.282 | 30.456 | 0.573 | 1259.5 | 29.3776 | 0.03 | -0.23 | 0.583 | 0.010 |
| 183.514 | 22.003 | 30.245 | 30.441 | 0.649 | 1205.5 | 26.2195 | 0.03 | -0.23 | 0.658 | 0.009 |
| 179.314 | 22.017 | 30.429 | 30.430 | 0.003 | 1136.2 | 23.0213 | 0.03 | -0.28 | 0.013 | 0.010 |
| 175.011 | 22.032 | 30.383 | 30.425 | 0.137 | 1084.1 | 19.7127 | 0.03 | -0.32 | 0.146 | 0.009 |
| 170.767 | 22.046 | 30.536 | 30.428 | -0.354 | 1020.8 | 16.4170 | 0.04 | -0.40 | -0.345 | 0.009 |
| 166.497 | 22.060 | 30.671 | 30.444 | -0.740 | 960.8 | 13.0668 | 0.04 | -0.50 | -0.732 | 0.008 |
| 162.200 | 22.075 | 30.653 | 30.480 | -0.565 | 911.5 | 9.6595 | 0.03 | -0.52 | -0.559 | 0.005 |
| 157.876 | 22.090 | 30.769 | 30.544 | -0.732 | 855.8 | 6.1932 | 0.02 | -0.41 | -0.730 | 0.002 |
| 153.984 | 22.102 | 30.845 | 30.635 | -0.682 | 0.1 | 3.0412 | 0.00 | -0.01 | -0.682 | 0.000 |
| 175.530 | 22.813 | 30.720 | 30.775 | 0.180 | 1067.5 | 27.7047 | 0.05 | -0.47 | 0.200 | 0.020 |
| 175.122 | 22.815 | 30.620 | 30.774 | 0.504 | 1069.2 | 27.3613 | 0.05 | -0.46 | 0.523 | 0.019 |
| 169.076 | 22.838 | 30.651 | 30.757 | 0.345 | 992.9 | 22.2365 | 0.06 | -0.58 | 0.366 | 0.020 |
| 168.648 | 22.839 | 30.749 | 30.756 | 0.022 | 981.6 | 21.8708 | 0.06 | -0.62 | 0.043 | 0.021 |
| 162.555 | 22.862 | 30.764 | 30.752 | -0.040 | 909.2 | 16.6099 | 0.06 | -0.82 | -0.020 | 0.021 |
| 162.130 | 22.864 | 30.799 | 30.752 | -0.152 | 902.3 | 16.2388 | 0.06 | -0.81 | -0.132 | 0.020 |
| 156.936 | 22.881 | 30.901 | 30.770 | -0.425 | 838.3 | 11.6734 | 0.07 | 1.24 | -0.405 | 0.021 |
| 155.969 | 22.887 | 30.957 | 30.777 | -0.581 | 824.8 | 10.8146 | 0.06 | 1.11 | -0.565 | 0.017 |
| 155.536 | 22.888 | 30.956 | 30.780 | -0.568 | 820.2 | 10.4300 | 0.06 | 1.19 | -0.551 | 0.017 |
| 148.828 | 22.913 | 31.148 | 30.871 | -0.888 | 74.0 | 4.3941 | 0.04 | 1.76 | -0.881 | 0.007 |
| 164.346 | 23.368 | 30.934 | 31.013 | 0.256 | 920.0 | 23.5208 | 0.04 | -0.40 | 0.271 | 0.015 |
| 160.058 | 23.385 | 31.014 | 31.005 | -0.028 | 866.9 | 19.5801 | 0.04 | -0.54 | -0.011 | 0.017 |
| 156.170 | 23.403 | 31.053 | 31.007 | -0.148 | 822.1 | 15.9591 | 0.03 | -0.53 | -0.134 | 0.013 |
| 152.695 | 23.417 | 31.101 | 31.017 | -0.269 | 782.4 | 12.6822 | 0.03 | -0.64 | -0.256 | 0.012 |
| 150.090 | 23.431 | 31.142 | 31.035 | -0.343 | 753.2 | 10.1996 | 0.02 | -0.39 | -0.337 | 0.006 |
| 148.358 | 23.438 | 31.134 | 31.051 | -0.266 | 7356.9 | 8.5366 | 0.01 | -0.38 | -0.261 | 0.005 |
| 146.608 | 23.445 | 31.162 | 31.073 | -0.287 | 7166.1 | 6.8455 | 0.01 | -0.34 | -0.284 | 0.003 |
| 164.072 | 23.885 | 31.111 | 31.320 | 0.671 | 906.7 | 29.5630 | 0.02 | -0.22 | 0.681 | 0.010 |
| 160.011 | 23.903 | 31.104 | 31.308 | 0.657 | 861.5 | 25.6422 | 0.03 | -0.30 | 0.670 | 0.012 |
| 155.908 | 23.921 | 31.397 | 31.300 | -0.308 | 801.9 | 21.6240 | 0.03 | -0.42 | -0.294 | 0.014 |
| 151.599 | 23.939 | 31.303 | 31.299 | -0.014 | 761.3 | 17.3398 | 0.04 | -0.63 | 0.003 | 0.017 |
| 147.448 | 23.957 | 31.480 | 31.310 | -0.539 | 7110.5 | 13.1452 | 0.04 | -0.83 | -0.522 | 0.017 |
| 143.270 | 23.975 | 31.525 | 31.342 | -0.580 | 6681.4 | 8.8550 | 0.04 | 1.10 | -0.566 | 0.014 |
| 139.073 | 23.993 | 31.633 | 31.405 | -0.720 | 62.4 | 4.4671 | 0.03 | 1.41 | -0.712 | 0.008 |
| 154.473 | 24.651 | 31.706 | 31.784 | 0.247 | 772.0 | 30.0452 | 0.02 | -0.25 | 0.258 | 0.011 |

Table A6 (continued)

| T | $\rho$ | $C_v$,exp | $C_v$,cal | Dev | Wt | P | Dev1 | Dev2 | Dev3 | Dev4 |
|---|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | % | | MPa | % | % | % | % |
| 153.185 | 24.657 | 31.595 | 31.782 | 0.591 | 764.0 | 28.6816 | 0.02 | -0.31 | 0.605 | 0.013 |
| 149.124 | 24.676 | 31.598 | 31.777 | 0.565 | 7226.0 | 24.3346 | 0.03 | -0.51 | 0.585 | 0.019 |
| 147.886 | 24.682 | 31.651 | 31.776 | 0.396 | 7079.7 | 22.9952 | 0.04 | -0.57 | 0.416 | 0.021 |
| 143.713 | 24.702 | 31.844 | 31.781 | -0.199 | 6594.8 | 18.4271 | 0.04 | -0.83 | -0.175 | 0.024 |
| 142.547 | 24.708 | 31.794 | 31.785 | -0.030 | 6504.3 | 17.1361 | 0.04 | -0.88 | -0.006 | 0.024 |
| 139.337 | 24.723 | 31.826 | 31.801 | -0.078 | 6192.4 | 13.5454 | 0.05 | 1.18 | -0.054 | 0.025 |
| 138.242 | 24.728 | 32.209 | 31.809 | -1.240 | 5953.1 | 12.3089 | 0.05 | 1.32 | -1.216 | 0.025 |
| 137.159 | 24.733 | 31.953 | 31.820 | -0.417 | 5947.5 | 11.0794 | 0.05 | 1.47 | -0.393 | 0.025 |
| 134.136 | 24.749 | 32.039 | 31.860 | -0.558 | 5649.2 | 7.6115 | 0.04 | 1.65 | -0.540 | 0.018 |
| 132.694 | 24.754 | 32.346 | 31.885 | -1.426 | 5423.4 | 5.9387 | 0.04 | 2.29 | -1.408 | 0.019 |
| 131.693 | 24.759 | 32.305 | 31.906 | -1.236 | 5351.8 | 4.7717 | 0.04 | 2.57 | -1.220 | 0.016 |
| 130.508 | 24.772 | 32.470 | 31.938 | -1.640 | 52.0 | 3.3808 | 0.00 | -0.45 | -1.638 | 0.002 |
| 130.274 | 25.807 | 32.609 | 32.642 | 0.102 | 5139.3 | 18.3466 | 0.02 | -0.46 | 0.115 | 0.012 |
| 127.262 | 25.823 | 32.654 | 32.675 | 0.064 | 4882.1 | 14.4728 | 0.03 | -0.81 | 0.081 | 0.017 |
| 124.223 | 25.840 | 32.844 | 32.723 | -0.369 | 4590.9 | 10.4959 | 0.03 | 1.13 | -0.353 | 0.016 |
| 121.160 | 25.856 | 33.035 | 32.789 | -0.745 | 4309.8 | 6.4101 | 0.03 | 1.76 | -0.730 | 0.015 |
| 127.100 | 26.539 | 33.110 | 33.300 | 0.573 | 4741.4 | 27.6133 | 0.02 | -0.43 | 0.589 | 0.016 |
| 127.123 | 26.539 | 33.141 | 33.300 | 0.478 | 4734.7 | 27.6449 | 0.02 | -0.42 | 0.494 | 0.016 |
| 122.094 | 26.569 | 33.244 | 33.350 | 0.319 | 4326.9 | 20.7254 | 0.04 | 1.10 | 0.350 | 0.031 |
| 122.089 | 26.569 | 33.348 | 33.350 | 0.006 | 4300.8 | 20.7187 | 0.04 | 1.11 | 0.037 | 0.031 |
| 117.051 | 26.599 | 33.396 | 33.426 | 0.091 | 3927.5 | 13.5645 | 0.06 | 2.19 | 0.130 | 0.039 |
| 116.030 | 26.605 | 33.471 | 33.446 | -0.075 | 3839.6 | 12.0862 | 0.06 | 2.53 | -0.036 | 0.039 |
| 111.917 | 26.629 | 33.691 | 33.537 | -0.457 | 3515.7 | 6.0116 | 0.06 | 4.88 | -0.424 | 0.034 |
| 111.855 | 26.629 | 33.625 | 33.538 | -0.258 | 3524.7 | 5.9191 | 0.06 | 5.06 | -0.224 | 0.034 |
| 110.867 | 26.635 | 33.783 | 33.563 | -0.650 | 34.3 | 4.4383 | 0.06 | 6.48 | -0.619 | 0.032 |
| 117.361 | 27.268 | 33.843 | 34.045 | 0.598 | 3850.3 | 28.2504 | 0.03 | -0.60 | 0.620 | 0.021 |
| 115.142 | 27.283 | 33.956 | 34.070 | 0.336 | 3676.1 | 24.9294 | 0.04 | -0.93 | 0.365 | 0.029 |
| 112.446 | 27.300 | 34.003 | 34.100 | 0.284 | 3489.0 | 20.8258 | 0.05 | 1.56 | 0.324 | 0.040 |
| 110.058 | 27.315 | 34.021 | 34.125 | 0.304 | 3331.9 | 17.1238 | 0.06 | 2.27 | 0.351 | 0.046 |
| 107.466 | 27.332 | 34.088 | 34.147 | 0.174 | 3157.3 | 13.0295 | 0.07 | 3.23 | 0.222 | 0.048 |
| 105.029 | 27.347 | 34.237 | 34.156 | -0.236 | 2983.6 | 9.1061 | 0.07 | 4.91 | -0.187 | 0.049 |
| 102.424 | 27.365 | 34.360 | 34.144 | -0.628 | 2810.5 | 4.8191 | 0.07 | 8.14 | -0.589 | 0.040 |
| 106.655 | 28.040 | 34.664 | 34.825 | 0.466 | 3010.2 | 28.4769 | 0.00 | -0.05 | 0.467 | 0.002 |
| 105.104 | 28.051 | 34.616 | 34.813 | 0.569 | 2926.5 | 25.9193 | 0.01 | -0.34 | 0.579 | 0.010 |
| 103.902 | 28.060 | 34.807 | 34.797 | -0.028 | 2826.8 | 23.9163 | 0.02 | -0.54 | -0.014 | 0.014 |
| 102.319 | 28.070 | 34.748 | 34.762 | 0.041 | 2745.6 | 21.2466 | 0.03 | 1.05 | 0.066 | 0.024 |
| 101.123 | 28.079 | 34.886 | 34.726 | -0.458 | 2658.3 | 19.2058 | 0.03 | 1.29 | -0.431 | 0.027 |

Table A6 (continued)

Number of Points (Total) 337

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| $C_V(T,\rho)$, Dev : | AAD-% | 0.462 | BIAS-% | 0.165 | RMS% | 0.571 | |
| | AAD | 0.142 | BIAS | 0.047 | RMS | 0.176 | $J \cdot mol^{-1} \cdot K^{-1}$ |
| $\rho(T,P)$, Dev1 : | AAD-% | 0.119 | BIAS-% | -0.052 | RMS% | 0.162 | |
| | AAD | 0.017 | BIAS | -0.007 | RMS | 0.020 | $mol \cdot dm^{-3}$ |
| $P(T,\rho)$, Dev2 : | AAD-% | 0.463 | BIAS-% | -0.105 | RMS% | 0.916 | |
| | AAD | 0.059 | BIAS | -0.007 | RMS | 0.088 | MPa |
| $C_V(T,P)$, Dev3 : | AAD-% | 0.468 | BIAS-% | 0.171 | RMS% | 0.574 | |
| | AAD | 0.144 | BIAS | 0.049 | RMS | 0.177 | $J \cdot mol^{-1} \cdot K^{-1}$ |
| $C_V(T,P)$ vs. | AAD-% | 0.021 | BIAS-% | 0.006 | RMS% | 0.037 | |
| $C_V(T,\rho)$, Dev4: | AAD | 0.007 | BIAS | 0.002 | RMS | 0.012 | $J \cdot mol^{-1} \cdot K^{-1}$ |

TABLE A7

COMPARISONS FOR ISOBARIC SPECIFIC HEAT CAPACITY

Notes for Table A7. Entries for the first 3 columns, the temperature, pressure, and isobaric specific heat capacity, are directly from the experimental data. The primary isobaric specific heat capacity data were exclusively from Ref.[54]; 12 points from this reference, indicated by negative weights, were excluded from the primary data set.

Data from Jones et al. [54]

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 116.483 | 1.034 | 55.420 | 56.387 | 1.745 | 467.80 |
| 116.483 | 2.068 | 55.360 | 56.165 | 1.454 | 93.76 |
| 116.483 | 2.413 | 55.360 | 56.094 | 1.325 | 93.76 |
| 116.483 | 3.103 | 55.290 | 55.955 | 1.202 | 93.99 |
| 116.483 | 3.792 | 55.220 | 55.820 | 1.087 | 94.23 |
| 116.483 | 4.137 | 55.160 | 55.755 | 1.079 | 94.43 |
| 116.483 | 4.309 | 55.090 | 55.723 | 1.148 | 94.66 |
| 116.483 | 4.688 | 55.090 | 55.653 | 1.021 | 94.66 |
| 116.483 | 5.516 | 55.020 | 55.504 | 0.879 | 94.90 |
| 116.483 | 6.895 | 54.950 | 55.268 | 0.579 | 95.14 |
| 116.483 | 8.274 | 54.890 | 55.047 | 0.286 | 95.34 |
| 116.483 | 10.342 | 54.550 | 54.739 | 0.346 | 96.51 |
| 116.483 | 13.790 | 54.010 | 54.281 | 0.501 | 98.41 |
| 122.039 | 1.034 | 56.570 | 57.103 | 0.943 | 409.96 |
| 122.039 | 2.068 | 56.500 | 56.828 | 0.580 | 82.19 |
| 122.039 | 2.413 | 56.430 | 56.739 | 0.548 | 82.39 |
| 122.039 | 3.103 | 56.300 | 56.568 | 0.476 | 82.77 |
| 122.039 | 3.792 | 56.160 | 56.403 | 0.433 | 83.17 |
| 122.039 | 4.137 | 56.030 | 56.323 | 0.523 | 83.55 |
| 122.039 | 4.309 | 55.960 | 56.283 | 0.578 | 83.76 |
| 122.039 | 4.688 | 55.960 | 56.198 | 0.425 | 83.76 |
| 122.039 | 5.516 | 55.830 | 56.017 | 0.335 | 84.14 |
| 122.039 | 6.895 | 55.690 | 55.732 | 0.076 | 84.56 |
| 122.039 | 8.274 | 55.420 | 55.467 | 0.084 | 85.37 |
| 122.039 | 10.342 | 54.890 | 55.100 | 0.382 | 87.00 |
| 122.039 | 13.790 | 54.350 | 54.560 | 0.386 | 88.71 |
| 127.594 | 1.034 | 57.910 | 57.982 | 0.125 | 358.60 |
| 127.594 | 2.068 | 57.510 | 57.635 | 0.217 | 72.71 |
| 127.594 | 2.413 | 57.440 | 57.524 | 0.146 | 72.88 |
| 127.594 | 3.103 | 57.370 | 57.310 | -0.105 | 73.06 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 127.594 | 3.792 | 57.040 | 57.105 | 0.115 | 73.89 |
| 127.594 | 4.137 | 56.970 | 57.006 | 0.064 | 74.07 |
| 127.594 | 4.309 | 56.900 | 56.958 | 0.101 | 74.25 |
| 127.594 | 4.688 | 56.770 | 56.852 | 0.145 | 74.59 |
| 127.594 | 5.516 | 56.500 | 56.630 | 0.231 | 75.29 |
| 127.594 | 6.895 | 56.370 | 56.284 | -0.153 | 75.63 |
| 127.594 | 8.274 | 56.030 | 55.963 | -0.120 | 76.54 |
| 127.594 | 10.342 | 55.360 | 55.523 | 0.295 | 78.38 |
| 127.594 | 13.790 | 54.750 | 54.885 | 0.246 | 80.11 |
| 133.150 | 1.034 | 59.390 | 59.086 | -0.511 | 313.65 |
| 133.150 | 2.068 | 58.780 | 58.640 | -0.238 | 64.02 |
| 133.150 | 2.413 | 58.580 | 58.499 | -0.139 | 64.45 |
| 133.150 | 3.103 | 56.380 | 58.227 | 3.277 | -0.00 |
| 133.150 | 3.792 | 58.040 | 57.970 | -0.120 | 65.64 |
| 133.150 | 4.137 | 57.910 | 57.846 | -0.111 | 65.94 |
| 133.150 | 4.309 | 57.780 | 57.785 | 0.009 | 66.23 |
| 133.150 | 4.688 | 57.710 | 57.654 | -0.097 | 66.39 |
| 133.150 | 5.516 | 57.310 | 57.378 | 0.119 | 67.31 |
| 133.150 | 6.895 | 57.100 | 56.952 | -0.259 | 67.79 |
| 133.150 | 8.274 | 56.700 | 56.561 | -0.245 | 68.74 |
| 133.150 | 10.342 | 55.960 | 56.032 | 0.128 | 70.55 |
| 133.150 | 13.790 | 55.160 | 55.273 | 0.206 | 72.58 |
| 138.706 | 1.034 | 61.140 | 60.496 | -1.054 | 273.15 |
| 138.706 | 2.068 | 60.130 | 59.909 | -0.368 | 56.46 |
| 138.706 | 2.413 | 59.930 | 59.725 | -0.342 | 56.83 |
| 138.706 | 3.103 | 59.660 | 59.374 | -0.479 | 57.34 |
| 138.706 | 3.792 | 59.460 | 59.044 | -0.699 | 57.73 |
| 138.706 | 4.137 | 59.190 | 58.886 | -0.513 | 58.25 |
| 138.706 | 4.309 | 58.990 | 58.809 | -0.307 | 58.64 |
| 138.706 | 4.688 | 58.850 | 58.643 | -0.352 | 58.91 |
| 138.706 | 5.516 | 58.520 | 58.296 | -0.382 | 59.57 |
| 138.706 | 6.895 | 57.840 | 57.766 | -0.129 | 60.97 |
| 138.706 | 8.274 | 57.370 | 57.285 | -0.149 | 61.96 |
| 138.706 | 10.342 | 56.570 | 56.642 | 0.128 | 63.70 |
| 138.706 | 13.790 | 55.560 | 55.737 | 0.319 | 66.01 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 144.261 | 1.034 | 63.420 | 62.334 | -1.713 | 100.73 |
| 144.261 | 2.068 | 61.740 | 61.536 | -0.330 | 21.25 |
| 144.261 | 2.413 | 61.610 | 61.290 | -0.519 | 21.34 |
| 144.261 | 3.103 | 61.000 | 60.825 | -0.287 | 21.76 |
| 144.261 | 3.792 | 60.530 | 60.392 | -0.228 | 51.56 |
| 144.261 | 4.137 | 60.400 | 60.186 | -0.354 | 51.78 |
| 144.261 | 4.309 | 60.190 | 60.086 | -0.172 | 52.14 |
| 144.261 | 4.688 | 60.060 | 59.872 | -0.313 | 52.36 |
| 144.261 | 5.516 | 59.720 | 59.428 | -0.489 | 52.95 |
| 144.261 | 6.895 | 58.850 | 58.758 | -0.157 | 54.51 |
| 144.261 | 8.274 | 58.110 | 58.159 | 0.085 | 55.89 |
| 144.261 | 10.342 | 57.370 | 57.372 | 0.004 | 57.33 |
| 144.261 | 13.790 | 56.100 | 56.285 | 0.330 | 59.92 |
| 149.817 | 2.068 | 63.760 | 63.677 | -0.130 | 18.50 |
| 149.817 | 2.413 | 63.690 | 63.335 | -0.558 | 18.54 |
| 149.817 | 3.103 | 62.880 | 62.695 | -0.294 | 19.01 |
| 149.817 | 3.792 | 62.140 | 62.110 | -0.048 | 45.41 |
| 149.817 | 4.137 | 61.810 | 61.835 | 0.040 | 45.90 |
| 149.817 | 4.309 | 61.670 | 61.702 | 0.052 | 46.10 |
| 149.817 | 4.688 | 61.270 | 61.418 | 0.241 | 46.70 |
| 149.817 | 5.516 | 60.930 | 60.837 | -0.153 | 47.22 |
| 149.817 | 6.895 | 59.790 | 59.973 | 0.307 | 49.02 |
| 149.817 | 8.274 | 59.120 | 59.218 | 0.165 | 50.13 |
| 149.817 | 10.342 | 58.250 | 58.242 | -0.014 | 51.62 |
| 149.817 | 13.790 | 56.700 | 56.928 | 0.402 | 54.45 |
| 155.372 | 1.034 | 42.120 | 43.390 | 3.016 | 13.01 |
| 155.372 | 2.068 | 66.580 | 66.606 | 0.039 | 15.79 |
| 155.372 | 2.413 | 66.380 | 66.102 | -0.419 | 15.88 |
| 155.372 | 3.103 | 65.230 | 65.179 | -0.078 | 16.45 |
| 155.372 | 3.792 | 64.160 | 64.353 | 0.301 | 39.65 |
| 155.372 | 4.137 | 63.890 | 63.971 | 0.127 | 39.99 |
| 155.372 | 4.309 | 63.620 | 63.788 | 0.263 | 40.32 |
| 155.372 | 4.688 | 63.080 | 63.399 | 0.505 | 41.01 |
| 155.372 | 5.516 | 62.410 | 62.614 | 0.328 | 41.89 |
| 155.372 | 6.895 | 61.200 | 61.476 | 0.451 | 43.55 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 155.372 | 8.274 | 60.260 | 60.504 | 0.404 | 44.91 |
| 155.372 | 10.342 | 59.320 | 59.279 | -0.070 | 46.33 |
| 155.372 | 13.790 | 57.510 | 57.676 | 0.289 | 49.26 |
| 160.928 | 1.034 | 40.510 | 41.624 | 2.751 | 13.11 |
| 160.928 | 2.068 | 71.350 | 70.876 | -0.665 | 12.83 |
| 160.928 | 2.413 | 69.870 | 70.068 | 0.283 | 13.38 |
| 160.928 | 3.103 | 68.590 | 68.633 | 0.063 | 13.88 |
| 160.928 | 3.792 | 67.050 | 67.396 | 0.516 | 33.88 |
| 160.928 | 4.137 | 66.910 | 66.836 | -0.110 | 34.02 |
| 160.928 | 4.309 | 66.380 | 66.570 | 0.286 | 34.57 |
| 160.928 | 4.688 | 65.500 | 66.012 | 0.782 | 35.49 |
| 160.928 | 5.516 | 64.630 | 64.911 | 0.435 | 36.45 |
| 160.928 | 6.895 | 63.080 | 63.362 | 0.448 | 38.25 |
| 160.928 | 8.274 | 61.740 | 62.082 | 0.553 | 39.91 |
| 160.928 | 10.342 | 60.530 | 60.518 | -0.020 | 41.51 |
| 160.928 | 13.790 | 58.450 | 58.545 | 0.162 | 44.49 |
| 166.483 | 1.034 | 39.370 | 40.416 | 2.656 | 12.97 |
| 166.483 | 2.413 | 76.050 | 76.317 | 0.351 | 10.57 |
| 166.483 | 3.103 | 73.770 | 73.806 | 0.049 | 11.23 |
| 166.483 | 3.792 | 71.620 | 71.770 | 0.209 | 27.78 |
| 166.483 | 4.137 | 70.940 | 70.883 | -0.080 | 28.31 |
| 166.483 | 4.309 | 70.680 | 70.469 | -0.298 | 28.52 |
| 166.483 | 4.688 | 69.200 | 69.614 | 0.599 | 29.75 |
| 166.483 | 5.516 | 68.320 | 67.978 | -0.500 | 30.51 |
| 166.483 | 6.895 | 65.770 | 65.781 | 0.017 | 32.91 |
| 166.483 | 8.274 | 63.820 | 64.043 | 0.350 | 34.94 |
| 166.483 | 10.342 | 62.010 | 62.006 | -0.006 | 36.99 |
| 166.483 | 13.790 | 59.520 | 59.550 | 0.051 | 40.13 |
| 172.039 | 1.034 | 38.560 | 39.487 | 2.403 | 12.67 |
| 172.039 | 2.068 | 55.490 | 55.055 | -0.785 | 1.23 |
| 172.039 | 3.103 | 82.830 | 82.634 | -0.236 | 8.35 |
| 172.039 | 3.792 | 78.940 | 78.698 | -0.307 | 21.44 |
| 172.039 | 4.137 | 77.660 | 77.104 | -0.716 | 22.15 |
| 172.039 | 4.309 | 77.190 | 76.381 | -1.049 | 22.42 |
| 172.039 | 4.688 | 75.710 | 74.928 | -1.032 | 23.30 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 177.594 | 1.034 | 38.020 | 38.743 | 1.902 | 12.24 |
| 177.594 | 2.068 | 50.650 | 50.001 | -1.281 | 1.39 |
| 177.594 | 2.413 | 58.180 | 57.990 | -0.327 | 1.06 |
| 177.594 | 3.103 | 106.080 | 102.644 | -3.239 | -0.00 |
| 177.594 | 3.792 | 93.720 | 91.854 | -1.991 | 14.30 |
| 177.594 | 4.137 | 89.080 | 88.205 | -0.982 | 15.82 |
| 177.594 | 4.309 | 87.940 | 86.653 | -1.464 | 16.23 |
| 177.594 | 4.688 | 84.580 | 83.704 | -1.036 | 17.54 |
| 177.594 | 5.516 | 80.210 | 78.825 | -1.727 | 19.50 |
| 177.594 | 6.895 | 74.370 | 73.408 | -1.294 | 22.66 |
| 177.594 | 8.274 | 69.730 | 69.770 | 0.058 | 25.77 |
| 177.594 | 10.342 | 65.430 | 66.026 | 0.911 | 29.24 |
| 177.594 | 13.790 | 62.010 | 62.060 | 0.080 | 32.54 |
| 183.150 | 1.034 | 37.620 | 38.139 | 1.380 | 11.76 |
| 183.150 | 2.068 | 47.360 | 46.952 | -0.862 | 1.49 |
| 183.150 | 2.413 | 52.740 | 52.149 | -1.121 | 1.21 |
| 183.150 | 3.103 | 75.040 | 74.155 | -1.179 | 0.01 |
| 183.150 | 3.792 | 132.480 | 132.968 | 0.369 | 0.00 |
| 183.150 | 4.137 | 114.410 | 116.342 | 1.688 | 0.00 |
| 183.150 | 4.309 | 109.370 | 110.792 | 1.301 | 0.00 |
| 183.150 | 4.688 | 102.920 | 101.852 | -1.037 | 0.00 |
| 183.150 | 5.516 | 89.750 | 90.150 | 0.446 | 0.00 |
| 183.150 | 6.895 | 81.090 | 79.939 | -1.419 | 0.01 |
| 183.150 | 8.274 | 74.300 | 74.136 | -0.220 | 21.36 |
| 183.150 | 10.342 | 67.790 | 68.781 | 1.461 | 25.63 |
| 183.150 | 13.790 | 63.490 | 63.618 | 0.202 | 29.20 |
| 188.706 | 1.034 | 37.290 | 37.646 | 0.954 | 11.28 |
| 188.706 | 2.068 | 44.940 | 44.836 | -0.232 | 1.56 |
| 188.706 | 2.413 | 49.240 | 48.624 | -1.252 | 1.30 |
| 188.706 | 3.103 | 62.010 | 61.310 | -1.128 | 0.01 |
| 188.706 | 3.792 | 100.240 | 97.671 | -2.563 | 0.00 |
| 188.706 | 4.137 | 164.660 | 174.573 | 6.020 | -0.00 |
| 188.706 | 4.309 | 352.170 | 410.075 | 16.442 | -0.00 |
| 188.706 | 4.688 | 184.480 | 178.776 | -3.092 | 0.00 |
| 188.706 | 5.516 | 115.420 | 115.902 | 0.417 | 0.00 |
| 188.706 | 6.895 | 90.900 | 90.598 | -0.332 | 0.00 |
| 188.706 | 8.274 | 80.480 | 80.302 | -0.221 | 17.16 |
| 188.706 | 10.342 | 70.810 | 72.260 | 2.048 | 22.15 |
| 188.706 | 13.790 | 65.030 | 65.420 | 0.599 | 26.24 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 194.261 | 1.034 | 37.020 | 37.243 | 0.602 | 162.12 |
| 194.261 | 2.068 | 43.260 | 43.262 | 0.005 | 23.84 |
| 194.261 | 2.413 | 46.690 | 46.200 | -1.050 | 20.50 |
| 194.261 | 3.103 | 54.950 | 54.871 | -0.144 | 14.84 |
| 194.261 | 3.792 | 73.300 | 72.008 | -1.762 | 8.36 |
| 194.261 | 4.137 | 91.500 | 89.294 | -2.411 | 1.34 |
| 194.261 | 4.309 | 101.180 | 103.278 | 2.073 | 1.10 |
| 194.261 | 4.688 | 193.210 | 172.350 | -10.797 | -0.00 |
| 194.261 | 5.516 | 240.850 | 243.740 | 1.200 | -0.00 |
| 194.261 | 6.895 | 107.090 | 110.944 | 3.599 | 0.98 |
| 194.261 | 8.274 | 88.680 | 89.537 | 0.966 | 5.72 |
| 194.261 | 10.342 | 75.180 | 76.723 | 2.053 | 7.95 |
| 194.261 | 13.790 | 66.850 | 67.494 | 0.963 | 10.05 |
| 199.817 | 1.034 | 36.750 | 36.913 | 0.444 | 155.58 |
| 199.817 | 2.068 | 41.920 | 42.048 | 0.305 | 23.99 |
| 199.817 | 2.413 | 44.680 | 44.416 | -0.591 | 21.15 |
| 199.817 | 3.103 | 50.790 | 50.874 | 0.165 | 16.40 |
| 199.817 | 3.792 | 62.010 | 61.517 | -0.794 | 11.03 |
| 199.817 | 4.137 | 71.820 | 69.973 | -2.571 | 2.06 |
| 199.817 | 4.309 | 77.330 | 75.553 | -2.298 | 1.78 |
| 199.817 | 4.688 | 94.460 | 93.311 | -1.216 | 1.19 |
| 199.817 | 5.516 | 231.440 | 217.015 | -6.233 | -0.00 |
| 199.817 | 6.895 | 148.070 | 155.359 | 4.922 | -0.00 |
| 199.817 | 8.274 | 102.250 | 103.941 | 1.654 | 4.07 |
| 199.817 | 10.342 | 81.760 | 82.477 | 0.877 | 6.36 |
| 199.817 | 13.790 | 68.860 | 69.859 | 1.451 | 8.95 |
| 205.372 | 1.034 | 36.550 | 36.646 | 0.261 | 148.98 |
| 205.372 | 2.068 | 40.850 | 41.090 | 0.587 | 23.92 |
| 205.372 | 2.413 | 43.130 | 43.051 | -0.182 | 21.48 |
| 205.372 | 3.103 | 47.900 | 48.116 | 0.451 | 17.45 |
| 205.372 | 3.792 | 55.760 | 55.601 | -0.286 | 12.90 |
| 205.372 | 4.137 | 61.940 | 60.863 | -1.738 | 2.62 |
| 205.372 | 4.309 | 65.640 | 64.047 | -2.427 | 2.33 |
| 205.372 | 4.688 | 75.380 | 72.907 | -3.281 | 1.77 |
| 205.372 | 5.516 | 111.050 | 108.656 | -2.156 | 0.82 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 205.372 | 6.895 | 194.830 | 202.733 | 4.057 | -0.00 |
| 205.372 | 8.274 | 123.010 | 124.144 | 0.922 | 2.66 |
| 205.372 | 10.342 | 90.490 | 89.615 | -0.967 | 4.92 |
| 205.372 | 13.790 | 70.940 | 72.496 | 2.193 | 7.99 |
| 210.928 | 1.034 | 36.410 | 36.430 | 0.054 | 142.41 |
| 210.928 | 2.068 | 40.040 | 40.323 | 0.707 | 23.60 |
| 210.928 | 2.413 | 41.790 | 41.982 | 0.459 | 21.69 |
| 210.928 | 3.103 | 45.820 | 46.095 | 0.600 | 18.07 |
| 210.928 | 3.792 | 51.600 | 51.743 | 0.278 | 14.27 |
| 210.928 | 4.137 | 55.630 | 55.429 | -0.360 | 3.07 |
| 210.928 | 4.309 | 58.250 | 57.554 | -1.194 | 2.80 |
| 210.928 | 4.688 | 64.960 | 63.092 | -2.875 | 2.26 |
| 210.928 | 5.516 | 84.310 | 81.295 | -3.576 | 1.34 |
| 210.928 | 6.895 | 139.000 | 141.210 | 1.590 | 0.49 |
| 210.928 | 8.274 | 138.460 | 140.483 | 1.461 | 1.99 |
| 210.928 | 10.342 | 97.880 | 97.331 | -0.561 | 3.99 |
| 210.928 | 13.790 | 73.560 | 75.300 | 2.366 | 7.05 |
| 216.483 | 1.034 | 36.280 | 36.258 | -0.061 | 136.24 |
| 216.483 | 2.068 | 39.370 | 39.704 | 0.848 | 23.18 |
| 216.483 | 2.413 | 40.850 | 41.130 | 0.685 | 21.55 |
| 216.483 | 3.103 | 44.270 | 44.557 | 0.649 | 18.38 |
| 216.483 | 3.792 | 48.770 | 49.020 | 0.513 | 15.16 |
| 216.483 | 4.137 | 51.600 | 51.790 | 0.368 | 3.39 |
| 216.483 | 4.309 | 53.280 | 53.338 | 0.109 | 3.18 |
| 216.483 | 4.688 | 57.980 | 57.220 | -1.311 | 2.69 |
| 216.483 | 5.516 | 69.940 | 68.677 | -1.806 | 1.85 |
| 216.483 | 6.895 | 103.260 | 100.997 | -2.192 | 05 |
| 216.483 | 8.274 | 127.710 | 129.476 | 1.383 | 2.22 |
| 216.483 | 10.342 | 103.120 | 103.472 | 0.341 | 3.41 |
| 216.483 | 13.790 | 76.180 | 78.021 | 2.417 | 6.24 |
| 222.039 | 1.034 | 36.080 | 36.125 | 0.124 | 131.01 |
| 222.039 | 2.068 | 38.900 | 39.202 | 0.776 | 22.58 |
| 222.039 | 2.413 | 40.110 | 40.444 | 0.833 | 21.25 |
| 222.039 | 3.103 | 43.130 | 43.357 | 0.527 | 18.40 |
| 222.039 | 3.792 | 46.690 | 47.000 | 0.665 | 15.72 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 222.039 | 4.137 | 48.910 | 49.181 | 0.553 | 3.58 |
| 222.039 | 4.309 | 50.180 | 50.374 | 0.386 | 3.41 |
| 222.039 | 4.688 | 53.280 | 53.289 | 0.016 | 3.02 |
| 222.039 | 5.516 | 61.740 | 61.339 | -0.649 | 2.25 |
| 222.039 | 6.895 | 85.320 | 81.518 | -4.456 | -0.00 |
| 222.039 | 8.274 | 105.340 | 105.634 | 0.279 | 3.11 |
| 222.039 | 10.342 | 103.660 | 104.748 | 1.050 | 3.21 |
| 222.039 | 13.790 | 79.010 | 80.282 | 1.610 | 5.52 |
| 227.594 | 1.034 | 36.010 | 36.025 | 0.043 | 125.25 |
| 227.594 | 2.068 | 38.500 | 38.794 | 0.764 | 21.95 |
| 227.594 | 2.413 | 39.570 | 39.889 | 0.806 | 20.79 |
| 227.594 | 3.103 | 42.190 | 42.404 | 0.508 | 18.31 |
| 227.594 | 3.792 | 45.080 | 45.453 | 0.827 | 16.05 |
| 227.594 | 4.137 | 46.890 | 47.227 | 0.719 | 3.71 |
| 227.594 | 4.309 | 47.770 | 48.183 | 0.865 | 3.58 |
| 227.594 | 4.688 | 50.320 | 50.476 | 0.310 | 3.22 |
| 227.594 | 5.516 | 56.500 | 56.530 | 0.052 | 2.56 |
| 227.594 | 6.895 | 74.100 | 70.501 | -4.856 | -0.00 |
| 227.594 | 8.274 | 87.940 | 87.938 | -0.002 | 4.24 |
| 227.594 | 10.342 | 97.680 | 99.199 | 1.555 | 3.44 |
| 227.594 | 13.790 | 81.220 | 81.671 | 0.555 | 4.97 |
| 233.150 | 1.034 | 35.940 | 35.956 | 0.045 | 119.87 |
| 233.150 | 2.068 | 38.230 | 38.464 | 0.613 | 21.22 |
| 233.150 | 2.413 | 39.100 | 39.438 | 0.865 | 20.29 |
| 233.150 | 3.103 | 41.380 | 41.639 | 0.627 | 18.13 |
| 233.150 | 3.792 | 44.000 | 44.239 | 0.543 | 16.05 |
| 233.150 | 4.137 | 45.480 | 45.720 | 0.528 | 3.76 |
| 233.150 | 4.309 | 46.290 | 46.508 | 0.472 | 3.63 |
| 233.150 | 4.688 | 48.030 | 48.374 | 0.716 | 3.37 |
| 233.150 | 5.516 | 53.070 | 53.139 | 0.130 | 2.77 |
| 233.150 | 6.895 | 65.770 | 63.501 | -3.450 | -0.00 |
| 233.150 | 8.274 | 76.520 | 76.295 | -0.294 | 5.33 |
| 233.150 | 10.342 | 88.210 | 90.061 | 2.098 | 4.02 |
| 233.150 | 13.790 | 80.890 | 81.812 | 1.139 | 4.77 |
| 238.706 | 1.034 | 35.940 | 35.914 | -0.073 | 114.42 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 238.706 | 2.068 | 37.960 | 38.199 | 0.631 | 20.53 |
| 238.706 | 2.413 | 38.760 | 39.073 | 0.808 | 19.70 |
| 238.706 | 3.103 | 40.780 | 41.020 | 0.590 | 17.82 |
| 238.706 | 3.792 | 43.060 | 43.272 | 0.493 | 15.99 |
| 238.706 | 4.137 | 44.270 | 44.533 | 0.594 | 3.78 |
| 238.706 | 4.309 | 45.080 | 45.198 | 0.262 | 3.65 |
| 238.706 | 4.688 | 46.420 | 46.754 | 0.720 | 3.44 |
| 238.706 | 5.516 | 50.790 | 50.632 | -0.311 | 2.88 |
| 238.706 | 6.895 | 59.660 | 58.696 | -1.616 | 2.09 |
| 238.706 | 8.274 | 68.860 | 68.431 | -0.624 | 6.28 |
| 238.706 | 10.342 | 79.480 | 81.165 | 2.120 | 4.72 |
| 238.706 | 13.790 | 78.870 | 80.474 | 2.034 | 4.79 |
| 244.261 | 1.034 | 35.880 | 35.896 | 0.046 | 109.69 |
| 244.261 | 2.068 | 37.760 | 37.990 | 0.609 | 19.83 |
| 244.261 | 2.413 | 38.500 | 38.780 | 0.727 | 19.08 |
| 244.261 | 3.103 | 40.240 | 40.519 | 0.692 | 17.48 |
| 244.261 | 3.792 | 42.260 | 42.495 | 0.555 | 15.86 |
| 244.261 | 4.137 | 43.400 | 43.585 | 0.426 | 3.76 |
| 244.261 | 4.309 | 43.740 | 44.156 | 0.951 | 3.70 |
| 244.261 | 4.688 | 45.410 | 45.480 | 0.155 | 3.44 |
| 244.261 | 5.516 | 48.440 | 48.717 | 0.572 | 3.02 |
| 244.261 | 6.895 | 55.560 | 55.218 | -0.616 | 2.30 |
| 244.261 | 8.274 | 63.220 | 62.883 | -0.533 | 7.11 |
| 244.261 | 10.342 | 72.350 | 73.831 | 2.047 | 5.44 |
| 244.261 | 13.790 | 76.320 | 77.831 | 1.979 | 4.89 |
| 249.817 | 1.034 | 35.940 | 35.901 | -0.107 | 104.56 |
| 249.817 | 2.068 | 37.620 | 37.828 | 0.554 | 19.10 |
| 249.817 | 2.413 | 38.290 | 38.547 | 0.671 | 18.44 |
| 249.817 | 3.103 | 39.840 | 40.112 | 0.683 | 17.05 |
| 249.817 | 3.792 | 41.590 | 41.864 | 0.660 | 15.65 |
| 249.817 | 4.137 | 42.730 | 42.820 | 0.211 | 3.71 |
| 249.817 | 4.309 | 43.130 | 43.317 | 0.434 | 3.64 |
| 249.817 | 4.688 | 44.340 | 44.463 | 0.277 | 3.45 |
| 249.817 | 5.516 | 46.960 | 47.219 | 0.551 | 3.07 |
| 249.817 | 6.895 | 52.740 | 52.602 | -0.262 | 2.44 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 249.817 | 8.274 | 59.050 | 58.814 | -0.399 | 7.79 |
| 249.817 | 10.342 | 66.780 | 68.064 | 1.923 | 6.10 |
| 249.817 | 13.790 | 73.360 | 74.419 | 1.443 | 5.06 |
| 255.372 | 1.034 | 35.940 | 35.927 | -0.035 | 100.10 |
| 255.372 | 2.068 | 37.550 | 37.709 | 0.422 | 18.35 |
| 255.372 | 2.413 | 38.160 | 38.366 | 0.539 | 17.78 |
| 255.372 | 3.103 | 39.570 | 39.784 | 0.542 | 16.54 |
| 255.372 | 3.792 | 41.120 | 41.353 | 0.566 | 15.33 |
| 255.372 | 4.137 | 42.060 | 42.200 | 0.332 | 14.65 |
| 255.372 | 4.309 | 42.390 | 42.638 | 0.585 | 14.43 |
| 255.372 | 4.688 | 43.470 | 43.642 | 0.396 | 13.72 |
| 255.372 | 5.516 | 45.680 | 46.026 | 0.758 | 12.44 |
| 255.372 | 6.895 | 50.650 | 50.580 | -0.137 | 10.13 |
| 255.372 | 8.274 | 55.830 | 55.736 | -0.168 | 8.34 |
| 255.372 | 10.342 | 62.340 | 63.565 | 1.966 | 6.69 |
| 255.372 | 13.790 | 70.140 | 70.805 | 0.948 | 5.29 |
| 260.928 | 1.034 | 36.010 | 35.973 | -0.103 | 95.55 |
| 260.928 | 2.068 | 37.490 | 37.625 | 0.361 | 17.64 |
| 260.928 | 2.413 | 38.020 | 38.229 | 0.550 | 17.16 |
| 260.928 | 3.103 | 39.370 | 39.523 | 0.389 | 16.01 |
| 260.928 | 3.792 | 40.780 | 40.938 | 0.388 | 14.93 |
| 260.928 | 4.137 | 41.590 | 41.696 | 0.254 | 14.36 |
| 260.928 | 4.309 | 41.790 | 42.086 | 0.708 | 14.22 |
| 260.928 | 4.688 | 42.790 | 42.976 | 0.434 | 13.57 |
| 260.928 | 5.516 | 44.940 | 45.066 | 0.281 | 12.31 |
| 260.928 | 6.895 | 49.110 | 48.985 | -0.255 | 10.32 |
| 260.928 | 8.274 | 53.340 | 53.348 | 0.015 | 8.75 |
| 260.928 | 10.342 | 58.920 | 60.030 | 1.884 | 7.18 |
| 260.928 | 13.790 | 67.050 | 67.359 | 0.461 | 5.55 |
| 266.483 | 1.034 | 36.080 | 36.037 | -0.120 | 91.29 |
| 266.483 | 2.068 | 37.420 | 37.575 | 0.414 | 16.98 |
| 266.483 | 2.413 | 37.960 | 38.133 | 0.455 | 16.51 |
| 266.483 | 3.103 | 39.170 | 39.319 | 0.381 | 15.51 |
| 266.483 | 3.792 | 40.440 | 40.604 | 0.407 | 14.56 |
| 266.483 | 4.137 | 41.050 | 41.287 | 0.578 | 14.13 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 266.483 | 4.309 | 41.380 | 41.638 | 0.623 | 13.91 |
| 266.483 | 4.688 | 42.190 | 42.434 | 0.578 | 13.38 |
| 266.483 | 5.516 | 44.270 | 44.287 | 0.038 | 12.16 |
| 266.483 | 6.895 | 47.830 | 47.707 | -0.257 | 10.43 |
| 266.483 | 8.274 | 51.390 | 51.460 | 0.136 | 9.04 |
| 266.483 | 10.342 | 56.430 | 57.222 | 1.404 | 7.50 |
| 266.483 | 13.790 | 64.090 | 64.255 | 0.257 | 5.82 |
| 272.039 | 1.034 | 36.140 | 36.118 | -0.062 | 5.82 |
| 272.039 | 2.068 | 37.420 | 37.554 | 0.359 | 1.09 |
| 272.039 | 2.413 | 37.890 | 38.071 | 0.478 | 1.06 |
| 272.039 | 3.103 | 39.030 | 39.164 | 0.344 | 1.00 |
| 272.039 | 3.792 | 40.240 | 40.339 | 0.245 | 0.94 |
| 272.039 | 4.137 | 40.780 | 40.959 | 0.438 | 0.92 |
| 272.039 | 4.309 | 41.050 | 41.276 | 0.550 | 0.90 |
| 272.039 | 4.688 | 41.850 | 41.993 | 0.343 | 0.87 |
| 272.039 | 5.516 | 44.000 | 43.652 | -0.792 | 0.79 |
| 272.039 | 6.895 | 46.890 | 46.672 | -0.466 | 0.69 |
| 272.039 | 8.274 | 49.980 | 49.944 | -0.071 | 0.61 |
| 272.039 | 10.342 | 54.550 | 54.965 | 0.762 | 0.51 |
| 272.039 | 13.790 | 61.540 | 61.539 | -0.001 | 0.40 |
| 277.594 | 1.034 | 36.210 | 36.215 | 0.013 | 5.57 |
| 277.594 | 2.068 | 37.420 | 37.560 | 0.375 | 1.04 |
| 277.594 | 2.413 | 37.890 | 38.041 | 0.398 | 1.02 |
| 277.594 | 3.103 | 38.970 | 39.053 | 0.212 | 0.96 |
| 277.594 | 3.792 | 40.170 | 40.131 | -0.096 | 0.91 |
| 277.594 | 4.137 | 40.640 | 40.697 | 0.141 | 0.89 |
| 277.594 | 4.309 | 40.850 | 40.986 | 0.334 | 0.88 |
| 277.594 | 4.688 | 41.590 | 41.638 | 0.116 | 0.85 |
| 277.594 | 5.516 | 43.600 | 43.134 | -1.069 | 0.77 |
| 277.594 | 6.895 | 46.020 | 45.827 | -0.419 | 0.69 |
| 277.594 | 8.274 | 48.910 | 48.715 | -0.400 | 0.61 |
| 277.594 | 10.342 | 53.140 | 53.133 | -0.012 | 0.52 |
| 277.594 | 13.790 | 59.460 | 59.201 | -0.435 | 0.42 |
| 283.150 | 1.034 | 36.280 | 36.327 | 0.131 | 5.34 |
| 283.150 | 2.068 | 37.350 | 37.590 | 0.644 | 1.01 |

Data from Jones et al. [54] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 283.150 | 2.413 | 37.820 | 38.039 | 0.579 | 0.98 |
| 283.150 | 3.103 | 38.900 | 38.979 | 0.203 | 0.93 |
| 283.150 | 3.792 | 40.110 | 39.974 | -0.339 | 0.87 |
| 283.150 | 4.137 | 40.510 | 40.494 | -0.039 | 0.86 |
| 283.150 | 4.309 | 40.780 | 40.759 | -0.052 | 0.85 |
| 283.150 | 4.688 | 41.520 | 41.354 | -0.399 | 0.82 |
| 283.150 | 5.516 | 42.930 | 42.713 | -0.506 | 0.76 |
| 283.150 | 6.895 | 45.480 | 45.136 | -0.757 | 0.68 |
| 283.150 | 8.274 | 48.030 | 47.708 | -0.671 | 0.61 |
| 283.150 | 10.342 | 52.070 | 51.632 | -0.841 | 0.52 |
| 283.150 | 13.790 | 57.780 | 57.203 | -0.999 | 0.42 |

Number of Points (Ref. 54, Primary) 388

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.669 | BIAS-% | 0.160 | RMS-% | 0.931 | |
| AAD | 0.445 | BIAS | 0.069 | RMS | 0.749 | $J \cdot mol^{-1} \cdot K^{-1}$ |

Number of Points (Ref. 54, Total) 400

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.821 | BIAS-% | 0.162 | RMS-% | 1.514 | |
| AAD | 0.772 | BIAS | 0.165 | RMS | 3.345 | $J \cdot mol^{-1} \cdot K^{-1}$ |

Data from Van Kasteren and Zeldenrust [55]

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 121.1 | 5.00 | 55.188 | 56.032 | 1.530 | 0.00 |
| 121.1 | 5.00 | 55.060 | 56.032 | 1.766 | 0.00 |
| 121.1 | 5.00 | 54.979 | 56.032 | 1.916 | 0.00 |
| 121.0 | 5.00 | 55.156 | 56.022 | 1.570 | 0.00 |
| 136.1 | 5.00 | 57.338 | 58.033 | 1.213 | 0.00 |
| 136.2 | 5.00 | 57.402 | 58.051 | 1.130 | 0.00 |
| 136.2 | 5.00 | 57.241 | 58.051 | 1.415 | 0.00 |
| 151.3 | 5.00 | 61.268 | 61.654 | 0.630 | 0.00 |
| 151.3 | 5.00 | 61.044 | 61.654 | 1.000 | 0.00 |
| 151.2 | 5.00 | 60.963 | 61.622 | 1.081 | 0.00 |

Data from Van Kasteren and Zeldenrust [55]

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 165.1 | 5.00 | 67.846 | 68.011 | 0.244 | 0.00 |
| 165.1 | 5.00 | 67.830 | 68.011 | 0.267 | 0.00 |
| 165.1 | 5.00 | 68.054 | 68.011 | -0.063 | 0.00 |
| 165.0 | 5.00 | 67.734 | 67.946 | 0.313 | 0.00 |
| 175.6 | 5.00 | 78.579 | 78.367 | -0.270 | 0.00 |
| 175.7 | 5.00 | 79.092 | 78.516 | -0.728 | 0.00 |
| 175.6 | 5.00 | 78.707 | 78.367 | -0.432 | 0.00 |
| 175.5 | 5.00 | 79.076 | 78.219 | -1.084 | 0.00 |
| 182.7 | 5.00 | 94.622 | 94.846 | 0.237 | 0.00 |
| 182.7 | 5.00 | 94.573 | 94.846 | 0.289 | 0.00 |
| 182.7 | 5.00 | 94.654 | 94.846 | 0.203 | 0.00 |
| 184.2 | 5.00 | 101.841 | 01.159 | -0.670 | 0.00 |
| 186.4 | 5.00 | 116.248 | 14.823 | -1.226 | 0.00 |
| 188.5 | 5.00 | 140.408 | 38.418 | -1.417 | 0.00 |
| 191.0 | 5.00 | 251.298 | 18.727 | -12.961 | 0.00 |
| 192.7 | 5.00 | 558.746 | 11.247 | 9.396 | 0.00 |
| 192.6 | 5.00 | 549.681 | 46.601 | -0.560 | 0.00 |
| 195.4 | 5.00 | 279.662 | 64.189 | -5.533 | 0.00 |
| 198.0 | 5.00 | 149.408 | 46.547 | -1.915 | 0.00 |
| 201.5 | 5.00 | 103.959 | 02.911 | -1.008 | 0.00 |
| 201.5 | 5.00 | 103.927 | 02.911 | -0.978 | 0.00 |
| 209.5 | 5.00 | 73.108 | 71.555 | -2.124 | 0.00 |
| 209.5 | 5.00 | 73.108 | 71.555 | -2.124 | 0.00 |
| 220.0 | 5.00 | 57.659 | 57.625 | -0.060 | 0.00 |
| 220.0 | 5.00 | 57.851 | 57.625 | -0.391 | 0.00 |
| 230.5 | 5.00 | 50.712 | 51.165 | 0.894 | 0.00 |
| 240.0 | 5.00 | 47.359 | 47.755 | 0.836 | 0.00 |
| 240.4 | 5.00 | 47.311 | 47.642 | 0.699 | 0.00 |
| 250.6 | 5.00 | 44.985 | 45.313 | 0.729 | 0.00 |
| 144.4 | 3.20 | 59.850 | 60.803 | 1.592 | 0.00 |
| 144.3 | 3.20 | 60.690 | 60.773 | 0.137 | 0.00 |
| 144.4 | 3.20 | 59.960 | 60.803 | 1.405 | 0.00 |
| 146.2 | 3.20 | 61.600 | 61.353 | -0.402 | 0.00 |
| 146.5 | 3.20 | 60.890 | 61.449 | 0.918 | 0.00 |
| 154.9 | 3.20 | 63.990 | 64.819 | 1.296 | 0.00 |

Data from Van Kasteren and Zeldenrust [55] (continued)

| T | P | $C_p$,exp | $C_p$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | MPa | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 154.8 | 3.20 | 64.140 | 64.769 | 0.981 | 0.00 |
| 164.9 | 3.20 | 71.560 | 71.818 | 0.360 | 0.00 |
| 164.9 | 3.20 | 71.310 | 71.818 | 0.712 | 0.00 |
| 174.3 | 3.20 | 89.160 | 87.547 | -1.809 | 0.00 |
| 185.5 | 3.20 | 72.530 | 71.596 | -1.288 | 0.00 |
| 193.2 | 3.20 | 57.960 | 57.691 | -0.464 | 0.00 |
| 193.1 | 3.20 | 58.070 | 57.803 | -0.459 | 0.00 |
| 202.9 | 3.20 | 50.180 | 50.219 | 0.077 | 0.00 |
| 202.9 | 3.20 | 50.000 | 50.219 | 0.438 | 0.00 |

Number of Points (Ref. 55) 54

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.356 | BIAS-% | -0.050 | RMS-% | 2.524 | |
| AAD | 2.530 | BIAS | -0.021 | RMS | 8.717 | $J \cdot mol^{-1} \cdot K^{-1}$ |

Total Points 454

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.885 | BIAS-% | 0.137 | RMS-% | 1.668 | |
| AAD | 0.981 | BIAS | 0.143 | RMS | 4.347 | $J \cdot mol^{-1} \cdot K^{-1}$ |

TABLE A8

COMPARISONS FOR SPECIFIC HEAT CAPACITY OF THE SATURATED LIQUID

Notes for Table A8. The densities above were calculated from the experimental temperatures and the ancillary eq (2) for the density of the saturated liquid. These densities were used to calculate the heat capacity along the saturation boundary according to the equation given in Table 7.

Data are from Younglove [52] and Roder [53] as adjusted by Roder [53].

| T | $\rho$ | $C_{\sigma L}$,exp | $C_{\sigma L}$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mol\cdot dm^{-3}$ | $J\cdot mol^{-1}\cdot K^{-1}$ | $J\cdot mol^{-1}\cdot K^{-1}$ | % | |
| 95.402 | 27.7468 | 54.206 | 54.130 | -0.141 | 2004.81 |
| 95.846 | 27.7089 | 54.066 | 54.209 | 0.264 | 1996.77 |
| 99.021 | 27.4363 | 54.590 | 54.680 | 0.165 | 1887.59 |
| 101.651 | 27.2086 | 54.782 | 54.981 | 0.363 | 1812.19 |
| 101.961 | 27.1817 | 54.691 | 55.013 | 0.589 | 1807.43 |
| 102.574 | 27.1282 | 54.820 | 55.074 | 0.464 | 1787.90 |
| 106.891 | 26.7486 | 55.505 | 55.462 | -0.077 | 1666.02 |
| 108.219 | 26.6304 | 55.459 | 55.573 | 0.206 | 1638.81 |
| 108.800 | 26.5785 | 55.187 | 55.622 | 0.788 | 0.00 |
| 112.604 | 26.2351 | 55.960 | 55.946 | -0.026 | 1536.67 |
| 115.165 | 26.0002 | 56.292 | 56.178 | -0.202 | 1480.87 |
| 116.044 | 25.9188 | 56.582 | 56.263 | -0.564 | 1457.92 |
| 118.479 | 25.6912 | 56.761 | 56.509 | -0.443 | 1412.62 |
| 119.117 | 25.6310 | 56.685 | 56.578 | -0.189 | 1404.24 |
| 122.089 | 25.3474 | 57.292 | 56.919 | -0.650 | 1343.73 |
| 122.474 | 25.3103 | 57.137 | 56.967 | -0.298 | 1341.72 |
| 123.367 | 25.2237 | 56.845 | 57.079 | 0.411 | 1335.66 |
| 125.766 | 24.9886 | 57.514 | 57.400 | -0.198 | 1286.54 |
| 130.765 | 24.4848 | 58.092 | 58.175 | 0.142 | 1210.31 |
| 132.274 | 24.3287 | 58.640 | 58.439 | -0.343 | 1181.30 |
| 132.751 | 24.2790 | 58.441 | 58.526 | 0.145 | 1179.95 |
| 135.455 | 23.9929 | 58.701 | 59.048 | 0.591 | 1145.11 |
| 137.805 | 23.7385 | 59.285 | 59.546 | 0.441 | 1109.70 |
| 139.970 | 23.4989 | 59.463 | 60.046 | 0.980 | 1085.54 |
| 144.305 | 23.0028 | 60.317 | 61.176 | 1.424 | 1032.07 |
| 144.401 | 22.9915 | 60.686 | 61.203 | 0.852 | 1024.84 |
| 148.500 | 22.4989 | 61.780 | 62.463 | 1.106 | 975.23 |
| 148.881 | 22.4518 | 61.751 | 62.591 | 1.361 | 973.01 |
| 150.824 | 22.2082 | 63.536 | 63.275 | -0.411 | 0.00 |
| 152.809 | 21.9528 | 63.632 | 64.033 | 0.630 | 918.27 |

Table A8 (continued)

| T | $\rho$ | $C_{\sigma L}$,exp | $C_{\sigma L}$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 153.157 | 21.9073 | 63.781 | 64.172 | 0.613 | 913.99 |
| 155.542 | 21.5891 | 64.754 | 65.189 | 0.672 | 886.59 |
| 157.043 | 21.3829 | 65.156 | 65.888 | 1.123 | 873.29 |
| 157.355 | 21.3395 | 65.288 | 66.039 | 1.151 | 869.94 |
| 159.127 | 21.0883 | 66.400 | 66.946 | 0.822 | 846.84 |
| 161.181 | 20.7875 | 67.440 | 68.103 | 0.983 | 825.06 |
| 161.483 | 20.7424 | 67.604 | 68.284 | 1.006 | 821.86 |
| 163.136 | 20.4906 | 67.864 | 69.331 | 2.162 | 0.00 |
| 163.782 | 20.3900 | 69.643 | 69.768 | 0.179 | 789.49 |
| 165.128 | 20.1760 | 70.569 | 70.734 | 0.233 | 775.06 |
| 165.249 | 20.1565 | 70.232 | 70.824 | 0.843 | 778.55 |
| 165.548 | 20.1080 | 70.442 | 71.052 | 0.866 | 775.40 |
| 166.549 | 19.9435 | 71.232 | 71.846 | 0.861 | 764.24 |
| 169.253 | 19.4795 | 73.657 | 74.282 | 0.849 | 733.94 |
| 169.565 | 19.4239 | 74.109 | 74.595 | 0.656 | 729.00 |
| 170.157 | 19.3173 | 74.426 | 75.211 | 1.054 | 725.27 |
| 170.197 | 19.3100 | 74.846 | 75.253 | 0.544 | 721.05 |
| 170.251 | 19.3002 | 75.280 | 75.311 | 0.041 | 716.76 |
| 171.097 | 19.1444 | 76.029 | 76.249 | 0.290 | 709.01 |
| 173.180 | 18.7445 | 78.254 | 78.869 | 0.786 | 688.53 |
| 173.480 | 18.6848 | 78.910 | 79.289 | 0.481 | 682.86 |
| 173.505 | 18.6798 | 78.214 | 79.325 | 1.420 | 689.15 |
| 174.032 | 18.5734 | 79.372 | 80.094 | 0.910 | 679.30 |
| 174.429 | 18.4920 | 80.836 | 80.700 | -0.168 | 667.15 |
| 175.228 | 18.3248 | 81.869 | 81.999 | 0.158 | 659.75 |
| 176.295 | 18.0938 | 84.010 | 83.917 | -0.111 | 644.79 |
| 177.029 | 17.9294 | 85.230 | 85.379 | 0.175 | 637.38 |
| 177.420 | 17.8397 | 87.184 | 86.213 | -1.114 | 0.00 |
| 177.902 | 17.7272 | 86.393 | 87.299 | 1.049 | 631.65 |
| 178.557 | 17.5703 | 88.222 | 88.890 | 0.757 | 620.93 |
| 180.613 | 17.0442 | 94.968 | 94.981 | 0.014 | 5868.77 |
| 181.034 | 16.9292 | 96.269 | 96.493 | 0.232 | 5817.64 |
| 181.645 | 16.7569 | 98.591 | 98.894 | 0.308 | 5725.55 |
| 182.572 | 16.4822 | 103.209 | 103.107 | -0.099 | 5547.41 |
| 184.222 | 15.9437 | 113.503 | 113.028 | -0.418 | 5223.69 |

Table A8 (continued)

| T | $\rho$ | $C_{\sigma L}$,exp | $C_{\sigma L}$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | % | |
| 185.271 | 15.5577 | 121.885 | 121.882 | -0.003 | 5021.62 |
| 186.127 | 15.2079 | 132.650 | 131.567 | -0.816 | 0.00 |
| 187.577 | 14.5088 | 152.131 | 157.745 | 3.690 | 0.00 |
| 187.633 | 14.4781 | 157.474 | 159.174 | 1.079 | 0.00 |

Number of Points (Refs. 52 and 53) 69

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.626 | BIAS-% | 0.444 | RMS-% | 0.716 | |
| AAD | 0.496 | BIAS | 0.354 | RMS | 0.791 | $J \cdot mol^{-1} \cdot K^{-1}$ |

TABLE A9

COMPARISONS FOR SOUND SPEED

Notes for Table A9. The temperatures and pressures refer to experimentally reported conditions, except that, for data reported on the saturation boundary (in Refs. 57-59), an iteration of the SWEOS equation of state was used to calculate a pressure and density. Other reported densities were also from this SWEOS. These quantities were used to determine the "experimental" value for $\partial P/\partial\rho|_T$ from the experimental sound speed and calculated values for the isobaric and isochoric specific heat capacities (according to $\partial P/\partial\rho|_T = u\ N_A\ M\ w^2\ C_V/C_P$). This derivative was used to determine the coefficients in the final SWEOS according to the weights in the final column of the table. Calculated values of the sound speed and derivative were from the final SWEOS. Values missing in the tables or statistics have been omitted for any of several reasons including recent acquisition, replicate points, critical region data, etc.

Data from Baidakov et al. [56]

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 150.0 | 4.001 | 22.74 | 980.7 | 978.0 | -0.3 | 7.68 | 7.63 | -0.6 | 0.0 |
| 150.0 | 3.807 | 22.71 | 977.2 | 974.4 | -0.3 | 7.60 | 7.55 | -0.7 | 0.0 |
| 150.0 | 3.625 | 22.69 | 973.5 | 970.9 | -0.3 | 7.53 | 7.48 | -0.6 | 0.0 |
| 150.0 | 3.419 | 22.66 | 970.0 | 966.9 | -0.3 | 7.45 | 7.39 | -0.7 | 0.0 |
| 150.0 | 3.219 | 22.63 | 965.7 | 963.0 | -0.3 | 7.36 | 7.31 | -0.7 | 0.0 |
| 150.0 | 3.022 | 22.60 | 962.3 | 959.2 | -0.3 | 7.29 | 7.23 | -0.8 | 0.0 |
| 150.0 | 2.825 | 22.58 | 958.1 | 955.2 | -0.3 | 7.20 | 7.15 | -0.7 | 0.0 |
| 150.0 | 2.631 | 22.55 | 954.5 | 951.3 | -0.3 | 7.13 | 7.07 | -0.8 | 0.0 |
| 150.0 | 2.437 | 22.52 | 950.5 | 947.4 | -0.3 | 7.05 | 6.99 | -0.8 | 0.0 |
| 150.0 | 2.242 | 22.49 | 946.3 | 943.3 | -0.3 | 6.96 | 6.91 | -0.8 | 0.0 |
| 150.0 | 2.045 | 22.46 | 942.1 | 939.2 | -0.3 | 6.88 | 6.83 | -0.8 | 0.0 |
| 150.0 | 1.851 | 22.44 | 938.3 | 935.1 | -0.3 | 6.80 | 6.75 | -0.8 | 0.0 |
| 150.0 | 1.658 | 22.41 | 934.2 | 930.9 | -0.4 | 6.72 | 6.66 | -0.9 | 0.0 |
| 150.0 | 1.459 | 22.38 | 930.0 | 926.5 | -0.4 | 6.64 | 6.58 | -0.9 | 0.0 |
| 150.0 | 1.265 | 22.35 | 925.8 | 922.2 | -0.4 | 6.56 | 6.49 | -0.9 | 0.0 |
| 150.0 | 1.068 | 22.32 | 921.5 | 917.8 | -0.4 | 6.47 | 6.41 | -1.0 | 0.0 |
| 155.0 | 3.999 | 22.12 | 922.5 | 919.6 | -0.3 | 6.54 | 6.49 | -0.7 | 0.0 |
| 155.0 | 3.806 | 22.09 | 918.3 | 915.5 | -0.3 | 6.46 | 6.41 | -0.7 | 0.0 |
| 155.0 | 3.609 | 22.06 | 914.4 | 911.2 | -0.3 | 6.38 | 6.33 | -0.8 | 0.0 |
| 155.0 | 3.417 | 22.03 | 909.9 | 907.0 | -0.3 | 6.30 | 6.25 | -0.7 | 0.0 |

Data from Baidakov et al. [56] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial \rho\|_T$ exp | $\partial P/\partial \rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 155.0 | 3.218 | 22.00 | 905.8 | 902.5 | -0.4 | 6.22 | 6.17 | -0.8 | 0.0 |
| 155.0 | 3.022 | 21.97 | 901.3 | 898.1 | -0.4 | 6.13 | 6.08 | -0.8 | 0.0 |
| 155.0 | 2.827 | 21.93 | 896.8 | 893.6 | -0.4 | 6.05 | 6.00 | -0.8 | 0.0 |
| 155.0 | 2.632 | 21.90 | 892.2 | 889.0 | -0.4 | 5.97 | 5.92 | -0.8 | 0.0 |
| 155.0 | 2.436 | 21.87 | 887.7 | 884.4 | -0.4 | 5.88 | 5.83 | -0.9 | 0.0 |
| 155.0 | 2.244 | 21.83 | 883.0 | 879.7 | -0.4 | 5.80 | 5.75 | -0.9 | 0.0 |
| 155.0 | 2.047 | 21.80 | 878.3 | 874.9 | -0.4 | 5.71 | 5.66 | -0.9 | 0.0 |
| 155.0 | 1.850 | 21.76 | 873.4 | 870.0 | -0.4 | - | - | - | 0.0 |
| 155.0 | 1.656 | 21.73 | 868.5 | 865.0 | -0.4 | 5.54 | 5.48 | -0.9 | 0.0 |
| 155.0 | 1.459 | 21.69 | 863.7 | 860.0 | -0.4 | 5.45 | 5.40 | -1.0 | 0.0 |
| 160.0 | 3.998 | 21.46 | 861.2 | 858.2 | -0.3 | 5.46 | 5.41 | -0.8 | 0.0 |
| 160.0 | 3.981 | 21.45 | 861.1 | 857.8 | -0.4 | 5.45 | 5.41 | -0.9 | 0.0 |
| 160.0 | 3.805 | 21.42 | 856.5 | 853.4 | -0.4 | 5.37 | 5.33 | -0.8 | 0.0 |
| 160.0 | 3.787 | 21.42 | 856.4 | 852.9 | -0.4 | 5.37 | 5.32 | -0.9 | 0.0 |
| 160.0 | 3.621 | 21.39 | 852.2 | 848.7 | -0.4 | 5.30 | 5.25 | -0.9 | 0.0 |
| 160.0 | 3.608 | 21.38 | 851.9 | 848.4 | -0.4 | 5.29 | 5.24 | -0.9 | 0.0 |
| 160.0 | 3.588 | 21.38 | 851.3 | 847.9 | -0.4 | 5.28 | 5.23 | -0.9 | 0.0 |
| 160.0 | 3.419 | 21.35 | 847.3 | 843.5 | -0.4 | 5.21 | 5.16 | -1.0 | 0.0 |
| 160.0 | 3.230 | 21.31 | 842.3 | 838.6 | -0.4 | 5.13 | 5.08 | -1.0 | 0.0 |
| 160.0 | 3.033 | 21.27 | 837.0 | 833.3 | -0.4 | 5.04 | 4.99 | -1.0 | 0.0 |
| 160.0 | 2.826 | 21.23 | 831.3 | 827.7 | -0.4 | 4.94 | 4.89 | -1.0 | 0.0 |
| 160.0 | 2.613 | 21.19 | 825.4 | 821.8 | -0.4 | 4.84 | 4.80 | -1.0 | 0.0 |
| 160.0 | 2.434 | 21.15 | 820.4 | 816.7 | -0.5 | 4.76 | 4.71 | -1.0 | 0.0 |
| 160.0 | 2.240 | 21.11 | 814.8 | 811.1 | -0.5 | 4.72 | 4.62 | -2.0 | 0.0 |
| 160.0 | 2.043 | 21.06 | 809.0 | 805.3 | -0.5 | 4.58 | 4.53 | -1.0 | 0.0 |
| 160.0 | 1.850 | 21.02 | 803.4 | 799.5 | -0.5 | 4.49 | 4.44 | -1.1 | 0.0 |
| 160.0 | 1.737 | 20.99 | 799.8 | 796.0 | -0.5 | 4.43 | 4.38 | -1.1 | 0.0 |
| 160.0 | 1.655 | 20.98 | 797.3 | 793.5 | -0.5 | 4.39 | 4.34 | -1.1 | 0.0 |
| 160.0 | 1.644 | 20.97 | 797.2 | 793.1 | -0.5 | 4.39 | 4.34 | -1.2 | 0.0 |
| 163.0 | 4.000 | 21.03 | 823.3 | 819.5 | -0.5 | 4.84 | 4.79 | -1.0 | 0.0 |
| 163.0 | 3.806 | 20.99 | 818.0 | 814.2 | -0.5 | 4.75 | 4.70 | -1.0 | 0.0 |
| 163.0 | 3.613 | 20.95 | 812.7 | 808.8 | -0.5 | 4.66 | 4.61 | -1.0 | 0.0 |
| 163.0 | 3.422 | 20.91 | 807.3 | 803.3 | -0.5 | 4.57 | 4.53 | -1.1 | 0.0 |
| 163.0 | 3.223 | 20.86 | 801.5 | 797.5 | -0.5 | 4.48 | 4.43 | -1.1 | 0.0 |
| 163.0 | 3.024 | 20.82 | 795.5 | 791.6 | -0.5 | 4.39 | 4.34 | -1.1 | 0.0 |

Data from Baidakov et al. [56] (continued)

| T | P | ρ | W,exp | W,cal | Dev1 | ∂P/∂ρ\|T exp | ∂P/∂ρ\|T cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 163.0 | 2.826 | 20.77 | 789.6 | 785.5 | -0.5 | 4.30 | 4.25 | -1.1 | 0.0 |
| 163.0 | 2.632 | 20.72 | 783.7 | 779.5 | -0.5 | 4.21 | 4.16 | -1.2 | 0.0 |
| 163.0 | 2.435 | 20.68 | 777.3 | 773.2 | -0.5 | 4.11 | 4.06 | -1.2 | 0.0 |
| 163.0 | 2.244 | 20.63 | 771.2 | 766.9 | -0.6 | 4.02 | 3.97 | -1.2 | 0.0 |
| 163.0 | 2.051 | 20.58 | 764.7 | 760.5 | -0.6 | 3.92 | 3.87 | -1.2 | 0.0 |
| 163.0 | 1.854 | 20.53 | 757.9 | 753.7 | -0.6 | 3.82 | 3.77 | -1.2 | 0.0 |
| 167.0 | 3.995 | 20.42 | 769.5 | 765.0 | -0.6 | 4.03 | 3.98 | -1.2 | 0.0 |
| 167.0 | 3.802 | 20.37 | 763.1 | 758.9 | -0.6 | 3.93 | 3.89 | -1.2 | 0.0 |
| 167.0 | 3.616 | 20.32 | 757.2 | 752.8 | -0.6 | 3.85 | 3.80 | -1.2 | 0.0 |
| 167.0 | 3.490 | 20.28 | 752.9 | 748.6 | -0.6 | 3.78 | 3.74 | -1.2 | 0.0 |
| 167.0 | 3.423 | 20.27 | 750.6 | 746.3 | -0.6 | 3.75 | 3.70 | -1.2 | 0.0 |
| 167.0 | 3.219 | 20.21 | 743.8 | 739.3 | -0.6 | 3.65 | 3.60 | -1.3 | 0.0 |
| 167.0 | 3.036 | 20.16 | 737.1 | 732.8 | -0.6 | 3.56 | 3.51 | -1.2 | 0.0 |
| 167.0 | 2.823 | 20.10 | 729.7 | 725.1 | -0.6 | 3.45 | 3.41 | -1.3 | 0.0 |
| 167.0 | 2.623 | 20.04 | 722.2 | 717.6 | -0.6 | 3.35 | 3.31 | -1.4 | 0.0 |
| 167.0 | 2.462 | 19.99 | 715.8 | 711.4 | -0.6 | 3.27 | 3.22 | -1.3 | 0.0 |
| 167.0 | 2.435 | 19.98 | 714.9 | 710.3 | -0.6 | 3.25 | 3.21 | -1.4 | 0.0 |
| 167.0 | 2.325 | 19.95 | 710.3 | 706.0 | -0.6 | 3.19 | 3.15 | -1.3 | 0.0 |
| 167.0 | 2.267 | 19.93 | 708.2 | 703.6 | -0.6 | 3.16 | 3.12 | -1.4 | 0.0 |
| 167.0 | 2.240 | 19.92 | 707.1 | 702.5 | -0.6 | 3.15 | 3.11 | -1.4 | 0.0 |
| 167.0 | 2.121 | 19.88 | 702.2 | 697.7 | -0.6 | 3.09 | 3.04 | -1.4 | 0.0 |
| 167.0 | 2.104 | 19.87 | 701.5 | 697.0 | -0.6 | 3.08 | 3.04 | -1.4 | 0.0 |
| 170.0 | 4.000 | 19.91 | 726.4 | 721.8 | -0.6 | 3.43 | 3.39 | -1.3 | 0.0 |
| 170.0 | 3.810 | 19.86 | 719.3 | 714.9 | -0.6 | 3.34 | 3.30 | -1.3 | 0.0 |
| 170.0 | 3.608 | 19.79 | 711.9 | 707.4 | -0.6 | 3.24 | 3.20 | -1.3 | 0.0 |
| 170.0 | 3.412 | 19.73 | 704.2 | 699.8 | -0.6 | 3.14 | 3.10 | -1.3 | 0.0 |
| 170.0 | 3.217 | 19.67 | 696.7 | 692.1 | -0.7 | 3.04 | 3.00 | -1.4 | 0.0 |
| 170.0 | 3.027 | 19.60 | 688.8 | 684.3 | -0.7 | 2.94 | 2.90 | -1.4 | 0.0 |
| 170.0 | 2.829 | 19.53 | 680.4 | 675.8 | -0.7 | 2.83 | 2.79 | -1.4 | 0.0 |
| 170.0 | 2.629 | 19.46 | 671.4 | 667.0 | -0.7 | 2.72 | 2.69 | -1.4 | 0.0 |
| 170.0 | 2.434 | 19.39 | 662.4 | 658.1 | -0.7 | 2.62 | 2.58 | -1.4 | 0.0 |
| 170.0 | 2.354 | 19.35 | 658.6 | 654.3 | -0.7 | 2.57 | 2.53 | -1.4 | 0.0 |
| 173.0 | 4.001 | 19.36 | 680.2 | 675.6 | -0.7 | 2.86 | 2.82 | -1.4 | 0.0 |
| 173.0 | 3.806 | 19.29 | 671.9 | 667.4 | -0.7 | 2.75 | 2.72 | -1.4 | 0.0 |
| 173.0 | 3.610 | 19.22 | 663.2 | 658.8 | -0.7 | 2.65 | 2.61 | -1.3 | 0.0 |

Data from Baidakov et al. [56] (continued)

| T | P | ρ | W,exp | W,cal | Dev1 | ∂P/∂ρ\|T exp | ∂P/∂ρ\|T cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | m·s$^{-1}$ | m·s$^{-1}$ | % | MPa·dm$^3$·mol$^{-1}$ | | % | |
| 173.0 | 3.419 | 19.14 | 654.7 | 650.2 | -0.7 | 2.55 | 2.51 | -1.4 | 0.0 |
| 173.0 | 3.221 | 19.06 | 645.2 | 640.9 | -0.7 | 2.44 | 2.40 | -1.4 | 0.0 |
| 173.0 | 3.024 | 18.98 | 635.4 | 631.2 | -0.7 | 2.33 | 2.29 | -1.4 | 0.0 |
| 173.0 | 2.824 | 18.89 | 624.9 | 620.9 | -0.6 | 2.21 | 2.18 | -1.3 | 0.0 |
| 173.0 | 2.628 | 18.80 | 614.0 | 610.3 | -0.6 | 2.09 | 2.07 | -1.2 | 0.0 |
| 177.0 | 4.003 | 18.52 | 612.2 | 607.8 | -0.7 | 2.10 | 2.07 | -1.4 | 0.0 |
| 177.0 | 3.807 | 18.42 | 601.4 | 597.4 | -0.7 | 1.99 | 1.96 | -1.3 | 0.0 |
| 177.0 | 3.617 | 18.32 | 590.4 | 586.8 | -0.6 | 1.88 | 1.85 | -1.2 | 0.0 |
| 177.0 | 3.610 | 18.32 | 590.0 | 586.3 | -0.6 | 1.87 | 1.85 | -1.2 | 0.0 |
| 177.0 | 3.414 | 18.21 | 578.0 | 574.7 | -0.6 | 1.75 | 1.74 | -1.1 | 0.0 |
| 177.0 | 3.219 | 18.09 | 565.0 | 562.4 | -0.5 | 1.63 | 1.62 | -0.9 | 0.0 |
| 177.0 | 3.023 | 17.97 | 551.0 | 549.2 | -0.3 | 1.50 | 1.50 | -0.6 | 0.0 |
| 177.0 | 2.982 | 17.94 | 547.9 | 546.3 | -0.3 | 1.48 | 1.47 | -0.6 | 0.0 |
| 180.0 | 4.000 | 17.76 | 553.3 | 550.0 | -0.6 | 1.54 | 1.52 | -1.2 | 0.0 |
| 180.0 | 3.907 | 17.70 | 547.0 | 543.8 | -0.6 | 1.49 | 1.47 | -1.1 | 0.0 |
| 180.0 | 3.808 | 17.63 | 540.0 | 537.0 | -0.5 | 1.42 | 1.41 | -1.1 | 0.0 |
| 180.0 | 3.716 | 17.56 | 532.9 | 530.5 | -0.4 | 1.36 | 1.35 | -0.9 | 0.0 |
| 180.0 | 3.613 | 17.48 | 524.3 | 522.9 | -0.3 | 1.29 | 1.29 | -0.5 | 0.0 |
| 180.0 | 3.520 | 17.41 | 516.8 | 515.7 | -0.2 | 1.23 | 1.23 | -0.4 | 0.0 |
| 180.0 | 3.416 | 17.32 | 507.4 | 507.3 | 0.0 | 1.16 | 1.16 | 0.0 | 0.0 |
| 180.0 | 3.346 | 17.26 | 500.9 | 501.4 | 0.1 | 1.11 | 1.11 | 0.2 | 0.0 |
| 180.0 | 3.338 | 17.25 | 500.0 | 500.7 | 0.1 | 1.10 | 1.10 | 0.3 | 0.0 |
| 183.0 | 3.996 | 16.79 | 482.4 | 481.6 | -0.2 | 0.98 | 0.98 | -0.3 | 0.0 |
| 183.0 | 3.977 | 16.78 | 481.2 | 479.9 | -0.3 | 0.97 | 0.96 | -0.5 | 0.0 |
| 183.0 | 3.912 | 16.71 | 474.4 | 473.9 | -0.1 | 0.92 | 0.92 | -0.2 | 0.0 |
| 183.0 | 3.808 | 16.59 | 462.1 | 463.6 | 0.3 | 0.84 | 0.85 | 0.7 | 0.0 |
| 183.0 | 3.731 | 16.49 | 452.8 | 455.5 | 0.6 | 0.78 | 0.79 | 1.3 | 0.0 |
| 183.0 | 3.690 | 16.44 | 447.1 | 450.9 | 0.9 | 0.75 | 0.76 | 1.8 | 0.0 |
| 183.0 | 3.649 | 16.39 | 441.7 | 446.2 | 1.0 | 0.71 | 0.73 | 2.1 | 0.0 |

Number of Points (Ref. 56) 119

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.475 | BIAS-% | -0.425 | RMS-% | 0.267 | |
| | AAD | 3.504 | BIAS | -3.277 | RMS | 1.589 | m·s$^{-1}$ |

Number of Points (Ref. 56) 118

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DERIVATIVE: | AAD-% | 1.037 | BIAS- | -0.929 | RMS-% | 0.567 | |
| | AAD | 0.040 | BIAS | -0.039 | RMS | 0.018 | MPa·dm$^3$·mol$^{-1}$ |

Data from Blagoi et al. [57]

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial \rho\vert_T$ exp | $\partial P/\partial \rho\vert_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 90.9 | 0.012 | 28.13 | 1531.0 | 1546.2 | 1.0 | 23.80 | 24.37 | 2.4 | 0.132 |
| 93.6 | 0.017 | 27.90 | 1509.0 | 1514.2 | 0.3 | 23.12 | 23.31 | 0.8 | 0.134 |
| 97.7 | 0.027 | 27.56 | 1472.0 | 1469.8 | -0.1 | 21.84 | 21.76 | -0.4 | 0.138 |
| 99.9 | 0.034 | 27.37 | 1444.0 | 1447.3 | 0.2 | 20.89 | 20.95 | 0.3 | 0.141 |
| 101.1 | 0.038 | 27.27 | 1430.0 | 1435.2 | 0.4 | 20.41 | 20.52 | 0.5 | 0.000 |
| 103.6 | 0.049 | 27.05 | 1406.0 | 1410.3 | 0.3 | 19.56 | 19.64 | 0.4 | 0.000 |
| 105.2 | 0.057 | 26.91 | 1388.0 | 1394.5 | 0.5 | 18.95 | 19.08 | 0.7 | 0.000 |
| 110.1 | 0.089 | 26.48 | 1347.0 | 1346.3 | -0.1 | 17.49 | 17.42 | -0.4 | 0.000 |
| 115.5 | 0.138 | 25.98 | 1285.0 | 1292.8 | 0.6 | 15.53 | 15.68 | 0.9 | 0.000 |
| 118.2 | 0.168 | 25.73 | 1262.0 | 1265.7 | 0.3 | 14.79 | 14.83 | 0.3 | 0.000 |
| 121.0 | 0.206 | 25.46 | 1236.0 | 1237.3 | 0.1 | 13.99 | 13.98 | -0.1 | 0.000 |
| 124.7 | 0.264 | 25.10 | 1201.0 | 1199.2 | -0.2 | 12.96 | 12.89 | -0.6 | 0.000 |
| 127.3 | 0.312 | 24.84 | 1173.0 | 1172.0 | -0.1 | 12.19 | 12.14 | -0.4 | 0.000 |
| 131.6 | 0.404 | 24.41 | 1125.0 | 1126.3 | 0.1 | 10.95 | 10.94 | 0.0 | 0.000 |
| 133.7 | 0.456 | 24.18 | 1101.0 | 1103.5 | 0.2 | 10.36 | 10.38 | 0.2 | 0.000 |
| 137.7 | 0.568 | 23.75 | 1063.0 | 1059.5 | -0.3 | 9.42 | 9.34 | -0.9 | 0.000 |
| 143.3 | 0.758 | 23.12 | 994.0 | 996.1 | 0.2 | 7.93 | 7.95 | 0.2 | 0.000 |
| 147.4 | 0.923 | 22.63 | 954.0 | 948.3 | -0.6 | 7.08 | 6.98 | -1.4 | 0.000 |
| 152.9 | 1.184 | 21.94 | 885.0 | 881.8 | -0.4 | 5.82 | 5.76 | -0.9 | 0.000 |
| 156.2 | 1.363 | 21.50 | 848.0 | 840.5 | -0.9 | 5.17 | 5.07 | -1.9 | 0.000 |
| 160.1 | 1.599 | 20.95 | 795.0 | 790.2 | -0.6 | 4.35 | 4.29 | -1.3 | 0.000 |
| 164.4 | 1.892 | 20.29 | 741.0 | 732.5 | -1.1 | 3.57 | 3.49 | -2.4 | 0.000 |
| 168.8 | 2.230 | 19.56 | 672.0 | 670.6 | -0.2 | 2.73 | 2.72 | -0.5 | 0.000 |
| 171.7 | 2.475 | 19.03 | 637.0 | 627.9 | -1.4 | 2.31 | 2.25 | -2.9 | 0.000 |
| 176.5 | 2.924 | 18.05 | 560.0 | 553.7 | -1.1 | 1.57 | 1.53 | -2.2 | 0.000 |
| 177.8 | 3.055 | 17.75 | 536.0 | 532.7 | -0.6 | 1.37 | 1.35 | -1.2 | 0.000 |

Number of Points (Ref. 57) 26 on saturation boundary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.461 | BIAS-% | -0.134 | RMS-% | 0.572 | |
| | AAD | 4.506 | BIAS | -0.030 | RMS | 5.524 | $m \cdot s^{-1}$ |
| DERIVATIVE: | AAD-% | 0.928 | BIAS-% | -0.411 | RMS-% | 1.147 | |
| | AAD | 0.086 | BIAS | 0.018 | RMS | 0.135 | $MPa \cdot dm^3 \cdot mol^{-1}$ |

Data from Gammon and Douslin [37]

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $m\cdot s^{-1}$ | $m\cdot s^{-1}$ | % | $MPa\cdot dm^3\cdot mol^{-1}$ | | % | |
| 323.15 | 24.595 | 10.14 | 574.3 | 573.3 | -0.2 | 2.98 | 2.97 | -0.4 | 0.000 |
| 298.15 | 2.378 | 1.00 | 441.9 | 442.0 | 0.0 | 2.28 | 2.28 | 0.0 | 0.857 |
| 298.15 | 5.627 | 2.50 | 437.1 | 437.0 | 0.0 | 2.06 | 2.06 | -0.1 | 0.586 |
| 298.15 | 10.491 | 5.00 | 444.6 | 444.6 | 0.0 | 1.88 | 1.88 | 0.0 | 0.489 |
| 298.15 | 15.205 | 7.49 | 474.5 | 474.1 | -0.1 | 1.95 | 1.95 | -0.2 | 0.000 |
| 298.15 | 19.418 | 9.53 | 518.3 | 517.5 | -0.1 | 2.25 | 2.24 | -0.3 | 0.000 |
| 298.15 | 20.702 | 10.08 | 533.9 | 532.9 | -0.2 | 2.38 | 2.37 | -0.4 | 0.000 |
| 273.15 | 16.178 | 9.63 | 478.4 | 477.4 | -0.2 | 1.71 | 1.70 | -0.4 | 0.000 |
| 248.15 | 12.816 | 9.75 | 430.9 | 429.5 | -0.3 | 1.17 | 1.16 | -0.6 | 0.000 |
| 223.15 | 9.320 | 9.88 | 371.6 | 370.1 | -0.4 | 0.63 | 0.62 | -0.6 | 0.000 |
| 198.15 | 5.704 | 10.05 | 282.6 | 282.5 | 0.0 | 0.12 | 0.12 | -0.1 | 0.000 |
| 193.05 | 0.782 | 0.52 | 353.2 | 353.1 | 0.0 | 1.42 | 1.42 | 0.0 | 3.567 |
| 193.05 | 1.563 | 1.11 | 340.6 | 340.4 | -0.1 | 1.23 | 1.23 | -0.2 | 2.485 |
| 193.05 | 2.244 | 1.70 | 328.7 | 328.4 | -0.1 | 1.05 | 1.05 | -0.2 | 2.039 |
| 193.05 | 2.820 | 2.30 | 317.7 | 317.5 | -0.1 | 0.89 | 0.88 | -0.2 | 1.789 |
| 193.05 | 3.306 | 2.90 | 307.5 | 307.4 | 0.0 | 0.73 | 0.73 | -0.1 | 1.625 |
| 193.05 | 3.703 | 3.50 | 298.3 | 298.4 | 0.1 | 0.60 | 0.60 | 0.1 | 1.511 |
| 193.05 | 4.025 | 4.10 | 289.9 | 290.3 | 0.1 | 0.47 | 0.48 | 0.2 | 1.428 |
| 193.05 | 4.281 | 4.71 | 282.4 | 282.9 | 0.2 | 0.37 | 0.37 | 0.4 | 1.365 |
| 193.05 | 4.478 | 5.32 | 275.6 | 276.3 | 0.2 | 0.28 | 0.28 | 0.2 | 1.319 |
| 193.05 | 4.626 | 5.93 | 269.5 | 270.2 | 0.3 | 0.20 | 0.21 | 0.4 | 1.283 |
| 193.05 | 4.729 | 6.51 | 264.2 | 265.0 | 0.3 | 0.15 | 0.15 | 0.4 | 0.000 |
| 193.05 | 4.806 | 7.13 | 258.9 | 260.0 | 0.4 | 0.10 | 0.10 | 1.0 | 0.000 |
| 193.05 | 4.859 | 7.75 | 254.1 | 255.6 | 0.6 | 0.07 | 0.07 | 0.8 | 0.000 |
| 193.05 | 4.897 | 8.39 | 249.9 | 252.0 | 0.9 | 0.05 | 0.05 | 1.0 | 0.000 |
| 193.05 | 4.924 | 9.03 | 246.7 | 249.7 | 1.2 | 0.04 | 0.04 | 2.9 | 0.000 |
| 193.05 | 4.946 | 9.64 | 245.7 | 249.3 | 1.5 | 0.03 | 0.03 | 2.9 | 0.000 |
| 193.05 | 4.962 | 10.12 | 246.8 | 250.6 | 1.5 | 0.03 | 0.03 | 4.4 | 0.000 |
| 193.05 | 4.966 | 10.24 | 247.5 | 251.3 | 1.5 | 0.03 | 0.04 | 3.1 | 0.000 |
| 193.05 | 4.988 | 10.83 | 253.1 | 256.4 | 1.3 | 0.04 | 0.04 | 3.0 | 0.000 |
| 193.05 | 5.016 | 11.43 | 263.1 | 265.7 | 1.0 | 0.05 | 0.05 | 3.2 | 0.000 |
| 191.45 | 4.587 | 6.52 | 258.4 | 259.2 | 0.3 | 0.12 | 0.12 | 0.6 | 0.000 |
| 191.45 | 4.646 | 7.15 | 251.8 | 253.3 | 0.6 | 0.07 | 0.07 | 0.8 | 0.000 |
| 191.45 | 4.683 | 7.79 | 244.5 | 247.8 | 1.4 | 0.04 | 0.04 | 2.6 | 0.000 |
| 191.45 | 4.705 | 8.45 | 236.8 | 243.0 | 2.6 | 0.02 | 0.02 | 3.6 | 0.000 |

Data from Gammon and Douslin [37] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $m\cdot s^{-1}$ | $m\cdot s^{-1}$ | % | $MPa\cdot dm^3\cdot mol^{-1}$ | | % | |
| 191.45 | 4.717 | 9.12 | 229.5 | 239.4 | 4.3 | 0.01 | 0.01 | 11.5 | 0.000 |
| 191.45 | 4.725 | 9.74 | 224.5 | 237.9 | 6.0 | 0.01 | 0.01 | 16.6 | 0.000 |
| 191.45 | 4.730 | 10.17 | 223.7 | 238.4 | 6.5 | 0.01 | 0.01 | 17.2 | 0.000 |
| 191.45 | 4.731 | 10.28 | 224.1 | 238.7 | 6.5 | 0.01 | 0.01 | 19.6 | 0.000 |
| 191.45 | 4.738 | 10.82 | 229.2 | 242.3 | 5.7 | 0.01 | 0.01 | 13.1 | 0.000 |
| 191.45 | 4.748 | 11.40 | 240.2 | 250.2 | 4.2 | 0.02 | 0.02 | 6.8 | 0.000 |
| 190.85 | 4.533 | 6.53 | 256.1 | 257.0 | 0.3 | 0.11 | 0.11 | 0.7 | 0.000 |
| 190.85 | 4.586 | 7.15 | 248.6 | 250.7 | 0.8 | 0.06 | 0.06 | 1.3 | 0.000 |
| 190.85 | 4.616 | 7.80 | 239.8 | 244.8 | 2.1 | 0.03 | 0.03 | 3.0 | 0.000 |
| 190.85 | 4.632 | 8.48 | 228.9 | 239.4 | 4.6 | 0.01 | 0.01 | 11.3 | 0.000 |
| 190.85 | 4.638 | 9.21 | 215.8 | 235.0 | 8.9 | 0.00 | 0.01 | 18.5 | 0.000 |
| 190.85 | 4.641 | 9.89 | 205.1 | 233.2 | 13.7 | 0.00 | 0.00 | 26.9 | 0.000 |
| 190.85 | 4.643 | 10.29 | 204.4 | 233.7 | 14.3 | 0.00 | 0.00 | 30.4 | 0.000 |
| 190.85 | 4.643 | 10.37 | 205.1 | 233.9 | 14.1 | 0.00 | 0.00 | 34.4 | 0.000 |
| 190.85 | 4.646 | 10.86 | 212.9 | 237.0 | 11.3 | 0.00 | 0.01 | 14.2 | 0.000 |
| 190.85 | 4.650 | 11.42 | 225.9 | 244.5 | 8.3 | 0.01 | 0.01 | 14.4 | 0.000 |
| 190.63 | 4.513 | 6.53 | 255.2 | 256.1 | 0.3 | 0.10 | 0.10 | 0.5 | 0.000 |
| 190.63 | 4.564 | 7.15 | 247.4 | 249.7 | 1.0 | 0.06 | 0.06 | 1.5 | 0.000 |
| 190.63 | 4.592 | 7.80 | 237.7 | 243.6 | 2.5 | 0.03 | 0.03 | 4.4 | 0.000 |
| 190.63 | 4.605 | 8.49 | 224.5 | 238.0 | 6.0 | 0.01 | 0.01 | 10.8 | 0.000 |
| 190.63 | 4.609 | 9.28 | 204.1 | 233.2 | 14.2 | 0.00 | 0.00 | 36.6 | 0.000 |
| 190.63 | 4.610 | 9.86 | 191.3 | 231.5 | 21.0 | 0.00 | 0.00 | 10.8 | 0.000 |
| 190.63 | 4.611 | 10.53 | 195.2 | 232.6 | 19.2 | 0.00 | 0.00 | 36.8 | 0.000 |
| 190.63 | 4.611 | 10.51 | 195.5 | 232.6 | 18.9 | 0.00 | 0.00 | 33.9 | 0.000 |
| 190.63 | 4.612 | 11.08 | 205.9 | 237.2 | 15.2 | 0.00 | 0.00 | 22.4 | 0.000 |
| 190.63 | 4.615 | 11.48 | 219.1 | 243.3 | 11.1 | 0.01 | 0.01 | 17.6 | 0.000 |
| 190.56 | 4.507 | 6.53 | 255.0 | 255.8 | 0.3 | 0.10 | 0.10 | 0.4 | 0.000 |
| 190.56 | 4.556 | 7.16 | 246.9 | 249.4 | 1.0 | 0.06 | 0.06 | 2.8 | 0.000 |
| 190.56 | 4.584 | 7.80 | 237.0 | 243.3 | 2.7 | 0.03 | 0.03 | 4.0 | 0.000 |
| 190.56 | 4.596 | 8.48 | 222.8 | 237.6 | 6.7 | 0.01 | 0.01 | 14.0 | 0.000 |
| 190.56 | 4.600 | 9.21 | 199.1 | 233.0 | 17.0 | 0.00 | 0.00 | 11.5 | 0.000 |
| 190.56 | 4.601 | 10.23 | 184.2 | 231.0 | 25.4 | 0.00 | 0.00 | 127.9 | 0.000 |
| 190.56 | 4.601 | 10.95 | 198.0 | 235.1 | 18.8 | 0.00 | 0.00 | 79.3 | 0.000 |
| 190.56 | 4.601 | 10.83 | 196.6 | 234.0 | 19.0 | 0.00 | 0.00 | 22.3 | 0.000 |
| 190.56 | 4.602 | 11.24 | 205.4 | 238.6 | 16.2 | 0.00 | 0.00 | 30.4 | 0.000 |

Data from Gammon and Douslin [37] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial \rho\|_T$ exp | $\partial P/\partial \rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 190.56 | 4.603 | 11.55 | 217.0 | 243.9 | 12.4 | 0.01 | 0.01 | 32.8 | 0.000 |
| 190.50 | 0.771 | 0.52 | 350.5 | 350.4 | 0.0 | 1.40 | 1.40 | -0.1 | 3.549 |
| 190.50 | 1.538 | 1.11 | 337.6 | 337.3 | -0.1 | 1.21 | 1.20 | -0.1 | 2.466 |
| 190.50 | 2.203 | 1.71 | 325.3 | 325.0 | -0.1 | 1.02 | 1.02 | -0.2 | 2.023 |
| 190.50 | 2.760 | 2.30 | 313.9 | 313.7 | -0.1 | 0.85 | 0.85 | -0.2 | 1.775 |
| 190.50 | 3.226 | 2.91 | 303.2 | 303.2 | 0.0 | 0.70 | 0.70 | -0.1 | 0.000 |
| 190.50 | 3.603 | 3.51 | 293.5 | 293.7 | 0.0 | 0.56 | 0.56 | 0.0 | 0.000 |
| 190.50 | 3.902 | 4.11 | 284.7 | 284.9 | 0.1 | 0.44 | 0.44 | 0.2 | 0.000 |
| 190.50 | 4.133 | 4.72 | 276.5 | 276.8 | 0.1 | 0.33 | 0.33 | 0.2 | 0.000 |
| 190.50 | 4.304 | 5.32 | 269.0 | 269.3 | 0.1 | 0.24 | 0.24 | 0.0 | 0.000 |
| 190.50 | 4.425 | 5.94 | 261.7 | 262.1 | 0.1 | 0.16 | 0.16 | 0.4 | 0.000 |
| 190.50 | 4.501 | 6.53 | 254.7 | 255.6 | 0.4 | 0.10 | 0.10 | 0.4 | 0.000 |
| 190.50 | 4.550 | 7.15 | 246.6 | 249.1 | 1.0 | 0.06 | 0.06 | 2.9 | 0.000 |
| 190.50 | 4.577 | 7.80 | 236.3 | 243.0 | 2.8 | 0.03 | 0.03 | 4.4 | 0.000 |
| 190.50 | 4.589 | 8.48 | 221.0 | 237.3 | 7.4 | 0.01 | 0.01 | 17.4 | 0.000 |
| 190.50 | 4.592 | 9.04 | 200.0 | 233.5 | 16.8 | 0.00 | 0.00 | 28.7 | 0.000 |
| 190.43 | 4.495 | 6.53 | 254.4 | 255.3 | 0.4 | 0.10 | 0.10 | 1.0 | 0.000 |
| 190.43 | 4.543 | 7.16 | 246.1 | 248.8 | 1.1 | 0.05 | 0.06 | 2.4 | 0.000 |
| 190.43 | 4.569 | 7.80 | 235.5 | 242.6 | 3.0 | 0.02 | 0.03 | 8.4 | 0.000 |
| 190.43 | 4.580 | 8.48 | 218.3 | 236.9 | 8.5 | 0.01 | 0.01 | 20.7 | 0.000 |
| 190.25 | 4.287 | 5.33 | 268.3 | 268.5 | 0.1 | 0.23 | 0.23 | 0.2 | 0.000 |
| 190.25 | 4.405 | 5.94 | 260.9 | 261.2 | 0.1 | 0.16 | 0.16 | 0.0 | 0.000 |
| 190.25 | 4.479 | 6.53 | 253.7 | 254.6 | 0.4 | 0.10 | 0.10 | 0.7 | 0.000 |
| 190.25 | 4.525 | 7.16 | 245.0 | 248.0 | 1.2 | 0.05 | 0.05 | 2.1 | 0.000 |
| 190.25 | 4.549 | 7.80 | 233.2 | 241.7 | 3.6 | 0.02 | 0.02 | 5.3 | 0.000 |
| 189.65 | 3.861 | 4.11 | 282.9 | 283.1 | 0.1 | 0.42 | 0.42 | 0.0 | 0.000 |
| 189.65 | 4.083 | 4.72 | 274.5 | 274.7 | 0.1 | 0.31 | 0.31 | 0.1 | 0.000 |
| 189.65 | 4.245 | 5.33 | 266.7 | 266.8 | 0.0 | 0.22 | 0.22 | -0.2 | 0.000 |
| 189.65 | 4.357 | 5.94 | 258.9 | 259.2 | 0.1 | 0.14 | 0.14 | -0.1 | 0.000 |
| 189.65 | 4.424 | 6.53 | 251.0 | 252.3 | 0.5 | 0.09 | 0.09 | 0.7 | 0.000 |
| 189.65 | 4.463 | 7.16 | 240.5 | 245.3 | 2.0 | 0.04 | 0.04 | 4.0 | 0.000 |
| 188.15 | 0.761 | 0.52 | 348.0 | 347.9 | 0.0 | 1.38 | 1.38 | -0.1 | 0.012 |
| 188.15 | 1.515 | 1.11 | 334.8 | 334.5 | -0.1 | 1.18 | 1.18 | -0.2 | 0.008 |
| 188.15 | 2.164 | 1.71 | 322.1 | 321.8 | -0.1 | 0.99 | 0.99 | -0.2 | 0.007 |
| 188.15 | 2.705 | 2.30 | 310.3 | 310.1 | -0.1 | 0.82 | 0.82 | -0.1 | 0.006 |

Data from Gammon and Douslin [37] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $m\cdot s^{-1}$ | $m\cdot s^{-1}$ | % | $MPa\cdot dm^3\cdot mol^{-1}$ | | % | |
| 188.15 | 3.153 | 2.91 | 299.2 | 299.2 | 0.0 | 0.67 | 0.66 | 0.0 | 0.000 |
| 188.15 | 3.509 | 3.51 | 289.1 | 289.1 | 0.0 | 0.52 | 0.52 | 0.0 | 0.000 |
| 188.15 | 3.787 | 4.11 | 279.6 | 279.7 | 0.0 | 0.40 | 0.40 | 0.0 | 0.000 |
| 188.15 | 3.995 | 4.72 | 270.9 | 270.8 | 0.0 | 0.29 | 0.29 | 0.0 | 0.000 |
| 188.15 | 4.140 | 5.33 | 262.4 | 262.2 | -0.1 | 0.19 | 0.19 | 0.0 | 0.000 |
| 188.15 | 4.235 | 5.95 | 253.4 | 253.8 | 0.1 | 0.11 | 0.12 | 0.3 | 0.000 |
| 183.15 | 0.738 | 0.52 | 342.6 | 342.5 | 0.0 | 1.33 | 1.33 | -0.1 | 0.012 |
| 183.15 | 1.465 | 1.11 | 328.6 | 328.3 | -0.1 | 1.13 | 1.13 | -0.2 | 0.008 |
| 183.15 | 2.083 | 1.71 | 315.1 | 314.8 | -0.1 | 0.94 | 0.93 | -0.2 | 0.007 |
| 183.15 | 2.587 | 2.31 | 302.4 | 302.2 | -0.1 | 0.76 | 0.76 | -0.1 | 0.006 |
| 183.15 | 2.995 | 2.91 | 290.4 | 290.3 | -0.1 | 0.59 | 0.59 | -0.2 | 0.005 |
| 183.15 | 3.307 | 3.51 | 279.1 | 278.9 | -0.1 | 0.45 | 0.45 | -0.2 | 0.000 |
| 183.15 | 3.537 | 4.12 | 268.4 | 267.6 | -0.3 | 0.31 | 0.31 | -0.6 | 0.000 |
| 173.15 | 0.694 | 0.52 | 331.5 | 331.3 | -0.1 | 1.24 | 1.24 | -0.1 | 0.011 |
| 173.15 | 1.363 | 1.11 | 315.8 | 315.5 | -0.1 | 1.02 | 1.02 | -0.2 | 0.008 |
| 173.15 | 1.915 | 1.71 | 300.4 | 300.1 | -0.1 | 0.82 | 0.81 | -0.3 | 0.006 |
| 173.15 | 2.344 | 2.31 | 285.7 | 285.2 | -0.2 | 0.62 | 0.62 | -0.4 | 0.006 |
| 163.15 | 0.649 | 0.52 | 319.9 | 319.7 | -0.1 | 1.14 | 1.14 | -0.2 | 0.011 |
| 163.15 | 1.259 | 1.12 | 302.2 | 302.0 | -0.1 | 0.91 | 0.91 | -0.2 | 0.008 |
| 163.15 | 1.740 | 1.72 | 284.6 | 283.9 | -0.2 | 0.69 | 0.68 | -0.4 | 0.006 |
| 153.15 | 0.604 | 0.52 | 307.7 | 307.5 | -0.1 | 1.05 | 1.05 | -0.1 | 0.011 |
| 143.15 | 0.557 | 0.52 | 294.9 | 294.7 | -0.1 | 0.95 | 0.95 | -0.2 | 0.010 |
| 190.50 | 4.592 | 11.19 | 200.3 | 237.3 | 18.4 | 0.00 | 0.00 | 19.1 | 0.000 |
| 190.50 | 4.592 | 11.33 | 203.1 | 239.4 | 17.9 | 0.00 | 0.00 | 27.3 | 0.000 |
| 190.50 | 4.592 | 11.28 | 203.4 | 238.6 | 17.3 | 0.00 | 0.00 | 63.1 | 0.000 |
| 190.50 | 4.592 | 11.33 | 203.6 | 239.4 | 17.5 | 0.00 | 0.00 | 25.3 | 0.000 |
| 190.50 | 4.594 | 11.61 | 215.4 | 244.4 | 13.4 | 0.01 | 0.01 | 30.0 | 0.000 |
| 190.43 | 4.582 | 11.59 | 209.1 | 243.3 | 16.4 | 0.00 | 0.01 | 51.9 | 0.000 |
| 190.43 | 4.584 | 11.77 | 217.7 | 247.2 | 13.5 | 0.01 | 0.01 | 38.9 | 0.000 |
| 190.25 | 4.556 | 12.09 | 224.4 | 253.7 | 13.0 | 0.01 | 0.02 | 25.5 | 0.000 |
| 190.25 | 4.557 | 12.15 | 227.1 | 255.3 | 12.4 | 0.01 | 0.02 | 31.0 | 0.000 |
| 189.65 | 4.471 | 13.01 | 259.0 | 281.4 | 8.6 | 0.05 | 0.05 | 18.4 | 0.000 |
| 189.65 | 4.472 | 13.03 | 259.7 | 282.0 | 8.6 | 0.05 | 0.06 | 18.5 | 0.000 |
| 188.15 | 4.267 | 14.21 | 314.1 | 331.0 | 5.4 | 0.16 | 0.18 | 11.0 | 0.000 |
| 188.15 | 4.267 | 14.22 | 314.2 | 331.1 | 5.4 | 0.16 | 0.18 | 10.6 | 0.000 |

Data from Gammon and Douslin [37] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $m\cdot s^{-1}$ | $m\cdot s^{-1}$ | % | $MPa\cdot dm^3\cdot mol^{-1}$ | | % | |
| 185.91 | 3.977 | 15.32 | 374.2 | 385.6 | 3.0 | 0.37 | 0.40 | 6.0 | 0.000 |
| 183.15 | 3.642 | 16.31 | 434.9 | 440.5 | 1.3 | 0.68 | 0.69 | 2.5 | 0.000 |
| 183.15 | 3.642 | 16.31 | 435.0 | 440.5 | 1.3 | 0.68 | 0.69 | 2.6 | 0.000 |
| 178.15 | 3.092 | 17.67 | 528.4 | 527.1 | -0.2 | 1.31 | 1.31 | -0.5 | 9.928 |
| 173.15 | 2.606 | 18.75 | 610.0 | 606.1 | -0.6 | 2.05 | 2.02 | -1.3 | 5.181 |
| 170.75 | 2.394 | 19.21 | 646.5 | 642.1 | -0.7 | 2.43 | 2.40 | -1.4 | 4.019 |
| 163.15 | 1.804 | 20.49 | 754.1 | 749.6 | -0.6 | 3.77 | 3.72 | -1.3 | 2.608 |
| 155.44 | 1.321 | 21.60 | 854.4 | 850.2 | -0.5 | 5.29 | 5.23 | -1.1 | 2.024 |
| 153.15 | 1.197 | 21.91 | 882.8 | 878.7 | -0.5 | 5.77 | 5.71 | -1.1 | 1.908 |
| 143.15 | 0.753 | 23.14 | 1001.9 | 997.9 | -0.4 | 8.06 | 7.98 | -1.0 | 1.544 |
| 140.02 | 0.643 | 23.50 | 1037.6 | 1033.5 | -0.4 | 8.84 | 8.75 | -1.0 | 1.461 |
| 133.15 | 0.443 | 24.24 | 1113.9 | 1109.5 | -0.4 | 10.64 | 10.53 | -1.0 | 1.311 |
| 125.09 | 0.271 | 25.06 | 1200.3 | 1195.1 | -0.4 | 12.92 | 12.77 | -1.1 | 1.174 |
| 123.15 | 0.239 | 25.26 | 1220.6 | 1215.2 | -0.4 | 13.49 | 13.34 | -1.1 | 1.146 |
| 113.15 | 0.115 | 26.20 | 1322.7 | 1316.2 | -0.5 | 16.64 | 16.43 | -1.3 | 1.022 |
| 190.43 | 4.582 | 8.78 | 206.8 | 234.7 | 13.5 | 0.00 | 0.00 | 38.7 | 0.000 |
| 190.37 | 4.572 | 8.44 | 215.8 | 236.8 | 9.8 | 0.01 | 0.01 | 17.3 | 0.000 |
| 190.35 | 4.569 | 8.40 | 215.6 | 237.0 | 9.9 | 0.01 | 0.01 | 24.2 | 0.000 |
| 190.25 | 4.556 | 8.22 | 220.8 | 237.9 | 7.7 | 0.01 | 0.01 | 21.7 | 0.000 |
| 190.03 | 4.523 | 7.79 | 229.7 | 240.7 | 4.8 | 0.02 | 0.02 | 12.0 | 0.000 |
| 189.97 | 4.516 | 7.74 | 230.0 | 240.9 | 4.7 | 0.02 | 0.02 | 9.8 | 0.000 |
| 189.65 | 4.471 | 7.36 | 235.9 | 243.1 | 3.1 | 0.03 | 0.03 | 6.1 | 0.000 |
| 189.65 | 4.471 | 7.36 | 235.9 | 243.2 | 3.1 | 0.03 | 0.03 | 6.6 | 0.000 |
| 189.50 | 4.448 | 7.15 | 239.3 | 244.7 | 2.3 | 0.04 | 0.04 | 3.5 | 0.000 |
| 189.40 | 4.436 | 7.12 | 239.1 | 244.6 | 2.3 | 0.04 | 0.04 | 4.3 | 0.000 |
| 188.70 | 4.336 | 6.54 | 246.2 | 248.4 | 0.9 | 0.07 | 0.07 | 1.6 | 0.000 |
| 188.60 | 4.326 | 6.52 | 245.9 | 248.3 | 0.9 | 0.07 | 0.07 | 1.4 | 0.000 |
| 188.15 | 4.266 | 6.26 | 248.2 | 249.7 | 0.6 | 0.08 | 0.08 | 1.4 | 0.000 |
| 187.60 | 4.189 | 5.95 | 251.3 | 251.9 | 0.2 | 0.10 | 0.11 | 0.3 | 0.000 |
| 187.45 | 4.173 | 5.92 | 251.2 | 251.8 | 0.2 | 0.11 | 0.11 | 0.1 | 0.000 |
| 186.10 | 3.993 | 5.33 | 256.1 | 255.7 | -0.2 | 0.16 | 0.16 | -0.6 | 0.000 |
| 185.90 | 3.974 | 5.30 | 256.0 | 255.5 | -0.2 | 0.16 | 0.16 | -0.4 | 0.000 |
| 184.15 | 3.751 | 4.73 | 260.5 | 259.5 | -0.4 | 0.22 | 0.21 | -0.7 | 0.000 |
| 183.90 | 3.729 | 4.70 | 260.4 | 259.3 | -0.4 | 0.22 | 0.22 | -0.9 | 0.000 |
| 183.15 | 3.641 | 4.50 | 261.7 | 260.6 | -0.4 | 0.24 | 0.24 | -0.7 | 0.000 |

Data from Gammon and Douslin [37] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 181.55 | 3.451 | 4.12 | 264.7 | 263.5 | -0.5 | 0.29 | 0.28 | -1.1 | 0.000 |
| 181.30 | 3.429 | 4.08 | 264.8 | 263.4 | -0.5 | 0.29 | 0.29 | -1.1 | 0.000 |
| 178.25 | 3.098 | 3.51 | 269.0 | 267.7 | -0.5 | 0.37 | 0.37 | -0.9 | 0.005 |
| 178.05 | 3.080 | 3.48 | 269.1 | 267.8 | -0.5 | 0.37 | 0.37 | -0.9 | 0.005 |
| 174.25 | 2.699 | 2.91 | 273.7 | 272.5 | -0.4 | 0.46 | 0.46 | -1.0 | 0.005 |
| 173.95 | 2.678 | 2.89 | 273.6 | 272.4 | -0.5 | 0.46 | 0.46 | -0.9 | 0.005 |
| 173.15 | 2.605 | 2.79 | 274.4 | 273.2 | -0.5 | 0.48 | 0.48 | -1.0 | 0.005 |
| 169.15 | 2.241 | 2.31 | 278.6 | 277.6 | -0.4 | 0.57 | 0.56 | -0.7 | 0.005 |
| 168.55 | 2.209 | 2.28 | 278.3 | 277.3 | -0.4 | 0.57 | 0.56 | -0.8 | 0.005 |
| 163.15 | 1.803 | 1.81 | 281.9 | 281.0 | -0.3 | 0.65 | 0.65 | -0.7 | 0.006 |
| 162.65 | 1.730 | 1.72 | 283.8 | 283.1 | -0.3 | 0.68 | 0.68 | -0.5 | 0.006 |
| 161.45 | 1.687 | 1.68 | 282.8 | 282.0 | -0.3 | 0.68 | 0.67 | -0.6 | 0.006 |
| 155.05 | 1.173 | 1.12 | 290.5 | 290.2 | -0.1 | 0.82 | 0.82 | -0.2 | 0.007 |
| 153.15 | 1.196 | 1.17 | 285.8 | 285.2 | -0.2 | 0.77 | 0.77 | -0.4 | 0.007 |
| 150.65 | 1.071 | 1.05 | 286.3 | 285.8 | -0.2 | 0.80 | 0.79 | -0.4 | 0.007 |
| 148.15 | 0.956 | 0.94 | 286.6 | 286.1 | -0.2 | 0.82 | 0.81 | -0.3 | 0.008 |
| 143.15 | 0.752 | 0.74 | 286.6 | 286.2 | -0.1 | 0.85 | 0.85 | -0.3 | 0.009 |
| 138.15 | 0.533 | 0.52 | 288.2 | 288.0 | -0.1 | 0.90 | 0.90 | -0.2 | 0.010 |
| 133.15 | 0.442 | 0.44 | 284.6 | 284.2 | -0.1 | 0.89 | 0.88 | -0.3 | 0.011 |
| 123.15 | 0.238 | 0.25 | 279.9 | 279.4 | -0.2 | 0.89 | 0.89 | -0.3 | 0.014 |
| 113.15 | 0.114 | 0.13 | 272.8 | 271.8 | -0.4 | 0.87 | 0.87 | -0.8 | 0.019 |

Number of Points (Ref.37) 196

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 3.379 | BIAS-% | 3.196 | RMS-% | 5.712 | |
| | AAD | 7.556 | BIAS | 6.649 | RMS | 11.888 | $m \cdot s^{-1}$ |
| DERIVATIVE: | AAD-% | 7.363 | BIAS-% | 6.963 | RMS-% | 15.048 | |
| | AAD | 0.007 | BIAS | -0.005 | RMS | 0.025 | $MPa \cdot dm^3 \cdot mol^{-1}$ |

Number of Points (Ref. 37) 138 outside critical region

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.844 | BIAS-% | 0.584 | RMS-% | 1.752 | |
| | AAD | 2.489 | BIAS | 1.200 | RMS | 4.765 | $m \cdot s^{-1}$ |

Data from Sivaramin and Gammon [44]

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 193.05 | 1.4555 | - | 342.31 | 342.20 | -0.032 | - | - | - | - |
| 193.05 | 3.4464 | - | 304.34 | 304.34 | 0.000 | - | - | - | - |
| 193.05 | 4.4289 | - | 277.41 | 278.04 | 0.228 | - | - | - | - |
| 193.05 | 4.8182 | - | 257.92 | 259.05 | 0.439 | - | - | - | - |
| 193.05 | 4.9370 | - | 245.84 | 249.23 | 1.378 | - | - | - | - |
| 193.05 | 5.0192 | - | 264.32 | 266.94 | 0.992 | - | - | - | - |
| 193.05 | 5.1745 | - | 313.12 | 315.90 | 0.889 | - | - | - | - |
| 193.05 | 5.6433 | - | 392.17 | 393.83 | 0.424 | - | - | - | - |
| 195.15 | 1.4748 | - | 344.79 | 344.64 | -0.042 | - | - | - | - |
| 195.15 | 3.5174 | - | 307.89 | 307.88 | -0.001 | - | - | - | - |
| 195.15 | 4.5645 | - | 282.46 | 283.24 | 0.276 | - | - | - | - |
| 195.15 | 5.0281 | - | 266.32 | 267.32 | 0.377 | - | - | - | - |
| 195.15 | 5.2175 | - | 261.11 | 261.87 | 0.294 | - | - | - | - |
| 195.15 | 5.3794 | - | 283.72 | 284.34 | 0.218 | - | - | - | - |
| 195.15 | 5.6169 | - | 330.36 | 331.88 | 0.460 | - | - | - | - |
| 195.15 | 6.1971 | - | 406.00 | 406.25 | 0.062 | - | - | - | - |
| 200.15 | 1.5200 | - | 350.48 | 350.36 | -0.034 | - | - | - | - |
| 200.15 | 3.6831 | - | 316.08 | 316.10 | 0.004 | - | - | - | - |
| 200.15 | 4.8817 | - | 293.83 | 294.72 | 0.303 | - | - | - | - |
| 200.15 | 5.3444 | - | 285.38 | 286.65 | 0.443 | - | - | - | - |
| 200.15 | 5.8840 | - | 286.39 | 286.68 | 0.101 | - | - | - | - |
| 200.15 | 6.2521 | - | 315.80 | 316.11 | 0.097 | - | - | - | - |
| 200.15 | 6.6840 | - | 361.70 | 361.84 | 0.041 | - | - | - | - |
| 200.15 | 7.5229 | - | 433.29 | 431.98 | -0.301 | - | - | - | - |
| 210.15 | 1.6096 | - | 361.65 | 361.42 | -0.064 | - | - | - | - |
| 210.15 | 3.9818 | - | 331.92 | 331.97 | 0.016 | - | - | - | - |
| 210.15 | 5.4978 | - | 314.59 | 315.28 | 0.221 | - | - | - | - |
| 210.15 | 6.4755 | - | 310.70 | 311.65 | 0.306 | - | - | - | - |
| 210.15 | 7.2020 | - | 322.91 | 322.90 | -0.001 | - | - | - | - |
| 210.15 | 7.9731 | - | 357.87 | 357.09 | -0.218 | - | - | - | - |
| 210.15 | 8.8393 | - | 407.26 | 405.64 | -0.398 | - | - | - | - |
| 210.15 | 10.1705 | - | 476.05 | 473.81 | -0.470 | - | - | - | - |
| 223.15 | 1.7246 | - | 375.27 | 375.11 | -0.043 | - | - | - | - |
| 223.15 | 4.3776 | - | 350.79 | 350.77 | -0.004 | - | - | - | - |
| 223.15 | 6.2730 | - | 338.77 | 339.21 | 0.131 | - | - | - | - |

Data from Sivaramin and Gammon [44] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 223.15 | 7.6782 | - | 341.08 | 341.36 | 0.082 | - | - | - | - |
| 223.15 | 8.8588 | - | 360.17 | 358.52 | -0.458 | - | - | - | - |
| 223.15 | 10.2272 | - | 400.90 | 398.98 | -0.478 | - | - | - | - |
| 223.15 | 11.8153 | - | 453.11 | 456.85 | 0.825 | - | - | - | - |
| 248.15 | 1.9419 | - | 399.71 | 399.49 | -0.055 | - | - | - | - |
| 248.15 | 5.1074 | - | 383.14 | 383.12 | -0.005 | - | - | - | - |
| 248.15 | 7.6438 | - | 379.16 | 379.36 | 0.055 | - | - | - | - |
| 248.15 | 9.8765 | - | 389.83 | 389.51 | -0.081 | - | - | - | - |
| 248.15 | 11.9829 | - | 417.23 | 415.15 | -0.497 | - | - | - | - |
| 248.15 | 14.4705 | - | 464.55 | 463.08 | -0.317 | - | - | - | - |
| 273.15 | 2.1550 | - | 421.74 | 421.67 | -0.017 | - | - | - | - |
| 273.15 | 5.8826 | - | 411.50 | 411.42 | -0.019 | - | - | - | - |
| 273.15 | 9.0367 | - | 413.83 | 413.86 | 0.007 | - | - | - | - |
| 273.15 | 11.9865 | - | 430.46 | 429.89 | -0.133 | - | - | - | - |
| 273.15 | 15.1102 | - | 463.69 | 462.90 | -0.171 | - | - | - | - |
| 273.15 | 18.6778 | - | 516.55 | 515.58 | -0.189 | - | - | - | - |
| 298.15 | 2.3772 | - | 441.86 | 441.95 | 0.022 | - | - | - | - |
| 298.15 | 4.5805 | - | 438.02 | 437.88 | -0.032 | - | - | - | - |
| 298.15 | 6.6411 | - | 437.04 | 436.87 | -0.039 | - | - | - | - |
| 298.15 | 8.5992 | - | 439.19 | 439.07 | -0.027 | - | - | - | - |
| 298.15 | 10.4926 | - | 444.59 | 444.61 | 0.004 | - | - | - | - |
| 298.15 | 12.3602 | - | 453.65 | 453.61 | -0.007 | - | - | - | - |
| 298.15 | 14.2422 | - | 466.56 | 466.31 | -0.053 | - | - | - | - |
| 298.15 | 16.1884 | - | 483.45 | 483.05 | -0.083 | - | - | - | - |
| 298.15 | 18.2474 | - | 504.86 | 504.20 | -0.131 | - | - | - | - |
| 298.15 | 20.4839 | - | 531.11 | 530.26 | -0.160 | - | - | - | - |
| 298.15 | 22.9728 | - | 562.60 | 561.69 | -0.162 | - | - | - | - |
| 323.15 | 2.5998 | - | 460.66 | 460.70 | 0.010 | - | - | - | - |
| 323.15 | 5.0523 | - | 459.14 | 458.86 | -0.061 | - | - | - | - |
| 323.15 | 7.3921 | - | 460.30 | 460.03 | -0.058 | - | - | - | - |
| 323.15 | 9.6586 | - | 464.64 | 464.41 | -0.049 | - | - | - | - |
| 323.15 | 11.8912 | - | 472.31 | 472.12 | -0.039 | - | - | - | - |
| 323.15 | 14.1263 | - | 483.53 | 483.31 | -0.045 | - | - | - | - |

Data from Sivaramin and Gammon [44] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $m\cdot s^{-1}$ | $m\cdot s^{-1}$ | % | $MPa\cdot dm^3\cdot mol^{-1}$ | | % | |
| 323.15 | 16.4214 | - | 498.55 | 498.27 | -0.055 | - | - | - | - |
| 323.15 | 18.8148 | - | 517.76 | 517.22 | -0.105 | - | - | - | - |
| 323.15 | 21.3771 | - | 541.31 | 540.62 | -0.126 | - | - | - | - |
| 323.15 | 24.1556 | - | 569.45 | 568.68 | -0.135 | - | - | - | - |
| 348.15 | 2.8212 | - | 478.08 | 478.19 | 0.023 | - | - | - | - |
| 348.15 | 5.5215 | - | 478.58 | 478.28 | -0.063 | - | - | - | - |
| 348.15 | 11.9927 | - | 492.36 | 491.99 | -0.074 | - | - | - | - |
| 348.15 | 13.2802 | - | 497.55 | 497.23 | -0.065 | - | - | - | - |
| 348.15 | 15.8908 | - | 510.84 | 510.36 | -0.093 | - | - | - | - |
| 348.15 | 18.5881 | - | 527.81 | 527.21 | -0.114 | - | - | - | - |
| 348.15 | 21.4232 | - | 548.62 | 548.02 | -0.109 | - | - | - | - |
| 348.15 | 24.4792 | - | 573.98 | 573.27 | -0.124 | - | - | - | - |
| 373.15 | 3.0434 | - | 494.48 | 494.64 | 0.033 | - | - | - | - |
| 373.15 | 5.9932 | - | 496.63 | 496.45 | -0.035 | - | - | - | - |
| 373.15 | 8.8836 | - | 501.54 | 501.22 | -0.063 | - | - | - | - |
| 373.15 | 11.7603 | - | 509.58 | 509.17 | -0.081 | - | - | - | - |
| 373.15 | 14.6627 | - | 520.99 | 520.46 | -0.102 | - | - | - | - |
| 373.15 | 17.6313 | - | 535.78 | 535.22 | -0.104 | - | - | - | - |
| 373.15 | 20.7423 | - | 554.36 | 553.81 | -0.098 | - | - | - | - |
| 373.15 | 24.0067 | - | 576.81 | 576.19 | -0.108 | - | - | - | - |
| 373.15 | 27.5422 | - | 603.75 | 602.97 | -0.129 | - | - | - | - |
| 398.15 | 3.2337 | - | 510.22 | 510.24 | 0.003 | - | - | - | - |
| 398.15 | 6.4583 | - | 513.95 | 513.61 | -0.065 | - | - | - | - |
| 398.15 | 9.6228 | - | 520.31 | 519.91 | -0.077 | - | - | - | - |
| 398.15 | 12.8003 | - | 529.93 | 529.37 | -0.106 | - | - | - | - |
| 398.15 | 16.0370 | - | 542.82 | 542.18 | -0.119 | - | - | - | - |
| 398.15 | 19.3679 | - | 559.18 | 558.45 | -0.130 | - | - | - | - |
| 398.15 | 22.8752 | - | 579.33 | 578.53 | -0.139 | - | - | - | - |
| 398.15 | 26.6023 | - | 603.37 | 602.55 | -0.136 | - | - | - | - |
| 423.15 | 3.4839 | - | 525.07 | 525.18 | 0.022 | - | - | - | - |
| 423.15 | 6.9249 | - | 530.37 | 529.96 | -0.077 | - | - | - | - |
| 423.15 | 10.3612 | - | 538.16 | 537.66 | -0.092 | - | - | - | - |
| 423.15 | 13.8385 | - | 549.13 | 548.51 | -0.112 | - | - | - | - |
| 423.15 | 17.4008 | - | 563.41 | 562.69 | -0.127 | - | - | - | - |
| 423.15 | 21.1001 | - | 581.48 | 580.38 | -0.188 | - | - | - | - |
| 423.15 | 24.9969 | - | 602.88 | 601.80 | -0.179 | - | - | - | - |

Data from Sivaramin and Gammon [44] (continued)

Number of Points (Ref.44) 104

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.164 | BIAS-% | 0.005 | RMS-% | 0.272 | |
| | AAD | 0.643 | BIAS | -0.124 | RMS | 0.939 | $m \cdot s^{-1}$ |

Data from Straty [58]

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial \rho\|_T$ exp | $\partial P/\partial \rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 91.00 | 0.012 | 28.12 | 1538.1 | 1544.9 | 0.4 | 24.03 | 24.33 | 1.3 | 8.604 |
| 92.00 | 0.014 | 28.04 | 1528.7 | 1532.8 | 0.3 | 23.74 | 23.93 | 0.8 | 8.658 |
| 96.00 | 0.022 | 27.70 | 1490.6 | 1487.7 | -0.2 | 22.48 | 22.39 | -0.4 | 8.913 |
| 100.00 | 0.034 | 27.36 | 1452.2 | 1446.2 | -0.4 | 21.13 | 20.92 | -1.0 | 9.213 |
| 101.73 | 0.041 | 27.21 | 1435.5 | 1428.9 | -0.5 | 20.53 | 20.30 | -1.1 | -0.000 |
| 104.00 | 0.051 | 27.02 | 1413.4 | 1406.3 | -0.5 | 19.74 | 19.50 | -1.2 | 9.553 |
| 108.00 | 0.074 | 26.66 | 1373.8 | 1367.0 | -0.5 | 18.36 | 18.12 | -1.3 | 9.933 |
| 112.00 | 0.104 | 26.30 | 1334.1 | 1327.6 | -0.5 | 17.01 | 16.80 | -1.3 | 10.349 |
| 116.00 | 0.143 | 25.94 | 1294.0 | 1287.8 | -0.5 | 15.71 | 15.52 | -1.2 | 10.807 |
| 120.00 | 0.192 | 25.56 | 1252.9 | 1247.5 | -0.4 | 14.45 | 14.28 | -1.1 | 2.263 |
| 124.00 | 0.252 | 25.17 | 1211.3 | 1206.4 | -0.4 | 13.23 | 13.09 | -1.1 | 2.377 |
| 128.00 | 0.325 | 24.77 | 1169.1 | 1164.6 | -0.4 | 12.06 | 11.94 | -1.0 | 2.503 |
| 132.00 | 0.414 | 24.36 | 1126.0 | 1121.9 | -0.4 | 10.94 | 10.84 | -1.0 | 2.646 |
| 136.00 | 0.518 | 23.94 | 1082.2 | 1078.4 | -0.4 | 9.86 | 9.77 | -0.9 | 2.809 |
| 140.00 | 0.642 | 23.50 | 1037.4 | 1033.8 | -0.4 | 8.84 | 8.76 | -0.9 | 2.997 |
| 144.00 | 0.785 | 23.04 | 991.7 | 988.0 | -0.4 | 7.85 | 7.78 | -0.9 | 3.218 |
| 120.00 | 0.192 | 25.56 | 1252.8 | 1247.5 | -0.4 | 14.44 | 14.28 | -1.1 | -0.000 |
| 140.00 | 0.642 | 23.50 | 1037.4 | 1033.8 | -0.4 | 8.84 | 8.76 | -0.9 | -0.001 |
| 148.00 | 0.949 | 22.56 | 944.8 | 941.1 | -0.4 | 6.91 | 6.85 | -1.0 | 3.482 |
| 150.00 | 1.040 | 22.31 | 921.0 | 917.2 | -0.4 | 6.46 | 6.40 | -1.0 | 3.635 |
| 152.00 | 1.138 | 22.06 | 896.6 | 892.9 | -0.4 | 6.02 | 5.96 | -1.0 | 3.807 |
| 156.00 | 1.352 | 21.53 | 846.9 | 843.1 | -0.5 | 5.17 | 5.11 | -1.1 | 4.219 |
| 160.00 | 1.593 | 20.96 | 795.5 | 791.5 | -0.5 | 4.36 | 4.31 | -1.1 | 4.767 |
| 160.00 | 1.593 | 20.96 | 795.5 | 791.5 | -0.5 | 4.36 | 4.31 | -1.1 | -0.001 |
| 164.00 | 1.863 | 20.36 | 742.2 | 738.0 | -0.6 | 3.61 | 3.56 | -1.3 | 5.545 |

Data from Straty [58] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 168.00 | 2.166 | 19.70 | 686.3 | 682.1 | -0.6 | 2.89 | 2.85 | -1.3 | 6.789 |
| 170.00 | 2.329 | 19.35 | 657.5 | 653.1 | -0.7 | 2.56 | 2.52 | -1.4 | 7.766 |
| 172.00 | 2.502 | 18.97 | 627.5 | 623.4 | -0.6 | 2.23 | 2.20 | -1.3 | 9.281 |
| 176.00 | 2.874 | 18.16 | 564.1 | 561.7 | -0.4 | 1.62 | 1.60 | -0.8 | 84.709 |
| 178.00 | 3.075 | 17.70 | 530.5 | 529.5 | -0.2 | 1.33 | 1.33 | -0.4 | 86.608 |
| 180.00 | 3.286 | 17.20 | 495.0 | 496.1 | 0.2 | 1.06 | 1.07 | 0.4 | 0.000 |
| 182.00 | 3.508 | 16.65 | 457.7 | 461.3 | 0.8 | 0.81 | 0.83 | 1.6 | 0.000 |
| 184.00 | 3.742 | 16.03 | 417.2 | 424.3 | 1.7 | - | - | - | - |
| 186.00 | 3.988 | 15.28 | 370.9 | 383.5 | 3.4 | - | - | - | - |
| 100.00* | 33.385 | 28.67 | 1672.6 | 1670.2 | -0.1 | 30.30 | 30.28 | -0.1 | 3.277 |
| 100.00 | 26.077 | 28.42 | 1630.7 | 1629.1 | -0.1 | 28.40 | 28.39 | 0.0 | 3.388 |
| 100.00 | 19.123 | 28.17 | 1588.1 | 1586.8 | -0.1 | 26.54 | 26.53 | 0.0 | 3.508 |
| 100.00 | 13.088 | 27.93 | 1548.5 | 1546.8 | -0.1 | 24.88 | 24.84 | -0.1 | 3.627 |
| 100.00 | 7.244 | 27.69 | 1507.4 | 1504.6 | -0.2 | 23.23 | 23.14 | -0.4 | 3.759 |
| 100.00 | 1.661 | 27.44 | 1465.1 | 1460.1 | -0.3 | 21.61 | 21.43 | -0.8 | 3.903 |
| 120.00 | 31.161 | 27.21 | 1517.2 | 1508.6 | -0.6 | 23.78 | 23.53 | -1.1 | 0.745 |
| 120.00 | 26.233 | 27.00 | 1482.8 | 1475.6 | -0.5 | 22.41 | 22.20 | -0.9 | 0.769 |
| 120.00 | 19.980 | 26.70 | 1436.0 | 1430.4 | -0.4 | 20.62 | 20.46 | -0.8 | 0.803 |
| 120.00 | 15.149 | 26.46 | 1397.0 | 1392.3 | -0.3 | 19.20 | 19.06 | -0.7 | 0.834 |
| 120.00 | 9.258 | 26.13 | 1345.2 | 1341.1 | -0.3 | 17.40 | 17.27 | -0.7 | 0.878 |
| 120.00 | 4.367 | 25.84 | 1290.5 | 1293.3 | 0.2 | 15.66 | 15.70 | 0.3 | 0.929 |
| 150.00 | 34.530 | 25.26 | 1339.6 | 1326.9 | -0.9 | 17.56 | 17.24 | -1.8 | 0.881 |
| 150.00 | 28.845 | 24.91 | 1290.0 | 1279.6 | -0.8 | 15.92 | 15.67 | -1.6 | 0.929 |
| 150.00 | 23.669 | 24.57 | 1240.3 | 1232.1 | -0.7 | 14.37 | 14.19 | -1.3 | 0.982 |
| 150.00 | 18.433 | 24.18 | 1184.6 | 1178.6 | -0.5 | 12.73 | 12.61 | -1.0 | 1.050 |
| 150.00 | 12.667 | 23.68 | 1114.5 | 1110.7 | -0.3 | 10.83 | 10.76 | -0.7 | 1.149 |
| 150.00 | 7.263 | 23.13 | 1036.6 | 1034.0 | -0.3 | 8.92 | 8.87 | -0.6 | 1.284 |
| 150.00 | 3.020 | 22.60 | 962.1 | 959.1 | -0.3 | 7.28 | 7.23 | -0.7 | 3.378 |
| 170.00 | 31.457 | 23.58 | 1183.8 | 1172.5 | -1.0 | 12.99 | 12.75 | -1.9 | 1.045 |
| 170.00 | 26.994 | 23.21 | 1135.5 | 1126.4 | -0.8 | 11.66 | 11.48 | -1.6 | 1.111 |
| 170.00 | 20.773 | 22.62 | 1059.2 | 1053.0 | -0.6 | 9.72 | 9.61 | -1.1 | 1.235 |
| 170.00 | 17.538 | 22.27 | 1013.9 | 1009.2 | -0.5 | 8.65 | 8.58 | -0.9 | 1.322 |
| 170.00 | 13.012 | 21.68 | 940.7 | 937.9 | -0.3 | 7.08 | 7.04 | -0.6 | 1.494 |
| 170.00 | 7.774 | 20.81 | 833.5 | 831.5 | -0.2 | 5.09 | 5.06 | -0.5 | 1.857 |
| 170.00 | 4.528 | 20.06 | 742.9 | 740.1 | -0.4 | 3.67 | 3.64 | -0.8 | 2.367 |

Data from Straty [58] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial \rho\|_T$ exp | $\partial P/\partial \rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 184.00 | 34.254 | 22.75 | 1129.0 | 1117.6 | -1.0 | 11.68 | 11.45 | -2.0 | 4.466 |
| 184.00 | 27.883 | 22.15 | 1055.1 | 1046.9 | -0.8 | 9.81 | 9.66 | -1.5 | 4.946 |
| 184.00 | 22.511 | 21.54 | 982.8 | 977.2 | -0.6 | 8.14 | 8.06 | -1.1 | 5.533 |
| 184.00 | 17.862 | 20.90 | 909.0 | 905.6 | -0.4 | 6.62 | 6.58 | -0.7 | 6.306 |
| 184.00 | 13.839 | 20.21 | 831.9 | 830.0 | -0.2 | 5.22 | 5.19 | -0.4 | 7.413 |
| 184.00 | 10.436 | 19.46 | 751.2 | 749.2 | -0.3 | 3.93 | 3.91 | -0.5 | 9.183 |
| 184.00 | 7.722 | 18.65 | 666.6 | 664.2 | -0.4 | 2.79 | 2.77 | -0.7 | 12.672 |
| 184.00 | 5.770 | 17.79 | 579.9 | 579.7 | 0.0 | 1.84 | 1.84 | 0.0 | 0.000 |
| 184.00 | 5.301 | 17.52 | 552.8 | 553.9 | 0.2 | 1.58 | 1.59 | 0.4 | 0.000 |
| 210.00 | 34.073 | 20.74 | 987.0 | 979.0 | -0.8 | 8.56 | 8.43 | -1.6 | 0.182 |
| 210.00 | 27.598 | 19.88 | 898.0 | 893.4 | -0.5 | 6.72 | 6.65 | -1.0 | 0.213 |
| 210.00 | 22.264 | 18.96 | 809.8 | 807.7 | -0.3 | 5.13 | 5.10 | -0.5 | 0.258 |
| 210.00 | 17.486 | 17.86 | 711.5 | 710.9 | -0.1 | 3.63 | 3.62 | -0.1 | 0.346 |
| 210.00 | 14.832 | 17.02 | 643.9 | 643.2 | -0.1 | 2.76 | 2.75 | -0.2 | 0.472 |
| 210.00 | 12.703 | 16.12 | 577.5 | 576.9 | -0.1 | 2.02 | 2.02 | -0.2 | 0.901 |
| 210.00 | 10.944 | 15.08 | 511.5 | 509.6 | -0.4 | 1.41 | 1.40 | -0.7 | 0.817 |
| 210.00 | 12.705 | 16.12 | 578.0 | 576.9 | -0.2 | 2.03 | 2.02 | -0.3 | -0.001 |
| 210.00 | 10.951 | 15.09 | 511.5 | 509.9 | -0.3 | 1.41 | 1.40 | -0.6 | -0.001 |
| 210.00 | 10.173 | 14.47 | 477.0 | 475.2 | -0.4 | 1.14 | 1.13 | -0.7 | 0.607 |
| 210.00 | 9.646 | 13.96 | 451.2 | 449.6 | -0.4 | 0.95 | 0.95 | -0.7 | 0.533 |
| 240.00 | 34.638 | 18.49 | 863.5 | 858.7 | -0.6 | 6.40 | 6.33 | -1.1 | 0.226 |
| 240.00 | 29.111 | 17.51 | 782.7 | 780.0 | -0.3 | 5.00 | 4.96 | -0.7 | 0.274 |
| 240.00 | 24.656 | 16.49 | 707.0 | 705.7 | -0.2 | 3.86 | 3.84 | -0.4 | 0.348 |
| 240.00 | 20.885 | 15.36 | 632.6 | 632.2 | -0.1 | 2.89 | 2.89 | -0.1 | 0.500 |
| 240.00 | 24.662 | 16.49 | 706.8 | 705.8 | -0.1 | 3.85 | 3.84 | -0.3 | -0.000 |
| 240.00 | 20.886 | 15.36 | 632.8 | 632.2 | -0.1 | 2.90 | 2.89 | -0.2 | -0.000 |
| 240.00 | 18.890 | 14.61 | 588.8 | 588.4 | -0.1 | 2.40 | 2.40 | -0.2 | 0.746 |
| 240.00 | 16.841 | 13.65 | 540.2 | 539.4 | -0.2 | 1.91 | 1.91 | -0.3 | 1.662 |
| 240.00 | 15.186 | 12.68 | 498.4 | 497.3 | -0.2 | 1.55 | 1.54 | -0.4 | 0.711 |
| 240.00 | 14.071 | 11.90 | 469.8 | 468.4 | -0.3 | 1.33 | 1.32 | -0.6 | 0.582 |
| 270.00 | 34.769 | 16.30 | 771.5 | 769.1 | -0.3 | 5.12 | 5.09 | -0.6 | 0.001 |
| 270.00 | 30.486 | 15.37 | 711.2 | 709.9 | -0.2 | 4.20 | 4.19 | -0.4 | 0.001 |
| 270.00 | 25.972 | 14.15 | 641.6 | 641.0 | -0.1 | 3.27 | 3.27 | -0.2 | 0.002 |
| 270.00 | 21.837 | 12.70 | 572.8 | 572.3 | -0.1 | 2.49 | 2.49 | -0.2 | 0.004 |
| 300.00 | 34.838 | 14.33 | 713.9 | 712.2 | -0.2 | 4.52 | 4.50 | -0.5 | 0.001 |

Data from Straty [58] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 300.00 | 29.732 | 13.07 | 649.5 | 648.3 | -0.2 | 3.64 | 3.63 | -0.4 | 0.002 |
| 300.00 | 27.295 | 12.36 | 618.0 | 616.8 | -0.2 | 3.26 | 3.24 | -0.4 | 0.002 |
| 300.00 | 24.427 | 11.41 | 580.4 | 579.5 | -0.2 | 2.84 | 2.83 | -0.4 | 0.003 |
| 300.00 | 20.983 | 10.09 | 537.3 | 536.0 | -0.2 | 2.42 | 2.41 | -0.5 | 0.007 |

Number of Points (Ref. 58) 99 Data above the starred temperature for this reference were at saturation boundary.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.414 | BIAS-% | -0.268 | RMS-% | 0.502 | |
| | AAD | 3.835 | BIAS | -3.043 | RMS | 3.667 | $m \cdot s^{-1}$ |

Number of Points (Ref. 58) 91 Selected data (omitting those with negative weights). These 91 points contribute to total below.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.424 | BIAS-% | -0.264 | RMS-% | 0.522 | |
| | AAD | 3.910 | BIAS | -3.048 | RMS | 3.773 | $m \cdot s^{-1}$ |

Number of Points (Ref. 58) 97

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DERIVATIVE: | AAD-% | 0.783 | BIAS-% | -0.683 | RMS-% | 0.593 | |
| | AAD | 0.079 | BIAS | -0.067 | RMS | 0.091 | $MPa \cdot dm^3 \cdot mol^{-1}$ |

Data from Van Dael et al. [59]

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\vert_T$ exp | $\partial P/\partial\rho\vert_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $m\cdot s^{-1}$ | $m\cdot s^{-1}$ | % | $MPa\cdot dm^3\cdot mol^{-1}$ | | % | |
| 94.05 | 0.018 | 27.86 | 1509.0 | 1509.1 | 0.0 | 23.11 | 23.13 | 0.1 | 0.001 |
| 94.36 | 0.018 | 27.84 | 1507.0 | 1505.6 | -0.1 | 23.04 | 23.02 | -0.1 | 0.001 |
| 96.17 | 0.023 | 27.69 | 1489.8 | 1485.9 | -0.3 | 22.45 | 22.33 | -0.5 | 0.001 |
| 98.50 | 0.029 | 27.49 | 1466.6 | 1461.5 | -0.3 | 21.64 | 21.46 | -0.8 | 0.001 |
| 101.79 | 0.041 | 27.21 | 1433.9 | 1428.3 | -0.4 | 20.48 | 20.27 | -1.0 | 0.001 |
| 105.45 | 0.059 | 26.89 | 1400.0 | 1392.0 | -0.6 | 19.26 | 18.99 | -1.4 | 0.001 |
| 109.09 | 0.082 | 26.57 | 1363.8 | 1356.2 | -0.6 | 18.01 | 17.76 | -1.4 | 0.001 |
| 112.79 | 0.111 | 26.23 | 1326.8 | 1319.7 | -0.5 | 16.77 | 16.54 | -1.4 | 0.001 |
| 116.07 | 0.144 | 25.93 | 1293.3 | 1287.1 | -0.5 | 15.69 | 15.50 | -1.2 | 0.001 |
| 119.78 | 0.189 | 25.58 | 1256.0 | 1249.7 | -0.5 | 14.54 | 14.35 | -1.3 | 0.001 |
| 123.81 | 0.249 | 25.19 | 1214.5 | 1208.4 | -0.5 | 13.31 | 13.15 | -1.3 | 0.001 |
| 127.96 | 0.325 | 24.78 | 1170.3 | 1165.0 | -0.4 | 12.09 | 11.95 | -1.1 | 0.001 |
| 131.97 | 0.413 | 24.37 | 1127.2 | 1122.3 | -0.4 | 10.97 | 10.84 | -1.1 | 0.001 |
| 136.17 | 0.523 | 23.92 | 1081.0 | 1076.5 | -0.4 | 9.83 | 9.73 | -1.0 | 0.001 |
| 140.23 | 0.649 | 23.47 | 1035.3 | 1031.2 | -0.4 | 8.79 | 8.70 | -1.0 | 0.001 |
| 144.49 | 0.804 | 22.98 | 986.7 | 982.4 | -0.4 | 7.74 | 7.66 | -1.1 | 0.001 |
| 149.01 | 0.995 | 22.44 | 933.3 | 929.1 | -0.5 | 6.69 | 6.62 | -1.1 | 0.001 |
| 153.78 | 1.230 | 21.83 | 875.7 | 870.9 | -0.5 | 5.65 | 5.58 | -1.3 | 0.001 |
| 158.02 | 1.470 | 21.25 | 822.2 | 817.3 | -0.6 | 4.77 | 4.70 | -1.3 | 0.001 |
| 162.81 | 1.780 | 20.54 | 759.1 | 754.1 | -0.7 | 3.83 | 3.78 | -1.4 | 0.002 |
| 167.50 | 2.126 | 19.78 | 694.3 | 689.2 | -0.7 | 2.99 | 2.94 | -1.6 | 0.002 |
| 172.02 | 2.503 | 18.97 | 628.2 | 623.1 | -0.8 | 2.23 | 2.20 | -1.6 | 0.003 |
| 176.44 | 2.918 | 18.06 | 558.1 | 554.7 | -0.6 | 1.56 | 1.54 | -1.2 | 0.008 |
| 179.47 | 3.229 | 17.34 | 506.0 | 505.1 | -0.2 | 1.14 | 1.14 | -0.4 | 0.004 |
| 182.51 | 3.567 | - | 449.0 | 452.1 | 0.7 | - | - | - | - |
| 185.93 | 3.979 | - | 374.3 | 385.0 | 2.9 | - | - | - | - |
| 187.55 | 4.187 | - | 331.5 | 346.9 | 4.7 | - | - | - | - |
| 189.60 | 4.464 | - | 273.0 | 283.3 | 3.8 | - | - | - | - |

Number of Points (Ref. 59) 28 on saturation boundary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.820 | BIAS-% | 0.037 | RMS-% | 1.342 | |
| | AAD | 5.481 | BIAS | -2.647 | RMS | 5.657 | $m\cdot s^{-1}$ |

Number of Points (Ref. 59) 24

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DERIVATIVE: | AAD-% | 1.074 | BIAS-% | -1.064 | RMS-% | 0.430 | |
| | AAD | 0.115 | BIAS | -0.112 | RMS | 0.080 | $MPa\cdot dm^3\cdot mol^{-1}$ |

Data from Van Itterbeek et al. [60]

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\vert_T$ exp | $\partial P/\partial\rho\vert_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 111.33 | 0.112 | 26.37 | 1340.9 | 1334.3 | -0.5 | 17.24 | 17.02 | -1.3 | 0.000 |
| 111.33 | 0.505 | 26.39 | 1345.0 | 1338.3 | -0.5 | 17.38 | 17.15 | -1.3 | 0.000 |
| 111.33 | 0.981 | 26.42 | 1349.6 | 1343.1 | -0.5 | 17.53 | 17.31 | -1.2 | 0.000 |
| 111.33 | 1.973 | 26.47 | 1358.7 | 1352.8 | -0.4 | 17.84 | 17.64 | -1.1 | 0.000 |
| 111.33 | 2.937 | 26.53 | 1367.0 | 1362.0 | -0.4 | 18.12 | 17.95 | -0.9 | 0.000 |
| 111.33 | 3.932 | 26.58 | 1376.6 | 1371.4 | -0.4 | 18.45 | 18.27 | -1.0 | 0.000 |
| 111.33 | 4.913 | 26.64 | 1384.8 | 1380.3 | -0.3 | 18.74 | 18.59 | -0.8 | 0.000 |
| 111.33 | 5.884 | 26.69 | 1393.1 | 1389.1 | -0.3 | 19.03 | 18.89 | -0.7 | 0.000 |
| 111.33 | 6.815 | 26.74 | 1402.1 | 1397.3 | -0.3 | 19.34 | 19.18 | -0.8 | 0.000 |
| 111.33 | 7.569 | 26.78 | 1408.5 | 1403.8 | -0.3 | 19.57 | 19.42 | -0.8 | 0.000 |
| 125.09 | 0.281 | 25.07 | 1200.6 | 1195.3 | -0.4 | 12.93 | 12.78 | -1.2 | 0.000 |
| 125.09 | 0.530 | 25.09 | 1202.9 | 1198.4 | -0.4 | 13.00 | 12.87 | -1.0 | 0.000 |
| 125.09 | 1.010 | 25.12 | 1209.0 | 1204.4 | -0.4 | 13.17 | 13.04 | -1.0 | 0.000 |
| 125.09 | 1.991 | 25.20 | 1220.8 | 1216.5 | -0.4 | 13.51 | 13.38 | -0.9 | 0.000 |
| 125.09 | 2.958 | 25.27 | 1232.1 | 1227.9 | -0.3 | 13.84 | 13.72 | -0.9 | 0.000 |
| 125.09 | 3.917 | 25.34 | 1242.7 | 1239.0 | -0.3 | 14.16 | 14.05 | -0.8 | 0.000 |
| 125.09 | 4.864 | 25.40 | 1253.8 | 1249.6 | -0.3 | 14.49 | 14.37 | -0.8 | 0.000 |
| 125.09 | 5.924 | 25.48 | 1265.1 | 1261.2 | -0.3 | 14.84 | 14.73 | -0.8 | 0.000 |
| 125.09 | 6.846 | 25.54 | 1275.0 | 1270.9 | -0.3 | 15.14 | 15.03 | -0.8 | 0.000 |
| 125.09 | 7.796 | 25.60 | 1285.0 | 1280.8 | -0.3 | 15.46 | 15.34 | -0.8 | 0.000 |
| 125.09 | 8.775 | 25.66 | 1295.0 | 1290.7 | -0.3 | 15.77 | 15.65 | -0.8 | 0.000 |
| 125.09 | 9.788 | 25.73 | 1305.2 | 1300.7 | -0.3 | 16.10 | 15.98 | -0.8 | 0.000 |
| 140.02 | 0.647 | 23.50 | 1038.5 | 1033.6 | -0.5 | 8.85 | 8.75 | -1.1 | 0.000 |
| 140.02 | 1.112 | 23.55 | 1045.0 | 1041.6 | -0.3 | 9.01 | 8.94 | -0.8 | 0.000 |
| 140.02 | 1.988 | 23.65 | 1059.5 | 1056.3 | -0.3 | 9.35 | 9.28 | -0.8 | 0.000 |
| 140.02 | 2.981 | 23.75 | 1075.0 | 1072.1 | -0.3 | 9.73 | 9.66 | -0.7 | 0.000 |
| 140.02 | 3.934 | 23.85 | 1089.1 | 1086.7 | -0.2 | 10.07 | 10.02 | -0.6 | 0.000 |
| 140.02 | 4.931 | 23.95 | 1104.0 | 1101.3 | -0.2 | 10.44 | 10.38 | -0.6 | 0.000 |
| 140.02 | 5.899 | 24.04 | 1117.9 | 1114.9 | -0.3 | 10.80 | 10.73 | -0.6 | 0.000 |
| 140.02 | 6.835 | 24.12 | 1130.6 | 1127.6 | -0.3 | 11.13 | 11.06 | -0.6 | 0.000 |
| 140.02 | 7.893 | 24.22 | 1145.3 | 1141.5 | -0.3 | 11.52 | 11.43 | -0.7 | 0.000 |
| 140.02 | 8.836 | 24.30 | 1157.0 | 1153.4 | -0.3 | 11.83 | 11.75 | -0.7 | 0.000 |
| 140.02 | 9.788 | 24.38 | 1169.5 | 1165.1 | -0.4 | 12.17 | 12.08 | -0.8 | 0.000 |
| 140.02 | 10.609 | 24.45 | 1178.7 | 1174.9 | -0.3 | 12.43 | 12.35 | -0.7 | 0.000 |
| 140.02 | 11.034 | 24.48 | 1183.9 | 1179.8 | -0.3 | 12.58 | 12.49 | -0.7 | 0.000 |

Data from Van Itterbeek et al. [60] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 155.44 | 1.368 | 21.61 | 854.0 | 851.4 | -0.3 | 5.29 | 5.25 | -0.8 | 0.000 |
| 155.44 | 2.145 | 21.76 | 872.9 | 871.5 | -0.2 | 5.63 | 5.60 | -0.5 | 0.000 |
| 155.44 | 2.915 | 21.89 | 891.3 | 890.0 | -0.1 | 5.96 | 5.94 | -0.4 | 0.000 |
| 155.44 | 3.981 | 22.06 | 915.1 | 914.0 | -0.1 | 6.41 | 6.39 | -0.3 | 0.000 |
| 155.44 | 4.953 | 22.21 | 935.5 | 934.3 | -0.1 | 6.81 | 6.79 | -0.3 | 0.000 |
| 155.44 | 5.929 | 22.35 | 954.5 | 953.5 | -0.1 | 7.20 | 7.18 | -0.3 | 0.000 |
| 155.44 | 6.737 | 22.46 | 970.5 | 968.5 | -0.2 | 7.52 | 7.49 | -0.5 | 0.000 |
| 155.44 | 7.843 | 22.60 | 990.5 | 988.0 | -0.2 | 7.95 | 7.91 | -0.5 | 0.000 |
| 155.44 | 8.876 | 22.73 | 1007.7 | 1005.3 | -0.2 | 8.33 | 8.29 | -0.5 | 0.000 |
| 155.44 | 9.778 | 22.84 | 1022.5 | 1019.8 | -0.3 | 8.66 | 8.61 | -0.6 | 0.000 |
| 155.44 | 10.842 | 22.96 | 1038.6 | 1036.1 | -0.2 | 9.04 | 8.99 | -0.5 | 0.000 |
| 155.44 | 11.814 | 23.07 | 1053.6 | 1050.4 | -0.3 | 9.39 | 9.33 | -0.6 | 0.000 |
| 155.44 | 12.777 | 23.17 | 1068.6 | 1064.0 | -0.4 | 9.74 | 9.66 | -0.9 | 0.000 |
| 155.44 | 13.770 | 23.27 | 1080.9 | 1077.6 | -0.3 | 10.05 | 9.99 | -0.6 | 0.000 |
| 155.44 | 14.773 | 23.37 | 1094.9 | 1090.8 | -0.4 | 10.40 | 10.33 | -0.7 | 0.000 |
| 155.44 | 15.594 | 23.45 | 1105.5 | 1101.3 | -0.4 | 10.67 | 10.59 | -0.7 | 0.000 |
| 170.75 | 2.402 | 19.21 | 646.8 | 642.5 | -0.7 | 2.44 | 2.40 | -1.4 | 0.000 |
| 170.75 | 3.001 | 19.45 | 672.2 | 670.4 | -0.3 | 2.75 | 2.73 | -0.6 | 0.000 |
| 170.75 | 3.957 | 19.77 | 710.2 | 708.9 | -0.2 | 3.24 | 3.22 | -0.4 | 0.000 |
| 170.75 | 4.915 | 20.04 | 743.7 | 742.4 | -0.2 | 3.70 | 3.68 | -0.4 | 0.000 |
| 170.75 | 6.200 | 20.37 | 782.7 | 781.5 | -0.1 | 4.28 | 4.26 | -0.3 | 0.000 |
| 170.75 | 7.843 | 20.73 | 826.0 | 824.8 | -0.2 | 4.97 | 4.96 | -0.3 | 0.000 |
| 170.75 | 8.876 | 20.93 | 849.9 | 849.0 | -0.1 | 5.38 | 5.37 | -0.2 | 0.000 |
| 170.75 | 9.829 | 21.10 | 871.1 | 869.9 | -0.1 | 5.76 | 5.74 | -0.3 | 0.000 |
| 170.75 | 10.690 | 21.24 | 890.3 | 887.6 | -0.3 | 6.10 | 6.07 | -0.6 | 0.000 |
| 170.75 | 11.673 | 21.40 | 909.0 | 906.7 | -0.2 | 6.46 | 6.43 | -0.5 | 0.000 |
| 170.75 | 12.696 | 21.56 | 927.0 | 925.6 | -0.2 | 6.82 | 6.80 | -0.3 | 0.000 |
| 170.75 | 13.578 | 21.68 | 944.1 | 941.0 | -0.3 | 7.16 | 7.11 | -0.6 | 0.000 |
| 170.75 | 14.611 | 21.82 | 961.4 | 958.3 | -0.3 | 7.52 | 7.47 | -0.6 | 0.000 |
| 170.75 | 15.614 | 21.96 | 977.9 | 974.3 | -0.4 | 7.87 | 7.81 | -0.7 | 0.000 |
| 170.75 | 16.871 | 22.11 | 995.3 | 993.5 | -0.2 | 8.26 | 8.23 | -0.3 | 0.000 |
| 170.75 | 18.289 | 22.28 | 1015.6 | 1014.0 | -0.2 | 8.72 | 8.70 | -0.3 | 0.000 |
| 185.91 | 4.521 | 0.00 | 450.0 | 456.4 | 1.4 | 0.00 | 0.00 | 0.0 | 0.000 |
| 185.91 | 5.003 | 16.74 | 494.8 | 497.6 | 0.6 | 1.11 | 1.12 | 1.2 | 0.000 |
| 185.91 | 5.934 | 17.42 | 556.2 | 557.3 | 0.2 | 1.63 | 1.63 | 0.4 | 0.000 |

Data from Van Itterbeek et al. [60] (continued)

| T | P | $\rho$ | W,exp | W,cal | Dev1 | $\partial P/\partial\rho\|_T$ exp | $\partial P/\partial\rho\|_T$ cal | Dev2 | Wt |
|---|---|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $m \cdot s^{-1}$ | $m \cdot s^{-1}$ | % | $MPa \cdot dm^3 \cdot mol^{-1}$ | | % | |
| 185.91 | 6.886 | 17.93 | 603.0 | 604.8 | 0.3 | 2.10 | 2.11 | 0.6 | 0.000 |
| 185.91 | 7.893 | 18.36 | 646.6 | 646.5 | 0.0 | 2.58 | 2.58 | 0.0 | 0.000 |
| 185.91 | 8.927 | 18.73 | 685.6 | 683.3 | -0.3 | 3.05 | 3.03 | -0.6 | 0.000 |
| 185.91 | 9.808 | 19.01 | 707.4 | 711.3 | 0.5 | 3.36 | 3.39 | 1.1 | 0.000 |
| 185.91 | 10.811 | 19.29 | 733.7 | 740.0 | 0.9 | 3.73 | 3.80 | 1.8 | 0.000 |
| 185.91 | 11.825 | 19.54 | 766.8 | 766.6 | 0.0 | 4.19 | 4.19 | 0.0 | 0.000 |
| 185.91 | 13.253 | 19.86 | 800.6 | 800.5 | 0.0 | 4.72 | 4.72 | 0.0 | 0.000 |
| 185.91 | 14.814 | 20.17 | 836.3 | 833.9 | -0.3 | 5.31 | 5.28 | -0.5 | 0.000 |
| 185.91 | 15.888 | 20.37 | 856.1 | 855.2 | -0.1 | 5.66 | 5.65 | -0.2 | 0.000 |
| 185.91 | 17.357 | 20.62 | 884.2 | 882.3 | -0.2 | 6.18 | 6.15 | -0.4 | 0.000 |
| 185.91 | 18.340 | 20.78 | 901.8 | 899.3 | -0.3 | 6.51 | 6.48 | -0.5 | 0.000 |
| 190.03 | 4.553 | 0.00 | 264.2 | 288.5 | 9.2 | 0.00 | 0.00 | 0.0 | 0.000 |
| 190.03 | 4.775 | 0.00 | 340.2 | 359.2 | 5.6 | 0.00 | 0.00 | 0.0 | 0.000 |
| 190.03 | 5.295 | 0.00 | 415.6 | 430.5 | 3.6 | 0.00 | 0.00 | 0.0 | 0.000 |
| 190.03 | 5.953 | 16.26 | 482.3 | 486.4 | 0.9 | 1.04 | 1.06 | 1.8 | 0.000 |
| 190.03 | 6.840 | 16.96 | 539.8 | 541.9 | 0.4 | 1.51 | 1.52 | 0.8 | 0.000 |
| 190.03 | 7.792 | 17.50 | 590.9 | 589.0 | -0.3 | 1.99 | 1.98 | -0.6 | 0.000 |
| 190.03 | 8.856 | 17.99 | 634.5 | 632.8 | -0.3 | 2.46 | 2.45 | -0.5 | 0.000 |
| 190.03 | 10.102 | 18.45 | 677.7 | 676.4 | -0.2 | 2.99 | 2.98 | -0.3 | 0.000 |
| 190.03 | 11.348 | 18.83 | 715.7 | 714.1 | -0.2 | 3.49 | 3.47 | -0.4 | 0.000 |
| 190.03 | 12.574 | 19.16 | 748.8 | 747.1 | -0.2 | 3.96 | 3.94 | -0.4 | 0.000 |
| 190.03 | 13.790 | 19.46 | 778.2 | 776.7 | -0.2 | 4.40 | 4.39 | -0.3 | 0.000 |
| 190.03 | 15.037 | 19.73 | 807.2 | 804.5 | -0.3 | 4.86 | 4.83 | -0.6 | 0.000 |
| 190.03 | 16.334 | 19.98 | 833.3 | 831.2 | -0.3 | 5.31 | 5.28 | -0.5 | 0.000 |
| 190.03 | 17.509 | 20.20 | 855.1 | 853.7 | -0.2 | 5.69 | 5.68 | -0.3 | 0.000 |
| 190.03 | 18.735 | 20.41 | 878.5 | 875.8 | -0.3 | 6.12 | 6.08 | -0.6 | 0.000 |
| 190.03 | 19.971 | 20.60 | 900.5 | 896.8 | -0.4 | 6.53 | 6.48 | -0.8 | 0.000 |

Number of Points (Ref. 60) 97

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.492 | BIAS-% | -0.007 | RMS-% | 1.205 | |
| | AAD | 3.540 | BIAS | -1.751 | RMS | 4.508 | $m \cdot s^{-1}$ |

Number of Points (Ref. 60) 93

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DERIVATIVE: | AAD-% | 0.663 | BIAS-% | -0.496 | RMS-% | 0.548 | |
| | AAD | 0.064 | BIAS | -0.060 | RMS | 0.059 | $MPa \cdot dm^3 \cdot mol^{-1}$ |

Data from Van Itterbeek et al. [60] (continued)

Number of Points Total 661

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 1.297 | BIAS-% | 0.831 | RMS-% | 3.524 | |
| | AAD | 4.440 | BIAS | 0.573 | RMS | 8.170 | $m \cdot s^{-1}$ |

Number of Points Total 603 excluding critical region data of Ref.[37]

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SOUND SPEED: | AAD-% | 0.516 | BIAS-% | 0.006 | RMS-% | 1.108 | |
| | AAD | 2.980 | BIAS | -1.259 | RMS | 4.142 | $m \cdot s^{-1}$ |

TABLE A10
COMPARISONS FOR COLLISION INTEGRAL

Notes for Table A10. The temperature in kelvins corresponds to the given reduced temperature for the methane fluid ($t = kT/\epsilon$). The collision integral $\Omega^{(2,2)*}$, int is from the integration results of Ref.[14]; the "cor" result is from the correlation of eq (10).

| t | T<br>K | $\Omega^{(2,2)*}$<br>int | $\Omega^{(2,2)*}$<br>cor | Dev<br>% |
|---|---|---|---|---|
| 0.50 | 87.000 | 2.136 15 | 2.138 73 | 0.121 |
| 0.55 | 95.700 | 2.051 91 | 2.053 45 | 0.075 |
| 0.60 | 104.400 | 1.972 92 | 1.975 11 | 0.111 |
| 0.65 | 113.100 | 1.903 93 | 1.903 50 | -0.023 |
| 0.70 | 121.800 | 1.839 99 | 1.838 22 | -0.096 |
| 0.75 | 130.500 | 1.778 44 | 1.778 77 | 0.019 |
| 0.80 | 139.200 | 1.725 05 | 1.724 65 | -0.023 |
| 0.85 | 147.900 | 1.677 59 | 1.675 33 | -0.135 |
| 0.90 | 156.600 | 1.632 61 | 1.630 31 | -0.141 |
| 0.95 | 165.300 | 1.590 74 | 1.589 15 | -0.100 |
| 1.00 | 174.000 | 1.552 45 | 1.551 43 | -0.065 |
| 1.10 | 191.400 | 1.485 92 | 1.484 91 | -0.068 |
| 1.20 | 208.800 | 1.428 35 | 1.428 28 | -0.005 |
| 1.30 | 226.200 | 1.379 36 | 1.379 63 | 0.020 |
| 1.40 | 243.600 | 1.337 06 | 1.337 48 | 0.031 |
| 1.50 | 261.000 | 1.300 37 | 1.300 65 | 0.022 |
| 1.60 | 278.400 | 1.267 48 | 1.268 24 | 0.060 |
| 1.70 | 295.800 | 1.238 42 | 1.239 51 | 0.088 |
| 1.80 | 313.200 | 1.212 81 | 1.213 90 | 0.090 |
| 1.90 | 330.600 | 1.190 00 | 1.190 92 | 0.077 |
| 2.00 | 348.000 | 1.169 43 | 1.170 20 | 0.066 |
| 2.20 | 382.800 | 1.133 94 | 1.134 34 | 0.035 |
| 2.40 | 417.600 | 1.104 30 | 1.104 39 | 0.008 |
| 2.60 | 452.400 | 1.079 11 | 1.079 00 | -0.010 |
| 2.80 | 487.200 | 1.057 60 | 1.057 19 | -0.039 |
| 3.00 | 522.000 | 1.038 97 | 1.038 24 | -0.070 |
| 3.20 | 556.800 | 1.022 62 | 1.021 61 | -0.098 |
| 3.40 | 591.600 | 1.008 09 | 1.006 89 | -0.119 |
| 3.60 | 626.400 | 0.995 07 | 0.993 74 | -0.134 |
| 3.80 | 661.200 | 0.983 32 | 0.981 91 | -0.143 |

Table A10 (continued)

| t | T | $\Omega^{(2,2)*}$ | $\Omega^{(2,2)*}$ | Dev |
|---|---|---|---|---|
| | K | int | cor | % |
| 4.00 | 696.000 | 0.972 66 | 0.971 20 | -0.150 |
| 4.50 | 783.000 | 0.949 72 | 0.948 32 | -0.147 |
| 5.00 | 870.000 | 0.930 87 | 0.929 62 | -0.135 |
| 5.50 | 957.000 | 0.914 94 | 0.913 91 | -0.112 |
| 6.00 | 1044.000 | 0.901 18 | 0.900 43 | -0.083 |
| 6.50 | 1131.000 | 0.889 09 | 0.888 65 | -0.050 |

Number of Points (Ref. 14) 36

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.077 | BIAS-% | -0.031 | RMS-% | 0.084 |
| AAD | 0.001 | BIAS | 0.000 | RMS | 0.001 |

TABLE A11

COMPARISONS FOR ZERO DENSITY VISCOSITY

Notes for Table A11. The column $\eta$,exp refers to the reported experimental value at the lowest pressure at the given temperature. These pressures were often at 0.101 325 MPa (1 atm). In the column $\eta_0$,exp, the reported viscosities were corrected to zero pressure by subtracting the value of the excess viscosity at the reported conditions and calculated from the current correlation. The deviations and statistics refer to these corrected values of $\eta_0$. When the experimental data have already been extrapolated to zero pressure, (that is for Refs. 62, 65, 66), there are no entries in the $\eta_0$,exp column. The weights refer to weighting in the determination of the intermolecular parameters $\epsilon$ and $\sigma$.

Data from Hellemans et al. [61]

| T | $\eta$, exp | $\eta_0$,exp | $\eta_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $\mu$Pa·s | $\mu$Pa·s | $\mu$Pa·s | % | |
| 298.15 | 11.092 | 11.076 | 11.121 | 0.407 | 1.0 |
| 323.15 | 11.941 | 11.926 | 11.920 | -0.053 | 1.0 |
| 373.15 | 13.514 | 13.501 | 13.445 | -0.410 | 1.0 |
| 423.15 | 14.896 | 14.884 | 14.885 | 0.006 | 1.0 |
| 468.15 | 16.116 | 16.105 | 16.115 | 0.064 | 1.0 |

Number of points (Ref.61) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.188 | BIAS-% | 0.003 | RMS-% | 0.261 | |
| AAD | 0.024 | BIAS | -0.001 | RMS | 0.032 | $\mu$Pa·s |

Data from Dawe et al. [62]

| T | $\eta$, exp | $\eta_0$,exp | $\eta_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $\mu$Pa·s | $\mu$Pa·s | $\mu$Pa·s | % | |
| 293.0 | 11.00 | - | 10.954 | -0.421 | 0.0 |
| 403.0 | 14.39 | - | 14.314 | -0.525 | 0.0 |
| 497.0 | 16.92 | - | 16.875 | -0.266 | 0.0 |
| 601.0 | 19.45 | - | 19.452 | 0.011 | 0.0 |
| 676.0 | 21.13 | - | 21.178 | 0.229 | 0.0 |
| 749.0 | 22.68 | - | 22.771 | 0.403 | 0.0 |
| 823.0 | 24.26 | - | 24.312 | 0.214 | 0.0 |
| 900.0 | 25.78 | - | 25.847 | 0.259 | 0.0 |
| 1050.0 | 28.55 | - | 28.673 | 0.431 | 0.0 |

Data from Dawe et al. [62]

Number of points (Ref.62) 9

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.306 | BIAS-% | 0.037 | RMS-% | 0.337 | |
| AAD | 0.061 | BIAS | 0.024 | RMS | 0.065 | μPa·s |

Data from Kestin et al. [63]

| T | η, exp | $\eta_0$ ,exp | $\eta_0$ ,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | μPa·s | μPa·s | μPa·s | % | |
| 296.22 | 11.023 | 11.007 | 11.059 | 0.471 | 0.0 |
| 302.44 | 11.226 | 11.210 | 11.260 | 0.445 | 0.0 |

Number of points (Ref.63) 2

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.458 | BIAS-% | 0.458 | RMS-% | 0.013 | |
| AAD | 0.051 | BIAS | 0.051 | RMS | 0.001 | μPa·s |

Data from Timrot et al. [64]

| T | η, exp | $\eta_0$ ,exp | $\eta_0$ ,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | μPa·s | μPa·s | μPa·s | % | |
| 296.85 | 11.13 | 11.125 | 11.079 | -0.416 | 0.0 |
| 325.74 | 12.03 | 12.026 | 12.001 | -0.204 | 0.0 |
| 375.85 | 13.53 | 13.526 | 13.525 | -0.007 | 0.0 |
| 423.45 | 14.93 | 14.927 | 14.893 | -0.223 | 0.0 |
| 471.05 | 16.22 | 16.217 | 16.193 | -0.149 | 0.0 |
| 523.75 | 17.59 | 17.587 | 17.561 | -0.148 | 0.0 |
| 569.35 | 18.73 | 18.727 | 18.693 | -0.186 | 0.0 |
| 622.45 | 19.96 | 19.957 | 19.956 | -0.007 | 0.0 |
| 675.25 | 21.18 | 21.178 | 21.162 | -0.076 | 0.0 |

Number of points (Ref.64) 9

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.157 | BIAS-% | -0.157 | RMS-% | 0.118 | |
| AAD | 0.023 | BIAS | -0.023 | RMS | 0.014 | μPa·s |

Data from Kestin and Yata [65]

| T | $\eta$, exp | $\eta_0$,exp | $\eta_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $\mu$Pa·s | $\mu$Pa·s | $\mu$Pa·s | % | |
| 293.15 | 10.924 | - | 10.959 | 0.316 | 0.0 |
| 303.15 | 11.258 | - | 11.283 | 0.222 | 0.0 |

Number of points (Ref.65) 2

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.269 | BIAS-% | 0.269 | RMS-% | 0.047 | |
| AAD | 0.030 | BIAS | 0.030 | RMS | 0.005 | $\mu$Pa·s |

Data from De Rocco and Halford [66]

| T | $\eta$, exp | $\eta_0$,exp | $\eta_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $\mu$Pa·s | $\mu$Pa·s | $\mu$Pa·s | % | |
| 210.70 | 8.10 | - | 8.122 | 0.2711 | 0.0 |
| 250.10 | 9.67 | - | 9.514 | -1.6134 | 0.0 |
| 273.16 | 10.31 | - | 10.298 | -0.1205 | 0.0 |
| 292.70 | 11.03 | - | 10.944 | -0.7810 | 0.0 |
| 300.70 | 11.25 | - | 11.204 | -0.4099 | 0.0 |
| 308.20 | 11.55 | - | 11.445 | -0.9066 | 0.0 |
| 320.70 | 11.89 | - | 11.843 | -0.3983 | 0.0 |
| 328.70 | 12.20 | - | 12.094 | -0.8711 | 0.0 |
| 337.30 | 12.53 | - | 12.361 | -1.3494 | 0.0 |
| 351.10 | 12.81 | - | 12.784 | -0.2040 | 0.0 |
| 363.10 | 13.22 | - | 13.146 | -0.5597 | 0.0 |
| 373.20 | 13.55 | - | 13.447 | -0.7612 | 0.0 |
| 387.90 | 13.91 | - | 13.879 | -0.2266 | 0.0 |
| 394.40 | 14.19 | - | 14.067 | -0.8666 | 0.0 |
| 407.20 | 14.49 | - | 14.434 | -0.3842 | 0.0 |
| 424.40 | 15.06 | - | 14.920 | -0.9311 | 0.0 |
| 439.90 | 15.41 | - | 15.350 | -0.3921 | 0.0 |
| 451.60 | 15.74 | - | 15.669 | -0.4486 | 0.0 |
| 459.40 | 15.94 | - | 15.881 | -0.3735 | 0.0 |
| 473.16 | 16.35 | - | 16.249 | -0.6193 | 0.0 |

Number of points (Ref.66) 20

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.624 | BIAS-% | -0.597 | RMS-% | 0.420 | |
| AAD | 0.080 | BIAS | -0.078 | RMS | 0.048 | $\mu$Pa·s |

Data from Maitland and Smith [67]

| T | $\eta$, exp | $\eta_0$,exp | $\eta_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | μPa·s | μPa·s | μPa·s | % | |
| 295.0 | 11.09 | 11.0747 | 11.0189 | -0.5036 | 0.0 |
| 394.0 | 14.08 | 14.0635 | 14.0555 | -0.0572 | 0.0 |
| 547.0 | 18.21 | 18.1926 | 18.1436 | -0.2691 | 0.0 |
| 698.0 | 21.63 | 21.6120 | 21.6668 | 0.2533 | 0.0 |
| 873.0 | 25.42 | 25.4016 | 25.3158 | -0.3379 | 0.0 |
| | | | | | |
| 873.0 | 25.23 | 25.2116 | 25.3158 | 0.4132 | 0.0 |
| 1022.0 | 27.83 | 27.8114 | 28.1600 | 1.2536 | 0.0 |

Number of points (Ref.67) 7

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.441 | BIAS-% | 0.107 | RMS-% | 0.557 | |
| AAD | 0.101 | BIAS | 0.044 | RMS | 0.139 | μPa·s |

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Data from Abe et al. [68]

| T | $\eta$, exp | $\eta_0$,exp | $\eta_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | μPa·s | μPa·s | μPa·s | % | |
| 298.15 | 11.10 | 11.0842 | 11.1213 | 0.3346 | 0.0 |
| 333.15 | 12.28 | 12.2655 | 12.2323 | -0.2701 | 0.0 |
| 373.15 | 13.48 | 13.4667 | 13.4454 | -0.1582 | 0.0 |
| 418.15 | 14.78 | 14.7679 | 14.7444 | -0.1586 | 0.0 |
| 468.15 | 16.10 | 16.0889 | 16.1152 | 0.1636 | 0.0 |

Number of points (Ref.68) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.217 | BIAS-% | -0.018 | RMS-% | 0.228 | |
| AAD | 0.028 | BIAS | -0.003 | RMS | 0.029 | μPa·s |

Data from Clarke and Smith [69]

| T | $\eta$, exp | $\eta_0$, exp | $\eta_0$, cal | Dev | Wt |
|---|---|---|---|---|---|
| K | μPa·s | μPa·s | μPa·s | % | |
| 113.8 | 4.47 | 4.4656 | 4.4739 | 0.1853 | 0.0 |
| 140.1 | 5.50 | 5.4905 | 5.4799 | -0.1931 | 0.0 |
| 171.4 | 6.68 | 6.6710 | 6.6702 | -0.0126 | 0.0 |
| 200.3 | 7.76 | 7.7516 | 7.7435 | -0.1042 | 0.0 |
| 234.1 | 8.95 | 8.9423 | 8.9568 | 0.1614 | 0.0 |
| 273.0 | 10.29 | 10.2831 | 10.2922 | 0.0891 | 0.0 |
| 299.1 | 11.14 | 11.1307 | 11.1521 | 0.1922 | 0.0 |
| 333.2 | 12.23 | 12.2214 | 12.2339 | 0.1021 | 0.0 |
| 373.9 | 13.48 | 13.4721 | 13.4676 | -0.0338 | 0.0 |

Number of points (Ref.69) 10

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.119 | BIAS-% | 0.043 | RMS-% | 0.128 | |
| AAD | 0.010 | BIAS | 0.005 | RMS | 0.010 | μPa·s |

Data from Giddings et al. [70]

| T | $\eta$, exp | $\eta_0$, exp | $\eta_0$, cal | Dev | Wt |
|---|---|---|---|---|---|
| K | μPa·s | μPa·s | μPa·s | % | |
| 283.15 | 10.67 | 10.6536 | 10.6300 | -0.2216 | 0.0 |
| 310.93 | 11.62 | 11.6047 | 11.5326 | -0.6212 | 0.0 |
| 344.26 | 12.69 | 12.6758 | 12.5751 | -0.7945 | 0.0 |
| 377.59 | 13.70 | 13.6868 | 13.5765 | -0.8058 | 0.0 |
| 410.93 | 14.65 | 14.6377 | 14.5404 | -0.6647 | 0.0 |

Number of points (Ref.70) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.622 | BIAS-% | -0.622 | RMS-% | 0.212 | |
| AAD | 0.081 | BIAS | -0.081 | RMS | 0.031 | μPa·s |

Data from Carmichael et al. [71]

| T | $\eta$, exp | $\eta_0$,exp | $\eta_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | μPa·s | μPa·s | μPa·s | % | |
| 277.594 | 10.530 | 10.5117 | 10.4456 | -0.6280 | 0.0 |
| 310.928 | 11.585 | 11.5667 | 11.5325 | -0.2956 | 0.0 |
| 377.594 | 13.631 | 13.6145 | 13.5766 | -0.2777 | 0.0 |
| 444.261 | 15.597 | 15.5817 | 15.4692 | -0.7219 | 0.0 |
| 477.594 | 16.543 | 16.5198 | 16.3663 | -0.9287 | 0.0 |

Number of points (Ref.71) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.570 | BIAS-% | -0.570 | RMS-% | 0.251 | |
| AAD | 0.081 | BIAS | -0.081 | RMS | 0.046 | μPa·s |

Number of Points Total 78

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.388 | BIAS-% | -0.211 | RMS-% | 0.456 | |
| AAD | 0.056 | BIAS | -0.024 | RMS | 0.073 | μPa·s |

TABLE A12

COMPARISONS FOR ZERO DENSITY THERMAL CONDUCTIVITY

Notes for Table A12. The column $\lambda$,exp refers to the reported experimental value at the lowest pressure at the given temperature. These pressures were often at 0.101 325 MPa (1 atm). In the column $\lambda_0$,exp, the reported thermal conductivities were corrected to zero pressure by subtracting the value of the excess thermal conductivity at the reported conditions and calculated from the current correlation. The deviations and statistics refer to these corrected values of $\lambda_0$. When the experimental data have already been extrapolated to zero pressure, (that is for Refs. 8, 72, 73, and 76), there are no entries in the $\lambda_0$,exp column. The weights refer to weighting in the determination of the intermolecular parameters in the damping function, eq (12).

Data from Roder [8]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 133.0 | 13.92 | - | 13.72 | -1.458 | 1.0 |
| 143.0 | 14.97 | - | 14.90 | -0.448 | 1.0 |
| 155.0 | 16.40 | - | 16.32 | -0.459 | 1.0 |
| 163.0 | 17.33 | - | 17.27 | -0.339 | 1.0 |
| 175.0 | 18.70 | - | 18.69 | -0.060 | 1.0 |
| 183.0 | 19.62 | - | 19.63 | 0.067 | 1.0 |
| 197.0 | 21.31 | - | 21.29 | -0.103 | 1.0 |
| 215.0 | 23.12 | - | 23.43 | 1.339 | 1.0 |
| 235.0 | 25.60 | - | 25.85 | 0.975 | 1.0 |
| 255.0 | 28.03 | - | 28.34 | 1.101 | 1.0 |
| 275.0 | 30.54 | - | 30.92 | 1.253 | 1.0 |
| 295.0 | 33.01 | - | 33.62 | 1.854 | 1.0 |
| 310.0 | 35.36 | - | 35.73 | 1.048 | 1.0 |

Number of points (Ref. 8) 13

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.808 | BIAS-% | 0.367 | RMS-% | 0.919 | |
| AAD | 0.206 | BIAS | 0.139 | RMS | 0.235 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Clifford et al. [72]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 300.65 | 34.93 | - | 34.41 | -1.496 | 0.0 |

Number of points (Ref.72) 1

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.496 | BIAS-% | -1.496 | RMS-% | - | |
| AAD | 0.523 | BIAS | -0.523 | RMS | - | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Assael and Wakeham [73]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 308.15 | 35.35 | - | 35.47 | 0.329 | 0.0 |

Number of points (Ref.73) 1

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.329 | BIAS-% | 0.329 | RMS-% | - | |
| AAD | 0.116 | BIAS | 0.116 | RMS | - | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Johnston and Grilly [74]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 96.76 | 10.2550 | 10.2161 | 9.4505 | -7.494 | 0.0 |
| 125.35 | 13.3679 | 13.3413 | 12.8104 | -3.979 | 0.0 |
| 140.49 | 15.0959 | 15.0703 | 14.6053 | -3.085 | 0.0 |
| 155.29 | 16.7569 | 16.7310 | 16.3591 | -2.223 | 0.0 |
| 169.93 | 18.4347 | 18.4069 | 18.0901 | -1.721 | 0.0 |
| 185.41 | 20.1041 | 20.0700 | 19.9178 | -0.758 | 0.0 |
| 201.24 | 21.9451 | 21.9155 | 21.7905 | -0.571 | 0.0 |
| 216.69 | 23.7819 | 23.7583 | 23.6321 | -0.531 | 0.0 |
| 231.71 | 25.5935 | 25.5734 | 25.4474 | -0.493 | 0.0 |
| 246.86 | 27.4219 | 27.4042 | 27.3154 | -0.324 | 0.0 |

Data from Johnston and Grilly [74] (continued)

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 262.85 | 29.3926 | 29.3768 | 29.3402 | -0.124 | 0.0 |
| 278.72 | 31.4218 | 31.4075 | 31.4154 | 0.025 | 0.0 |
| 294.49 | 33.5808 | 33.5677 | 33.5515 | -0.048 | 0.0 |
| 324.00 | 37.5974 | 37.5861 | 37.7669 | 0.481 | 0.0 |
| 338.60 | 39.9112 | 39.9006 | 39.9620 | 0.154 | 0.0 |
| 353.96 | 42.4509 | 42.4410 | 42.3495 | -0.215 | 0.0 |
| 368.33 | 44.8901 | 44.8808 | 44.6538 | -0.506 | 0.0 |
| 383.57 | 47.5972 | 47.5883 | 47.1688 | -0.882 | 0.0 |

Number of points (Ref.74) 18

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.312 | BIAS-% | -1.239 | RMS-% | 1.896 | |
| AAD | 0.228 | BIAS | -0.200 | RMS | 0.230 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Zheng et al. [75]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 299.45 | 34.74 | 34.68 | 34.24 | -1.233 | 0.0 |

Number of points (Ref.75) 1

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.233 | BIAS-% | -1.233 | RMS-% | - | |
| AAD | 0.427 | BIAS | -0.427 | RMS | - | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Mann and Dickins [76]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 275.18 | 30.480 | - | 30.946 | 1.530 | 0.0 |
| 276.18 | 30.619 | - | 31.078 | 1.501 | 0.0 |
| 277.17 | 30.853 | - | 31.210 | 1.156 | 0.0 |
| 279.17 | 31.079 | - | 31.475 | 1.275 | 0.0 |
| 281.18 | 31.372 | - | 31.744 | 1.184 | 0.0 |
| 283.18 | 31.665 | - | 32.012 | 1.095 | 0.0 |

Data from Mann and Dickins [76] (continued)

Number of points (Ref.76) 6

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.290 | BIAS-% | 1.290 | RMS-% | 0.168 | |
| AAD | 0.400 | BIAS | 0.400 | RMS | 0.047 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Misic and Thodos [77]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 275.05 | 31.4637 | 31.3798 | 30.9292 | -1.436 | 0.0 |
| 297.75 | 34.3506 | 34.2750 | 34.0029 | -0.794 | 0.0 |
| 316.75 | 37.0702 | 37.0002 | 36.7040 | -0.801 | 0.0 |
| 348.25 | 41.8818 | 41.8195 | 41.4527 | -0.877 | 0.0 |

Number of points (Ref.77) 4

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.977 | BIAS-% | -0.977 | RMS-% | 0.267 | |
| AAD | 0.346 | BIAS | -0.346 | RMS | 0.069 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Carmichael et al. [78]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 277.594 | 31.219 | 31.126 | 31.266 | 0.450 | 0.0 |
| 310.928 | 35.235 | 35.155 | 35.863 | 2.017 | 0.0 |
| 377.594 | 44.628 | 44.565 | 46.174 | 3.612 | 0.0 |
| 410.928 | 50.505 | 50.444 | 51.854 | 2.794 | 0.0 |
| 444.261 | 55.717 | 55.661 | 57.818 | 3.876 | 0.0 |

Number of points (Ref.78) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 2.550 | BIAS-% | 2.550 | RMS-% | 1.236 | |
| AAD | 1.205 | BIAS | 1.205 | RMS | 0.706 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Baker and Brokaw [79]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 299.8 | 33.7649 | 33.6912 | 34.2885 | 1.773 | 0.0 |
| 333.0 | 38.1623 | 38.0977 | 39.1114 | 2.661 | 0.0 |
| 375.5 | 44.5805 | 44.5246 | 45.8281 | 2.928 | 0.0 |
| 423.3 | 52.3711 | 52.3226 | 54.0374 | 3.277 | 0.0 |
| 472.3 | 60.4504 | 60.4076 | 63.0125 | 4.312 | 0.0 |

Number of points (Ref.79) 5

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 2.990 | BIAS-% | 2.990 | RMS-% | 0.828 | |
| AAD | 1.447 | BIAS | 1.447 | RMS | 0.685 | $mW \cdot m^{-1} \cdot K^{-1}$ |

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Data from Sokolova and Golubev [80]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 238.7 | 26.08 | 25.98 | 26.30 | 1.245 | 0.0 |
| 231.8 | 25.25 | 25.15 | 25.46 | 1.244 | 0.0 |
| 224.8 | 24.45 | 24.34 | 24.61 | 1.102 | 0.0 |
| 216.4 | 23.47 | 23.35 | 23.60 | 1.048 | 0.0 |
| 210.0 | 22.71 | 22.59 | 22.83 | 1.093 | 0.0 |
| 183.2 | 19.68 | 19.53 | 19.66 | 0.662 | 0.0 |
| 176.8 | 19.01 | 18.86 | 18.90 | 0.206 | 0.0 |
| 165.3 | 17.75 | 17.60 | 17.54 | -0.343 | 0.0 |
| 152.6 | 16.39 | 16.24 | 16.04 | -1.213 | 0.0 |
| 140.3 | 15.07 | 14.90 | 14.58 | -2.160 | 0.0 |
| 118.8 | 12.71 | 12.48 | 12.04 | -3.556 | 0.0 |

Number of points (Ref.80) 11

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.261 | BIAS-% | -0.061 | RMS-% | 1.536 | |
| AAD | 0.235 | BIAS | 0.049 | RMS | 0.256 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Le Neindre et al. [81]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 307.35 | 35.6 | 35.53 | 35.35 | -0.498 | 0.0 |
| 298.65 | 34.5 | 34.40 | 34.13 | -0.791 | 0.0 |
| 368.85 | 45.1 | 45.04 | 44.74 | -0.678 | 1.0 |
| 407.95 | 51.4 | 51.35 | 51.33 | -0.031 | 1.0 |
| 420.25 | 53.9 | 53.83 | 53.50 | -0.628 | 1.0 |
| 465.55 | 62.3 | 62.24 | 61.75 | -0.789 | 1.0 |
| 523.35 | 73.2 | 73.15 | 72.77 | -0.520 | 1.0 |
| 571.85 | 82.8 | 82.77 | 82.25 | -0.618 | 1.0 |
| 575.75 | 84.6 | 84.57 | 83.02 | -1.826 | 1.0 |
| 621.45 | 94.0 | 93.96 | 92.05 | -2.031 | 1.0 |

Number of points (Ref.81) 10

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.841 | BIAS-% | -0.841 | RMS-% | 0.582 | |
| AAD | 0.594 | BIAS | -0.594 | RMS | 0.588 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Yorizane et al. [82]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 323.35 | 37.7 | 37.63 | 37.67 | 0.098 | 0.0 |
| 319.95 | 37.5 | 37.43 | 37.17 | -0.700 | 0.0 |
| 316.75 | 37.3 | 37.23 | 36.70 | -1.418 | 0.0 |
| 312.85 | 36.7 | 36.63 | 36.14 | -1.342 | 0.0 |
| 309.35 | 36.3 | 36.23 | 35.64 | -1.635 | 0.0 |
| 308.25 | 35.7 | 35.63 | 35.48 | -0.419 | 0.0 |
| 303.15 | 35.1 | 35.03 | 34.76 | -0.771 | 0.0 |
| 297.75 | 34.4 | 34.33 | 34.00 | -0.943 | 0.0 |
| 303.15 | 35.1 | 35.03 | 34.76 | -0.771 | 0.0 |
| 309.85 | 36.6 | 36.53 | 35.71 | -2.248 | 0.0 |
| 316.75 | 37.2 | 37.13 | 36.70 | -1.153 | 0.0 |
| 317.75 | 37.2 | 37.13 | 36.85 | -0.762 | 0.0 |
| 323.45 | 37.7 | 37.63 | 37.69 | -0.138 | 0.0 |

Number of points (Ref.82) 13

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.954 | BIAS-% | -0.917 | RMS-% | 0.637 | |
| AAD | 0.347 | BIAS | -0.333 | RMS | 0.234 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Tanaka et al. [83]

| T | $\lambda$,exp | $\lambda_0$,exp | $\lambda_0$,cal | Dev | Wt |
|---|---|---|---|---|---|
| K | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | % | |
| 298.15 | 33.9 | 33.83 | 34.06 | 0.685 | 0.0 |
| 323.15 | 37.4 | 37.33 | 37.64 | 0.824 | 0.0 |
| 348.15 | 41.4 | 41.34 | 41.44 | 0.236 | 0.0 |

Number of points (Ref.83) 3

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.582 | BIAS-% | 0.582 | RMS-% | 0.251 | |
| AAD | 0.212 | BIAS | 0.212 | RMS | 0.087 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Number of Points Total with positive weight 21

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 0.839 | BIAS-% | -0.112 | RMS-% | 1.025 | |
| AAD | 0.389 | BIAS | -0.176 | RMS | 0.586 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Number of Points Total referenced in Ref.[1] 74

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.076 | BIAS-% | -0.449 | RMS-% | 1.456 | |
| AAD | 0.315 | BIAS | -0.135 | RMS | 0.413 | $mW \cdot m^{-1} \cdot K^{-1}$ |

Number of Points Total 91

| | | | | | | |
|---|---|---|---|---|---|---|
| AAD-% | 1.241 | BIAS-% | -0.084 | RMS-% | 1.705 | |
| AAD | 0.424 | BIAS | 0.028 | RMS | 0.639 | $mW \cdot m^{-1} \cdot K^{-1}$ |

TABLE A13

COMPARISONS FOR VISCOSITY AT ELEVATED PRESSURES

Notes for Table A13. The quantities T, P, and $\eta$,exp refer to experimental quantities; the density was evaluated from the SWEOS. For the data along the saturated liquid boundary of Boon [85] and Haynes [87], however, both the pressure and density were calculated from the ancillary equations for the phase boundary. The tabulated densities were then used as input to calculate the viscosity.

Data from Barua et al. [84]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 223.15 | 2.0265 | 1.2092 | 8.820 | 9.0509 | 2.618 | 0.0 |
| 223.15 | 6.0795 | 4.8458 | 10.875 | 11.3032 | 3.938 | 0.0 |
| 223.15 | 8.1065 | 7.8446 | 13.528 | 14.1882 | 4.880 | 0.0 |
| 223.15 | 12.1590 | 13.2838 | 21.641 | 22.5027 | 3.982 | 0.0 |
| 223.15 | 14.1855 | 14.6807 | 25.013 | 25.5006 | 1.949 | 0.0 |
| 223.15 | 16.2120 | 15.6757 | 27.310 | 27.9289 | 2.266 | 0.0 |
| 248.15 | 1.0133 | 0.5081 | 9.555 | 9.6414 | 0.904 | 0.0 |
| 248.15 | 3.0398 | 1.6405 | 9.980 | 10.1550 | 1.754 | 0.0 |
| 248.15 | 6.0795 | 3.7125 | 11.117 | 11.3922 | 2.476 | 0.0 |
| 248.15 | 8.1060 | 5.3936 | 12.390 | 12.6976 | 2.483 | 0.0 |
| 248.15 | 10.1325 | 7.2752 | 14.144 | 14.5088 | 2.579 | 0.0 |
| 248.15 | 14.1855 | 10.8636 | 18.692 | 19.1512 | 2.456 | 0.0 |
| 248.15 | 16.2120 | 12.2398 | 20.865 | 21.4262 | 2.690 | 0.0 |
| 273.15 | 1.4196 | 0.6469 | 10.410 | 10.5567 | 1.409 | 0.0 |
| 273.15 | 2.6223 | 1.2312 | 10.644 | 10.8216 | 1.669 | 0.0 |
| 273.15 | 4.9426 | 2.4619 | 11.264 | 11.4766 | 1.888 | 0.0 |
| 273.15 | 7.0137 | 3.6802 | 12.010 | 12.2591 | 2.074 | 0.0 |
| 273.15 | 9.8903 | 5.5360 | 13.454 | 13.7217 | 1.989 | 0.0 |
| 273.15 | 13.3516 | 7.8639 | 15.799 | 16.0592 | 1.647 | 0.0 |
| 273.15 | 16.8899 | 10.0448 | 18.487 | 18.8258 | 1.832 | 0.0 |
| 298.15 | 2.8999 | 1.2307 | 11.479 | 11.6574 | 1.554 | 0.0 |
| 298.15 | 5.5455 | 2.4624 | 12.123 | 12.3235 | 1.654 | 0.0 |
| 298.15 | 7.9804 | 3.6810 | 12.923 | 13.1148 | 1.484 | 0.0 |
| 298.15 | 11.5004 | 5.5387 | 14.384 | 14.5871 | 1.412 | 0.0 |
| 298.15 | 15.9404 | 7.8691 | 16.731 | 16.9271 | 1.172 | 0.0 |
| 298.15 | 17.7552 | 8.7601 | 17.709 | 17.9814 | 1.538 | 0.0 |
| 348.15 | 2.8989 | 1.0281 | 13.037 | 13.1487 | 0.857 | 0.0 |
| 348.15 | 5.5648 | 2.0165 | 13.504 | 13.6689 | 1.221 | 0.0 |
| 348.15 | 8.1384 | 3.0010 | 14.119 | 14.2697 | 1.067 | 0.0 |
| 348.15 | 12.1185 | 4.5508 | 15.222 | 15.3883 | 1.092 | 0.0 |

Data from Barua et al. [84] (continued)

| T K | P MPa | $\rho$ $mol \cdot dm^{-3}$ | $\eta$,exp $\mu Pa \cdot s$ | $\eta$,cal $\mu Pa \cdot s$ | Dev % | Wt |
|---|---|---|---|---|---|---|
| 348.15 | 14.6800 | 5.5415 | 16.066 | 16.2187 | 0.950 | 0.0 |
| 348.15 | 17.6539 | 6.6599 | 17.100 | 17.2700 | 0.994 | 0.0 |
| 423.15 | 1.1703 | 0.3339 | 15.063 | 15.0284 | -0.230 | 0.0 |
| 423.15 | 2.8513 | 0.8172 | 15.233 | 15.2521 | 0.125 | 0.0 |
| 423.15 | 5.6793 | 1.6377 | 15.620 | 15.6752 | 0.354 | 0.0 |
| 423.15 | 8.5052 | 2.4615 | 16.055 | 16.1555 | 0.626 | 0.0 |
| 423.15 | 12.7163 | 3.6816 | 16.831 | 16.9709 | 0.831 | 0.0 |
| 423.15 | 15.7844 | 4.5531 | 17.496 | 17.6313 | 0.773 | 0.0 |
| 423.15 | 17.2253 | 4.9545 | 17.827 | 17.9579 | 0.734 | 0.0 |

Number of points (Ref.84) 39

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.696 | BIAS-% | 1.684 | RMS-% | 1.026 |
| AAD | 0.255 | BIAS | 0.253 | RMS | 0.182 $\mu Pa \cdot s$ |

Data from Boon et al. [85]

| T K | P MPa | $\rho$ $mol \cdot dm^{-3}$ | $\eta$,exp $\mu Pa \cdot s$ | $\eta$,cal $\mu Pa \cdot s$ | Dev % | Wt |
|---|---|---|---|---|---|---|
| 91.01 | 0.0122 | 28.1199 | 199.50 | 200.3647 | 0.433 | 0.0 |
| 93.77 | 0.0172 | 27.8858 | 182.50 | 185.5583 | 1.676 | 0.0 |
| 97.34 | 0.0259 | 27.5809 | 162.40 | 168.4102 | 3.701 | 0.0 |
| 100.88 | 0.0377 | 27.2756 | 146.70 | 153.4119 | 4.575 | 0.0 |
| 103.84 | 0.0505 | 27.0175 | 138.40 | 142.2355 | 2.771 | 0.0 |
| 107.05 | 0.0681 | 26.7344 | 127.20 | 131.3626 | 3.272 | 0.0 |
| 109.86 | 0.0872 | 26.4835 | 120.10 | 122.7949 | 2.244 | 0.0 |
| 114.15 | 0.1238 | 26.0937 | 112.30 | 111.2087 | -0.972 | 0.0 |

Number of points (Ref.85) 8

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 2.456 | BIAS-% | 2.213 | RMS-% | 1.689 |
| AAD | 3.554 | BIAS | 3.281 | RMS | 2.389 $\mu Pa \cdot s$ |

Data from Carmichael et al. [71]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 277.594 | 0.1117 | 0.0485 | 10.530 | 10.4640 | -0.627 | 1.0 |
| 277.594 | 6.9685 | 3.5515 | 12.447 | 12.3242 | -0.986 | 1.0 |
| 277.594 | 14.1301 | 8.0623 | 16.990 | 16.4423 | -3.223 | 1.0 |
| 277.594 | 14.1473 | 8.0730 | 17.008 | 16.4547 | -3.253 | 1.0 |
| 277.594 | 14.1632 | 8.0828 | 16.881 | 16.4661 | -2.458 | 1.0 |
| 277.594 | 27.7051 | 14.0602 | 26.417 | 25.9290 | -1.847 | 1.0 |
| 277.594 | 27.7361 | 14.0691 | 26.438 | 25.9478 | -1.854 | 1.0 |
| 277.594 | 27.7430 | 14.0711 | 26.436 | 25.9519 | -1.831 | 1.0 |
| 277.594 | 35.6368 | 15.9423 | 30.814 | 30.3397 | -1.539 | 1.0 |
| 277.594 | 35.6547 | 15.9458 | 30.770 | 30.3489 | -1.368 | 1.0 |
| 277.594 | 35.6713 | 15.9491 | 30.833 | 30.3575 | -1.542 | 1.0 |
| 310.928 | 0.1207 | 0.0468 | 11.685 | 11.5508 | -1.148 | 1.0 |
| 310.928 | 0.1227 | 0.0476 | 11.602 | 11.5511 | -0.439 | 1.0 |
| 310.928 | 0.1241 | 0.0481 | 11.615 | 11.5513 | -0.548 | 1.0 |
| 310.928 | 0.1262 | 0.0489 | 11.684 | 11.5516 | -1.133 | 1.0 |
| 310.928 | 0.1317 | 0.0510 | 11.609 | 11.5525 | -0.487 | 1.0 |
| 310.928 | 6.2839 | 2.6594 | 12.829 | 12.8643 | 0.275 | 1.0 |
| 310.928 | 10.2077 | 4.5153 | 14.318 | 14.1618 | -1.091 | 1.0 |
| 310.928 | 10.2070 | 4.5149 | 14.328 | 14.1615 | -1.162 | 1.0 |
| 310.928 | 13.4034 | 6.0653 | 15.587 | 15.4942 | -0.595 | 1.0 |
| 310.928 | 27.4438 | 11.7304 | 22.952 | 22.6524 | -1.305 | 1.0 |
| 310.928 | 27.4652 | 11.7370 | 22.924 | 22.6632 | -1.138 | 1.0 |
| 310.928 | 27.4679 | 11.7378 | 22.741 | 22.6645 | -0.336 | 1.0 |
| 310.928 | 27.5127 | 11.7515 | 22.697 | 22.6871 | -0.044 | 1.0 |
| 310.928 | 34.5757 | 13.6235 | 26.489 | 26.0815 | -1.538 | 1.0 |
| 310.928 | 34.6129 | 13.6320 | 26.454 | 26.0985 | -1.344 | 1.0 |
| 310.928 | 34.6447 | 13.6393 | 26.414 | 26.1130 | -1.139 | 1.0 |
| 310.928 | 35.1866 | 13.7622 | 26.436 | 26.3598 | -0.288 | 1.0 |
| 310.928 | 35.2107 | 13.7676 | 26.439 | 26.3708 | -0.258 | 1.0 |
| 377.594 | 0.1269 | 0.0405 | 13.631 | 13.5932 | -0.277 | 1.0 |
| 377.594 | 7.0540 | 2.3327 | 14.639 | 14.7501 | 0.759 | 1.0 |
| 377.594 | 7.0547 | 2.3329 | 14.657 | 14.7503 | 0.636 | 1.0 |
| 377.594 | 13.8770 | 4.6575 | 16.389 | 16.3790 | -0.061 | 1.0 |
| 377.594 | 14.0611 | 4.7195 | 16.368 | 16.4290 | 0.373 | 1.0 |
| 377.594 | 14.0694 | 4.7223 | 16.363 | 16.4312 | 0.417 | 1.0 |

Data from Carmichael [71] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 377.594 | 27.6741 | 8.8847 | 20.850 | 20.6467 | -0.975 | 1.0 |
| 377.594 | 27.6844 | 8.8874 | 20.940 | 20.6501 | -1.385 | 1.0 |
| 377.594 | 27.6913 | 8.8893 | 20.658 | 20.6523 | -0.027 | 1.0 |
| 377.594 | 27.9085 | 8.9471 | 20.743 | 20.7239 | -0.092 | 1.0 |
| 377.594 | 27.9340 | 8.9539 | 20.849 | 20.7323 | -0.560 | 1.0 |
| 377.594 | 27.9954 | 8.9702 | 20.776 | 20.7525 | -0.113 | 1.0 |
| 377.594 | 35.0494 | 10.6868 | 23.350 | 23.0703 | -1.198 | 1.0 |
| 444.261 | 0.1338 | 0.0362 | 15.597 | 15.4845 | -0.721 | 1.0 |
| 444.261 | 6.9913 | 1.9112 | 16.377 | 16.4191 | 0.257 | 1.0 |
| 444.261 | 6.9933 | 1.9118 | 16.357 | 16.4194 | 0.381 | 1.0 |
| 444.261 | 6.9961 | 1.9126 | 16.358 | 16.4198 | 0.378 | 1.0 |
| 444.261 | 14.0446 | 3.8254 | 17.589 | 17.6695 | 0.458 | 1.0 |
| 444.261 | 14.0466 | 3.8259 | 17.573 | 17.6699 | 0.552 | 1.0 |
| 444.261 | 28.6221 | 7.4148 | 20.976 | 20.8781 | -0.467 | 1.0 |
| 444.261 | 28.6621 | 7.4236 | 20.918 | 20.8876 | -0.145 | 1.0 |
| 444.261 | 28.6704 | 7.4255 | 20.915 | 20.8895 | -0.122 | 1.0 |
| 444.261 | 34.8177 | 8.7200 | 22.208 | 22.3553 | 0.663 | 1.0 |
| 444.261 | 34.8212 | 8.7207 | 22.172 | 22.3561 | 0.830 | 1.0 |
| 444.261 | 35.2997 | 8.8158 | 22.513 | 22.4709 | -0.187 | 1.0 |
| 444.261 | 35.3259 | 8.8210 | 22.499 | 22.4771 | -0.097 | 1.0 |
| 444.261 | 35.3438 | 8.8245 | 22.581 | 22.4814 | -0.441 | 1.0 |
| 477.594 | 0.2158 | 0.0544 | 16.543 | 16.3896 | -0.927 | 1.0 |
| 477.594 | 7.0795 | 1.7857 | 17.242 | 17.2527 | 0.062 | 1.0 |
| 477.594 | 7.0823 | 1.7864 | 17.253 | 17.2531 | 0.001 | 1.0 |
| 477.594 | 7.0857 | 1.7873 | 17.214 | 17.2536 | 0.230 | 1.0 |
| 477.594 | 14.0639 | 3.5158 | 18.338 | 18.3564 | 0.100 | 1.0 |
| 477.594 | 14.0666 | 3.5165 | 18.372 | 18.3569 | -0.082 | 1.0 |
| 477.594 | 27.8368 | 6.6392 | 20.909 | 20.9922 | 0.398 | 1.0 |
| 477.594 | 27.8464 | 6.6412 | 20.921 | 20.9942 | 0.350 | 1.0 |
| 477.594 | 27.9616 | 6.6651 | 21.023 | 21.0178 | -0.025 | 1.0 |
| 477.594 | 34.9349 | 8.0423 | 22.285 | 22.4699 | 0.830 | 1.0 |
| 477.594 | 34.9549 | 8.0461 | 22.296 | 22.4741 | 0.799 | 1.0 |

Number of points (Ref.71) 67

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.764 | BIAS-% | -0.503 | RMS-% | 0.905 |
| AAD | 0.156 | BIAS | -0.108 | RMS | 0.193 $\mu Pa \cdot s$ |

Data from Diller [9]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 300.0 | 27.5171 | 12.4236 | 23.08 | 23.4859 | 1.759 | 0.0 |
| 300.0 | 24.6130 | 11.4741 | 21.63 | 21.8836 | 1.172 | 0.0 |
| 300.0 | 21.9816 | 10.4929 | 20.11 | 20.3771 | 1.328 | 0.0 |
| 300.0 | 19.8617 | 9.6115 | 18.89 | 19.1409 | 1.328 | 0.0 |
| 300.0 | 17.5856 | 8.5754 | 17.60 | 17.8172 | 1.234 | 0.0 |
| 300.0 | 14.2203 | 6.9008 | 16.17 | 15.9469 | -1.380 | 0.0 |
| 300.0 | 10.6642 | 5.0361 | 14.10 | 14.2183 | 0.839 | 0.0 |
| 300.0 | 8.5932 | 3.9579 | 13.43 | 13.3756 | -0.405 | 0.0 |
| 300.0 | 6.5757 | 2.9418 | 12.57 | 12.6805 | 0.879 | 0.0 |
| 300.0 | 4.4641 | 1.9307 | 12.13 | 12.0809 | -0.404 | 0.0 |
| 300.0 | 2.3501 | 0.9808 | 11.67 | 11.5988 | -0.610 | 0.0 |
| 250.0 | 33.1075 | 17.4623 | 33.91 | 33.8731 | -0.109 | 0.0 |
| 250.0 | 30.2114 | 16.8947 | 32.12 | 32.1340 | 0.043 | 0.0 |
| 250.0 | 26.2641 | 15.9738 | 29.56 | 29.5642 | 0.014 | 0.0 |
| 250.0 | 23.4267 | 15.1618 | 27.44 | 27.5203 | 0.293 | 0.0 |
| 250.0 | 19.9095 | 13.8848 | 24.55 | 24.6567 | 0.435 | 0.0 |
| 250.0 | 15.6382 | 11.6497 | 20.33 | 20.4779 | 0.727 | 0.0 |
| 250.0 | 14.2168 | 10.6548 | 19.30 | 18.8990 | -2.078 | 0.0 |
| 250.0 | 12.8282 | 9.5433 | 17.24 | 17.3106 | 0.410 | 0.0 |
| 250.0 | 11.4851 | 8.3599 | 15.87 | 15.8044 | -0.413 | 0.0 |
| 250.0 | 10.0994 | 7.0840 | 14.56 | 14.3750 | -1.270 | 0.0 |
| 250.0 | 8.6876 | 5.8009 | 13.12 | 13.1252 | 0.040 | 0.0 |
| 250.0 | 7.2482 | 4.5728 | 12.31 | 12.0926 | -1.766 | 0.0 |
| 250.0 | 5.8005 | 3.4501 | 11.36 | 11.2803 | -0.701 | 0.0 |
| 250.0 | 4.5051 | 2.5444 | 10.84 | 10.7125 | -1.177 | 0.0 |
| 250.0 | 3.0433 | 1.6256 | 10.57 | 10.2130 | -3.378 | 0.0 |
| 212.0 | 25.9756 | 19.4383 | 40.14 | 40.0453 | -0.236 | 1.0 |
| 212.0 | 24.0602 | 19.1042 | 39.18 | 38.6561 | -1.337 | 1.0 |
| 212.0 | 22.0279 | 18.7101 | 37.20 | 37.1058 | -0.253 | 1.0 |
| 212.0 | 19.8848 | 18.2372 | 35.20 | 35.3592 | 0.452 | 1.0 |
| 212.0 | 18.0669 | 17.7740 | 33.66 | 33.7563 | 0.286 | 0.0 |
| 212.0 | 17.8173 | 17.7049 | 33.45 | 33.5253 | 0.225 | 0.0 |
| 212.0 | 15.8212 | 17.0886 | 31.53 | 31.5564 | 0.084 | 0.0 |
| 212.0 | 15.1417 | 16.8471 | 30.36 | 30.8256 | 1.534 | 0.0 |
| 212.0 | 12.5149 | 15.6714 | 27.22 | 27.5556 | 1.233 | 0.0 |

Data from Diller [9] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 212.0 | 12.3572 | 15.5834 | 26.86 | 27.3283 | 1.743 | 0.0 |
| 212.0 | 10.7324 | 14.4780 | 24.30 | 24.6547 | 1.460 | 0.0 |
| 212.0 | 9.8615 | 13.6563 | 22.68 | 22.8642 | 0.812 | 0.0 |
| 212.0 | 9.2284 | 12.8844 | 20.78 | 21.3169 | 2.584 | 0.0 |
| 212.0 | 8.6517 | 11.9841 | 19.32 | 19.6613 | 1.767 | 0.0 |
| 212.0 | 8.2518 | 11.2078 | 18.35 | 18.3512 | 0.006 | 0.0 |
| 212.0 | 7.6827 | 9.8580 | 15.71 | 16.3074 | 3.803 | 0.0 |
| 212.0 | 7.3221 | 8.9005 | 14.48 | 15.0219 | 3.742 | 0.0 |
| 212.0 | 6.9239 | 7.8512 | 13.38 | 13.7564 | 2.813 | 0.0 |
| 212.0 | 6.5161 | 6.8677 | 12.19 | 12.6967 | 4.156 | 0.0 |
| 212.0 | 6.0626 | 5.9185 | 11.59 | 11.7826 | 1.662 | 0.0 |
| 212.0 | 5.2844 | 4.6049 | 10.31 | 10.6825 | 3.613 | 0.0 |
| 212.0 | 4.7580 | 3.8854 | 9.69 | 10.1567 | 4.816 | 0.0 |
| 212.0 | 3.8811 | 2.8909 | 9.41 | 9.5148 | 1.114 | 0.0 |
| 212.0 | 2.6830 | 1.8045 | 9.07 | 8.9211 | -1.642 | 0.0 |
| 212.0 | 1.3573 | 0.8328 | 8.69 | 8.4809 | -2.406 | 0.0 |
| 200.0 | 26.0666 | 20.5452 | 45.55 | 44.9282 | -1.365 | 1.0 |
| 200.0 | 22.7861 | 20.0554 | 43.26 | 42.5112 | -1.731 | 1.0 |
| 200.0 | 17.1539 | 18.9907 | 38.47 | 37.8847 | -1.522 | 1.0 |
| 200.0 | 13.4880 | 18.0190 | 34.49 | 34.2569 | -0.676 | 1.0 |
| 200.0 | 10.7512 | 16.9746 | 31.18 | 30.8498 | -1.059 | 0.0 |
| 200.0 | 8.9805 | 15.9606 | 28.11 | 27.9351 | -0.622 | 0.0 |
| 200.0 | 7.9300 | 15.0569 | 26.03 | 25.6097 | -1.615 | 0.0 |
| 200.0 | 7.0972 | 13.9399 | 23.25 | 23.0368 | -0.917 | 0.0 |
| 200.0 | 6.0940 | 10.7792 | 17.73 | 17.1987 | -2.997 | 0.0 |
| 200.0 | 5.7235 | 8.3884 | 13.97 | 13.9010 | -0.494 | 0.0 |
| 200.0 | 5.3374 | 6.5189 | 12.28 | 11.8645 | -3.383 | 0.0 |
| 200.0 | 5.0575 | 5.6154 | 11.44 | 11.0312 | -3.573 | 0.0 |
| 200.0 | 4.6874 | 4.7241 | 10.71 | 10.2986 | -3.841 | 0.0 |
| 200.0 | 4.1792 | 3.8062 | 10.06 | 9.6321 | -4.253 | 0.0 |
| 200.0 | 3.5092 | 2.8863 | 9.58 | 9.0494 | -5.538 | 0.0 |
| 200.0 | 2.5405 | 1.8678 | 9.05 | 8.4990 | -6.088 | 0.0 |
| 180.0 | 29.6172 | 22.6414 | 58.06 | 57.9165 | -0.247 | 1.0 |
| 180.0 | 26.0926 | 22.2956 | 55.35 | 55.2777 | -0.131 | 1.0 |
| 180.0 | 22.5630 | 21.9099 | 52.91 | 52.5713 | -0.640 | 1.0 |

Data from Diller [9] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 180.0 | 18.9364 | 21.4591 | 50.00 | 49.6796 | -0.641 | 1.0 |
| 180.0 | 18.0006 | 21.3314 | 49.05 | 48.9073 | -0.291 | 1.0 |
| 180.0 | 15.5309 | 20.9659 | 47.34 | 46.7988 | -1.143 | 1.0 |
| 180.0 | 14.3643 | 20.7761 | 46.07 | 45.7585 | -0.676 | 1.0 |
| 180.0 | 10.9669 | 20.1355 | 42.77 | 42.4934 | -0.647 | 1.0 |
| 180.0 | 6.6784 | 18.9933 | 37.64 | 37.4444 | -0.520 | 1.0 |
| 180.0 | 4.7313 | 18.1821 | 34.47 | 34.3347 | -0.392 | 1.0 |
| 180.0 | 3.5334 | 17.4191 | 31.78 | 31.7013 | -0.248 | 0.0 |
| 170.0 | 31.3603 | 23.5728 | 65.87 | 66.1360 | 0.404 | 1.0 |
| 170.0 | 28.0109 | 23.2992 | 63.50 | 63.4795 | -0.032 | 1.0 |
| 170.0 | 24.6337 | 22.9996 | 61.26 | 60.7878 | -0.771 | 1.0 |
| 170.0 | 21.4364 | 22.6889 | 58.20 | 58.2058 | 0.010 | 1.0 |
| 170.0 | 17.7783 | 22.2923 | 55.66 | 55.1763 | -0.869 | 1.0 |
| 170.0 | 14.7678 | 21.9226 | 53.31 | 52.5838 | -1.362 | 1.0 |
| 170.0 | 14.6458 | 21.9066 | 53.26 | 52.4762 | -1.472 | 1.0 |
| 170.0 | 11.6174 | 21.4778 | 50.26 | 49.7178 | -1.079 | 1.0 |
| 170.0 | 8.5905 | 20.9691 | 47.07 | 46.7281 | -0.726 | 1.0 |
| 170.0 | 5.9150 | 20.4137 | 43.65 | 43.7607 | 0.254 | 1.0 |
| 170.0 | 3.2114 | 19.6654 | 40.24 | 40.1690 | -0.176 | 1.0 |
| 170.0 | 2.3339 | 19.3469 | 38.78 | 38.7617 | -0.047 | 1.0 |
| 170.0 | 2.3338 | 19.3468 | 38.72 | 38.7616 | 0.107 | 1.0 |
| 140.0 | 32.1731 | 25.8442 | 97.32 | 99.9805 | 2.734 | 1.0 |
| 140.0 | 28.6862 | 25.6534 | 93.95 | 96.0911 | 2.279 | 1.0 |
| 140.0 | 25.5140 | 25.4705 | 91.10 | 92.6413 | 1.692 | 1.0 |
| 140.0 | 21.9776 | 25.2547 | 88.47 | 88.8758 | 0.459 | 1.0 |
| 140.0 | 18.3655 | 25.0192 | 85.03 | 85.0952 | 0.077 | 1.0 |
| 140.0 | 16.7132 | 24.9056 | 82.61 | 83.3812 | 0.934 | 1.0 |
| 140.0 | 14.8198 | 24.7704 | 81.70 | 81.4242 | -0.338 | 1.0 |
| 140.0 | 14.3898 | 24.7389 | 81.05 | 80.9804 | -0.086 | 1.0 |
| 140.0 | 11.6975 | 24.5340 | 78.46 | 78.2020 | -0.329 | 1.0 |
| 140.0 | 11.5486 | 24.5223 | 78.50 | 78.0482 | -0.576 | 1.0 |
| 140.0 | 8.7964 | 24.2966 | 75.33 | 75.1958 | -0.178 | 1.0 |
| 140.0 | 8.1090 | 24.2375 | 75.22 | 74.4791 | -0.985 | 1.0 |
| 140.0 | 5.9313 | 24.0417 | 71.93 | 72.1916 | 0.364 | 1.0 |
| 140.0 | 4.6192 | 23.9169 | 71.39 | 70.7963 | -0.832 | 1.0 |

Data from Diller [9] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 140.0 | 3.6012 | 23.8159 | 69.54 | 69.7021 | 0.233 | 1.0 |
| 140.0 | 3.5782 | 23.8136 | 69.59 | 69.6772 | 0.125 | 1.0 |
| 140.0 | 1.0162 | 23.5408 | 67.74 | 66.8629 | -1.295 | 1.0 |
| 140.0 | 0.6435 | 23.4986 | 66.18 | 66.4447 | 0.400 | 1.0 |
| 120.0 | 29.6804 | 27.1490 | 135.66 | 139.1141 | 2.546 | 1.0 |
| 120.0 | 26.0938 | 26.9908 | 132.02 | 133.5790 | 1.181 | 1.0 |
| 120.0 | 22.8894 | 26.8433 | 126.93 | 128.8088 | 1.480 | 1.0 |
| 120.0 | 18.5450 | 26.6331 | 121.87 | 122.5704 | 0.575 | 1.0 |
| 120.0 | 14.9691 | 26.4501 | 117.36 | 117.6036 | 0.208 | 1.0 |
| 120.0 | 11.8634 | 26.2826 | 112.56 | 113.3914 | 0.739 | 1.0 |
| 120.0 | 10.0661 | 26.1816 | 110.98 | 110.9899 | 0.009 | 1.0 |
| 120.0 | 8.2936 | 26.0789 | 109.04 | 108.6433 | -0.364 | 1.0 |
| 120.0 | 6.4887 | 25.9707 | 105.48 | 106.2723 | 0.751 | 1.0 |
| 120.0 | 4.7333 | 25.8617 | 103.04 | 103.9804 | 0.913 | 1.0 |
| 120.0 | 3.0145 | 25.7511 | 101.69 | 101.7460 | 0.055 | 1.0 |
| 120.0 | 1.1885 | 25.6289 | 99.49 | 99.3782 | -0.112 | 1.0 |
| 100.0 | 31.3341 | 28.6020 | 218.49 | 220.8303 | 1.071 | 1.0 |
| 100.0 | 29.1106 | 28.5266 | 215.48 | 215.6186 | 0.064 | 1.0 |
| 100.0 | 27.6657 | 28.4768 | 212.13 | 212.3065 | 0.083 | 1.0 |
| 100.0 | 26.8786 | 28.4494 | 210.75 | 210.5254 | -0.107 | 1.0 |
| 100.0 | 25.2648 | 28.3926 | 206.80 | 206.9247 | 0.060 | 1.0 |
| 100.0 | 24.0528 | 28.3494 | 205.58 | 204.2630 | -0.641 | 1.0 |
| 100.0 | 23.3380 | 28.3236 | 203.68 | 202.7097 | -0.476 | 1.0 |
| 100.0 | 22.0477 | 28.2767 | 201.56 | 199.9366 | -0.805 | 1.0 |
| 100.0 | 20.4257 | 28.2169 | 198.40 | 196.5039 | -0.956 | 1.0 |
| 100.0 | 18.5381 | 28.1460 | 193.94 | 192.5810 | -0.701 | 1.0 |
| 100.0 | 16.5683 | 28.0705 | 190.05 | 188.5651 | -0.781 | 1.0 |
| 100.0 | 12.5966 | 27.9134 | 181.94 | 180.6900 | -0.687 | 1.0 |
| 100.0 | 9.8678 | 27.8011 | 174.37 | 175.4359 | 0.611 | 1.0 |
| 100.0 | 9.4111 | 27.7820 | 175.95 | 174.5682 | -0.785 | 1.0 |
| 100.0 | 7.3829 | 27.6956 | 169.50 | 170.7511 | 0.738 | 1.0 |
| 100.0 | 5.8976 | 27.6310 | 169.32 | 167.9918 | -0.784 | 1.0 |
| 100.0 | 4.5249 | 27.5700 | 164.74 | 165.4672 | 0.441 | 1.0 |
| 100.0 | 3.3040 | 27.5149 | 161.63 | 163.2414 | 0.997 | 1.0 |
| 100.0 | 2.3281 | 27.4701 | 162.62 | 161.4742 | -0.705 | 1.0 |
| 100.0 | 1.7964 | 27.4455 | 159.99 | 160.5160 | 0.329 | 1.0 |

Data from Diller et al. [9] (continued)

Number of points (Ref. 9) 141

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.101 | BIAS-% | -0.089 | RMS-% | 1.598 |
| AAD | 0.489 | BIAS | 0.014 | RMS | 0.749 $\mu$Pa· s |

Data from Giddings et al. [70]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | $\mu$Pa·s | $\mu$Pa·s | % | |
| 283.15 | 0.1013 | 0.0431 | 10.67 | 10.6464 | -0.221 | 4.0 |
| 283.15 | 0.6890 | 0.2969 | 10.74 | 10.7460 | 0.056 | 4.0 |
| 283.15 | 1.3790 | 0.6031 | 10.86 | 10.8733 | 0.123 | 4.0 |
| 283.15 | 2.0680 | 0.9180 | 10.90 | 11.0126 | 1.033 | 4.0 |
| 283.15 | 2.7581 | 1.2427 | 11.14 | 11.1650 | 0.224 | 4.0 |
| 283.15 | 3.4471 | 1.5766 | 11.31 | 11.3312 | 0.188 | 4.0 |
| 283.15 | 4.1371 | 1.9208 | 11.48 | 11.5127 | 0.285 | 4.0 |
| 283.15 | 5.5161 | 2.6383 | 11.93 | 11.9244 | -0.047 | 4.0 |
| 283.15 | 6.8952 | 3.3941 | 12.37 | 12.4083 | 0.309 | 4.0 |
| 283.15 | 8.6187 | 4.3867 | 13.12 | 13.1240 | 0.031 | 4.0 |
| 283.15 | 10.3220 | 5.4071 | 14.08 | 13.9584 | -0.864 | 4.0 |
| 283.15 | 12.0658 | 6.4699 | 14.96 | 14.9390 | -0.141 | 4.0 |
| 283.15 | 13.7893 | 7.5111 | 16.00 | 16.0161 | 0.100 | 4.0 |
| 283.15 | 17.3377 | 9.5126 | 18.32 | 18.4396 | 0.653 | 4.0 |
| 283.15 | 20.6804 | 11.1214 | 20.70 | 20.7672 | 0.324 | 4.0 |
| 283.15 | 27.5786 | 13.6062 | 25.05 | 25.1734 | 0.493 | 4.0 |
| 283.15 | 34.4738 | 15.3290 | 28.80 | 28.9703 | 0.591 | 4.0 |
| 283.15 | 41.3680 | 16.6170 | 32.25 | 32.3405 | 0.281 | 4.0 |
| 283.15 | 48.2631 | 17.6396 | 35.50 | 35.4399 | -0.169 | 4.0 |
| 283.15 | 55.1583 | 18.4868 | 38.50 | 38.3703 | -0.337 | 0.0 |
| 310.93 | 0.1013 | 0.0392 | 11.62 | 11.5479 | -0.620 | 4.0 |
| 310.93 | 0.6890 | 0.2693 | 11.68 | 11.6402 | -0.340 | 4.0 |
| 310.93 | 1.3790 | 0.5445 | 11.79 | 11.7565 | -0.284 | 4.0 |
| 310.93 | 2.0680 | 0.8249 | 11.90 | 11.8814 | -0.156 | 4.0 |
| 310.93 | 2.7581 | 1.1113 | 12.00 | 12.0159 | 0.133 | 4.0 |
| 310.93 | 3.4471 | 1.4029 | 12.16 | 12.1599 | -0.001 | 4.0 |
| 310.93 | 4.1371 | 1.7004 | 12.31 | 12.3144 | 0.035 | 4.0 |
| 310.93 | 5.5161 | 2.3108 | 12.65 | 12.6551 | 0.041 | 4.0 |
| 310.93 | 6.8952 | 2.9409 | 13.03 | 13.0411 | 0.085 | 4.0 |
| 310.93 | 8.6187 | 3.7515 | 13.68 | 13.5898 | -0.659 | 4.0 |

Data from Giddings et al. [70] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 310.93 | 10.3422 | 4.5803 | 14.22 | 14.2131 | -0.048 | 4.0 |
| 310.93 | 12.0658 | 5.4174 | 14.94 | 14.9087 | -0.210 | 4.0 |
| 310.93 | 13.7893 | 6.2509 | 15.71 | 15.6699 | -0.256 | 4.0 |
| 310.93 | 17.3377 | 7.9075 | 17.52 | 17.3976 | -0.699 | 4.0 |
| 310.93 | 20.6804 | 9.3362 | 19.30 | 19.1372 | -0.844 | 4.0 |
| 310.93 | 27.5786 | 11.7715 | 22.80 | 22.7201 | -0.350 | 4.0 |
| 310.93 | 34.4738 | 13.5999 | 26.10 | 26.0347 | -0.250 | 4.0 |
| 310.93 | 41.3680 | 15.0082 | 29.20 | 29.0564 | -0.492 | 4.0 |
| 310.93 | 48.2631 | 16.1369 | 31.80 | 31.8533 | 0.168 | 4.0 |
| 310.93 | 55.1583 | 17.0733 | 34.20 | 34.4918 | 0.853 | 4.0 |
| 344.26 | 0.1013 | 0.0354 | 12.69 | 12.5893 | -0.794 | 4.0 |
| 344.26 | 0.6890 | 0.2423 | 12.75 | 12.6742 | -0.595 | 4.0 |
| 344.26 | 1.3790 | 0.4883 | 12.84 | 12.7796 | -0.470 | 4.0 |
| 344.26 | 2.0680 | 0.7370 | 12.94 | 12.8914 | -0.375 | 4.0 |
| 344.26 | 2.7581 | 0.9893 | 13.05 | 13.0100 | -0.307 | 4.0 |
| 344.26 | 3.4471 | 1.2442 | 13.15 | 13.1352 | -0.113 | 4.0 |
| 344.26 | 4.1371 | 1.5023 | 13.28 | 13.2675 | -0.094 | 4.0 |
| 344.26 | 5.5161 | 2.0262 | 13.55 | 13.5535 | 0.026 | 4.0 |
| 344.26 | 6.8952 | 2.5595 | 13.86 | 13.8686 | 0.062 | 4.0 |
| 344.26 | 8.6187 | 3.2362 | 14.29 | 14.3039 | 0.097 | 4.0 |
| 344.26 | 10.3422 | 3.9200 | 14.79 | 14.7849 | -0.035 | 4.0 |
| 344.26 | 12.0658 | 4.6059 | 15.33 | 15.3097 | -0.133 | 4.0 |
| 344.26 | 13.7893 | 5.2881 | 15.89 | 15.8749 | -0.095 | 4.0 |
| 344.26 | 17.3377 | 6.6588 | 17.12 | 17.1463 | 0.154 | 4.0 |
| 344.26 | 20.6804 | 7.8789 | 18.42 | 18.4396 | 0.106 | 4.0 |
| 344.26 | 27.5786 | 10.0969 | 21.23 | 21.2238 | -0.029 | 4.0 |
| 344.26 | 34.4738 | 11.8972 | 23.94 | 23.9618 | 0.091 | 4.0 |
| 344.26 | 41.3680 | 13.3519 | 26.50 | 26.5568 | 0.214 | 4.0 |
| 344.26 | 48.2631 | 14.5478 | 29.10 | 29.0044 | -0.328 | 4.0 |
| 344.26 | 55.1583 | 15.5526 | 31.30 | 31.3296 | 0.095 | 4.0 |
| 377.59 | 0.1013 | 0.0323 | 13.70 | 13.5897 | -0.805 | 4.0 |
| 377.59 | 0.6890 | 0.2204 | 13.76 | 13.6683 | -0.667 | 4.0 |
| 377.59 | 1.3790 | 0.4430 | 13.84 | 13.7649 | -0.542 | 4.0 |
| 377.59 | 2.0680 | 0.6671 | 13.93 | 13.8663 | -0.457 | 4.0 |
| 377.59 | 2.7581 | 0.8933 | 14.03 | 13.9729 | -0.407 | 4.0 |

Data from Giddings et al. [70] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 377.59 | 3.4471 | 1.1207 | 14.12 | 14.0842 | -0.254 | 4.0 |
| 377.59 | 4.1371 | 1.3500 | 14.23 | 14.2008 | -0.205 | 4.0 |
| 377.59 | 5.5161 | 1.8122 | 14.45 | 14.4490 | -0.007 | 4.0 |
| 377.59 | 6.8952 | 2.2788 | 14.71 | 14.7178 | 0.053 | 4.0 |
| 377.59 | 8.6187 | 2.8661 | 15.07 | 15.0822 | 0.081 | 4.0 |
| 377.59 | 10.3422 | 3.4554 | 15.47 | 15.4777 | 0.050 | 4.0 |
| 377.59 | 12.0658 | 4.0438 | 15.80 | 15.9027 | 0.650 | 4.0 |
| 377.59 | 13.7893 | 4.6280 | 16.36 | 16.3552 | -0.029 | 4.0 |
| 377.59 | 17.3377 | 5.8055 | 17.34 | 17.3621 | 0.127 | 4.0 |
| 377.59 | 20.6804 | 6.8670 | 18.39 | 18.3834 | -0.036 | 4.0 |
| 377.59 | 27.5786 | 8.8593 | 20.62 | 20.6153 | -0.023 | 4.0 |
| 377.59 | 34.4738 | 10.5579 | 22.86 | 22.8828 | 0.100 | 4.0 |
| 377.59 | 41.3680 | 11.9874 | 25.10 | 25.0967 | -0.013 | 4.0 |
| 377.59 | 48.2631 | 13.1961 | 27.20 | 27.2273 | 0.100 | 4.0 |
| 377.59 | 55.1583 | 14.2300 | 29.40 | 29.2743 | -0.428 | 4.0 |
| 410.93 | 0.1013 | 0.0297 | 14.65 | 14.5527 | -0.664 | 4.0 |
| 410.93 | 0.6890 | 0.2022 | 14.70 | 14.6258 | -0.505 | 4.0 |
| 410.93 | 1.3790 | 0.4057 | 14.78 | 14.7151 | -0.439 | 4.0 |
| 410.93 | 2.0680 | 0.6099 | 14.86 | 14.8081 | -0.349 | 4.0 |
| 410.93 | 2.7581 | 0.8154 | 14.94 | 14.9050 | -0.234 | 4.0 |
| 410.93 | 3.4471 | 1.0213 | 15.03 | 15.0056 | -0.162 | 4.0 |
| 410.93 | 4.1371 | 1.2282 | 15.12 | 15.1102 | -0.065 | 4.0 |
| 410.93 | 5.5161 | 1.6436 | 15.32 | 15.3307 | 0.070 | 4.0 |
| 410.93 | 6.8952 | 2.0607 | 15.54 | 15.5663 | 0.170 | 4.0 |
| 410.93 | 8.6187 | 2.5829 | 15.84 | 15.8818 | 0.264 | 4.0 |
| 410.93 | 10.3422 | 3.1046 | 16.17 | 16.2197 | 0.308 | 4.0 |
| 410.93 | 12.0658 | 3.6239 | 16.33 | 16.5790 | 1.525 | 4.0 |
| 410.93 | 13.7893 | 4.1387 | 16.91 | 16.9582 | 0.285 | 4.0 |
| 410.93 | 17.3377 | 5.1773 | 17.74 | 17.7943 | 0.306 | 4.0 |
| 410.93 | 20.6804 | 6.1195 | 18.61 | 18.6377 | 0.149 | 4.0 |
| 410.93 | 27.5786 | 7.9189 | 20.49 | 20.4876 | -0.012 | 4.0 |
| 410.93 | 34.4738 | 9.5003 | 22.40 | 22.3977 | -0.010 | 4.0 |
| 410.93 | 41.3680 | 10.8712 | 24.30 | 24.2988 | -0.005 | 4.0 |
| 410.93 | 48.2631 | 12.0584 | 26.10 | 26.1577 | 0.221 | 4.0 |
| 410.93 | 55.1583 | 13.0925 | 28.00 | 27.9639 | -0.129 | 4.0 |

Number of points (Ref.70) 100

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.281 | BIAS-% | -0.055 | RMS-% | 0.386 |
| AAD | 0.049 | BIAS | -0.006 | RMS | 0.071 $\mu Pa \cdot s$ |

Data from Gonzalez et al. [86]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 310.928 | 1.3789 | 0.5444 | 12.01 | 11.7564 | -2.112 | 0.0 |
| 310.928 | 2.7579 | 1.1112 | 12.10 | 12.0158 | -0.696 | 0.0 |
| 310.928 | 4.1368 | 1.7002 | 12.54 | 12.3142 | -1.800 | 0.0 |
| 310.928 | 5.5158 | 2.3107 | 12.76 | 12.6550 | -0.823 | 0.0 |
| 310.928 | 6.8947 | 2.9407 | 13.16 | 13.0409 | -0.905 | 0.0 |
| 310.928 | 10.3421 | 4.5803 | 14.46 | 14.2131 | -1.708 | 0.0 |
| 310.928 | 13.7895 | 6.2511 | 15.95 | 15.6699 | -1.756 | 0.0 |
| 310.928 | 20.6842 | 9.3378 | 19.56 | 19.1393 | -2.151 | 0.0 |
| 310.928 | 27.5789 | 11.7717 | 23.14 | 22.7204 | -1.813 | 0.0 |
| 310.928 | 34.4737 | 13.6000 | 26.65 | 26.0348 | -2.309 | 0.0 |
| 310.928 | 41.3684 | 15.0083 | 29.90 | 29.0567 | -2.820 | 0.0 |
| 310.928 | 55.1579 | 17.0733 | 35.47 | 34.4919 | -2.758 | 0.0 |
| 344.261 | 1.3789 | 0.4882 | 13.08 | 12.7797 | -2.296 | 0.0 |
| 344.261 | 2.7579 | 0.9892 | 13.28 | 13.0100 | -2.033 | 0.0 |
| 344.261 | 4.1368 | 1.5022 | 13.46 | 13.2675 | -1.430 | 0.0 |
| 344.261 | 5.5158 | 2.0260 | 13.73 | 13.5534 | -1.286 | 0.0 |
| 344.261 | 6.8947 | 2.5593 | 14.08 | 13.8685 | -1.502 | 0.0 |
| 344.261 | 10.3421 | 3.9200 | 14.90 | 14.7849 | -0.773 | 0.0 |
| 344.261 | 13.7895 | 5.2882 | 15.95 | 15.8750 | -0.470 | 0.0 |
| 344.261 | 20.6842 | 7.8802 | 18.68 | 18.4411 | -1.279 | 0.0 |
| 344.261 | 27.5789 | 10.0969 | 21.63 | 21.2239 | -1.878 | 0.0 |
| 344.261 | 34.4737 | 11.8971 | 24.46 | 23.9617 | -2.037 | 0.0 |
| 344.261 | 41.3684 | 13.3519 | 27.50 | 26.5569 | -3.430 | 0.0 |
| 344.261 | 55.1579 | 15.5525 | 32.22 | 31.3294 | -2.764 | 0.0 |
| 377.594 | 1.3789 | 0.4430 | 14.05 | 13.7650 | -2.028 | 0.0 |
| 377.594 | 2.7579 | 0.8932 | 14.22 | 13.9729 | -1.737 | 0.0 |
| 377.594 | 4.1368 | 1.3499 | 14.40 | 14.2008 | -1.383 | 0.0 |
| 377.594 | 5.5158 | 1.8120 | 14.63 | 14.4491 | -1.237 | 0.0 |
| 377.594 | 6.8947 | 2.2786 | 14.81 | 14.7178 | -0.623 | 0.0 |
| 377.594 | 13.7895 | 4.6280 | 16.46 | 16.3553 | -0.636 | 0.0 |
| 377.594 | 20.6842 | 6.8680 | 18.60 | 18.3846 | -1.158 | 0.0 |
| 377.594 | 27.5789 | 8.8593 | 20.64 | 20.6153 | -0.120 | 0.0 |
| 377.594 | 34.4737 | 10.5577 | 23.27 | 22.8827 | -1.665 | 0.0 |
| 377.594 | 41.3684 | 11.9874 | 25.56 | 25.0967 | -1.812 | 0.0 |
| 377.594 | 55.1579 | 14.2298 | 30.03 | 29.2740 | -2.517 | 0.0 |

Data from Gonzalez et al. [86] (continued)

| T | P | ρ | η,exp | η,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | μPa·s | μPa·s | % | |
| 410.928 | 1.3789 | 0.4057 | 15.09 | 14.7150 | -2.485 | 0.0 |
| 410.928 | 2.7579 | 0.8153 | 15.26 | 14.9049 | -2.327 | 0.0 |
| 410.928 | 4.1368 | 1.2281 | 15.34 | 15.1101 | -1.499 | 0.0 |
| 410.928 | 5.5158 | 1.6435 | 15.50 | 15.3306 | -1.093 | 0.0 |
| 410.928 | 6.8947 | 2.0605 | 15.66 | 15.5662 | -0.599 | 0.0 |
| 410.928 | 10.3421 | 3.1046 | 16.33 | 16.2197 | -0.676 | 0.0 |
| 410.928 | 13.7895 | 4.1388 | 17.02 | 16.9582 | -0.363 | 0.0 |
| 410.928 | 20.6842 | 6.1206 | 18.82 | 18.6386 | -0.964 | 0.0 |
| 410.928 | 34.4737 | 9.5003 | 22.83 | 22.3976 | -1.894 | 0.0 |
| 410.928 | 41.3684 | 10.8713 | 24.86 | 24.2989 | -2.257 | 0.0 |
| 410.928 | 55.1579 | 13.0925 | 29.08 | 27.9638 | -3.838 | 0.0 |
| 444.261 | 1.3789 | 0.3744 | 16.00 | 15.6322 | -2.299 | 0.0 |
| 444.261 | 4.1368 | 1.1280 | 16.37 | 15.9943 | -2.295 | 0.0 |
| 444.261 | 6.8947 | 1.8847 | 16.72 | 16.4039 | -1.891 | 0.0 |
| 444.261 | 13.7895 | 3.7574 | 17.85 | 17.6198 | -1.289 | 0.0 |
| 444.261 | 20.6842 | 5.5417 | 19.33 | 19.0567 | -1.414 | 0.0 |
| 444.261 | 27.5789 | 7.1813 | 20.92 | 20.6325 | -1.374 | 0.0 |
| 444.261 | 34.4737 | 8.6512 | 22.63 | 22.2728 | -1.579 | 0.0 |

Number of points (Ref.86) 53

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.658 | BIAS-% | -1.658 | RMS-% | 0.768 |
| AAD | 0.335 | BIAS | -0.335 | RMS | 0.248 μPa·s |

Data from Haynes [87]

| T | P | ρ | η,exp | η,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | μPa·s | μPa·s | % | |
| 95.0 | 0.01983 | 27.78109 | 178.44724 | 179.40555 | 0.5370 | 2.0 |
| 100.0 | 0.03441 | 27.35180 | 156.97692 | 156.96669 | -0.0065 | 2.0 |
| 105.0 | 0.05643 | 26.91566 | 138.38713 | 138.16422 | -0.1611 | 2.0 |
| 110.0 | 0.08820 | 26.47086 | 122.58596 | 122.38943 | -0.1603 | 2.0 |
| 115.0 | 0.13232 | 26.01545 | 109.07683 | 109.10539 | 0.0262 | 2.0 |

Data from Haynes [87] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 120.0 | 0.19158 | 25.54730 | 97.56533 | 97.85224 | 0.2941 | 2.0 |
| 125.0 | 0.26896 | 25.06409 | 88.35418 | 88.24503 | -0.1235 | 2.0 |
| 130.0 | 0.36760 | 24.56319 | 81.04580 | 79.96689 | -1.3312 | 2.0 |
| 135.0 | 0.49072 | 24.04154 | 73.34020 | 72.75987 | -0.7913 | 2.0 |
| 140.0 | 0.64165 | 23.49559 | 67.33754 | 66.41512 | -1.3699 | 2.0 |
| 145.0 | 0.82379 | 22.92098 | 61.23474 | 60.76358 | -0.7694 | 2.0 |
| 150.0 | 1.04065 | 22.31228 | 55.73642 | 55.66745 | -0.1238 | 2.0 |
| 155.0 | 1.29580 | 21.66242 | 51.43842 | 51.01256 | -0.8279 | 2.0 |
| 160.0 | 1.59296 | 20.96180 | 46.54146 | 46.70134 | 0.3435 | 2.0 |
| 165.0 | 1.93607 | 20.19664 | 41.94595 | 42.64546 | 1.6677 | 2.0 |
| 170.0 | 2.32936 | 19.34572 | 37.64927 | 38.75676 | 2.9416 | 2.0 |
| 175.0 | 2.77762 | 18.37296 | 34.35499 | 34.93156 | 1.6783 | 2.0 |
| 180.0 | 3.28655 | 17.20702 | 30.95908 | 31.01327 | 0.1750 | 2.0 |
| 185.0 | 3.86361 | 15.66142 | 26.15027 | 26.65399 | 1.9263 | 2.0 |
| 190.0 | 4.52082 | 12.49998 | 19.76671 | 19.75384 | -0.0651 | 2.0 |

Number of points (Ref.87) 20

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.766 | BIAS-% | 0.193 | RMS-% | 1.081 |
| AAD | 0.424 | BIAS | 0.014 | RMS | 0.556 $\mu Pa \cdot s$ |

Data from Hellemans et al. [88]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 96.8 | 0.0405 | 27.6352 | 169.0 | 171.2001 | 1.302 | 0.0 |
| 96.8 | 0.2837 | 27.6462 | 170.0 | 171.6593 | 0.976 | 0.0 |
| 96.8 | 1.9657 | 27.7211 | 173.0 | 174.8539 | 1.072 | 0.0 |
| 96.8 | 1.8238 | 27.7149 | 180.0 | 174.5834 | -3.009 | 0.0 |
| 96.8 | 5.8262 | 27.8869 | 180.0 | 182.3155 | 1.286 | 0.0 |
| 96.8 | 7.8122 | 27.9690 | 191.0 | 186.2324 | -2.496 | 0.0 |
| 96.8 | 9.3523 | 28.0314 | 188.0 | 189.3108 | 0.697 | 0.0 |
| 106.0 | 0.0808 | 26.8426 | 133.0 | 135.2417 | 1.685 | 0.0 |
| 106.0 | 1.9252 | 26.9391 | 135.0 | 138.2104 | 2.378 | 0.0 |
| 106.0 | 4.0327 | 27.0458 | 138.0 | 141.6371 | 2.636 | 0.0 |

Data from Hellemans et al. [88] (continued)

| T | P | ρ | η,exp | η,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm⁻³ | μPa·s | μPa·s | % | |
| 106.0 | 5.8465 | 27.1349 | 141.0 | 144.6196 | 2.567 | 0.0 |
| 106.0 | 7.9439 | 27.2349 | 145.0 | 148.1123 | 2.146 | 0.0 |
| 106.0 | 9.5448 | 27.3093 | 149.0 | 150.8128 | 1.217 | 0.0 |
| 115.3 | 0.1517 | 26.0031 | 107.0 | 108.7093 | 1.597 | 0.0 |
| 115.3 | 2.1380 | 26.1265 | 110.0 | 111.4579 | 1.325 | 0.0 |
| 115.3 | 4.0023 | 26.2380 | 112.0 | 114.0509 | 1.831 | 0.0 |
| 115.3 | 6.0592 | 26.3565 | 117.0 | 116.9325 | -0.058 | 0.0 |
| 115.3 | 7.8122 | 26.4540 | 119.0 | 119.4099 | 0.344 | 0.0 |
| 115.3 | 0.1224 | 26.5783 | 123.0 | 122.7114 | -0.235 | 0.0 |
| 125.0 | 0.2736 | 25.0747 | 90.0 | 88.4116 | -1.765 | 0.0 |
| 125.0 | 3.8098 | 25.3383 | 93.6 | 92.7271 | -0.933 | 0.0 |
| 125.0 | 6.1504 | 25.5004 | 95.8 | 95.5786 | -0.231 | 0.0 |
| 125.0 | 7.7108 | 25.6039 | 100.7 | 97.4845 | -3.193 | 0.0 |
| 125.0 | 9.8083 | 25.7378 | 98.3 | 100.0576 | 1.788 | 0.0 |
| 138.7 | 0.6181 | 23.6455 | 69.5 | 68.0467 | -2.091 | 0.0 |
| 138.7 | 1.9252 | 23.7854 | 71.2 | 69.5065 | -2.378 | 0.0 |
| 138.7 | 3.9415 | 23.9875 | 73.6 | 71.7128 | -2.564 | 0.0 |
| 138.7 | 5.8465 | 24.1657 | 76.5 | 73.7595 | -3.582 | 0.0 |
| 138.7 | 7.9540 | 24.3504 | 78.8 | 75.9945 | -3.560 | 0.0 |
| 138.7 | 9.4435 | 24.4743 | 80.2 | 77.5619 | -3.289 | 0.0 |
| 145.6 | 0.8613 | 22.8527 | 63.5 | 60.1486 | -5.278 | 0.0 |
| 145.6 | 1.1146 | 22.8866 | 63.7 | 60.4347 | -5.126 | 0.0 |
| 145.6 | 1.9961 | 23.0012 | 66.0 | 61.4168 | -6.944 | 0.0 |
| 145.6 | 3.9821 | 23.2416 | 68.3 | 63.5643 | -6.934 | 0.0 |
| 145.6 | 5.8465 | 23.4487 | 71.3 | 65.5170 | -8.111 | 0.0 |
| 145.6 | 7.7919 | 23.6491 | 72.5 | 67.5067 | -6.887 | 0.0 |
| 145.6 | 9.5955 | 23.8230 | 75.8 | 69.3193 | -8.550 | 0.0 |
| 156.3 | 1.3780 | 21.4872 | 48.8 | 49.8724 | 2.198 | 0.0 |
| 156.3 | 2.5129 | 21.7009 | 49.1 | 51.2355 | 4.349 | 0.0 |
| 156.3 | 4.0530 | 21.9621 | 51.5 | 52.9799 | 2.874 | 0.0 |
| 156.3 | 6.0187 | 22.2588 | 52.1 | 55.0765 | 5.713 | 0.0 |
| 156.3 | 8.0959 | 22.5388 | 51.5 | 57.1789 | 11.027 | 0.0 |
| 156.3 | 9.7069 | 22.7374 | 53.3 | 58.7506 | 10.226 | 0.0 |
| 171.4 | 2.4619 | 19.0923 | 35.5 | 37.7034 | 6.207 | 0.0 |
| 171.4 | 3.9314 | 19.6399 | 36.8 | 40.0699 | 8.886 | 0.0 |

Data from Hellemans et al. [88] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | $\mu$Pa·s | $\mu$Pa·s | % | |
| 171.4 | 5.9072 | 20.1983 | 38.1 | 42.6942 | 12.058 | 0.0 |
| 171.4 | 7.6906 | 20.6046 | 39.6 | 44.7578 | 13.025 | 0.0 |
| 171.4 | 9.6360 | 20.9816 | 40.2 | 46.8052 | 16.431 | 0.0 |
| 183.0 | 3.6477 | 16.3848 | 27.0 | 28.5960 | 5.911 | 0.0 |
| 183.0 | 5.5222 | 17.8916 | 28.4 | 33.3737 | 17.513 | 0.0 |
| 183.0 | 7.7716 | 18.8385 | 29.9 | 36.8849 | 23.361 | 0.0 |
| 183.0 | 9.9602 | 19.4847 | 30.7 | 39.5636 | 28.872 | 0.0 |
| 187.3 | 4.1645 | 14.7229 | 22.5 | 24.3686 | 8.305 | 0.0 |
| 187.3 | 5.8870 | 17.0254 | 23.7 | 30.6393 | 29.280 | 0.0 |
| 187.3 | 7.8628 | 18.0876 | 23.9 | 34.1682 | 42.963 | 0.0 |
| 187.3 | 9.7069 | 18.7569 | 25.3 | 36.6581 | 44.894 | 0.0 |

Number of points (Ref.88) 56

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 7.074 | BIAS-% | 4.317 | RMS-% | 11.118 |
| AAD | 3.405 | BIAS | 1.160 | RMS | 4.006 $\mu$Pa·s |

Data from Huang et al. [89]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | $\mu$Pa·s | $\mu$Pa·s | % | |
| 173.15 | 2.6067 | 18.7496 | 38.5 | 36.3444 | -5.599 | 0.0 |
| 173.15 | 4.0279 | 19.3416 | 40.5 | 38.7816 | -4.243 | 0.0 |
| 173.15 | 6.7132 | 20.1296 | 43.8 | 42.3765 | -3.250 | 0.0 |
| 173.15 | 10.0699 | 20.8403 | 47.7 | 46.0341 | -3.492 | 0.0 |
| 173.15 | 13.4265 | 21.3968 | 51.2 | 49.2358 | -3.836 | 0.0 |
| 173.15 | 20.1397 | 22.2632 | 57.3 | 54.9746 | -4.058 | 0.0 |
| 173.15 | 26.8529 | 22.9416 | 62.7 | 60.3075 | -3.816 | 0.0 |
| 173.15 | 33.5662 | 23.5072 | 67.6 | 65.5140 | -3.086 | 0.0 |
| 153.15 | 1.1975 | 21.9082 | 54.2 | 52.6900 | -2.786 | 0.0 |
| 153.15 | 4.0279 | 22.3571 | 57.0 | 55.8884 | -1.950 | 0.0 |
| 153.15 | 6.7132 | 22.7182 | 59.9 | 58.6908 | -2.019 | 0.0 |
| 153.15 | 10.0699 | 23.1097 | 63.1 | 62.0007 | -1.742 | 0.0 |
| 153.15 | 13.4265 | 23.4536 | 66.4 | 65.1794 | -1.838 | 0.0 |
| 153.15 | 20.1397 | 24.0428 | 72.7 | 71.3503 | -1.857 | 0.0 |
| 153.15 | 26.8529 | 24.5415 | 78.8 | 77.4837 | -1.670 | 0.0 |

Data from Huang et al. [89] (continued)

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 153.15 | 33.5662 | 24.9774 | 84.7 | 83.7509 | -1.121 | 0.0 |
| 133.15 | 0.4426 | 24.2432 | 76.7 | 75.3883 | -1.710 | 0.0 |
| 133.15 | 4.0279 | 24.5639 | 81.0 | 79.4553 | -1.907 | 0.0 |
| 133.15 | 6.7132 | 24.7821 | 84.0 | 82.4523 | -1.842 | 0.0 |
| 133.15 | 10.0699 | 25.0340 | 87.8 | 86.1768 | -1.849 | 0.0 |
| 133.15 | 13.4265 | 25.2667 | 91.7 | 89.9079 | -1.954 | 0.0 |
| 133.15 | 20.1397 | 25.6872 | 99.0 | 97.4929 | -1.522 | 0.0 |
| 133.15 | 26.8529 | 26.0613 | 106.0 | 105.3840 | -0.581 | 0.0 |
| 133.15 | 33.5662 | 26.4001 | 114.0 | 113.7365 | -0.231 | 0.0 |
| 123.15 | 0.2384 | 25.2560 | 94.0 | 91.8162 | -2.323 | 0.0 |
| 123.15 | 4.0279 | 25.5268 | 99.0 | 96.5397 | -2.485 | 0.0 |
| 123.15 | 6.7132 | 25.7047 | 102.0 | 99.8924 | -2.066 | 0.0 |
| 123.15 | 10.0699 | 25.9135 | 107.0 | 104.1160 | -2.695 | 0.0 |
| 123.15 | 13.4265 | 26.1094 | 111.0 | 108.3998 | -2.342 | 0.0 |
| 123.15 | 20.1397 | 26.4698 | 120.0 | 117.2396 | -2.300 | 0.0 |
| 123.15 | 26.8529 | 26.7963 | 129.0 | 126.5817 | -1.875 | 0.0 |
| 123.15 | 33.5662 | 27.0959 | 137.0 | 136.5954 | -0.295 | 0.0 |
| 113.15 | 0.1151 | 26.2001 | 114.0 | 114.1058 | 0.093 | 0.0 |
| 113.15 | 4.0279 | 26.4292 | 119.0 | 119.7182 | 0.604 | 0.0 |
| 113.15 | 6.7132 | 26.5772 | 123.0 | 123.6223 | 0.506 | 0.0 |
| 113.15 | 10.0699 | 26.7530 | 128.0 | 128.5843 | 0.456 | 0.0 |
| 113.15 | 13.4265 | 26.9200 | 133.0 | 133.6591 | 0.496 | 0.0 |
| 113.15 | 20.1397 | 27.2312 | 142.0 | 144.2348 | 1.574 | 0.0 |
| 113.15 | 26.8529 | 27.5175 | 152.0 | 155.5272 | 2.321 | 0.0 |
| 113.15 | 33.5662 | 27.7832 | 162.0 | 167.7264 | 3.535 | 0.0 |
| 103.15 | 0.0479 | 27.0909 | 144.0 | 145.1668 | 0.810 | 0.0 |
| 103.15 | 4.0279 | 27.2857 | 151.0 | 151.9432 | 0.625 | 0.0 |
| 103.15 | 6.7132 | 27.4107 | 156.0 | 156.6087 | 0.390 | 0.0 |
| 103.15 | 10.0699 | 27.5607 | 162.0 | 162.5659 | 0.349 | 0.0 |
| 103.15 | 13.4265 | 27.7043 | 168.0 | 168.6842 | 0.407 | 0.0 |
| 103.15 | 20.1397 | 27.9751 | 181.0 | 181.4927 | 0.272 | 0.0 |
| 103.15 | 26.8529 | 28.2271 | 193.0 | 195.2203 | 1.150 | 0.0 |
| 103.15 | 33.5662 | 28.4633 | 206.0 | 210.0740 | 1.978 | 0.0 |

Number of points (Ref.89) 48

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.873 | BIAS-% | -1.225 | RMS-% | 1.885 |
| AAD | 1.635 | BIAS | -0.596 | RMS | 1.843 $\mu Pa \cdot s$ |

Data from Kestin and Yata [65]

| T | P | $\rho$ | $\eta$,exp | $\eta$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $\mu Pa \cdot s$ | $\mu Pa \cdot s$ | % | |
| 293.15 | 2.5524 | 1.0984 | 11.321 | 11.4289 | 0.953 | 0.0 |
| 293.15 | 2.0255 | 0.8631 | 11.217 | 11.3196 | 0.914 | 0.0 |
| 293.15 | 1.5219 | 0.6424 | 11.137 | 11.2213 | 0.757 | 0.0 |
| 293.15 | 1.0153 | 0.4245 | 11.054 | 11.1283 | 0.672 | 0.0 |
| 293.15 | 0.5087 | 0.2107 | 10.986 | 11.0409 | 0.500 | 0.0 |
| 293.15 | 0.1064 | 0.0437 | 10.936 | 10.9754 | 0.360 | 0.0 |
| 293.15 | 0.0500 | 0.0205 | 10.924 | 10.9664 | 0.388 | 0.0 |
| 303.15 | 2.2443 | 0.9238 | 11.590 | 11.6751 | 0.734 | 0.0 |
| 303.15 | 1.9221 | 0.7870 | 11.526 | 11.6125 | 0.750 | 0.0 |
| 303.15 | 1.5280 | 0.6216 | 11.462 | 11.5389 | 0.671 | 0.0 |
| 303.15 | 1.0072 | 0.4063 | 11.387 | 11.4466 | 0.524 | 0.0 |
| 303.15 | 0.5147 | 0.2059 | 11.318 | 11.3642 | 0.408 | 0.0 |
| 303.15 | 0.5137 | 0.2055 | 11.318 | 11.3641 | 0.407 | 0.0 |
| 303.15 | 0.5066 | 0.2027 | 11.322 | 11.3629 | 0.361 | 0.0 |
| 303.15 | 0.1155 | 0.0459 | 11.276 | 11.3008 | 0.220 | 0.0 |
| 303.15 | 0.1125 | 0.0447 | 11.268 | 11.3003 | 0.287 | 0.0 |
| 303.15 | 0.1054 | 0.0419 | 11.267 | 11.2992 | 0.286 | 0.0 |
| 303.15 | 0.0500 | 0.0199 | 11.258 | 11.2907 | 0.290 | 0.0 |

Number of points (Ref.65) 18

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.527 | BIAS-% | 0.527 | RMS-% | 0.222 |
| AAD | 0.059 | BIAS | 0.059 | RMS | 0.025 $\mu Pa \cdot s$ |

Number of Points Total with positive weight 267

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.559 | BIAS-% | -0.161 | RMS-% | 0.791 |
| AAD | 0.292 | BIAS | -0.025 | RMS | 0.559 $\mu Pa \cdot s$ |

Number of Points Total referenced in Ref. [1] 532

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.710 | BIAS-% | 0.246 | RMS-% | 4.122 |
| AAD | 0.786 | BIAS | 0.092 | RMS | 1.613 $\mu Pa \cdot s$ |

Number of Points Total 550

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.672 | BIAS-% | 0.255 | RMS-% | 4.055 |
| AAD | 0.762 | BIAS | 0.092 | RMS | 1.586 $\mu Pa \cdot s$ |

TABLE A14

COMPARISONS FOR THERMAL CONDUCTIVITY AT ELEVATED PRESSURES

Notes for Table A14. The quantities T, P, and λ,exp refer to experimental quantities; the density was evaluated from the SWEOS. The tabulated densities were then used as input to calculate the thermal conductivity.

Data from Assael and Wakeham [73]

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 307.48 | 1.84 | 0.741 | 36.45 | 36.60 | 0.412 | 0.0 |
| 307.27 | 2.60 | 1.060 | 37.01 | 37.14 | 0.351 | 0.0 |
| 307.16 | 3.31 | 1.364 | 37.62 | 37.68 | 0.159 | 0.0 |
| 307.03 | 3.93 | 1.636 | 38.09 | 38.19 | 0.263 | 0.0 |
| 306.96 | 4.49 | 1.885 | 38.62 | 38.67 | 0.129 | 0.0 |
| 306.82 | 5.06 | 2.144 | 39.22 | 39.19 | -0.076 | 0.0 |
| 306.73 | 5.79 | 2.480 | 39.99 | 39.90 | -0.225 | 0.0 |
| 306.62 | 6.48 | 2.804 | 40.78 | 40.61 | -0.417 | 0.0 |
| 306.58 | 7.12 | 3.109 | 41.53 | 41.31 | -0.530 | 0.0 |
| 306.87 | 7.81 | 3.436 | 42.71 | 42.15 | -1.311 | 0.0 |
| 306.73 | 8.36 | 3.706 | 43.39 | 42.81 | -1.337 | 0.0 |
| 306.66 | 8.79 | 3.918 | 43.99 | 43.35 | -1.455 | 0.0 |
| 306.52 | 9.27 | 4.157 | 44.65 | 43.97 | -1.523 | 0.0 |

Number of Points (Ref. 73) 13

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.630 | BIAS-% | -0.428 | RMS-% | 0.706 |
| AAD | 0.266 | BIAS | -0.191 | RMS | 0.303 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Clifford et al. [72]

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 301.10 | 1.61 | 0.661 | 35.85 | 35.57 | -0.781 | 0.0 |
| 300.98 | 2.10 | 0.869 | 36.06 | 35.91 | -0.416 | 0.0 |
| 300.90 | 2.36 | 0.982 | 36.35 | 36.10 | -0.688 | 0.0 |
| 300.89 | 3.06 | 1.288 | 36.98 | 36.66 | -0.865 | 0.0 |
| 300.64 | 3.60 | 1.531 | 37.29 | 37.09 | -0.536 | 0.0 |

Data from Clifford et al. [72] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 300.54 | 4.08 | 1.749 | 37.72 | 37.50 | -0.583 | 0.0 |
| 300.35 | 4.56 | 1.972 | 38.22 | 37.93 | -0.759 | 0.0 |
| 300.30 | 5.04 | 2.198 | 38.73 | 38.39 | -0.878 | 0.0 |
| 300.15 | 5.87 | 2.595 | 39.67 | 39.24 | -1.084 | 0.0 |
| 300.05 | 6.58 | 2.943 | 40.39 | 40.03 | -0.891 | 0.0 |
| 299.95 | 7.42 | 3.363 | 41.57 | 41.02 | -1.323 | 0.0 |
| 299.85 | 8.11 | 3.714 | 42.90 | 41.89 | -2.354 | 0.0 |
| 299.73 | 9.18 | 4.267 | 44.00 | 43.35 | -1.477 | 0.0 |
| 299.61 | 10.18 | 4.793 | 45.58 | 44.82 | -1.667 | 0.0 |
| 299.49 | 11.15 | 5.308 | 47.04 | 46.33 | -1.509 | 0.0 |
| 299.40 | 12.13 | 5.830 | 48.68 | 47.94 | -1.520 | 0.0 |
| 299.32 | 13.08 | 6.334 | 50.26 | 49.55 | -1.413 | 0.0 |
| 299.16 | 14.12 | 6.886 | 51.84 | 51.38 | -0.887 | 0.0 |
| 299.09 | 15.15 | 7.421 | 53.68 | 53.21 | -0.876 | 0.0 |
| 299.05 | 15.72 | 7.712 | 54.55 | 54.23 | -0.587 | 0.0 |
| 298.93 | 18.14 | 8.897 | 58.83 | 58.51 | -0.544 | 0.0 |
| 298.88 | 19.60 | 9.564 | 61.32 | 61.01 | -0.506 | 0.0 |
| 298.80 | 21.17 | 10.240 | 63.53 | 63.60 | 0.110 | 0.0 |
| 298.78 | 22.81 | 10.893 | 66.30 | 66.17 | -0.196 | 0.0 |
| 298.77 | 24.20 | 11.408 | 68.31 | 68.26 | -0.073 | 0.0 |
| 298.73 | 25.48 | 11.854 | 70.68 | 70.12 | -0.792 | 0.0 |
| 298.73 | 27.17 | 12.399 | 72.69 | 72.47 | -0.303 | 0.0 |
| 298.65 | 28.64 | 12.844 | 74.64 | 74.45 | -0.255 | 0.0 |
| 298.66 | 30.09 | 13.249 | 76.69 | 76.33 | -0.469 | 0.0 |
| 298.65 | 31.41 | 13.597 | 78.35 | 77.99 | -0.459 | 0.0 |
| 298.65 | 32.85 | 13.953 | 79.91 | 79.75 | -0.200 | 0.0 |
| 298.65 | 33.90 | 14.200 | 81.48 | 81.01 | -0.577 | 0.0 |
| 298.67 | 35.35 | 14.522 | 82.76 | 82.70 | -0.072 | 0.0 |

Number of Points (Ref. 72) 33

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.777 | BIAS-% | -0.771 | RMS-% | 0.531 |
| AAD | 0.378 | BIAS | -0.374 | RMS | 0.233 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Ikenberry and Rice [90]

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 98.90 | 39.82 | 28.949 | 287.36 | 234.92 | -18.249 | 0.0 |
| 98.93 | 30.44 | 28.645 | 267.61 | 227.58 | -14.958 | 0.0 |
| 98.99 | 20.31 | 28.286 | 225.48 | 219.25 | -2.763 | 0.0 |
| 99.01 | 10.13 | 27.890 | 216.52 | 210.41 | -2.822 | 0.0 |
| 99.02 | 5.12 | 27.677 | 211.71 | 205.82 | -2.782 | 0.0 |
| 99.02 | 2.56 | 27.563 | 209.16 | 203.41 | -2.749 | 0.0 |
| 99.03 | 0.16 | 27.451 | 206.90 | 201.09 | -2.808 | 0.0 |
| 125.47 | 50.67 | 27.624 | 218.99 | 215.69 | -1.507 | 0.0 |
| 125.49 | 40.68 | 27.235 | 210.12 | 206.97 | -1.499 | 0.0 |
| 125.55 | 30.41 | 26.788 | 200.33 | 197.43 | -1.448 | 0.0 |
| 125.53 | 20.41 | 26.300 | 189.91 | 187.57 | -1.232 | 0.0 |
| 125.54 | 10.15 | 25.712 | 178.24 | 176.45 | -1.004 | 0.0 |
| 125.61 | 5.08 | 25.371 | 171.38 | 170.35 | -0.601 | 0.0 |
| 125.62 | 2.43 | 25.178 | 168.03 | 167.02 | -0.601 | 0.0 |
| 150.23 | 50.74 | 26.087 | 192.38 | 189.73 | -1.377 | 0.0 |
| 150.25 | 40.54 | 25.577 | 182.84 | 179.88 | -1.619 | 0.0 |
| 150.28 | 30.44 | 24.995 | 171.67 | 169.34 | -1.357 | 0.0 |
| 150.28 | 20.48 | 24.312 | 159.54 | 157.91 | -1.022 | 0.0 |
| 150.28 | 10.13 | 23.409 | 145.60 | 144.17 | -0.982 | 0.0 |
| 150.29 | 5.04 | 22.834 | 137.40 | 136.18 | -0.888 | 0.0 |
| 150.30 | 2.62 | 22.510 | 132.88 | 131.91 | -0.730 | 0.0 |
| 175.13 | 50.67 | 24.523 | 166.52 | 165.89 | -0.378 | 0.0 |
| 175.14 | 40.58 | 23.879 | 156.19 | 155.42 | -0.493 | 0.0 |
| 175.17 | 30.41 | 23.095 | 144.43 | 143.74 | -0.478 | 0.0 |
| 175.15 | 20.41 | 22.107 | 130.92 | 130.56 | -0.275 | 0.0 |
| 175.16 | 10.13 | 20.596 | 114.06 | 113.25 | -0.710 | 0.0 |
| 175.15 | 5.13 | 19.345 | 102.76 | 101.19 | -1.528 | 0.0 |
| 200.20 | 50.67 | 22.946 | 145.31 | 145.38 | 0.048 | 0.0 |
| 200.20 | 40.41 | 22.115 | 134.22 | 134.22 | 0.000 | 0.0 |
| 200.21 | 30.41 | 21.084 | 122.05 | 121.89 | -0.131 | 0.0 |
| 200.22 | 20.28 | 19.601 | 106.86 | 106.75 | -0.103 | 0.0 |
| 200.18 | 13.01 | 17.837 | 92.80 | 92.23 | -0.614 | 0.0 |
| 200.18 | 10.17 | 16.652 | 85.73 | 84.40 | -1.551 | 0.0 |
| 200.18 | 7.63 | 14.653 | 78.28 | 74.66 | -4.624 | 0.0 |
| 200.10 | 5.11 | 5.735 | 41.92 | 42.01 | 0.215 | 0.0 |

Data from Ikenberry and Rice [90] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | mW·m$^{-1}$·K$^{-1}$ | | % | |
| 200.08 | 2.48 | 1.813 | 25.02 | 25.46 | 1.759 | 0.0 |
| 200.08 | 0.28 | 0.174 | 21.59 | 22.00 | 1.899 | 0.0 |
| 235.01 | 50.74 | 20.786 | 123.34 | 123.08 | -0.211 | 0.0 |
| 235.00 | 40.54 | 19.681 | 112.13 | 111.74 | -0.348 | 0.0 |
| 235.00 | 30.68 | 18.228 | 99.50 | 99.03 | -0.472 | 0.0 |
| 234.99 | 20.28 | 15.717 | 82.30 | 81.92 | -0.462 | 0.0 |
| 235.00 | 13.06 | 11.882 | 64.89 | 64.29 | -0.925 | 0.0 |
| 234.98 | 10.10 | 8.769 | 53.18 | 52.69 | -0.921 | 0.0 |
| 234.96 | 5.07 | 3.294 | 32.89 | 32.91 | 0.061 | 0.0 |
| 234.95 | 2.49 | 1.419 | 27.91 | 28.44 | 1.899 | 0.0 |

Number of Points (Ref. 90) 45

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.847 | BIAS-% | -1.585 | RMS-% | 3.472 |
| AAD | 3.683 | BIAS | -3.614 | RMS | 9.466 mW·m$^{-1}$·K$^{-1}$ |

Data from Le Neindre et al. [81]

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | mW·m$^{-1}$·K$^{-1}$ | | % | |
| 307.35 | 0.10 | 0.039 | 35.60 | 35.42 | -0.506 | 0.0 |
| 298.65 | 0.14 | 0.057 | 34.50 | 34.23 | -0.783 | 0.0 |
| 304.45 | 1.00 | 0.401 | 35.80 | 35.60 | -0.559 | 0.0 |
| 298.55 | 1.00 | 0.410 | 35.00 | 34.79 | -0.600 | 0.0 |
| 303.85 | 4.40 | 1.870 | 38.80 | 38.21 | -1.521 | 0.0 |
| 298.45 | 5.00 | 2.197 | 38.40 | 38.14 | -0.677 | 0.0 |
| 306.35 | 5.80 | 2.489 | 40.70 | 39.86 | -2.064 | 0.0 |
| 302.85 | 7.30 | 3.254 | 41.90 | 41.15 | -1.790 | 0.0 |
| 298.85 | 10.10 | 4.772 | 45.50 | 44.66 | -1.846 | 0.0 |
| 304.75 | 10.50 | 4.817 | 46.80 | 45.57 | -2.628 | 0.0 |
| 301.45 | 10.50 | 4.908 | 46.30 | 45.39 | -1.965 | 0.0 |
| 304.15 | 13.70 | 6.462 | 51.30 | 50.58 | -1.404 | 0.0 |
| 299.35 | 14.70 | 7.178 | 53.20 | 52.40 | -1.504 | 0.0 |
| 303.45 | 16.30 | 7.780 | 55.70 | 55.01 | -1.239 | 0.0 |
| 302.75 | 18.50 | 8.847 | 59.30 | 58.79 | -0.860 | 0.0 |

Data from Le Neindre et al. [81] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 298.75 | 20.40 | 9.920 | 62.60 | 62.35 | -0.399 | 0.0 |
| 302.05 | 21.60 | 10.214 | 64.30 | 63.88 | -0.653 | 0.0 |
| 303.25 | 22.30 | 10.417 | 65.40 | 64.82 | -0.887 | 0.0 |
| 302.75 | 26.90 | 12.057 | 71.60 | 71.48 | -0.168 | 0.0 |
| 298.45 | 30.60 | 13.399 | 77.00 | 77.01 | 0.013 | 0.0 |
| 302.55 | 32.30 | 13.577 | 78.70 | 78.39 | -0.394 | 0.0 |
| 302.35 | 38.60 | 14.970 | 86.30 | 85.64 | -0.765 | 0.0 |
| 298.65 | 40.70 | 15.577 | 89.00 | 88.66 | -0.382 | 0.0 |
| 302.35 | 45.40 | 16.155 | 93.80 | 92.73 | -1.141 | 0.0 |
| 298.75 | 50.90 | 17.140 | 99.70 | 98.92 | -0.782 | 0.0 |
| 302.25 | 51.40 | 17.024 | 99.90 | 98.57 | -1.331 | 0.0 |
| 302.05 | 58.20 | 17.868 | 106.60 | 104.83 | -1.660 | 0.0 |
| 298.65 | 60.90 | 18.329 | 108.80 | 108.07 | -0.671 | 0.0 |
| 301.75 | 69.00 | 18.982 | 115.90 | 114.12 | -1.536 | 0.0 |
| 298.65 | 71.50 | 19.345 | 118.40 | 117.02 | -1.166 | 0.0 |
| 301.65 | 78.50 | 19.793 | 123.20 | 121.75 | -1.177 | 0.0 |
| 298.65 | 82.10 | 20.196 | 126.80 | 125.41 | -1.096 | 0.0 |
| 301.45 | 87.00 | 20.431 | 129.50 | 128.30 | -0.927 | 0.0 |
| 298.55 | 93.90 | 21.008 | 134.40 | 134.28 | -0.089 | 0.0 |
| 301.25 | 95.90 | 21.027 | 136.40 | 134.89 | -1.107 | 0.0 |
| 298.45 | 101.70 | 21.485 | 141.10 | 139.92 | -0.836 | 0.0 |
| 301.15 | 103.60 | 21.491 | 141.90 | 140.40 | -1.057 | 0.0 |
| 301.15 | 106.90 | 21.677 | 143.50 | 142.70 | -0.557 | 0.0 |
| 301.35 | 116.20 | 22.161 | 150.60 | 148.98 | -1.076 | 0.0 |
| 368.85 | 0.10 | 0.033 | 45.10 | 44.79 | -0.687 | 0.0 |
| 368.75 | 1.10 | 0.362 | 45.60 | 45.30 | -0.658 | 0.0 |
| 368.75 | 4.80 | 1.615 | 47.50 | 47.51 | 0.021 | 0.0 |
| 369.05 | 10.20 | 3.511 | 52.00 | 51.64 | -0.692 | 0.0 |
| 369.25 | 20.60 | 7.065 | 61.90 | 61.85 | -0.081 | 0.0 |
| 368.85 | 31.00 | 10.047 | 72.00 | 72.49 | 0.681 | 0.0 |
| 368.65 | 41.80 | 12.409 | 81.90 | 82.34 | 0.537 | 0.0 |
| 368.55 | 51.40 | 14.028 | 90.00 | 90.18 | 0.200 | 0.0 |
| 368.75 | 60.90 | 15.311 | 97.20 | 97.36 | 0.165 | 0.0 |
| 368.75 | 71.60 | 16.509 | 105.10 | 104.96 | -0.133 | 0.0 |
| 368.75 | 81.50 | 17.442 | 112.00 | 111.63 | -0.330 | 0.0 |

Data from Le Neindre et al. [81] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 368.55 | 92.10 | 18.311 | 119.20 | 118.50 | -0.587 | 0.0 |
| 368.35 | 102.30 | 19.045 | 125.20 | 124.87 | -0.264 | 0.0 |
| 407.95 | 0.10 | 0.029 | 51.40 | 51.38 | -0.039 | 0.0 |
| 407.65 | 3.30 | 0.986 | 53.00 | 52.90 | -0.189 | 0.0 |
| 406.85 | 10.50 | 3.191 | 58.00 | 57.21 | -1.362 | 0.0 |
| 406.25 | 17.60 | 5.332 | 63.30 | 62.60 | -1.106 | 0.0 |
| 405.85 | 24.30 | 7.207 | 68.70 | 68.28 | -0.611 | 0.0 |
| 405.65 | 30.80 | 8.828 | 74.00 | 73.84 | -0.216 | 0.0 |
| 406.65 | 38.50 | 10.453 | 80.70 | 80.18 | -0.644 | 0.0 |
| 406.15 | 45.40 | 11.736 | 86.00 | 85.43 | -0.663 | 0.0 |
| 405.65 | 52.50 | 12.879 | 91.30 | 90.53 | -0.843 | 0.0 |
| 405.15 | 59.50 | 13.862 | 96.30 | 95.33 | -1.007 | 0.0 |
| 404.35 | 67.20 | 14.820 | 101.80 | 100.38 | -1.395 | 0.0 |
| 403.75 | 77.30 | 15.895 | 108.20 | 106.75 | -1.340 | 0.0 |
| 402.85 | 83.30 | 16.479 | 112.00 | 110.43 | -1.402 | 0.0 |
| 404.25 | 95.90 | 17.468 | 119.50 | 117.78 | -1.439 | 0.0 |
| 404.25 | 104.50 | 18.088 | 124.30 | 122.66 | -1.319 | 0.0 |
| 404.35 | 114.70 | 18.749 | 130.20 | 128.30 | -1.459 | 0.0 |
| 420.25 | 0.14 | 0.040 | 53.90 | 53.56 | -0.631 | 0.0 |
| 420.25 | 1.00 | 0.287 | 54.40 | 53.95 | -0.827 | 0.0 |
| 420.45 | 5.00 | 1.450 | 56.30 | 55.99 | -0.551 | 0.0 |
| 420.55 | 10.20 | 2.977 | 59.60 | 59.11 | -0.822 | 0.0 |
| 420.45 | 20.60 | 5.918 | 67.10 | 66.76 | -0.507 | 0.0 |
| 420.35 | 31.00 | 8.487 | 75.10 | 75.12 | 0.027 | 0.0 |
| 420.25 | 40.80 | 10.492 | 82.50 | 82.65 | 0.182 | 0.0 |
| 420.25 | 51.30 | 12.245 | 90.00 | 90.09 | 0.100 | 0.0 |
| 420.25 | 60.90 | 13.569 | 96.60 | 96.42 | -0.186 | 0.0 |
| 420.15 | 71.40 | 14.791 | 104.00 | 102.95 | -1.010 | 0.0 |
| 420.05 | 81.60 | 15.804 | 110.00 | 109.00 | -0.909 | 0.0 |
| 419.95 | 92.10 | 16.710 | 116.50 | 115.00 | -1.288 | 0.0 |
| 419.85 | 101.70 | 17.442 | 121.40 | 120.31 | -0.898 | 0.0 |
| 465.55 | 0.14 | 0.036 | 62.30 | 61.81 | -0.787 | 0.0 |
| 465.55 | 1.00 | 0.259 | 62.80 | 62.16 | -1.019 | 0.0 |
| 465.55 | 5.00 | 1.297 | 64.20 | 63.91 | -0.452 | 0.0 |
| 466.05 | 10.20 | 2.638 | 67.00 | 66.64 | -0.537 | 0.0 |

Data from Le Neindre et al. [81] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 465.85 | 20.80 | 5.257 | 73.20 | 73.02 | -0.246 | 0.0 |
| 465.65 | 30.80 | 7.460 | 79.60 | 79.68 | 0.101 | 0.0 |
| 465.55 | 40.80 | 9.350 | 86.10 | 86.29 | 0.221 | 0.0 |
| 465.45 | 51.10 | 10.996 | 92.30 | 92.74 | 0.477 | 0.0 |
| 465.35 | 60.80 | 12.312 | 98.20 | 98.45 | 0.255 | 0.0 |
| 465.25 | 71.00 | 13.501 | 104.20 | 104.14 | -0.058 | 0.0 |
| 465.15 | 81.70 | 14.578 | 110.20 | 109.85 | -0.318 | 0.0 |
| 465.15 | 92.20 | 15.500 | 116.10 | 115.25 | -0.732 | 0.0 |
| 464.95 | 102.50 | 16.305 | 121.30 | 120.39 | -0.750 | 0.0 |
| 483.25 | 0.55 | 0.137 | 65.20 | 65.29 | 0.138 | 0.0 |
| 486.85 | 1.20 | 0.297 | 66.40 | 66.23 | -0.256 | 0.0 |
| 483.15 | 3.40 | 0.848 | 66.60 | 66.43 | -0.255 | 0.0 |
| 486.55 | 6.80 | 1.681 | 69.10 | 68.57 | -0.767 | 0.0 |
| 482.85 | 7.30 | 1.819 | 68.60 | 68.13 | -0.685 | 0.0 |
| 482.65 | 11.80 | 2.927 | 70.80 | 70.37 | -0.607 | 0.0 |
| 487.05 | 15.10 | 3.682 | 73.50 | 72.92 | -0.789 | 0.0 |
| 486.65 | 21.60 | 5.169 | 77.20 | 76.66 | -0.699 | 0.0 |
| 485.25 | 28.40 | 6.632 | 81.10 | 80.67 | -0.530 | 0.0 |
| 484.85 | 35.90 | 8.083 | 85.60 | 85.33 | -0.315 | 0.0 |
| 484.55 | 42.70 | 9.264 | 89.80 | 89.48 | -0.356 | 0.0 |
| 484.35 | 54.10 | 10.980 | 96.30 | 96.16 | -0.145 | 0.0 |
| 484.35 | 55.10 | 11.116 | 96.80 | 96.73 | -0.072 | 0.0 |
| 484.05 | 65.70 | 12.449 | 102.50 | 102.53 | 0.029 | 0.0 |
| 483.95 | 70.60 | 12.999 | 105.20 | 105.12 | -0.076 | 0.0 |
| 483.95 | 72.60 | 13.213 | 106.30 | 106.17 | -0.122 | 0.0 |
| 483.75 | 75.50 | 13.517 | 107.80 | 107.65 | -0.139 | 0.0 |
| 483.65 | 79.40 | 13.905 | 109.90 | 109.64 | -0.237 | 0.0 |
| 483.55 | 84.30 | 14.365 | 112.50 | 112.09 | -0.364 | 0.0 |
| 483.55 | 87.30 | 14.633 | 114.20 | 113.58 | -0.543 | 0.0 |
| 483.45 | 95.10 | 15.288 | 118.30 | 117.38 | -0.778 | 0.0 |
| 483.45 | 104.90 | 16.033 | 122.90 | 122.05 | -0.692 | 0.0 |
| 483.45 | 109.80 | 16.378 | 125.10 | 124.34 | -0.608 | 0.0 |
| 483.65 | 112.80 | 16.577 | 125.40 | 125.74 | 0.271 | 0.0 |
| 523.35 | 0.14 | 0.032 | 73.20 | 72.82 | -0.519 | 0.0 |
| 523.35 | 1.00 | 0.230 | 73.70 | 73.13 | -0.773 | 0.0 |

Data from Le Neindre et al. [81] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $mW\cdot m^{-1}\cdot K^{-1}$ | | % | |
| 523.25 | 5.00 | 1.145 | 74.70 | 74.63 | -0.094 | 0.0 |
| 523.25 | 10.40 | 2.363 | 76.80 | 76.94 | 0.182 | 0.0 |
| 523.15 | 20.40 | 4.512 | 81.60 | 81.87 | 0.331 | 0.0 |
| 523.05 | 30.70 | 6.515 | 87.00 | 87.48 | 0.552 | 0.0 |
| 522.95 | 40.80 | 8.242 | 92.20 | 93.08 | 0.954 | 0.0 |
| 522.85 | 50.90 | 9.745 | 97.70 | 98.52 | 0.839 | 0.0 |
| 522.65 | 60.70 | 11.019 | 102.90 | 103.56 | 0.641 | 0.0 |
| 522.65 | 71.40 | 12.228 | 108.30 | 108.83 | 0.489 | 0.0 |
| 522.55 | 82.40 | 13.316 | 114.00 | 114.00 | 0.000 | 0.0 |
| 522.45 | 94.90 | 14.397 | 120.20 | 119.66 | -0.449 | 0.0 |
| 571.85 | 0.10 | 0.021 | 82.80 | 82.29 | -0.616 | 0.0 |
| 571.65 | 5.30 | 1.106 | 85.30 | 84.02 | -1.501 | 0.0 |
| 571.45 | 10.50 | 2.168 | 87.30 | 85.96 | -1.535 | 0.0 |
| 571.35 | 20.70 | 4.147 | 91.60 | 90.35 | -1.365 | 0.0 |
| 571.15 | 30.30 | 5.850 | 95.90 | 94.85 | -1.095 | 0.0 |
| 570.85 | 40.50 | 7.472 | 100.60 | 99.77 | -0.825 | 0.0 |
| 570.85 | 50.90 | 8.928 | 105.40 | 104.77 | -0.598 | 0.0 |
| 570.65 | 60.50 | 10.120 | 109.80 | 109.21 | -0.537 | 0.0 |
| 570.55 | 72.60 | 11.438 | 115.20 | 114.59 | -0.530 | 0.0 |
| 570.45 | 83.70 | 12.499 | 120.00 | 119.33 | -0.558 | 0.0 |
| 570.35 | 95.40 | 13.490 | 125.20 | 124.15 | -0.839 | 0.0 |
| 570.25 | 107.90 | 14.431 | 130.40 | 129.14 | -0.966 | 0.0 |
| 570.15 | 117.40 | 15.078 | 134.30 | 132.84 | -1.087 | 0.0 |
| 570.05 | 124.70 | 15.542 | 137.50 | 135.63 | -1.360 | 0.0 |
| 575.75 | 0.10 | 0.021 | 84.60 | 83.06 | -1.820 | 0.0 |
| 575.75 | 1.00 | 0.209 | 85.20 | 83.35 | -2.171 | 0.0 |
| 575.75 | 5.10 | 1.057 | 86.10 | 84.74 | -1.580 | 0.0 |
| 575.35 | 10.10 | 2.072 | 87.40 | 86.54 | -0.984 | 0.0 |
| 575.65 | 20.50 | 4.077 | 91.80 | 91.02 | -0.850 | 0.0 |
| 575.55 | 30.60 | 5.852 | 96.20 | 95.72 | -0.499 | 0.0 |
| 575.45 | 40.80 | 7.455 | 100.70 | 100.61 | -0.089 | 0.0 |
| 575.35 | 50.70 | 8.833 | 105.50 | 105.30 | -0.190 | 0.0 |
| 575.35 | 60.60 | 10.054 | 110.30 | 109.86 | -0.399 | 0.0 |
| 575.25 | 69.20 | 11.005 | 114.20 | 113.68 | -0.455 | 0.0 |
| 575.25 | 80.60 | 12.130 | 119.10 | 118.57 | -0.445 | 0.0 |

Data from Le Neindre et al. [81] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 575.15 | 91.60 | 13.094 | 123.80 | 123.10 | -0.565 | 0.0 |
| 575.05 | 103.50 | 14.024 | 129.00 | 127.86 | -0.884 | 0.0 |
| 621.45 | 0.14 | 0.027 | 94.00 | 92.09 | -2.032 | 0.0 |
| 621.45 | 1.00 | 0.193 | 94.50 | 92.35 | -2.275 | 0.0 |
| 621.45 | 5.00 | 0.958 | 95.40 | 93.59 | -1.897 | 0.0 |
| 621.45 | 10.20 | 1.929 | 96.80 | 95.36 | -1.488 | 0.0 |
| 621.25 | 20.30 | 3.722 | 100.20 | 99.15 | -1.048 | 0.0 |
| 621.25 | 30.50 | 5.382 | 104.00 | 103.38 | -0.596 | 0.0 |
| 621.15 | 40.50 | 6.852 | 108.40 | 107.66 | -0.683 | 0.0 |
| 621.05 | 50.70 | 8.195 | 112.30 | 112.02 | -0.249 | 0.0 |
| 620.95 | 60.90 | 9.395 | 116.70 | 116.28 | -0.360 | 0.0 |
| 620.95 | 68.40 | 10.196 | 119.90 | 119.34 | -0.467 | 0.0 |
| 620.95 | 81.40 | 11.442 | 125.40 | 124.48 | -0.734 | 0.0 |
| 620.95 | 92.10 | 12.354 | 129.40 | 128.55 | -0.657 | 0.0 |
| 620.75 | 102.20 | 13.139 | 133.10 | 132.27 | -0.624 | 0.0 |
| 648.65 | 0.50 | 0.093 | 98.70 | 97.57 | -1.145 | 0.0 |
| 648.55 | 3.40 | 0.626 | 100.50 | 98.39 | -2.100 | 0.0 |
| 648.45 | 7.00 | 1.277 | 101.80 | 99.49 | -2.269 | 0.0 |
| 648.45 | 11.20 | 2.021 | 103.10 | 100.87 | -2.163 | 0.0 |
| 648.25 | 21.10 | 3.689 | 106.20 | 104.40 | -1.695 | 0.0 |
| 648.15 | 30.50 | 5.150 | 109.70 | 108.05 | -1.504 | 0.0 |
| 647.95 | 40.70 | 6.592 | 113.40 | 112.13 | -1.120 | 0.0 |
| 647.95 | 50.30 | 7.816 | 117.30 | 116.02 | -1.091 | 0.0 |
| 647.85 | 59.40 | 8.868 | 120.60 | 119.64 | -0.796 | 0.0 |
| 647.75 | 71.60 | 10.132 | 125.10 | 124.35 | -0.600 | 0.0 |
| 647.65 | 83.20 | 11.200 | 129.30 | 128.68 | -0.480 | 0.0 |
| 647.65 | 95.10 | 12.179 | 134.30 | 132.99 | -0.975 | 0.0 |
| 647.75 | 117.10 | 13.741 | 141.50 | 140.64 | -0.608 | 0.0 |
| 647.85 | 119.40 | 13.887 | 142.30 | 141.43 | -0.611 | 0.0 |
| 648.05 | 121.10 | 13.992 | 142.50 | 142.03 | -0.330 | 0.0 |
| 726.55 | 1.00 | 0.165 | 114.50 | 113.00 | -1.310 | 0.0 |
| 726.45 | 3.60 | 0.590 | 115.30 | 113.65 | -1.431 | 0.0 |
| 725.15 | 40.10 | 5.822 | 126.10 | 125.00 | -0.872 | 0.0 |
| 725.05 | 50.70 | 7.060 | 128.90 | 128.67 | -0.178 | 0.0 |
| 725.15 | 60.80 | 8.131 | 131.30 | 132.18 | 0.670 | 0.0 |
| 725.25 | 72.00 | 9.207 | 134.80 | 136.00 | 0.890 | 0.0 |
| 725.45 | 81.00 | 9.996 | 137.90 | 139.01 | 0.805 | 0.0 |
| 725.75 | 89.00 | 10.646 | 141.70 | 141.65 | -0.035 | 0.0 |

Data from Le Neindre et al. [81] (continued)

Number of Points (Ref. 81) 193

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.778 | BIAS-% | -0.677 | RMS-% | 0.664 |
| AAD | 0.735 | BIAS | -0.632 | RMS | 0.657 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Mardolcar and de Castro [91]

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 110.868 | 0.204 | 26.414 | 184.60 | 185.17 | 0.309 | 9.7 |
| 111.002 | 1.100 | 26.453 | 185.59 | 185.97 | 0.205 | 9.7 |
| 110.971 | 2.236 | 26.521 | 187.00 | 187.26 | 0.139 | 9.7 |
| 111.202 | 3.270 | 26.558 | 188.06 | 188.07 | 0.005 | 9.7 |
| 111.024 | 4.269 | 26.628 | 189.03 | 189.37 | 0.180 | 9.6 |
| 110.897 | 5.269 | 26.692 | 190.10 | 190.60 | 0.263 | 9.6 |
| 111.038 | 6.337 | 26.737 | 191.04 | 191.53 | 0.256 | 9.6 |
| 110.718 | 7.404 | 26.819 | 192.55 | 193.06 | 0.265 | 9.6 |
| 110.952 | 8.645 | 26.862 | 194.09 | 194.02 | -0.036 | 9.5 |
| 124.806 | 0.721 | 25.129 | 164.41 | 165.97 | 0.949 | 10.1 |
| 124.985 | 1.755 | 25.190 | 166.20 | 167.05 | 0.511 | 10.1 |
| 125.059 | 2.719 | 25.254 | 167.39 | 168.18 | 0.472 | 10.1 |
| 125.034 | 3.822 | 25.336 | 168.97 | 169.60 | 0.373 | 10.0 |
| 124.867 | 4.924 | 25.429 | 170.41 | 171.18 | 0.452 | 10.0 |
| 125.196 | 5.957 | 25.469 | 172.13 | 171.99 | -0.081 | 10.0 |
| 124.728 | 7.060 | 25.586 | 173.44 | 173.94 | 0.288 | 9.9 |
| 124.784 | 8.369 | 25.666 | 175.10 | 175.40 | 0.171 | 9.9 |
| 155.480 | 1.514 | 21.634 | 122.11 | 121.93 | -0.147 | 11.3 |
| 155.251 | 2.306 | 21.810 | 122.85 | 123.98 | 0.920 | 11.3 |
| 154.953 | 2.891 | 21.950 | 125.47 | 125.62 | 0.120 | 11.2 |
| 155.192 | 3.374 | 21.997 | 125.94 | 126.23 | 0.230 | 11.2 |
| 154.969 | 4.132 | 22.145 | 127.52 | 128.01 | 0.384 | 11.1 |
| 155.034 | 4.924 | 22.255 | 129.08 | 129.40 | 0.248 | 11.1 |
| 155.285 | 5.648 | 22.328 | 130.18 | 130.36 | 0.138 | 11.0 |
| 154.726 | 6.302 | 22.484 | 131.09 | 132.28 | 0.908 | 11.0 |
| 154.995 | 7.129 | 22.562 | 132.64 | 133.33 | 0.520 | 11.0 |
| 154.598 | 7.887 | 22.702 | 134.03 | 135.11 | 0.806 | 10.9 |
| 155.167 | 8.576 | 22.724 | 135.51 | 135.50 | -0.007 | 10.9 |
| 180.336 | 3.753 | 17.485 | 89.69 | 87.39 | -2.564 | 12.5 |
| 180.509 | 4.132 | 17.703 | 91.15 | 88.90 | -2.468 | 12.5 |

Data from Mardolcar and de Castro [91] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 180.132 | 4.580 | 18.070 | 93.03 | 91.49 | -1.655 | 12.4 |
| 180.172 | 5.027 | 18.290 | 93.96 | 93.16 | -0.851 | 12.4 |
| 180.255 | 5.578 | 18.523 | 95.12 | 94.98 | -0.147 | 12.4 |
| 180.139 | 6.095 | 18.756 | 97.01 | 96.84 | -0.175 | 12.3 |
| 180.058 | 6.784 | 19.019 | 99.01 | 99.03 | 0.020 | 12.2 |
| 179.989 | 7.335 | 19.211 | 100.49 | 100.67 | 0.179 | 12.2 |
| 179.905 | 8.231 | 19.487 | 102.61 | 103.12 | 0.497 | 12.1 |

Number of Points (Ref. 91) 37

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.485 | BIAS-% | 0.045 | RMS-% | 0.763 |
| AAD | 0.602 | BIAS | 0.192 | RMS | 0.801 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Prasad et al. [92]

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 139.920 | 59.998 | 27.104 | 204.88 | 208.52 | 1.777 | 0.0 |
| 140.070 | 59.998 | 27.095 | 204.70 | 208.36 | 1.788 | 0.0 |
| 139.950 | 50.001 | 26.696 | 196.45 | 199.67 | 1.639 | 0.0 |
| 139.970 | 50.001 | 26.694 | 195.83 | 199.65 | 1.951 | 0.0 |
| 140.000 | 40.004 | 26.240 | 187.30 | 190.31 | 1.607 | 0.0 |
| 140.010 | 40.004 | 26.239 | 187.37 | 190.30 | 1.564 | 0.0 |
| 140.090 | 30.006 | 25.720 | 176.87 | 180.25 | 1.911 | 0.0 |
| 140.000 | 30.006 | 25.727 | 177.60 | 180.35 | 1.548 | 0.0 |
| 120.080 | 10.004 | 26.171 | 179.56 | 183.48 | 2.183 | 0.0 |
| 120.010 | 10.004 | 26.177 | 179.65 | 183.57 | 2.182 | 0.0 |
| 120.080 | 10.004 | 26.171 | 179.74 | 183.48 | 2.081 | 0.0 |
| 119.900 | 20.002 | 26.713 | 190.16 | 194.09 | 2.067 | 0.0 |
| 119.890 | 20.002 | 26.713 | 190.80 | 194.10 | 1.730 | 0.0 |
| 120.040 | 29.999 | 27.160 | 199.96 | 203.48 | 1.760 | 0.0 |
| 119.910 | 29.999 | 27.169 | 200.32 | 203.63 | 1.652 | 0.0 |
| 119.940 | 40.004 | 27.575 | 208.87 | 212.56 | 1.767 | 0.0 |
| 119.860 | 40.004 | 27.580 | 209.33 | 212.65 | 1.586 | 0.0 |
| 121.010 | 50.001 | 27.877 | 212.99 | 219.91 | 3.249 | 0.0 |
| 139.900 | 20.002 | 25.136 | 166.86 | 169.61 | 1.648 | 0.0 |
| 139.930 | 20.002 | 25.134 | 166.32 | 169.58 | 1.960 | 0.0 |

Data from Prasad et al. [92] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot mx^{-1} \cdot K^{-1}$ | | % | |
| 139.890 | 10.004 | 24.408 | 154.05 | 157.42 | 2.188 | 0.0 |
| 139.890 | 10.004 | 24.408 | 154.20 | 157.42 | 2.088 | 0.0 |
| 139.890 | 10.004 | 24.408 | 153.85 | 157.42 | 2.320 | 0.0 |
| 139.920 | 4.999 | 23.962 | 147.09 | 150.46 | 2.291 | 0.0 |
| 139.900 | 4.999 | 23.964 | 147.19 | 150.49 | 2.242 | 0.0 |
| 139.950 | 2.496 | 23.707 | 143.24 | 146.66 | 2.388 | 0.0 |
| 139.950 | 2.496 | 23.707 | 143.39 | 146.66 | 2.280 | 0.0 |
| 159.930 | 2.496 | 21.172 | 115.33 | 117.32 | 1.725 | 0.0 |
| 159.940 | 2.496 | 21.170 | 115.08 | 117.30 | 1.929 | 0.0 |
| 159.900 | 20.002 | 23.447 | 143.77 | 146.36 | 1.801 | 0.0 |
| 159.890 | 20.002 | 23.448 | 143.74 | 146.37 | 1.830 | 0.0 |
| 159.960 | 29.999 | 24.237 | 156.17 | 158.49 | 1.486 | 0.0 |
| 159.980 | 29.999 | 24.236 | 155.82 | 158.47 | 1.701 | 0.0 |
| 159.980 | 10.004 | 22.375 | 129.31 | 131.69 | 1.841 | 0.0 |
| 159.980 | 10.004 | 22.375 | 129.16 | 131.69 | 1.959 | 0.0 |
| 159.980 | 4.999 | 21.638 | 120.29 | 122.64 | 1.954 | 0.0 |
| 160.010 | 4.999 | 21.634 | 119.94 | 122.60 | 2.218 | 0.0 |
| 160.040 | 2.496 | 21.155 | 115.18 | 117.15 | 1.710 | 0.0 |
| 160.000 | 2.496 | 21.161 | 114.93 | 117.21 | 1.984 | 0.0 |
| 160.000 | 40.004 | 24.884 | 166.74 | 169.33 | 1.553 | 0.0 |
| 160.000 | 40.004 | 24.884 | 166.64 | 169.33 | 1.614 | 0.0 |
| 160.000 | 49.994 | 25.438 | 176.81 | 179.32 | 1.420 | 0.0 |
| 159.950 | 49.994 | 25.441 | 176.98 | 179.37 | 1.350 | 0.0 |
| 159.980 | 59.998 | 25.925 | 185.53 | 188.69 | 1.703 | 0.0 |
| 159.970 | 59.998 | 25.926 | 185.80 | 188.70 | 1.561 | 0.0 |
| 160.050 | 69.996 | 26.357 | 193.60 | 197.48 | 2.004 | 0.0 |
| 159.940 | 69.996 | 26.363 | 194.17 | 197.59 | 1.761 | 0.0 |
| 179.960 | 69.996 | 25.262 | 176.98 | 179.87 | 1.633 | 0.0 |
| 180.000 | 69.996 | 25.260 | 177.06 | 179.84 | 1.570 | 0.0 |
| 179.910 | 59.998 | 24.758 | 168.28 | 170.76 | 1.474 | 0.0 |
| 179.960 | 50.001 | 24.178 | 158.37 | 160.98 | 1.648 | 0.0 |
| 179.920 | 40.004 | 23.506 | 148.17 | 150.48 | 1.559 | 0.0 |
| 179.950 | 29.999 | 22.681 | 136.53 | 138.74 | 1.619 | 0.0 |
| 180.000 | 20.002 | 21.598 | 122.91 | 125.06 | 1.749 | 0.0 |
| 179.980 | 20.002 | 21.600 | 122.79 | 125.08 | 1.865 | 0.0 |

Data from Prasad et al. [92] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 179.980 | 9.997 | 19.923 | 106.00 | 107.18 | 1.113 | 0.0 |
| 179.980 | 9.997 | 19.923 | 105.83 | 107.18 | 1.276 | 0.0 |
| 179.980 | 4.999 | 18.320 | 93.92 | 93.36 | -0.596 | 0.0 |
| 179.990 | 4.999 | 18.318 | 94.16 | 93.34 | -0.871 | 0.0 |
| 199.990 | 69.996 | 24.174 | 161.18 | 164.15 | 1.843 | 0.0 |
| 200.010 | 59.998 | 23.588 | 152.39 | 154.82 | 1.595 | 0.0 |
| 200.010 | 59.998 | 23.588 | 152.44 | 154.82 | 1.561 | 0.0 |
| 200.010 | 50.001 | 22.909 | 142.54 | 144.83 | 1.607 | 0.0 |
| 200.000 | 40.004 | 22.093 | 131.59 | 133.90 | 1.755 | 0.0 |
| 199.990 | 29.999 | 21.054 | 119.76 | 121.52 | 1.470 | 0.0 |
| 199.990 | 20.002 | 19.575 | 104.91 | 106.48 | 1.497 | 0.0 |
| 200.000 | 10.004 | 16.597 | 84.95 | 84.07 | -1.036 | 0.0 |
| 199.990 | 10.004 | 16.599 | 84.65 | 84.08 | -0.673 | 0.0 |
| 199.990 | 4.999 | 5.458 | 40.15 | 40.35 | 0.498 | 0.0 |
| 220.020 | 69.996 | 23.105 | 147.79 | 150.52 | 1.847 | 0.0 |
| 220.000 | 69.996 | 23.106 | 147.89 | 150.53 | 1.785 | 0.0 |
| 220.050 | 59.998 | 22.436 | 139.11 | 141.15 | 1.466 | 0.0 |
| 220.010 | 50.001 | 21.648 | 128.97 | 131.08 | 1.636 | 0.0 |
| 220.050 | 40.004 | 20.670 | 118.07 | 119.89 | 1.541 | 0.0 |
| 220.110 | 29.999 | 19.367 | 105.42 | 106.96 | 1.461 | 0.0 |
| 220.000 | 20.002 | 17.358 | 89.67 | 90.80 | 1.260 | 0.0 |
| 220.030 | 9.997 | 11.685 | 66.15 | 63.42 | -4.127 | 0.0 |
| 240.020 | 69.996 | 22.063 | 137.42 | 138.98 | 1.135 | 0.0 |
| 240.060 | 59.998 | 21.308 | 128.56 | 129.68 | 0.871 | 0.0 |
| 240.000 | 50.001 | 20.407 | 118.30 | 119.66 | 1.150 | 0.0 |
| 240.000 | 40.004 | 19.264 | 106.96 | 108.47 | 1.412 | 0.0 |
| 240.000 | 29.999 | 17.684 | 94.38 | 95.42 | 1.102 | 0.0 |
| 240.060 | 20.002 | 15.039 | 78.35 | 78.67 | 0.408 | 0.0 |
| 260.030 | 69.996 | 21.051 | 128.14 | 129.39 | 0.975 | 0.0 |
| 260.000 | 59.998 | 20.217 | 119.20 | 120.31 | 0.931 | 0.0 |
| 260.000 | 50.001 | 19.200 | 109.25 | 110.44 | 1.089 | 0.0 |
| 260.030 | 40.004 | 17.889 | 98.59 | 99.43 | 0.852 | 0.0 |
| 260.050 | 30.006 | 16.034 | 86.20 | 86.59 | 0.452 | 0.0 |
| 300.180 | 69.996 | 19.143 | 114.95 | 115.36 | 0.357 | 0.0 |
| 299.330 | 69.996 | 19.182 | 115.72 | 115.60 | -0.104 | 0.0 |

Data from Prasad et al. [92] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 300.070 | 69.996 | 19.148 | 114.75 | 115.39 | 0.558 | 0.0 |
| 300.080 | 69.996 | 19.148 | 114.55 | 115.39 | 0.733 | 0.0 |
| 300.000 | 59.998 | 18.167 | 106.00 | 106.93 | 0.877 | 0.0 |
| 300.010 | 59.998 | 18.167 | 106.39 | 106.93 | 0.508 | 0.0 |
| 300.000 | 49.994 | 16.952 | 97.09 | 97.76 | 0.690 | 0.0 |
| 300.030 | 49.994 | 16.950 | 97.22 | 97.75 | 0.545 | 0.0 |
| 300.030 | 40.004 | 15.370 | 86.59 | 87.62 | 1.190 | 0.0 |
| 300.050 | 40.004 | 15.369 | 86.64 | 87.62 | 1.131 | 0.0 |
| 299.970 | 29.999 | 13.141 | 74.99 | 75.98 | 1.320 | 0.0 |
| 299.970 | 29.999 | 13.141 | 75.09 | 75.98 | 1.185 | 0.0 |
| 299.960 | 20.002 | 9.675 | 60.81 | 61.56 | 1.233 | 0.0 |
| 300.040 | 20.002 | 9.670 | 61.01 | 61.55 | 0.885 | 0.0 |
| 300.000 | 9.997 | 4.686 | 43.04 | 44.56 | 3.532 | 0.0 |
| 299.930 | 9.997 | 4.688 | 43.14 | 44.56 | 3.292 | 0.0 |
| 300.240 | 4.999 | 2.179 | 35.13 | 38.35 | 9.166 | 0.0 |
| 299.660 | 4.999 | 2.184 | 35.33 | 38.28 | 8.350 | 0.0 |
| 299.870 | 4.999 | 2.182 | 35.73 | 38.30 | 7.193 | 0.0 |
| 300.000 | 4.999 | 2.181 | 35.81 | 38.32 | 7.009 | 0.0 |
| 320.020 | 69.996 | 18.271 | 110.32 | 110.64 | 0.290 | 0.0 |
| 320.070 | 69.996 | 18.269 | 110.47 | 110.63 | 0.145 | 0.0 |
| 320.000 | 59.998 | 17.227 | 101.51 | 102.54 | 1.015 | 0.0 |
| 319.950 | 59.998 | 17.229 | 101.96 | 102.55 | 0.579 | 0.0 |
| 319.950 | 50.001 | 15.941 | 92.80 | 93.83 | 1.110 | 0.0 |
| 319.940 | 50.001 | 15.941 | 92.60 | 93.83 | 1.328 | 0.0 |
| 319.980 | 40.004 | 14.271 | 83.05 | 84.24 | 1.433 | 0.0 |
| 319.980 | 40.004 | 14.271 | 82.90 | 84.24 | 1.616 | 0.0 |
| 319.960 | 29.999 | 11.964 | 72.75 | 73.30 | 0.756 | 0.0 |
| 319.980 | 29.999 | 11.963 | 71.86 | 73.30 | 2.004 | 0.0 |
| 320.060 | 20.002 | 8.610 | 59.19 | 60.10 | 1.537 | 0.0 |
| 320.040 | 20.002 | 8.611 | 59.19 | 60.11 | 1.554 | 0.0 |
| 319.980 | 10.004 | 4.220 | 44.92 | 46.00 | 2.404 | 0.0 |
| 320.000 | 10.004 | 4.219 | 44.79 | 46.00 | 2.701 | 0.0 |
| 339.800 | 69.996 | 17.451 | 106.60 | 107.14 | 0.507 | 0.0 |
| 339.960 | 10.004 | 3.854 | 47.18 | 47.96 | 1.653 | 0.0 |
| 339.980 | 10.004 | 3.854 | 47.67 | 47.97 | 0.629 | 0.0 |

Data from Prasad et al. [92] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 340.000 | 10.004 | 3.853 | 47.67 | 47.97 | 0.629 | 0.0 |
| 340.050 | 69.996 | 17.441 | 106.05 | 107.10 | 0.990 | 0.0 |
| 340.020 | 69.996 | 17.442 | 105.66 | 107.11 | 1.372 | 0.0 |
| 340.000 | 59.998 | 16.349 | 98.53 | 99.40 | 0.883 | 0.0 |
| 340.020 | 59.998 | 16.348 | 98.39 | 99.40 | 1.027 | 0.0 |
| 339.980 | 50.001 | 15.006 | 90.13 | 91.14 | 1.121 | 0.0 |
| 339.960 | 40.004 | 13.284 | 81.33 | 82.11 | 0.959 | 0.0 |
| 339.950 | 29.999 | 10.967 | 71.26 | 71.87 | 0.856 | 0.0 |
| 340.230 | 20.002 | 7.782 | 58.67 | 59.93 | 2.148 | 0.0 |
| 400.150 | 69.996 | 15.264 | 102.24 | 102.25 | 0.010 | 0.0 |
| 400.070 | 59.998 | 14.092 | 95.35 | 95.67 | 0.336 | 0.0 |
| 399.990 | 50.001 | 12.685 | 87.89 | 88.67 | 0.887 | 0.0 |
| 399.950 | 40.004 | 10.956 | 79.47 | 81.10 | 2.051 | 0.0 |
| 399.920 | 29.999 | 8.799 | 71.29 | 72.78 | 2.090 | 0.0 |
| 399.880 | 20.002 | 6.150 | 63.87 | 63.93 | 0.094 | 0.0 |
| 399.890 | 10.004 | 3.105 | 54.03 | 55.81 | 3.294 | 0.0 |
| 379.920 | 69.996 | 15.945 | 102.25 | 103.07 | 0.802 | 0.0 |
| 379.970 | 59.998 | 14.786 | 95.98 | 96.13 | 0.156 | 0.0 |
| 379.980 | 50.001 | 13.383 | 88.08 | 88.74 | 0.749 | 0.0 |
| 380.030 | 40.004 | 11.635 | 79.98 | 80.71 | 0.913 | 0.0 |
| 379.970 | 40.004 | 11.637 | 79.93 | 80.71 | 0.976 | 0.0 |
| 379.990 | 30.006 | 9.410 | 71.16 | 71.80 | 0.899 | 0.0 |
| 380.090 | 20.002 | 6.594 | 61.76 | 62.06 | 0.486 | 0.0 |
| 379.910 | 10.004 | 3.313 | 52.97 | 52.94 | -0.057 | 0.0 |
| 359.900 | 69.996 | 16.670 | 104.39 | 104.65 | 0.249 | 0.0 |
| 357.900 | 69.996 | 16.746 | 104.54 | 104.85 | 0.297 | 0.0 |
| 359.890 | 59.998 | 15.540 | 96.62 | 97.33 | 0.735 | 0.0 |
| 359.890 | 50.001 | 14.159 | 89.34 | 89.52 | 0.201 | 0.0 |
| 359.900 | 40.004 | 12.412 | 80.52 | 81.00 | 0.596 | 0.0 |
| 359.890 | 30.006 | 10.129 | 70.68 | 71.44 | 1.075 | 0.0 |
| 359.910 | 20.002 | 7.136 | 60.69 | 60.65 | -0.066 | 0.0 |
| 359.940 | 20.002 | 7.135 | 60.69 | 60.65 | -0.066 | 0.0 |
| 359.940 | 10.011 | 3.561 | 50.07 | 50.31 | 0.479 | 0.0 |
| 260.580 | 69.996 | 21.024 | 129.47 | 129.15 | -0.247 | 0.0 |
| 260.510 | 59.998 | 20.190 | 119.32 | 120.09 | 0.645 | 0.0 |

Data from Prasad et al. [92] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 260.480 | 50.001 | 19.171 | 109.35 | 110.24 | 0.814 | 0.0 |
| 260.530 | 40.004 | 17.855 | 98.79 | 99.23 | 0.445 | 0.0 |
| 260.570 | 29.999 | 15.991 | 86.61 | 86.38 | -0.266 | 0.0 |
| 260.710 | 20.009 | 12.803 | 71.73 | 70.01 | -2.398 | 0.0 |
| 260.900 | 15.003 | 10.005 | 60.45 | 58.81 | -2.713 | 0.0 |
| 261.150 | 20.009 | 12.759 | 70.62 | 69.86 | -1.076 | 0.0 |
| 261.170 | 9.997 | 6.215 | 46.18 | 44.83 | -2.923 | 0.0 |
| 261.690 | 4.999 | 2.666 | 32.65 | 34.40 | 5.360 | 0.0 |
| 261.930 | 4.999 | 2.662 | 32.45 | 34.43 | 6.102 | 0.0 |
| 277.150 | 69.996 | 20.216 | 122.16 | 122.61 | 0.368 | 0.0 |
| 277.310 | 59.998 | 19.305 | 113.22 | 113.69 | 0.415 | 0.0 |
| 277.430 | 49.994 | 18.188 | 103.41 | 104.04 | 0.609 | 0.0 |
| 277.720 | 40.004 | 16.729 | 93.36 | 93.27 | -0.096 | 0.0 |
| 277.980 | 29.999 | 14.651 | 81.06 | 80.80 | -0.321 | 0.0 |
| 278.280 | 20.002 | 11.202 | 65.16 | 65.11 | -0.077 | 0.0 |
| 278.520 | 15.003 | 8.531 | 55.87 | 54.89 | -1.754 | 0.0 |
| 279.190 | 9.997 | 5.358 | 44.47 | 43.97 | -1.124 | 0.0 |
| 279.510 | 5.006 | 2.413 | 35.72 | 36.08 | 1.008 | 0.0 |
| 279.630 | 5.013 | 2.416 | 35.72 | 36.10 | 1.064 | 0.0 |
| 279.990 | 9.997 | 5.327 | 44.61 | 43.97 | -1.435 | 0.0 |

Number of Points (Ref.92) 180

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.525 | BIAS-% | 1.280 | RMS-% | 1.547 |
| AAD | 1.633 | BIAS | 1.474 | RMS | 1.383 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Roder [8]

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 111.827 | 0.561 | 26.348 | 184.27 | 184.23 | -0.022 | 9.7 |
| 111.655 | 0.556 | 26.363 | 184.76 | 184.46 | -0.162 | 9.7 |
| 111.255 | 0.551 | 26.399 | 184.75 | 185.02 | 0.146 | 9.7 |
| 110.983 | 0.546 | 26.423 | 185.12 | 185.39 | 0.146 | 9.7 |
| 111.762 | 11.644 | 26.945 | 196.81 | 195.99 | -0.417 | 9.5 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 111.363 | 11.641 | 26.976 | 196.79 | 196.50 | -0.147 | 9.5 |
| 111.215 | 11.635 | 26.988 | 197.54 | 196.68 | -0.435 | 9.5 |
| 110.985 | 11.630 | 27.006 | 197.58 | 196.97 | -0.309 | 9.5 |
| 111.768 | 22.698 | 27.445 | 207.04 | 206.53 | -0.246 | 9.3 |
| 111.688 | 22.693 | 27.450 | 207.62 | 206.62 | -0.482 | 9.3 |
| 111.301 | 22.688 | 27.479 | 207.75 | 207.07 | -0.327 | 9.3 |
| 111.173 | 22.682 | 27.488 | 208.46 | 207.22 | -0.595 | 9.3 |
| 111.613 | 34.119 | 27.909 | 216.81 | 216.80 | -0.005 | 9.2 |
| 111.472 | 34.117 | 27.918 | 217.79 | 216.96 | -0.381 | 9.2 |
| 111.231 | 34.112 | 27.935 | 217.61 | 217.22 | -0.179 | 9.2 |
| 110.997 | 34.109 | 27.950 | 217.96 | 217.48 | -0.220 | 9.2 |
| 111.508 | 44.939 | 28.301 | 225.69 | 225.92 | 0.102 | 9.1 |
| 111.347 | 44.932 | 28.311 | 226.02 | 226.09 | 0.031 | 9.0 |
| 111.101 | 44.926 | 28.326 | 226.24 | 226.34 | 0.044 | 9.0 |
| 110.863 | 44.920 | 28.341 | 226.67 | 226.59 | -0.035 | 9.0 |
| 111.433 | 56.744 | 28.687 | 234.94 | 235.35 | 0.175 | 8.9 |
| 111.181 | 56.740 | 28.702 | 235.17 | 235.60 | 0.183 | 8.9 |
| 110.963 | 56.735 | 28.715 | 235.42 | 235.81 | 0.166 | 8.9 |
| 110.745 | 56.726 | 28.728 | 235.54 | 236.03 | 0.208 | 8.9 |
| 111.218 | 68.635 | 29.052 | 243.25 | 244.57 | 0.543 | 8.8 |
| 111.104 | 68.639 | 29.058 | 243.68 | 244.68 | 0.410 | 8.8 |
| 110.894 | 68.647 | 29.070 | 243.81 | 244.88 | 0.439 | 8.8 |
| 110.631 | 68.659 | 29.086 | 244.05 | 245.15 | 0.451 | 8.8 |
| 134.645 | 0.316 | 0.303 | 14.83 | 14.60 | -1.551 | 14.7 |
| 134.119 | 0.316 | 0.304 | 14.75 | 14.54 | -1.424 | 14.9 |
| 133.606 | 0.315 | 0.305 | 14.75 | 14.49 | -1.763 | 14.4 |
| 133.127 | 0.314 | 0.305 | 14.71 | 14.44 | -1.835 | 14.3 |
| 135.369 | 0.778 | 24.035 | 151.36 | 150.68 | -0.449 | 10.4 |
| 135.054 | 0.772 | 24.069 | 151.81 | 151.13 | -0.448 | 10.4 |
| 134.663 | 0.761 | 24.110 | 152.03 | 151.69 | -0.224 | 10.4 |
| 134.383 | 0.745 | 24.139 | 152.45 | 152.07 | -0.249 | 10.4 |
| 135.395 | 11.718 | 24.951 | 166.43 | 165.43 | -0.601 | 10.1 |
| 135.072 | 11.715 | 24.980 | 166.87 | 165.84 | -0.617 | 10.1 |
| 134.724 | 11.709 | 25.010 | 167.08 | 166.28 | -0.479 | 10.1 |
| 134.433 | 11.694 | 25.035 | 167.55 | 166.64 | -0.543 | 10.1 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 135.255 | 22.964 | 25.687 | 179.51 | 178.46 | -0.585 | 9.8 |
| 134.855 | 22.963 | 25.718 | 180.09 | 178.94 | -0.639 | 9.8 |
| 134.596 | 22.961 | 25.738 | 179.96 | 179.24 | -0.400 | 9.8 |
| 134.300 | 22.959 | 25.760 | 180.38 | 179.60 | -0.432 | 9.8 |
| 135.304 | 34.181 | 26.279 | 190.82 | 189.87 | -0.498 | 9.6 |
| 134.983 | 34.180 | 26.302 | 191.06 | 190.24 | -0.429 | 9.6 |
| 134.717 | 34.177 | 26.320 | 191.53 | 190.53 | -0.522 | 9.6 |
| 134.482 | 34.172 | 26.336 | 191.75 | 190.79 | -0.501 | 9.6 |
| 135.055 | 45.585 | 26.817 | 201.44 | 200.89 | -0.273 | 9.4 |
| 134.801 | 45.577 | 26.833 | 201.70 | 201.15 | -0.273 | 9.4 |
| 134.607 | 45.574 | 26.846 | 202.24 | 201.36 | -0.435 | 9.4 |
| 134.390 | 45.564 | 26.859 | 202.25 | 201.59 | -0.326 | 9.4 |
| 135.242 | 56.761 | 27.257 | 210.85 | 210.56 | -0.138 | 9.3 |
| 134.920 | 56.753 | 27.276 | 211.14 | 210.89 | -0.118 | 9.3 |
| 134.722 | 56.743 | 27.288 | 211.86 | 211.08 | -0.368 | 9.3 |
| 134.408 | 56.735 | 27.306 | 211.76 | 211.41 | -0.165 | 9.3 |
| 135.053 | 67.925 | 27.675 | 219.96 | 220.11 | 0.068 | 9.1 |
| 134.764 | 67.926 | 27.692 | 220.06 | 220.41 | 0.159 | 9.1 |
| 134.496 | 67.926 | 27.707 | 220.36 | 220.68 | 0.145 | 9.1 |
| 134.259 | 67.928 | 27.720 | 220.67 | 220.92 | 0.113 | 9.1 |
| 145.151 | 0.357 | 0.315 | 15.97 | 15.80 | -1.064 | 16.1 |
| 144.549 | 0.357 | 0.317 | 15.90 | 15.74 | -1.006 | 16.1 |
| 144.034 | 0.357 | 0.318 | 15.84 | 15.68 | -1.010 | 16.1 |
| 143.587 | 0.357 | 0.319 | 15.84 | 15.64 | -1.263 | 15.6 |
| 144.746 | 0.650 | 0.612 | 16.58 | 16.58 | 0.000 | 16.7 |
| 144.258 | 0.650 | 0.615 | 16.59 | 16.54 | -0.301 | 16.3 |
| 143.690 | 0.650 | 0.619 | 16.60 | 16.50 | -0.602 | 15.9 |
| 143.403 | 0.650 | 0.620 | 16.52 | 16.48 | -0.242 | 16.2 |
| 154.710 | 0.429 | 0.355 | 17.08 | 16.99 | -0.527 | 17.5 |
| 154.129 | 0.429 | 0.357 | 17.17 | 16.93 | -1.398 | 15.9 |
| 153.687 | 0.429 | 0.358 | 16.97 | 16.88 | -0.530 | 17.5 |
| 153.161 | 0.429 | 0.359 | 16.91 | 16.82 | -0.532 | 17.5 |
| 155.000 | 0.731 | 0.635 | 17.81 | 17.70 | -0.618 | 17.0 |
| 154.460 | 0.731 | 0.638 | 17.73 | 17.66 | -0.395 | 17.1 |
| 153.983 | 0.731 | 0.641 | 17.71 | 17.61 | -0.565 | 17.0 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 153.493 | 0.731 | 0.644 | 17.62 | 17.57 | -0.284 | 17.2 |
| 154.611 | 1.082 | 1.014 | 18.76 | 18.80 | 0.213 | 16.6 |
| 154.165 | 1.082 | 1.019 | 18.66 | 18.78 | 0.643 | 16.9 |
| 153.622 | 1.082 | 1.025 | 18.64 | 18.76 | 0.644 | 16.8 |
| 153.277 | 1.082 | 1.029 | 18.52 | 18.75 | 1.242 | 17.1 |
| 155.515 | 1.600 | 21.645 | 121.79 | 122.07 | 0.230 | 11.3 |
| 155.080 | 1.599 | 21.707 | 122.60 | 122.73 | 0.106 | 11.3 |
| 154.711 | 1.598 | 21.759 | 123.06 | 123.30 | 0.195 | 11.3 |
| 154.339 | 1.595 | 21.811 | 123.44 | 123.86 | 0.340 | 11.2 |
| 155.315 | 6.757 | 22.476 | 131.93 | 132.27 | 0.258 | 11.0 |
| 154.878 | 6.755 | 22.527 | 132.63 | 132.85 | 0.166 | 11.0 |
| 154.565 | 6.754 | 22.562 | 132.94 | 133.27 | 0.248 | 11.0 |
| 154.223 | 6.757 | 22.602 | 133.18 | 133.73 | 0.413 | 11.0 |
| 155.484 | 14.577 | 23.343 | 143.99 | 144.11 | 0.083 | 10.7 |
| 155.132 | 14.576 | 23.376 | 144.44 | 144.53 | 0.062 | 10.6 |
| 154.797 | 14.575 | 23.408 | 144.87 | 144.92 | 0.035 | 10.6 |
| 154.491 | 14.579 | 23.437 | 145.20 | 145.30 | 0.069 | 10.6 |
| 155.595 | 25.316 | 24.239 | 157.93 | 157.73 | -0.127 | 10.3 |
| 155.239 | 25.314 | 24.267 | 158.29 | 158.11 | -0.114 | 10.3 |
| 154.966 | 25.310 | 24.289 | 158.67 | 158.41 | -0.164 | 10.3 |
| 154.586 | 25.318 | 24.319 | 158.89 | 158.84 | -0.031 | 10.3 |
| 155.724 | 36.001 | 24.941 | 169.52 | 169.51 | -0.006 | 10.1 |
| 155.402 | 36.001 | 24.964 | 169.96 | 169.84 | -0.071 | 10.0 |
| 154.976 | 35.997 | 24.994 | 170.56 | 170.28 | -0.164 | 10.0 |
| 154.755 | 35.978 | 25.009 | 170.93 | 170.49 | -0.257 | 10.0 |
| 155.563 | 46.637 | 25.547 | 180.80 | 180.44 | -0.199 | 9.8 |
| 155.228 | 46.631 | 25.568 | 180.94 | 180.77 | -0.094 | 9.8 |
| 154.890 | 46.626 | 25.589 | 181.48 | 181.11 | -0.204 | 9.8 |
| 154.570 | 46.626 | 25.610 | 181.85 | 181.43 | -0.231 | 9.8 |
| 155.419 | 56.930 | 26.055 | 190.60 | 190.28 | -0.168 | 9.6 |
| 154.980 | 56.927 | 26.081 | 190.79 | 190.71 | -0.042 | 9.6 |
| 154.681 | 56.921 | 26.099 | 191.18 | 190.99 | -0.099 | 9.6 |
| 154.420 | 56.919 | 26.115 | 191.54 | 191.25 | -0.151 | 9.6 |
| 155.151 | 67.027 | 26.508 | 199.46 | 199.53 | 0.035 | 9.5 |
| 154.884 | 67.028 | 26.523 | 199.42 | 199.78 | 0.181 | 9.5 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 154.564 | 67.035 | 26.541 | 200.13 | 200.10 | -0.015 | 9.5 |
| 154.234 | 67.043 | 26.560 | 200.37 | 200.42 | 0.025 | 9.5 |
| 165.249 | 0.446 | 0.342 | 18.21 | 18.19 | -0.110 | 19.0 |
| 164.627 | 0.446 | 0.344 | 18.11 | 18.12 | 0.055 | 19.5 |
| 164.008 | 0.446 | 0.345 | 18.07 | 18.05 | -0.111 | 19.0 |
| 163.654 | 0.446 | 0.346 | 18.03 | 18.01 | -0.111 | 19.0 |
| 164.789 | 0.935 | 0.771 | 19.12 | 19.11 | -0.052 | 18.1 |
| 164.336 | 0.935 | 0.774 | 19.12 | 19.07 | -0.262 | 17.8 |
| 163.737 | 0.935 | 0.778 | 19.03 | 19.02 | -0.053 | 18.0 |
| 163.372 | 0.935 | 0.781 | 18.91 | 18.98 | 0.370 | 18.5 |
| 164.151 | 1.657 | 1.578 | 21.41 | 21.53 | 0.560 | 16.7 |
| 163.770 | 1.657 | 1.587 | 21.44 | 21.53 | 0.420 | 16.5 |
| 163.435 | 1.657 | 1.594 | 21.47 | 21.54 | 0.326 | 16.4 |
| 163.111 | 1.657 | 1.601 | 21.41 | 21.54 | 0.607 | 16.5 |
| 175.467 | 0.406 | 0.290 | 19.22 | 19.30 | 0.416 | 21.8 |
| 174.780 | 0.406 | 0.291 | 19.09 | 19.22 | 0.681 | 23.3 |
| 174.244 | 0.406 | 0.292 | 19.11 | 19.16 | 0.262 | 20.9 |
| 173.672 | 0.406 | 0.293 | 19.08 | 19.09 | 0.052 | 20.0 |
| 174.946 | 1.015 | 0.778 | 20.29 | 20.26 | -0.148 | 18.7 |
| 174.370 | 1.015 | 0.782 | 20.15 | 20.21 | 0.298 | 19.2 |
| 173.887 | 1.015 | 0.785 | 20.15 | 20.16 | 0.050 | 18.8 |
| 173.424 | 1.015 | 0.788 | 20.10 | 20.11 | 0.050 | 18.8 |
| 174.393 | 1.751 | 1.500 | 22.07 | 22.12 | 0.227 | 17.8 |
| 173.984 | 1.751 | 1.507 | 22.03 | 22.10 | 0.318 | 17.8 |
| 173.504 | 1.751 | 1.515 | 22.16 | 22.08 | -0.361 | 17.3 |
| 173.135 | 1.752 | 1.523 | 21.94 | 22.07 | 0.593 | 17.8 |
| 173.762 | 2.459 | 2.478 | 25.67 | 25.67 | 0.000 | 16.2 |
| 173.415 | 2.460 | 2.497 | 25.79 | 25.74 | -0.194 | 16.1 |
| 173.064 | 2.461 | 2.516 | 25.85 | 25.82 | -0.116 | 16.1 |
| 172.766 | 2.462 | 2.533 | 25.28 | 25.89 | 2.413 | 16.9 |
| 175.226 | 4.616 | 19.151 | 99.77 | 99.49 | -0.281 | 12.1 |
| 174.785 | 4.616 | 19.236 | 100.43 | 100.18 | -0.249 | 12.1 |
| 174.407 | 4.615 | 19.308 | 101.07 | 100.76 | -0.307 | 12.1 |
| 174.021 | 4.616 | 19.381 | 101.29 | 101.35 | 0.059 | 12.1 |
| 175.360 | 12.710 | 21.033 | 117.36 | 117.96 | 0.511 | 11.5 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 175.020 | 12.708 | 21.072 | 117.69 | 118.34 | 0.552 | 11.5 |
| 174.534 | 12.705 | 21.128 | 118.18 | 118.89 | 0.601 | 11.5 |
| 174.088 | 12.712 | 21.180 | 118.62 | 119.41 | 0.666 | 11.5 |
| 175.653 | 19.724 | 21.980 | 128.32 | 129.05 | 0.569 | 11.2 |
| 175.178 | 19.722 | 22.025 | 129.01 | 129.53 | 0.403 | 11.1 |
| 174.793 | 19.720 | 22.061 | 129.57 | 129.93 | 0.278 | 11.1 |
| 174.357 | 19.724 | 22.103 | 129.80 | 130.38 | 0.447 | 11.1 |
| 175.719 | 26.457 | 22.692 | 137.72 | 138.26 | 0.392 | 10.9 |
| 175.380 | 26.455 | 22.720 | 138.11 | 138.58 | 0.340 | 10.9 |
| 174.924 | 26.450 | 22.757 | 138.61 | 139.02 | 0.296 | 10.9 |
| 174.570 | 26.446 | 22.787 | 138.79 | 139.36 | 0.411 | 10.9 |
| 175.558 | 33.801 | 23.346 | 147.01 | 147.42 | 0.279 | 10.6 |
| 175.163 | 33.796 | 23.375 | 147.43 | 147.78 | 0.237 | 10.6 |
| 174.813 | 33.792 | 23.401 | 147.73 | 148.11 | 0.257 | 10.6 |
| 174.483 | 33.794 | 23.425 | 148.27 | 148.42 | 0.101 | 10.6 |
| 175.820 | 41.291 | 23.881 | 155.22 | 155.57 | 0.225 | 10.4 |
| 175.338 | 41.288 | 23.914 | 155.73 | 156.00 | 0.173 | 10.4 |
| 175.061 | 41.285 | 23.933 | 156.08 | 156.25 | 0.109 | 10.4 |
| 174.654 | 41.276 | 23.960 | 156.53 | 156.61 | 0.051 | 10.4 |
| 175.705 | 48.148 | 24.335 | 162.60 | 162.84 | 0.148 | 10.3 |
| 175.305 | 48.149 | 24.361 | 162.91 | 163.20 | 0.178 | 10.2 |
| 174.788 | 48.142 | 24.393 | 163.32 | 163.65 | 0.202 | 10.2 |
| 174.596 | 48.145 | 24.406 | 163.48 | 163.83 | 0.214 | 10.2 |
| 175.547 | 55.061 | 24.748 | 169.59 | 169.82 | 0.136 | 10.1 |
| 175.051 | 55.062 | 24.778 | 169.93 | 170.26 | 0.194 | 10.1 |
| 174.704 | 55.058 | 24.799 | 170.64 | 170.56 | -0.047 | 10.1 |
| 174.439 | 55.051 | 24.815 | 170.91 | 170.79 | -0.070 | 10.1 |
| 175.386 | 61.637 | 25.107 | 175.83 | 176.18 | 0.199 | 10.0 |
| 175.017 | 61.642 | 25.128 | 176.36 | 176.51 | 0.085 | 9.9 |
| 174.659 | 61.637 | 25.149 | 176.57 | 176.81 | 0.136 | 9.9 |
| 174.273 | 61.641 | 25.171 | 177.02 | 177.15 | 0.073 | 9.9 |
| 175.485 | 68.363 | 25.431 | 181.95 | 182.21 | 0.143 | 9.8 |
| 175.204 | 68.360 | 25.446 | 182.24 | 182.45 | 0.115 | 9.8 |
| 174.804 | 68.375 | 25.469 | 182.35 | 182.81 | 0.252 | 9.8 |
| 174.506 | 68.379 | 25.486 | 182.64 | 183.07 | 0.235 | 9.8 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | mW·m$^{-1}$·K$^{-1}$ | | % | |
| 185.421 | 0.752 | 0.520 | 20.72 | 20.96 | 1.158 | 23.4 |
| 184.903 | 0.752 | 0.522 | 20.77 | 20.90 | 0.626 | 21.4 |
| 184.371 | 0.752 | 0.524 | 20.79 | 20.84 | 0.241 | 20.3 |
| 183.963 | 0.752 | 0.525 | 20.11 | 20.79 | 3.381 | 44.7 |
| 185.602 | 1.507 | 1.124 | 22.16 | 22.33 | 0.767 | 20.0 |
| 185.087 | 1.508 | 1.130 | 22.09 | 22.28 | 0.860 | 20.0 |
| 184.516 | 1.508 | 1.135 | 22.06 | 22.23 | 0.771 | 19.8 |
| 184.171 | 1.508 | 1.138 | 21.51 | 22.19 | 3.161 | 23.4 |
| 185.078 | 2.252 | 1.856 | 24.16 | 24.28 | 0.497 | 18.6 |
| 184.541 | 2.251 | 1.866 | 23.97 | 24.25 | 1.168 | 19.0 |
| 184.292 | 2.252 | 1.872 | 23.74 | 24.25 | 2.148 | 19.6 |
| 183.844 | 2.252 | 1.882 | 24.07 | 24.23 | 0.665 | 18.5 |
| 184.688 | 2.884 | 2.664 | 26.94 | 27.11 | 0.631 | 17.7 |
| 184.300 | 2.884 | 2.681 | 26.99 | 27.14 | 0.556 | 17.6 |
| 183.918 | 2.884 | 2.697 | 26.92 | 27.18 | 0.966 | 17.7 |
| 183.674 | 2.885 | 2.710 | 27.23 | 27.21 | -0.073 | 17.2 |
| 184.243 | 3.449 | 3.735 | 32.46 | 32.48 | 0.062 | 16.5 |
| 183.964 | 3.449 | 3.766 | 32.51 | 32.67 | 0.492 | 16.6 |
| 183.733 | 3.450 | 3.795 | 33.64 | 32.86 | -2.319 | 15.7 |
| 183.486 | 3.450 | 3.825 | 34.04 | 33.06 | -2.879 | 15.5 |
| 199.676 | 1.013 | 0.654 | 22.71 | 22.86 | 0.661 | 21.5 |
| 199.006 | 1.013 | 0.657 | 22.69 | 22.79 | 0.441 | 20.9 |
| 199.033 | 1.014 | 0.658 | 22.60 | 22.79 | 0.841 | 22.1 |
| 198.544 | 1.014 | 0.660 | 22.58 | 22.74 | 0.709 | 21.7 |
| 199.330 | 1.531 | 1.032 | 23.44 | 23.58 | 0.597 | 20.6 |
| 198.735 | 1.531 | 1.036 | 23.44 | 23.53 | 0.384 | 20.2 |
| 198.347 | 1.532 | 1.040 | 23.24 | 23.49 | 1.076 | 21.4 |
| 198.016 | 1.531 | 1.042 | 22.90 | 23.46 | 2.445 | 24.2 |
| 199.379 | 2.669 | 2.000 | 25.82 | 25.88 | 0.232 | 19.3 |
| 198.893 | 2.670 | 2.011 | 25.92 | 25.87 | -0.193 | 18.9 |
| 198.471 | 2.671 | 2.020 | 25.86 | 25.86 | 0.000 | 19.1 |
| 198.055 | 2.669 | 2.026 | 25.89 | 25.84 | -0.193 | 18.9 |
| 198.901 | 3.520 | 2.942 | 28.76 | 28.69 | -0.243 | 18.4 |
| 198.535 | 3.520 | 2.956 | 28.94 | 28.72 | -0.760 | 18.2 |
| 198.178 | 3.520 | 2.971 | 28.84 | 28.75 | -0.312 | 18.4 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 197.847 | 3.519 | 2.983 | 28.74 | 28.79 | 0.174 | 18.6 |
| 198.920 | 4.156 | 3.845 | 32.41 | 32.16 | -0.771 | 17.8 |
| 198.545 | 4.156 | 3.872 | 32.46 | 32.29 | -0.524 | 17.8 |
| 198.129 | 4.156 | 3.904 | 32.35 | 32.44 | 0.278 | 18.1 |
| 197.856 | 4.156 | 3.925 | 32.71 | 32.55 | -0.489 | 17.8 |
| 198.576 | 4.568 | 4.642 | 36.11 | 36.01 | -0.277 | 17.6 |
| 198.243 | 4.568 | 4.683 | 36.40 | 36.28 | -0.330 | 17.5 |
| 197.957 | 4.569 | 4.721 | 36.66 | 36.53 | -0.355 | 17.5 |
| 197.623 | 4.568 | 4.763 | 36.88 | 36.83 | -0.136 | 17.5 |
| 198.546 | 4.860 | 5.348 | 40.13 | 40.08 | -0.125 | 17.3 |
| 198.321 | 4.860 | 5.390 | 40.52 | 40.41 | -0.271 | 17.2 |
| 197.947 | 4.861 | 5.467 | 40.67 | 41.03 | 0.885 | 17.5 |
| 197.737 | 4.861 | 5.510 | 40.65 | 41.39 | 1.820 | 17.8 |
| 198.059 | 5.049 | 6.048 | 44.89 | 44.97 | 0.178 | 17.0 |
| 197.769 | 5.049 | 6.133 | 44.98 | 45.76 | 1.734 | 17.5 |
| 197.600 | 5.049 | 6.185 | 45.24 | 46.26 | 2.255 | 17.6 |
| 197.361 | 5.049 | 6.264 | 45.18 | 47.03 | 4.095 | 18.2 |
| 197.928 | 5.172 | 6.580 | 48.44 | 49.04 | 1.239 | 17.1 |
| 197.711 | 5.172 | 6.667 | 49.06 | 49.90 | 1.712 | 17.2 |
| 197.542 | 5.172 | 6.739 | 49.72 | 50.64 | 1.850 | 17.2 |
| 197.323 | 5.172 | 6.839 | 49.96 | 51.67 | 3.423 | 17.6 |
| 197.897 | 5.229 | 6.858 | 50.60 | 51.24 | 1.265 | 17.0 |
| 197.733 | 5.229 | 6.934 | 51.05 | 52.01 | 1.881 | 17.1 |
| 197.549 | 5.230 | 7.031 | 51.94 | 52.99 | 2.022 | 17.1 |
| 197.367 | 5.229 | 7.122 | 52.49 | 53.96 | 2.801 | 17.3 |
| 197.769 | 5.328 | 7.467 | 53.77 | 56.24 | 4.594 | 0.0 |
| 197.637 | 5.328 | 7.553 | 54.38 | 57.10 | 5.002 | 0.0 |
| 197.424 | 5.329 | 7.709 | 55.10 | 58.67 | 6.479 | 0.0 |
| 197.318 | 5.328 | 7.782 | 55.35 | 59.43 | 7.371 | 0.0 |
| 197.894 | 5.407 | 7.894 | 57.20 | 59.34 | 3.741 | 0.0 |
| 197.711 | 5.408 | 8.046 | 57.96 | 60.76 | 4.831 | 0.0 |
| 197.560 | 5.408 | 8.176 | 58.54 | 61.97 | 5.859 | 0.0 |
| 197.396 | 5.407 | 8.320 | 59.71 | 63.31 | 6.029 | 0.0 |
| 198.115 | 5.500 | 8.384 | 61.27 | 62.37 | 1.795 | 0.0 |
| 197.914 | 5.500 | 8.573 | 61.86 | 63.92 | 3.330 | 0.0 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 197.829 | 5.500 | 8.659 | 62.56 | 64.59 | 3.245 | 0.0 |
| 197.597 | 5.499 | 8.901 | 63.01 | 66.41 | 5.396 | 0.0 |
| 198.226 | 5.692 | 9.855 | 68.75 | 68.57 | -0.262 | 15.4 |
| 198.053 | 5.692 | 10.068 | 69.21 | 69.31 | 0.144 | 15.4 |
| 197.882 | 5.692 | 10.286 | 69.19 | 69.92 | 1.055 | 15.5 |
| 197.678 | 5.693 | 10.559 | 70.18 | 70.51 | 0.470 | 15.2 |
| 198.474 | 5.965 | 11.521 | 71.59 | 69.54 | -2.864 | 14.4 |
| 198.275 | 5.966 | 11.722 | 71.75 | 69.80 | -2.718 | 14.3 |
| 198.070 | 5.966 | 11.919 | 72.03 | 70.05 | -2.749 | 14.3 |
| 197.904 | 5.967 | 12.079 | 72.53 | 70.24 | -3.157 | 14.2 |
| 198.471 | 6.571 | 13.638 | 74.06 | 71.86 | -2.971 | 13.7 |
| 198.290 | 6.571 | 13.733 | 73.72 | 72.13 | -2.157 | 13.8 |
| 198.023 | 6.572 | 13.872 | 74.24 | 72.54 | -2.290 | 13.7 |
| 197.943 | 6.571 | 13.910 | 74.35 | 72.66 | -2.273 | 13.7 |
| 198.650 | 7.445 | 14.955 | 77.03 | 75.94 | -1.415 | 13.5 |
| 198.306 | 7.446 | 15.073 | 77.59 | 76.44 | -1.482 | 13.4 |
| 197.917 | 7.447 | 15.202 | 77.58 | 77.00 | -0.748 | 13.5 |
| 197.672 | 7.447 | 15.282 | 78.22 | 77.35 | -1.112 | 13.4 |
| 198.998 | 8.899 | 16.143 | 82.02 | 81.47 | -0.671 | 13.2 |
| 198.586 | 8.899 | 16.239 | 82.43 | 81.98 | -0.546 | 13.1 |
| 198.134 | 8.900 | 16.345 | 82.95 | 82.55 | -0.482 | 13.1 |
| 197.859 | 8.900 | 16.408 | 83.31 | 82.89 | -0.504 | 13.1 |
| 199.382 | 11.180 | 17.276 | 88.43 | 88.28 | -0.170 | 12.8 |
| 198.850 | 11.180 | 17.369 | 88.94 | 88.86 | -0.090 | 12.8 |
| 198.640 | 11.180 | 17.405 | 89.21 | 89.08 | -0.146 | 12.8 |
| 198.159 | 11.180 | 17.487 | 89.73 | 89.61 | -0.134 | 12.7 |
| 199.233 | 14.451 | 18.412 | 96.32 | 96.48 | 0.166 | 12.4 |
| 198.829 | 14.449 | 18.466 | 96.69 | 96.87 | 0.186 | 12.4 |
| 198.513 | 14.449 | 18.508 | 97.01 | 97.17 | 0.165 | 12.4 |
| 197.985 | 14.452 | 18.580 | 97.36 | 97.69 | 0.339 | 12.4 |
| 199.647 | 19.223 | 19.463 | 105.59 | 105.42 | -0.161 | 12.0 |
| 199.171 | 19.221 | 19.515 | 105.73 | 105.84 | 0.104 | 12.0 |
| 198.766 | 19.217 | 19.558 | 105.77 | 106.19 | 0.397 | 12.0 |
| 198.521 | 19.214 | 19.584 | 106.75 | 106.40 | -0.328 | 12.0 |
| 200.860 | 26.073 | 20.469 | 114.55 | 115.34 | 0.690 | 11.7 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm⁻³ | mW·m⁻¹·K⁻¹ | | % | |
| 200.358 | 26.073 | 20.514 | 115.03 | 115.74 | 0.617 | 11.7 |
| 199.942 | 26.070 | 20.551 | 115.46 | 116.08 | 0.537 | 11.7 |
| 199.516 | 26.067 | 20.589 | 115.52 | 116.42 | 0.779 | 11.7 |
| 201.141 | 35.267 | 21.550 | 126.69 | 127.38 | 0.545 | 11.3 |
| 200.642 | 35.265 | 21.588 | 127.33 | 127.76 | 0.338 | 11.3 |
| 200.211 | 35.263 | 21.620 | 127.63 | 128.09 | 0.360 | 11.3 |
| 199.725 | 35.263 | 21.657 | 127.79 | 128.47 | 0.532 | 11.3 |
| 200.885 | 47.247 | 22.643 | 140.78 | 141.27 | 0.348 | 10.9 |
| 200.367 | 47.244 | 22.677 | 141.41 | 141.65 | 0.170 | 10.8 |
| 199.989 | 47.240 | 22.701 | 141.38 | 141.93 | 0.389 | 10.9 |
| 199.680 | 47.238 | 22.721 | 141.74 | 142.16 | 0.296 | 10.8 |
| 201.164 | 62.619 | 23.684 | 156.25 | 156.47 | 0.141 | 10.5 |
| 200.687 | 62.619 | 23.711 | 156.68 | 156.82 | 0.089 | 10.4 |
| 200.378 | 62.620 | 23.729 | 156.87 | 157.05 | 0.115 | 10.4 |
| 200.002 | 62.621 | 23.750 | 157.19 | 157.32 | 0.083 | 10.4 |
| 201.156 | 69.413 | 24.079 | 163.11 | 162.77 | -0.208 | 10.3 |
| 200.706 | 69.417 | 24.104 | 163.28 | 163.10 | -0.110 | 10.3 |
| 200.328 | 69.421 | 24.125 | 163.56 | 163.38 | -0.110 | 10.3 |
| 200.030 | 69.426 | 24.141 | 163.91 | 163.60 | -0.189 | 10.3 |
| 215.053 | 1.068 | 0.633 | 24.40 | 24.58 | 0.738 | 22.1 |
| 214.489 | 1.068 | 0.635 | 24.27 | 24.52 | 1.030 | 23.0 |
| 213.947 | 1.068 | 0.637 | 24.32 | 24.46 | 0.576 | 21.5 |
| 213.426 | 1.068 | 0.639 | 24.11 | 24.40 | 1.203 | 23.7 |
| 215.328 | 1.747 | 1.076 | 25.39 | 25.46 | 0.276 | 20.1 |
| 214.790 | 1.747 | 1.080 | 25.34 | 25.41 | 0.276 | 20.1 |
| 214.260 | 1.747 | 1.083 | 25.27 | 25.35 | 0.317 | 20.1 |
| 213.806 | 1.748 | 1.087 | 25.12 | 25.31 | 0.756 | 20.8 |
| 214.864 | 3.035 | 2.049 | 27.64 | 27.54 | -0.362 | 18.8 |
| 214.326 | 3.036 | 2.059 | 27.49 | 27.51 | 0.073 | 19.1 |
| 213.846 | 3.036 | 2.067 | 27.86 | 27.48 | -1.364 | 18.1 |
| 213.566 | 3.038 | 2.074 | 27.61 | 27.46 | -0.543 | 18.7 |
| 214.431 | 4.165 | 3.103 | 30.69 | 30.34 | -1.140 | 17.9 |
| 214.021 | 4.165 | 3.117 | 30.68 | 30.34 | -1.108 | 17.9 |
| 213.625 | 4.165 | 3.131 | 30.67 | 30.35 | -1.043 | 18.0 |
| 213.296 | 4.165 | 3.143 | 30.69 | 30.35 | -1.108 | 17.9 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 215.344 | 5.021 | 4.028 | 33.84 | 33.41 | -1.271 | 17.5 |
| 214.428 | 5.021 | 4.080 | 33.98 | 33.53 | -1.324 | 17.5 |
| 213.774 | 5.021 | 4.119 | 34.21 | 33.63 | -1.695 | 17.3 |
| 213.072 | 5.021 | 4.162 | 34.39 | 33.75 | -1.861 | 17.2 |
| 214.675 | 5.810 | 5.168 | 38.44 | 37.76 | -1.769 | 16.9 |
| 214.439 | 5.811 | 5.192 | 38.21 | 37.86 | -0.916 | 17.1 |
| 214.014 | 5.813 | 5.238 | 38.06 | 38.05 | -0.026 | 17.4 |
| 213.567 | 5.810 | 5.279 | 39.16 | 38.22 | -2.400 | 16.6 |
| 214.369 | 6.372 | 6.164 | 42.81 | 42.14 | -1.565 | 16.5 |
| 214.079 | 6.373 | 6.209 | 42.83 | 42.36 | -1.097 | 16.6 |
| 213.712 | 6.370 | 6.259 | 42.67 | 42.61 | -0.141 | 16.9 |
| 213.474 | 6.371 | 6.298 | 43.09 | 42.81 | -0.650 | 16.7 |
| 213.934 | 6.928 | 7.386 | 47.97 | 47.87 | -0.208 | 16.4 |
| 213.759 | 6.929 | 7.428 | 48.31 | 48.09 | -0.455 | 16.3 |
| 213.375 | 6.929 | 7.516 | 48.62 | 48.56 | -0.123 | 16.3 |
| 213.185 | 6.930 | 7.563 | 49.03 | 48.81 | -0.449 | 16.2 |
| 213.566 | 7.356 | 8.495 | 52.95 | 52.91 | -0.076 | 15.9 |
| 213.304 | 7.357 | 8.575 | 53.01 | 53.30 | 0.547 | 16.0 |
| 213.126 | 7.358 | 8.631 | 53.68 | 53.58 | -0.186 | 15.9 |
| 212.961 | 7.356 | 8.677 | 53.66 | 53.80 | 0.261 | 15.9 |
| 213.712 | 7.759 | 9.444 | 56.44 | 56.66 | 0.390 | 15.6 |
| 213.375 | 7.759 | 9.558 | 57.37 | 57.15 | -0.383 | 15.5 |
| 213.200 | 7.760 | 9.620 | 57.56 | 57.41 | -0.261 | 15.5 |
| 213.080 | 7.759 | 9.660 | 57.26 | 57.58 | 0.559 | 15.6 |
| 213.798 | 8.254 | 10.564 | 60.38 | 60.44 | 0.099 | 15.2 |
| 213.577 | 8.255 | 10.643 | 60.79 | 60.73 | -0.099 | 15.1 |
| 213.415 | 8.255 | 10.700 | 61.04 | 60.94 | -0.164 | 15.1 |
| 213.191 | 8.255 | 10.780 | 61.31 | 61.22 | -0.147 | 15.1 |
| 213.742 | 8.697 | 11.473 | 63.46 | 63.22 | -0.378 | 14.8 |
| 213.550 | 8.697 | 11.537 | 63.92 | 63.44 | -0.751 | 14.7 |
| 213.349 | 8.698 | 11.607 | 64.11 | 63.67 | -0.686 | 14.7 |
| 213.104 | 8.696 | 11.686 | 64.49 | 63.93 | -0.868 | 14.6 |
| 213.965 | 9.310 | 12.406 | 66.72 | 66.07 | -0.974 | 14.4 |
| 213.642 | 9.311 | 12.504 | 67.07 | 66.41 | -0.984 | 14.3 |
| 213.475 | 9.312 | 12.556 | 67.04 | 66.58 | -0.686 | 14.4 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 213.336 | 9.309 | 12.593 | 67.24 | 66.71 | -0.788 | 14.3 |
| 214.655 | 10.068 | 13.183 | 69.21 | 68.69 | -0.751 | 14.1 |
| 214.386 | 10.069 | 13.255 | 69.76 | 68.96 | -1.147 | 14.1 |
| 214.165 | 10.069 | 13.313 | 69.79 | 69.17 | -0.888 | 14.1 |
| 213.890 | 10.070 | 13.386 | 70.16 | 69.44 | -1.026 | 14.0 |
| 214.865 | 11.106 | 14.143 | 73.03 | 72.46 | -0.781 | 13.8 |
| 214.535 | 11.106 | 14.216 | 73.33 | 72.76 | -0.777 | 13.8 |
| 214.277 | 11.106 | 14.274 | 73.71 | 72.99 | -0.977 | 13.8 |
| 213.865 | 11.107 | 14.365 | 74.08 | 73.38 | -0.945 | 13.7 |
| 215.388 | 12.417 | 14.987 | 76.99 | 76.33 | -0.857 | 13.5 |
| 214.771 | 12.418 | 15.104 | 77.41 | 76.86 | -0.711 | 13.5 |
| 214.164 | 12.420 | 15.219 | 78.00 | 77.40 | -0.769 | 13.5 |
| 213.575 | 12.422 | 15.330 | 78.22 | 77.93 | -0.371 | 13.5 |
| 215.850 | 14.257 | 15.899 | 81.17 | 81.16 | -0.012 | 13.3 |
| 215.227 | 14.257 | 15.997 | 81.80 | 81.67 | -0.159 | 13.3 |
| 214.710 | 14.257 | 16.079 | 82.21 | 82.09 | -0.146 | 13.2 |
| 214.290 | 14.256 | 16.144 | 82.28 | 82.44 | 0.194 | 13.2 |
| 216.298 | 16.764 | 16.828 | 86.64 | 86.84 | 0.231 | 13.0 |
| 215.635 | 16.766 | 16.917 | 87.24 | 87.35 | 0.126 | 13.0 |
| 215.026 | 16.764 | 16.997 | 87.62 | 87.82 | 0.228 | 12.9 |
| 214.509 | 16.767 | 17.067 | 87.84 | 88.23 | 0.444 | 12.9 |
| 215.935 | 20.275 | 17.890 | 93.75 | 94.22 | 0.501 | 12.6 |
| 215.396 | 20.274 | 17.950 | 94.22 | 94.62 | 0.425 | 12.6 |
| 214.891 | 20.273 | 18.007 | 94.76 | 94.99 | 0.243 | 12.6 |
| 214.387 | 20.270 | 18.062 | 94.91 | 95.36 | 0.474 | 12.6 |
| 216.265 | 24.891 | 18.846 | 101.43 | 101.91 | 0.473 | 12.3 |
| 215.719 | 24.888 | 18.898 | 101.99 | 102.29 | 0.294 | 12.3 |
| 215.148 | 24.888 | 18.952 | 102.20 | 102.69 | 0.479 | 12.3 |
| 214.700 | 24.886 | 18.995 | 102.68 | 103.01 | 0.321 | 12.2 |
| 215.940 | 31.251 | 19.899 | 111.15 | 111.47 | 0.288 | 11.9 |
| 215.396 | 31.251 | 19.944 | 111.37 | 111.84 | 0.422 | 11.9 |
| 214.911 | 31.248 | 19.983 | 111.76 | 112.17 | 0.367 | 11.9 |
| 214.518 | 31.245 | 20.015 | 111.99 | 112.44 | 0.402 | 11.9 |
| 215.647 | 39.620 | 20.942 | 121.78 | 122.29 | 0.419 | 11.5 |
| 215.127 | 39.618 | 20.979 | 122.24 | 122.63 | 0.319 | 11.5 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 214.645 | 39.614 | 21.013 | 122.54 | 122.95 | 0.335 | 11.5 |
| 214.236 | 39.613 | 21.042 | 122.71 | 123.23 | 0.424 | 11.5 |
| 215.862 | 48.553 | 21.785 | 131.78 | 132.20 | 0.319 | 11.2 |
| 215.441 | 48.554 | 21.812 | 132.02 | 132.47 | 0.341 | 11.2 |
| 214.911 | 48.549 | 21.845 | 132.38 | 132.82 | 0.332 | 11.2 |
| 214.480 | 48.547 | 21.873 | 132.96 | 133.10 | 0.105 | 11.1 |
| 216.114 | 57.652 | 22.492 | 141.03 | 141.36 | 0.234 | 10.9 |
| 215.631 | 57.648 | 22.520 | 141.39 | 141.67 | 0.198 | 10.9 |
| 215.140 | 57.648 | 22.549 | 141.70 | 141.99 | 0.205 | 10.9 |
| 214.778 | 57.645 | 22.570 | 141.82 | 142.23 | 0.289 | 10.9 |
| 215.841 | 66.100 | 23.084 | 149.35 | 149.62 | 0.181 | 10.7 |
| 215.368 | 66.103 | 23.110 | 149.75 | 149.93 | 0.120 | 10.7 |
| 214.932 | 66.101 | 23.134 | 150.16 | 150.21 | 0.033 | 10.6 |
| 214.525 | 66.103 | 23.157 | 150.37 | 150.48 | 0.073 | 10.6 |
| 215.706 | 69.263 | 23.289 | 152.59 | 152.61 | 0.013 | 10.6 |
| 215.349 | 69.269 | 23.309 | 153.09 | 152.85 | -0.157 | 10.6 |
| 214.975 | 69.277 | 23.329 | 153.29 | 153.10 | -0.124 | 10.6 |
| 214.553 | 69.276 | 23.352 | 153.48 | 153.38 | -0.065 | 10.6 |
| 234.956 | 0.977 | 0.520 | 26.53 | 26.75 | 0.829 | 23.5 |
| 234.383 | 0.978 | 0.522 | 26.45 | 26.68 | 0.870 | 23.7 |
| 233.637 | 0.978 | 0.524 | 26.34 | 26.60 | 0.987 | 24.2 |
| 233.152 | 0.979 | 0.526 | 26.32 | 26.54 | 0.836 | 23.4 |
| 236.032 | 3.145 | 1.834 | 29.45 | 29.44 | -0.034 | 19.2 |
| 235.316 | 3.146 | 1.843 | 29.45 | 29.38 | -0.238 | 19.0 |
| 234.753 | 3.147 | 1.851 | 29.35 | 29.33 | -0.068 | 19.1 |
| 234.261 | 3.148 | 1.857 | 29.36 | 29.28 | -0.272 | 19.0 |
| 235.158 | 5.135 | 3.346 | 33.53 | 33.08 | -1.342 | 17.7 |
| 234.655 | 5.135 | 3.361 | 33.61 | 33.07 | -1.607 | 17.6 |
| 234.220 | 5.135 | 3.374 | 33.61 | 33.06 | -1.636 | 17.6 |
| 233.740 | 5.135 | 3.389 | 33.61 | 33.05 | -1.666 | 17.5 |
| 236.400 | 7.129 | 5.155 | 38.39 | 38.91 | 1.355 | 17.8 |
| 235.396 | 7.129 | 5.218 | 39.46 | 39.05 | -1.039 | 17.1 |
| 234.339 | 7.131 | 5.290 | 39.52 | 39.23 | -0.734 | 17.1 |
| 233.533 | 7.132 | 5.347 | 40.43 | 39.37 | -2.622 | 16.5 |
| 235.044 | 9.424 | 7.925 | 49.71 | 49.39 | -0.644 | 16.0 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol\cdot dm^{-3}$ | $mW\cdot m^{-1}\cdot K^{-1}$ | | % | |
| 234.249 | 9.425 | 8.033 | 51.04 | 49.80 | -2.429 | 15.6 |
| 233.554 | 9.426 | 8.130 | 50.41 | 50.17 | -0.476 | 16.0 |
| 232.938 | 9.427 | 8.220 | 50.29 | 50.51 | 0.437 | 16.1 |
| 235.259 | 11.469 | 10.306 | 58.58 | 58.47 | -0.188 | 15.2 |
| 234.432 | 11.470 | 10.447 | 59.03 | 58.98 | -0.085 | 15.2 |
| 233.788 | 11.471 | 10.560 | 59.74 | 59.38 | -0.603 | 15.1 |
| 233.227 | 11.472 | 10.660 | 59.26 | 59.73 | 0.793 | 15.3 |
| 235.523 | 13.600 | 12.235 | 65.54 | 65.67 | 0.198 | 14.6 |
| 234.841 | 13.600 | 12.346 | 66.03 | 66.07 | 0.061 | 14.5 |
| 234.078 | 13.601 | 12.471 | 66.42 | 66.51 | 0.136 | 14.5 |
| 233.513 | 13.602 | 12.564 | 66.70 | 66.85 | 0.225 | 14.5 |
| 235.351 | 15.750 | 13.694 | 71.73 | 71.70 | -0.042 | 14.1 |
| 234.621 | 15.750 | 13.799 | 72.19 | 72.11 | -0.111 | 14.0 |
| 234.028 | 15.751 | 13.885 | 72.38 | 72.45 | 0.097 | 14.0 |
| 233.472 | 15.751 | 13.965 | 72.82 | 72.78 | -0.055 | 14.0 |
| 235.036 | 17.692 | 14.709 | 76.44 | 76.49 | 0.065 | 13.7 |
| 234.425 | 17.692 | 14.788 | 76.87 | 76.83 | -0.052 | 13.7 |
| 233.812 | 17.693 | 14.868 | 77.12 | 77.18 | 0.078 | 13.7 |
| 233.349 | 17.693 | 14.928 | 77.40 | 77.45 | 0.065 | 13.6 |
| 234.799 | 20.536 | 15.827 | 81.88 | 82.54 | 0.806 | 13.4 |
| 234.255 | 20.535 | 15.888 | 82.72 | 82.84 | 0.145 | 13.3 |
| 233.698 | 20.535 | 15.951 | 83.18 | 83.15 | -0.036 | 13.3 |
| 233.233 | 20.535 | 16.004 | 83.48 | 83.42 | -0.072 | 13.3 |
| 235.343 | 23.411 | 16.625 | 87.34 | 87.51 | 0.195 | 13.1 |
| 234.724 | 23.411 | 16.688 | 87.68 | 87.85 | 0.194 | 13.0 |
| 234.109 | 23.411 | 16.750 | 87.84 | 88.19 | 0.398 | 13.0 |
| 233.639 | 23.410 | 16.798 | 88.45 | 88.46 | 0.011 | 13.0 |
| 235.025 | 26.932 | 17.496 | 93.32 | 93.46 | 0.150 | 12.8 |
| 234.553 | 26.932 | 17.539 | 93.11 | 93.72 | 0.655 | 12.8 |
| 234.168 | 26.932 | 17.575 | 93.83 | 93.93 | 0.107 | 12.7 |
| 233.546 | 26.931 | 17.631 | 93.95 | 94.28 | 0.351 | 12.7 |
| 235.148 | 30.368 | 18.160 | 98.44 | 98.51 | 0.071 | 12.5 |
| 234.592 | 30.366 | 18.206 | 98.94 | 98.81 | -0.131 | 12.5 |
| 234.248 | 30.361 | 18.234 | 99.22 | 98.99 | -0.232 | 12.5 |
| 233.560 | 30.360 | 18.292 | 99.35 | 99.37 | 0.020 | 12.5 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 234.964 | 34.092 | 18.795 | 103.31 | 103.71 | 0.387 | 12.3 |
| 234.389 | 34.091 | 18.839 | 103.59 | 104.02 | 0.415 | 12.3 |
| 233.804 | 34.090 | 18.885 | 103.95 | 104.34 | 0.375 | 12.3 |
| 233.473 | 34.089 | 18.910 | 103.56 | 104.52 | 0.927 | 12.3 |
| 235.426 | 37.551 | 19.262 | 107.55 | 107.89 | 0.316 | 12.1 |
| 234.763 | 37.547 | 19.310 | 107.94 | 108.24 | 0.278 | 12.1 |
| 234.319 | 37.547 | 19.342 | 108.24 | 108.48 | 0.222 | 12.1 |
| 233.849 | 37.543 | 19.376 | 108.25 | 108.73 | 0.443 | 12.1 |
| 235.318 | 41.022 | 19.718 | 111.89 | 112.14 | 0.223 | 11.9 |
| 234.701 | 41.021 | 19.761 | 112.12 | 112.47 | 0.312 | 11.9 |
| 234.205 | 41.021 | 19.795 | 112.39 | 112.74 | 0.311 | 11.9 |
| 233.707 | 41.018 | 19.829 | 112.63 | 113.01 | 0.337 | 11.9 |
| 235.189 | 44.354 | 20.116 | 116.37 | 116.05 | -0.275 | 11.8 |
| 234.641 | 44.354 | 20.152 | 115.99 | 116.34 | 0.302 | 11.8 |
| 234.130 | 44.351 | 20.186 | 116.43 | 116.62 | 0.163 | 11.8 |
| 233.731 | 44.350 | 20.212 | 116.93 | 116.84 | -0.077 | 11.7 |
| 235.016 | 47.931 | 20.508 | 120.00 | 120.09 | 0.075 | 11.6 |
| 234.521 | 47.932 | 20.540 | 120.28 | 120.36 | 0.067 | 11.6 |
| 234.030 | 47.927 | 20.570 | 120.52 | 120.62 | 0.083 | 11.6 |
| 233.633 | 47.928 | 20.595 | 120.49 | 120.84 | 0.290 | 11.6 |
| 234.971 | 51.244 | 20.836 | 123.41 | 123.63 | 0.178 | 11.5 |
| 234.454 | 51.246 | 20.867 | 123.89 | 123.91 | 0.016 | 11.5 |
| 234.029 | 51.243 | 20.893 | 124.23 | 124.14 | -0.072 | 11.5 |
| 233.650 | 51.240 | 20.916 | 124.65 | 124.34 | -0.249 | 11.5 |
| 235.440 | 55.105 | 21.158 | 127.30 | 127.32 | 0.016 | 11.4 |
| 234.914 | 55.104 | 21.189 | 127.66 | 127.61 | -0.039 | 11.4 |
| 234.391 | 55.102 | 21.219 | 128.01 | 127.89 | -0.094 | 11.4 |
| 233.958 | 55.098 | 21.244 | 128.22 | 128.13 | -0.070 | 11.3 |
| 235.316 | 58.418 | 21.445 | 130.73 | 130.68 | -0.038 | 11.3 |
| 234.894 | 58.416 | 21.469 | 130.80 | 130.90 | 0.076 | 11.3 |
| 234.436 | 58.416 | 21.495 | 131.20 | 131.15 | -0.038 | 11.3 |
| 233.899 | 58.413 | 21.525 | 131.57 | 131.45 | -0.091 | 11.2 |
| 235.308 | 61.887 | 21.721 | 134.15 | 134.02 | -0.097 | 11.2 |
| 234.767 | 61.887 | 21.751 | 134.48 | 134.32 | -0.119 | 11.2 |
| 234.277 | 61.885 | 21.778 | 134.61 | 134.59 | -0.015 | 11.1 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 233.911 | 61.882 | 21.798 | 134.51 | 134.79 | 0.208 | 11.2 |
| 235.226 | 65.387 | 21.987 | 137.52 | 137.36 | -0.116 | 11.1 |
| 234.756 | 65.384 | 22.012 | 137.80 | 137.61 | -0.138 | 11.1 |
| 234.141 | 65.382 | 22.045 | 138.34 | 137.95 | -0.282 | 11.0 |
| 233.842 | 65.381 | 22.061 | 138.07 | 138.11 | 0.029 | 11.0 |
| 235.239 | 68.761 | 22.225 | 140.80 | 140.44 | -0.256 | 11.0 |
| 234.730 | 68.761 | 22.252 | 141.04 | 140.72 | -0.227 | 11.0 |
| 234.268 | 68.757 | 22.276 | 141.56 | 140.97 | -0.417 | 10.9 |
| 233.731 | 68.757 | 22.304 | 141.60 | 141.27 | -0.233 | 10.9 |
| 255.835 | 1.020 | 0.495 | 29.06 | 29.29 | 0.791 | 23.8 |
| 255.177 | 1.020 | 0.496 | 29.00 | 29.20 | 0.690 | 23.4 |
| 254.645 | 1.019 | 0.497 | 28.87 | 29.14 | 0.935 | 24.8 |
| 253.943 | 1.019 | 0.498 | 28.81 | 29.05 | 0.833 | 24.2 |
| 256.518 | 2.714 | 1.384 | 30.98 | 31.00 | 0.065 | 19.6 |
| 255.864 | 2.714 | 1.389 | 30.81 | 30.93 | 0.389 | 20.0 |
| 255.237 | 2.716 | 1.394 | 30.80 | 30.86 | 0.195 | 19.7 |
| 254.735 | 2.717 | 1.399 | 30.76 | 30.81 | 0.163 | 19.7 |
| 255.777 | 4.718 | 2.587 | 33.81 | 33.50 | -0.917 | 18.2 |
| 255.276 | 4.721 | 2.597 | 33.67 | 33.46 | -0.624 | 18.3 |
| 254.679 | 4.726 | 2.610 | 33.65 | 33.42 | -0.684 | 18.3 |
| 254.209 | 4.732 | 2.622 | 33.50 | 33.39 | -0.328 | 18.5 |
| 256.067 | 6.551 | 3.825 | 37.09 | 36.72 | -0.998 | 17.6 |
| 255.011 | 6.552 | 3.858 | 37.07 | 36.69 | -1.025 | 17.6 |
| 254.140 | 6.555 | 3.886 | 36.97 | 36.68 | -0.784 | 17.7 |
| 253.452 | 6.558 | 3.910 | 37.16 | 36.67 | -1.319 | 17.5 |
| 256.771 | 6.788 | 3.975 | 37.63 | 37.23 | -1.063 | 17.5 |
| 255.562 | 6.788 | 4.013 | 37.65 | 37.20 | -1.195 | 17.5 |
| 254.504 | 6.789 | 4.048 | 37.68 | 37.18 | -1.327 | 17.4 |
| 256.308 | 8.785 | 5.525 | 42.54 | 41.99 | -1.293 | 16.8 |
| 255.358 | 8.785 | 5.576 | 42.74 | 42.07 | -1.568 | 16.7 |
| 254.477 | 8.785 | 5.624 | 42.76 | 42.14 | -1.450 | 16.8 |
| 253.831 | 8.786 | 5.660 | 43.15 | 42.21 | -2.178 | 16.5 |
| 256.639 | 11.182 | 7.487 | 49.11 | 49.00 | -0.224 | 16.3 |
| 255.633 | 11.183 | 7.570 | 49.34 | 49.23 | -0.223 | 16.3 |
| 254.824 | 11.183 | 7.639 | 49.49 | 49.42 | -0.141 | 16.3 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | mW·m$^{-1}$·K$^{-1}$ | | % | |
| 254.114 | 11.187 | 7.704 | 49.73 | 49.60 | -0.261 | 16.2 |
| 256.101 | 13.268 | 9.233 | 55.38 | 55.51 | 0.235 | 15.7 |
| 255.217 | 13.269 | 9.325 | 55.49 | 55.80 | 0.559 | 15.7 |
| 254.473 | 13.270 | 9.405 | 55.59 | 56.04 | 0.809 | 15.7 |
| 253.901 | 13.273 | 9.469 | 55.89 | 56.24 | 0.626 | 15.7 |
| 256.416 | 15.396 | 10.740 | 60.85 | 61.27 | 0.690 | 15.2 |
| 255.651 | 15.397 | 10.825 | 61.12 | 61.54 | 0.687 | 15.2 |
| 254.967 | 15.399 | 10.904 | 61.34 | 61.79 | 0.734 | 15.2 |
| 254.357 | 15.401 | 10.975 | 61.67 | 62.02 | 0.568 | 15.1 |
| 256.151 | 17.518 | 12.052 | 65.96 | 66.43 | 0.713 | 14.7 |
| 255.415 | 17.519 | 12.134 | 66.19 | 66.70 | 0.771 | 14.7 |
| 254.730 | 17.521 | 12.212 | 66.43 | 66.96 | 0.798 | 14.7 |
| 254.159 | 17.522 | 12.276 | 66.67 | 67.18 | 0.765 | 14.7 |
| 255.901 | 20.351 | 13.442 | 71.95 | 72.38 | 0.598 | 14.2 |
| 255.130 | 20.352 | 13.522 | 72.27 | 72.68 | 0.567 | 14.2 |
| 254.542 | 20.353 | 13.584 | 72.66 | 72.90 | 0.330 | 14.1 |
| 254.029 | 20.351 | 13.637 | 72.60 | 73.10 | 0.689 | 14.2 |
| 256.273 | 23.422 | 14.554 | 77.46 | 77.82 | 0.465 | 13.8 |
| 255.560 | 23.422 | 14.622 | 77.81 | 78.09 | 0.360 | 13.8 |
| 254.902 | 23.423 | 14.686 | 77.92 | 78.35 | 0.552 | 13.8 |
| 254.313 | 23.423 | 14.742 | 78.09 | 78.58 | 0.627 | 13.8 |
| 255.901 | 26.850 | 15.604 | 83.05 | 83.53 | 0.578 | 13.5 |
| 255.234 | 26.850 | 15.662 | 83.38 | 83.79 | 0.492 | 13.4 |
| 254.549 | 26.851 | 15.722 | 83.45 | 84.07 | 0.743 | 13.4 |
| 254.205 | 26.849 | 15.752 | 83.91 | 84.20 | 0.346 | 13.4 |
| 255.776 | 30.401 | 16.465 | 88.33 | 88.81 | 0.543 | 13.2 |
| 255.193 | 30.399 | 16.512 | 88.52 | 89.04 | 0.587 | 13.1 |
| 254.584 | 30.400 | 16.561 | 89.07 | 89.29 | 0.247 | 13.1 |
| 254.087 | 30.397 | 16.601 | 89.15 | 89.50 | 0.393 | 13.1 |
| 255.663 | 33.905 | 17.178 | 93.23 | 93.62 | 0.418 | 12.9 |
| 255.054 | 33.907 | 17.224 | 93.61 | 93.88 | 0.288 | 12.9 |
| 254.579 | 33.909 | 17.260 | 93.88 | 94.08 | 0.213 | 12.8 |
| 254.064 | 33.909 | 17.299 | 93.94 | 94.29 | 0.373 | 12.8 |
| 255.663 | 37.376 | 17.778 | 97.80 | 98.03 | 0.235 | 12.7 |
| 255.091 | 37.374 | 17.818 | 98.11 | 98.27 | 0.163 | 12.6 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 254.512 | 37.373 | 17.859 | 98.20 | 98.51 | 0.316 | 12.6 |
| 254.068 | 37.374 | 17.891 | 98.38 | 98.70 | 0.325 | 12.6 |
| 256.199 | 40.731 | 18.254 | 101.93 | 101.83 | -0.098 | 12.5 |
| 255.692 | 40.729 | 18.288 | 102.18 | 102.04 | -0.137 | 12.4 |
| 255.244 | 40.727 | 18.317 | 102.49 | 102.23 | -0.254 | 12.4 |
| 256.203 | 44.631 | 18.784 | 105.93 | 106.27 | 0.321 | 12.3 |
| 255.607 | 44.631 | 18.822 | 106.28 | 106.52 | 0.226 | 12.3 |
| 254.993 | 44.631 | 18.861 | 106.34 | 106.78 | 0.414 | 12.3 |
| 254.544 | 44.632 | 18.890 | 106.82 | 106.98 | 0.150 | 12.2 |
| 256.097 | 48.090 | 19.214 | 109.70 | 110.07 | 0.337 | 12.1 |
| 255.479 | 48.089 | 19.252 | 110.07 | 110.33 | 0.236 | 12.1 |
| 254.909 | 48.089 | 19.287 | 110.33 | 110.58 | 0.227 | 12.1 |
| 254.428 | 48.087 | 19.316 | 110.59 | 110.78 | 0.172 | 12.1 |
| 255.939 | 51.674 | 19.624 | 113.61 | 113.87 | 0.229 | 12.0 |
| 255.358 | 51.673 | 19.658 | 113.79 | 114.12 | 0.290 | 12.0 |
| 254.925 | 51.672 | 19.683 | 113.97 | 114.31 | 0.298 | 12.0 |
| 254.412 | 51.673 | 19.713 | 114.22 | 114.53 | 0.271 | 11.9 |
| 256.371 | 56.210 | 20.060 | 117.93 | 118.22 | 0.246 | 11.8 |
| 255.786 | 56.209 | 20.093 | 118.19 | 118.48 | 0.245 | 11.8 |
| 255.239 | 56.207 | 20.123 | 118.43 | 118.71 | 0.236 | 11.8 |
| 254.711 | 56.208 | 20.153 | 118.39 | 118.95 | 0.473 | 11.8 |
| 254.267 | 56.203 | 20.177 | 119.12 | 119.14 | 0.017 | 11.8 |
| 255.471 | 59.687 | 20.434 | 121.84 | 121.97 | 0.107 | 11.7 |
| 255.429 | 59.690 | 20.436 | 121.89 | 121.99 | 0.082 | 11.7 |
| 254.396 | 59.684 | 20.492 | 122.09 | 122.45 | 0.295 | 11.7 |
| 254.078 | 59.683 | 20.509 | 122.46 | 122.59 | 0.106 | 11.6 |
| 255.957 | 63.260 | 20.719 | 125.86 | 125.11 | -0.596 | 11.5 |
| 255.379 | 63.260 | 20.749 | 126.59 | 125.36 | -0.972 | 11.5 |
| 254.993 | 63.255 | 20.769 | 124.68 | 125.53 | 0.682 | 11.6 |
| 254.436 | 63.252 | 20.798 | 125.37 | 125.78 | 0.327 | 11.5 |
| 255.922 | 66.477 | 20.984 | 128.80 | 128.06 | -0.575 | 11.4 |
| 255.361 | 66.480 | 21.013 | 128.65 | 128.32 | -0.257 | 11.4 |
| 254.827 | 66.474 | 21.040 | 128.88 | 128.55 | -0.256 | 11.4 |
| 254.429 | 66.473 | 21.060 | 128.52 | 128.73 | 0.163 | 11.4 |
| 275.820 | 1.015 | 0.453 | 31.52 | 31.79 | 0.857 | 25.6 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm⁻³ | mW·m⁻¹·K⁻¹ | | % | |
| 275.218 | 1.015 | 0.454 | 31.44 | 31.71 | 0.859 | 25.6 |
| 274.623 | 1.015 | 0.455 | 31.34 | 31.64 | 0.957 | 26.4 |
| 274.083 | 1.016 | 0.457 | 31.34 | 31.57 | 0.734 | 24.4 |
| 276.019 | 2.495 | 1.153 | 32.88 | 33.05 | 0.517 | 20.6 |
| 275.382 | 2.495 | 1.156 | 32.89 | 32.98 | 0.274 | 20.1 |
| 274.765 | 2.496 | 1.160 | 32.77 | 32.90 | 0.397 | 20.3 |
| 274.285 | 2.497 | 1.163 | 32.74 | 32.84 | 0.305 | 20.2 |
| 275.546 | 4.446 | 2.159 | 35.09 | 35.01 | -0.228 | 18.8 |
| 275.066 | 4.447 | 2.165 | 34.95 | 34.96 | 0.029 | 19.0 |
| 274.433 | 4.448 | 2.173 | 34.99 | 34.90 | -0.257 | 18.8 |
| 274.021 | 4.449 | 2.178 | 34.89 | 34.85 | -0.115 | 18.9 |
| 275.252 | 6.508 | 3.329 | 38.04 | 37.71 | -0.868 | 17.9 |
| 274.818 | 6.508 | 3.338 | 38.09 | 37.68 | -1.076 | 17.8 |
| 274.354 | 6.507 | 3.347 | 38.07 | 37.64 | -1.129 | 17.7 |
| 274.121 | 6.507 | 3.352 | 38.16 | 37.63 | -1.389 | 17.6 |
| 277.314 | 8.401 | 4.425 | 41.35 | 40.93 | -1.016 | 17.4 |
| 276.746 | 8.402 | 4.443 | 41.34 | 40.92 | -1.016 | 17.3 |
| 276.190 | 8.405 | 4.462 | 41.26 | 40.90 | -0.873 | 17.4 |
| 275.541 | 8.407 | 4.483 | 41.20 | 40.89 | -0.752 | 17.4 |
| 276.595 | 10.552 | 5.821 | 45.51 | 45.15 | -0.791 | 16.9 |
| 276.054 | 10.553 | 5.846 | 45.48 | 45.17 | -0.682 | 16.9 |
| 275.617 | 10.555 | 5.867 | 45.43 | 45.19 | -0.528 | 16.9 |
| 275.127 | 10.559 | 5.892 | 45.47 | 45.22 | -0.550 | 16.9 |
| 276.632 | 12.673 | 7.199 | 50.04 | 49.87 | -0.340 | 16.4 |
| 276.126 | 12.674 | 7.230 | 50.12 | 49.92 | -0.399 | 16.4 |
| 275.640 | 12.675 | 7.260 | 50.08 | 49.98 | -0.200 | 16.4 |
| 275.203 | 12.678 | 7.288 | 50.07 | 50.03 | -0.080 | 16.4 |
| 276.728 | 14.652 | 8.444 | 54.39 | 54.39 | 0.000 | 16.0 |
| 276.201 | 14.653 | 8.481 | 54.43 | 54.47 | 0.073 | 16.0 |
| 275.829 | 14.655 | 8.509 | 54.49 | 54.54 | 0.092 | 16.0 |
| 275.408 | 14.656 | 8.540 | 54.52 | 54.61 | 0.165 | 16.0 |
| 276.345 | 16.954 | 9.820 | 59.29 | 59.52 | 0.388 | 15.5 |
| 275.929 | 16.954 | 9.853 | 59.45 | 59.60 | 0.252 | 15.5 |
| 275.539 | 16.956 | 9.885 | 59.41 | 59.69 | 0.471 | 15.5 |
| 275.111 | 16.957 | 9.920 | 59.39 | 59.78 | 0.657 | 15.5 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 276.052 | 19.153 | 10.986 | 63.56 | 64.02 | 0.724 | 15.1 |
| 275.714 | 19.154 | 11.014 | 63.73 | 64.10 | 0.581 | 15.1 |
| 275.280 | 19.155 | 11.051 | 63.82 | 64.20 | 0.595 | 15.1 |
| 275.004 | 19.155 | 11.075 | 63.83 | 64.27 | 0.689 | 15.1 |
| 276.700 | 21.322 | 11.913 | 67.46 | 67.85 | 0.578 | 14.8 |
| 275.909 | 21.323 | 11.979 | 67.57 | 68.05 | 0.710 | 14.8 |
| 275.069 | 21.324 | 12.051 | 67.82 | 68.26 | 0.649 | 14.7 |
| 274.513 | 21.325 | 12.098 | 67.84 | 68.40 | 0.825 | 14.7 |
| 276.428 | 23.529 | 12.802 | 71.33 | 71.64 | 0.435 | 14.4 |
| 275.693 | 23.529 | 12.862 | 71.46 | 71.83 | 0.518 | 14.4 |
| 274.982 | 23.531 | 12.921 | 71.68 | 72.02 | 0.474 | 14.4 |
| 274.401 | 23.535 | 12.971 | 71.55 | 72.18 | 0.881 | 14.4 |
| 276.181 | 26.983 | 13.959 | 76.78 | 77.03 | 0.326 | 14.0 |
| 275.483 | 26.984 | 14.014 | 76.96 | 77.23 | 0.351 | 14.0 |
| 274.770 | 26.986 | 14.070 | 77.18 | 77.43 | 0.324 | 14.0 |
| 274.248 | 26.988 | 14.112 | 77.28 | 77.57 | 0.375 | 14.0 |
| 276.033 | 30.486 | 14.917 | 81.88 | 82.01 | 0.159 | 13.7 |
| 275.358 | 30.487 | 14.967 | 81.86 | 82.20 | 0.415 | 13.7 |
| 274.715 | 30.488 | 15.015 | 82.31 | 82.39 | 0.097 | 13.6 |
| 274.239 | 30.490 | 15.051 | 82.32 | 82.53 | 0.255 | 13.6 |
| 276.647 | 33.987 | 15.671 | 86.53 | 86.39 | -0.162 | 13.4 |
| 276.018 | 33.989 | 15.715 | 86.78 | 86.58 | -0.230 | 13.3 |
| 275.248 | 33.987 | 15.768 | 86.84 | 86.81 | -0.035 | 13.3 |
| 274.869 | 33.991 | 15.796 | 87.10 | 86.93 | -0.195 | 13.3 |
| 276.150 | 37.531 | 16.399 | 90.67 | 90.87 | 0.221 | 13.1 |
| 275.502 | 37.530 | 16.441 | 89.76 | 91.07 | 1.459 | 13.3 |
| 274.848 | 37.529 | 16.485 | 91.82 | 91.27 | -0.599 | 13.0 |
| 274.390 | 37.528 | 16.515 | 88.26 | 91.41 | 3.569 | 13.4 |
| 276.052 | 41.154 | 17.024 | 94.92 | 95.08 | 0.169 | 12.9 |
| 275.385 | 41.153 | 17.066 | 95.86 | 95.29 | -0.595 | 12.8 |
| 274.737 | 41.151 | 17.107 | 95.28 | 95.50 | 0.231 | 12.9 |
| 274.280 | 41.151 | 17.136 | 95.76 | 95.65 | -0.115 | 12.9 |
| 275.921 | 44.660 | 17.563 | 99.29 | 98.98 | -0.312 | 12.7 |
| 275.284 | 44.660 | 17.602 | 100.15 | 99.18 | -0.969 | 12.6 |
| 274.679 | 44.660 | 17.639 | 99.36 | 99.38 | 0.020 | 12.7 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 274.171 | 44.660 | 17.670 | 99.27 | 99.55 | 0.282 | 12.7 |
| 275.776 | 48.079 | 18.039 | 102.77 | 102.63 | -0.136 | 12.5 |
| 275.237 | 48.080 | 18.071 | 102.90 | 102.81 | -0.087 | 12.5 |
| 274.656 | 48.078 | 18.104 | 102.84 | 103.00 | 0.156 | 12.5 |
| 274.170 | 48.078 | 18.132 | 103.64 | 103.16 | -0.463 | 12.5 |
| 276.282 | 51.734 | 18.464 | 106.45 | 106.16 | -0.272 | 12.4 |
| 275.668 | 51.733 | 18.499 | 106.52 | 106.36 | -0.150 | 12.4 |
| 275.120 | 51.733 | 18.529 | 106.82 | 106.55 | -0.253 | 12.3 |
| 274.592 | 51.732 | 18.559 | 106.77 | 106.73 | -0.037 | 12.3 |
| 276.367 | 55.237 | 18.859 | 109.87 | 109.54 | -0.300 | 12.2 |
| 275.610 | 55.235 | 18.899 | 110.00 | 109.80 | -0.182 | 12.2 |
| 275.048 | 55.235 | 18.930 | 110.26 | 109.99 | -0.245 | 12.2 |
| 274.537 | 55.233 | 18.957 | 110.59 | 110.17 | -0.380 | 12.2 |
| 276.173 | 58.748 | 19.239 | 113.29 | 112.93 | -0.318 | 12.1 |
| 275.531 | 58.747 | 19.272 | 113.47 | 113.15 | -0.282 | 12.1 |
| 274.999 | 58.748 | 19.300 | 113.61 | 113.34 | -0.238 | 12.1 |
| 274.471 | 58.749 | 19.328 | 113.93 | 113.52 | -0.360 | 12.0 |
| 276.101 | 62.502 | 19.608 | 116.94 | 116.40 | -0.462 | 11.9 |
| 275.477 | 62.503 | 19.640 | 117.10 | 116.62 | -0.410 | 11.9 |
| 274.905 | 62.499 | 19.669 | 117.22 | 116.82 | -0.341 | 11.9 |
| 274.457 | 62.497 | 19.692 | 117.44 | 116.98 | -0.392 | 11.9 |
| 275.948 | 65.832 | 19.919 | 120.04 | 119.42 | -0.516 | 11.8 |
| 275.385 | 65.838 | 19.948 | 120.10 | 119.63 | -0.391 | 11.8 |
| 274.943 | 65.840 | 19.970 | 120.14 | 119.79 | -0.291 | 11.8 |
| 274.423 | 65.839 | 19.996 | 120.16 | 119.98 | -0.150 | 11.8 |
| 276.499 | 69.251 | 20.186 | 122.80 | 122.21 | -0.480 | 11.7 |
| 275.940 | 69.252 | 20.213 | 123.06 | 122.41 | -0.528 | 11.7 |
| 275.379 | 69.254 | 20.240 | 123.27 | 122.62 | -0.527 | 11.7 |
| 274.798 | 69.256 | 20.268 | 123.33 | 122.83 | -0.405 | 11.7 |
| 296.783 | 0.988 | 0.407 | 34.02 | 34.54 | 1.529 | 49.1 |
| 296.042 | 0.988 | 0.409 | 33.89 | 34.44 | 1.623 | 57.3 |
| 295.352 | 0.988 | 0.410 | 33.83 | 34.35 | 1.537 | 47.6 |
| 294.797 | 0.989 | 0.411 | 33.57 | 34.27 | 2.085 | 59.8 |
| 296.430 | 1.949 | 0.819 | 34.77 | 35.19 | 1.208 | 24.2 |
| 295.783 | 1.949 | 0.821 | 34.65 | 35.11 | 1.328 | 24.7 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 295.177 | 1.950 | 0.823 | 34.65 | 35.03 | 1.097 | 23.6 |
| 294.638 | 1.950 | 0.825 | 34.51 | 34.96 | 1.304 | 24.5 |
| 296.023 | 3.911 | 1.705 | 36.48 | 36.79 | 0.850 | 20.4 |
| 295.413 | 3.912 | 1.710 | 36.51 | 36.72 | 0.575 | 20.0 |
| 294.915 | 3.913 | 1.714 | 36.40 | 36.66 | 0.714 | 20.2 |
| 294.458 | 3.914 | 1.718 | 36.38 | 36.61 | 0.632 | 20.1 |
| 296.320 | 5.976 | 2.696 | 38.82 | 38.95 | 0.335 | 19.0 |
| 295.741 | 5.978 | 2.705 | 38.79 | 38.89 | 0.258 | 18.9 |
| 295.153 | 5.981 | 2.714 | 38.66 | 38.83 | 0.440 | 19.0 |
| 294.671 | 5.974 | 2.717 | 38.62 | 38.77 | 0.388 | 19.0 |
| 295.849 | 8.077 | 3.778 | 41.52 | 41.53 | 0.024 | 18.1 |
| 295.213 | 8.079 | 3.792 | 41.59 | 41.48 | -0.264 | 18.0 |
| 294.626 | 8.082 | 3.806 | 41.52 | 41.44 | -0.193 | 18.0 |
| 294.135 | 8.087 | 3.819 | 41.46 | 41.41 | -0.121 | 18.0 |
| 295.366 | 10.365 | 5.016 | 44.99 | 44.92 | -0.156 | 17.4 |
| 294.726 | 10.367 | 5.037 | 45.03 | 44.90 | -0.289 | 17.4 |
| 294.274 | 10.369 | 5.052 | 44.96 | 44.89 | -0.156 | 17.4 |
| 293.791 | 10.373 | 5.069 | 44.98 | 44.88 | -0.222 | 17.4 |
| 294.991 | 12.169 | 6.017 | 48.08 | 47.98 | -0.208 | 16.9 |
| 294.453 | 12.171 | 6.039 | 47.98 | 47.98 | 0.000 | 17.0 |
| 293.987 | 12.173 | 6.058 | 48.22 | 47.99 | -0.477 | 16.8 |
| 293.540 | 12.176 | 6.078 | 48.13 | 48.00 | -0.270 | 16.9 |
| 296.186 | 14.295 | 7.114 | 51.70 | 51.80 | 0.193 | 16.6 |
| 295.091 | 14.297 | 7.168 | 51.78 | 51.85 | 0.135 | 16.5 |
| 294.119 | 14.297 | 7.215 | 51.74 | 51.90 | 0.309 | 16.6 |
| 293.367 | 14.299 | 7.254 | 51.59 | 51.94 | 0.678 | 16.6 |
| 295.764 | 16.379 | 8.219 | 55.29 | 55.65 | 0.651 | 16.2 |
| 294.721 | 16.379 | 8.277 | 55.35 | 55.74 | 0.705 | 16.2 |
| 293.904 | 16.381 | 8.324 | 55.34 | 55.82 | 0.867 | 16.2 |
| 293.091 | 16.382 | 8.372 | 55.32 | 55.90 | 1.048 | 16.2 |
| 295.420 | 18.657 | 9.348 | 59.17 | 59.79 | 1.048 | 15.8 |
| 294.415 | 18.658 | 9.411 | 59.36 | 59.91 | 0.927 | 15.8 |
| 293.588 | 18.659 | 9.464 | 59.36 | 60.02 | 1.112 | 15.8 |
| 292.903 | 18.662 | 9.509 | 59.52 | 60.11 | 0.991 | 15.8 |
| 295.068 | 21.429 | 10.589 | 63.90 | 64.52 | 0.970 | 15.3 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 294.252 | 21.432 | 10.644 | 64.09 | 64.65 | 0.874 | 15.3 |
| 293.482 | 21.432 | 10.696 | 64.09 | 64.77 | 1.061 | 15.3 |
| 292.793 | 21.434 | 10.744 | 64.31 | 64.88 | 0.886 | 15.3 |
| 295.659 | 25.128 | 11.939 | 69.21 | 70.11 | 1.300 | 14.9 |
| 294.864 | 25.127 | 11.992 | 69.71 | 70.24 | 0.760 | 14.8 |
| 294.012 | 25.128 | 12.050 | 69.69 | 70.39 | 1.004 | 14.8 |
| 293.449 | 25.126 | 12.088 | 69.76 | 70.48 | 1.032 | 14.8 |
| 295.578 | 28.719 | 13.068 | 74.60 | 75.10 | 0.670 | 14.4 |
| 294.771 | 28.716 | 13.121 | 74.85 | 75.24 | 0.521 | 14.3 |
| 294.080 | 28.712 | 13.166 | 74.95 | 75.37 | 0.560 | 14.3 |
| 293.601 | 28.713 | 13.199 | 74.84 | 75.46 | 0.828 | 14.4 |
| 296.573 | 32.484 | 13.996 | 79.14 | 79.70 | 0.708 | 14.1 |
| 295.711 | 32.483 | 14.051 | 79.27 | 79.87 | 0.757 | 14.0 |
| 295.042 | 32.484 | 14.094 | 79.26 | 80.01 | 0.946 | 14.1 |
| 294.303 | 32.485 | 14.142 | 79.89 | 80.16 | 0.338 | 14.0 |
| 296.404 | 36.134 | 14.828 | 83.42 | 84.07 | 0.779 | 13.8 |
| 295.521 | 36.135 | 14.883 | 83.66 | 84.25 | 0.705 | 13.7 |
| 294.862 | 36.136 | 14.924 | 83.84 | 84.40 | 0.668 | 13.7 |
| 294.272 | 36.136 | 14.960 | 83.98 | 84.52 | 0.643 | 13.7 |
| 296.324 | 39.442 | 15.484 | 87.33 | 87.80 | 0.538 | 13.5 |
| 295.531 | 39.442 | 15.531 | 87.43 | 87.97 | 0.618 | 13.5 |
| 294.765 | 39.444 | 15.577 | 87.56 | 88.15 | 0.674 | 13.5 |
| 294.155 | 39.444 | 15.614 | 87.86 | 88.29 | 0.489 | 13.5 |
| 296.156 | 42.826 | 16.086 | 91.03 | 91.46 | 0.472 | 13.3 |
| 295.472 | 42.826 | 16.126 | 91.27 | 91.62 | 0.383 | 13.3 |
| 294.753 | 42.827 | 16.167 | 91.25 | 91.79 | 0.592 | 13.3 |
| 294.259 | 42.827 | 16.196 | 91.36 | 91.91 | 0.602 | 13.3 |
| 296.097 | 46.333 | 16.640 | 94.70 | 95.08 | 0.401 | 13.1 |
| 295.347 | 46.333 | 16.682 | 94.92 | 95.26 | 0.358 | 13.1 |
| 294.739 | 46.333 | 16.716 | 94.97 | 95.41 | 0.463 | 13.1 |
| 294.112 | 46.334 | 16.751 | 95.24 | 95.56 | 0.336 | 13.0 |
| 296.086 | 49.998 | 17.160 | 98.47 | 98.70 | 0.234 | 12.9 |
| 295.349 | 50.000 | 17.200 | 98.67 | 98.89 | 0.223 | 12.9 |
| 294.672 | 50.000 | 17.236 | 98.83 | 99.06 | 0.233 | 12.8 |
| 294.162 | 50.001 | 17.264 | 99.14 | 99.19 | 0.050 | 12.8 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 295.878 | 53.680 | 17.645 | 102.13 | 102.26 | 0.127 | 12.7 |
| 295.267 | 53.681 | 17.677 | 102.20 | 102.42 | 0.215 | 12.7 |
| 294.552 | 53.682 | 17.714 | 102.37 | 102.60 | 0.225 | 12.7 |
| 294.003 | 53.685 | 17.743 | 102.49 | 102.75 | 0.254 | 12.7 |
| 295.330 | 57.061 | 18.072 | 105.41 | 105.52 | 0.104 | 12.5 |
| 294.706 | 57.060 | 18.104 | 105.58 | 105.68 | 0.095 | 12.5 |
| 294.110 | 57.061 | 18.134 | 105.84 | 105.85 | 0.009 | 12.5 |
| 293.609 | 57.062 | 18.159 | 105.74 | 105.98 | 0.227 | 12.5 |
| 295.232 | 60.576 | 18.461 | 108.65 | 108.70 | 0.046 | 12.4 |
| 294.648 | 60.576 | 18.490 | 108.85 | 108.86 | 0.009 | 12.4 |
| 294.036 | 60.578 | 18.520 | 108.97 | 109.03 | 0.055 | 12.4 |
| 293.630 | 60.577 | 18.540 | 109.09 | 109.14 | 0.046 | 12.4 |
| 295.187 | 63.953 | 18.807 | 111.77 | 111.66 | -0.098 | 12.2 |
| 294.555 | 63.958 | 18.838 | 112.04 | 111.84 | -0.179 | 12.2 |
| 294.012 | 63.952 | 18.864 | 111.93 | 111.99 | 0.054 | 12.2 |
| 293.475 | 63.951 | 18.889 | 112.41 | 112.14 | -0.240 | 12.2 |
| 295.776 | 67.319 | 19.101 | 114.71 | 114.36 | -0.305 | 12.1 |
| 295.118 | 67.321 | 19.132 | 114.91 | 114.55 | -0.313 | 12.1 |
| 294.631 | 67.320 | 19.155 | 115.10 | 114.69 | -0.356 | 12.1 |
| 294.106 | 67.323 | 19.180 | 115.21 | 114.84 | -0.321 | 12.1 |
| 309.085 | 1.076 | 0.426 | 35.91 | 36.30 | 1.086 | 31.5 |
| 308.341 | 1.076 | 0.427 | 36.10 | 36.20 | 0.277 | 21.7 |
| 307.755 | 1.077 | 0.428 | 35.81 | 36.11 | 0.838 | 27.3 |
| 307.128 | 1.077 | 0.429 | 35.58 | 36.03 | 1.265 | 35.3 |
| 309.214 | 2.675 | 1.083 | 37.42 | 37.46 | 0.107 | 19.9 |
| 308.624 | 2.675 | 1.086 | 37.33 | 37.38 | 0.134 | 19.9 |
| 308.033 | 2.676 | 1.089 | 37.01 | 37.30 | 0.784 | 21.5 |
| 307.414 | 2.678 | 1.092 | 36.93 | 37.22 | 0.785 | 21.5 |
| 309.391 | 4.743 | 1.979 | 39.36 | 39.21 | -0.381 | 18.7 |
| 308.849 | 4.743 | 1.983 | 39.10 | 39.14 | 0.102 | 19.2 |
| 308.250 | 4.743 | 1.988 | 39.15 | 39.07 | -0.204 | 18.9 |
| 307.648 | 4.744 | 1.994 | 39.01 | 38.99 | -0.051 | 19.1 |
| 309.635 | 6.732 | 2.883 | 41.48 | 41.21 | -0.651 | 18.1 |
| 309.040 | 6.732 | 2.891 | 41.53 | 41.15 | -0.915 | 17.9 |
| 308.464 | 6.733 | 2.899 | 41.46 | 41.08 | -0.917 | 17.9 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 307.941 | 6.733 | 2.906 | 41.27 | 41.03 | -0.582 | 18.2 |
| 309.267 | 8.876 | 3.907 | 44.26 | 43.68 | -1.310 | 17.4 |
| 308.712 | 8.876 | 3.918 | 43.95 | 43.63 | -0.728 | 17.7 |
| 308.170 | 8.877 | 3.930 | 44.02 | 43.59 | -0.977 | 17.5 |
| 307.710 | 8.877 | 3.939 | 44.03 | 43.55 | -1.090 | 17.5 |
| 310.021 | 11.038 | 4.942 | 47.19 | 46.64 | -1.166 | 17.0 |
| 308.898 | 11.039 | 4.973 | 47.15 | 46.58 | -1.209 | 17.0 |
| 307.879 | 11.039 | 5.001 | 46.83 | 46.52 | -0.662 | 17.2 |
| 307.031 | 11.039 | 5.025 | 46.95 | 46.48 | -1.001 | 17.1 |
| 309.673 | 13.147 | 5.984 | 50.09 | 49.76 | -0.659 | 16.8 |
| 308.603 | 13.147 | 6.021 | 49.96 | 49.73 | -0.460 | 16.9 |
| 307.642 | 13.148 | 6.056 | 50.23 | 49.72 | -1.015 | 16.7 |
| 306.841 | 13.148 | 6.084 | 50.33 | 49.70 | -1.252 | 16.6 |
| 309.353 | 15.185 | 6.980 | 53.20 | 52.98 | -0.414 | 16.5 |
| 308.309 | 15.186 | 7.024 | 53.23 | 53.00 | -0.432 | 16.4 |
| 307.523 | 15.186 | 7.057 | 53.23 | 53.01 | -0.413 | 16.4 |
| 306.746 | 15.186 | 7.090 | 53.25 | 53.02 | -0.432 | 16.4 |
| 310.102 | 17.278 | 7.919 | 56.39 | 56.33 | -0.106 | 16.2 |
| 308.975 | 17.278 | 7.972 | 56.47 | 56.38 | -0.159 | 16.1 |
| 308.110 | 17.277 | 8.013 | 56.44 | 56.42 | -0.035 | 16.1 |
| 307.320 | 17.276 | 8.051 | 56.46 | 56.45 | -0.018 | 16.1 |
| 309.770 | 19.464 | 8.894 | 59.73 | 59.82 | 0.151 | 15.8 |
| 308.761 | 19.463 | 8.946 | 59.86 | 59.89 | 0.050 | 15.8 |
| 307.944 | 19.463 | 8.990 | 59.83 | 59.95 | 0.201 | 15.8 |
| 307.225 | 19.462 | 9.028 | 60.00 | 60.00 | 0.000 | 15.7 |
| 309.480 | 22.418 | 10.097 | 64.11 | 64.34 | 0.359 | 15.4 |
| 308.591 | 22.418 | 10.147 | 64.22 | 64.42 | 0.311 | 15.4 |
| 307.806 | 22.418 | 10.192 | 64.22 | 64.50 | 0.436 | 15.4 |
| 307.109 | 22.418 | 10.233 | 64.11 | 64.57 | 0.718 | 15.4 |
| 309.260 | 26.028 | 11.381 | 69.20 | 69.44 | 0.347 | 14.9 |
| 308.444 | 26.028 | 11.429 | 69.41 | 69.54 | 0.187 | 14.9 |
| 307.756 | 26.028 | 11.470 | 69.41 | 69.63 | 0.317 | 14.9 |
| 307.136 | 26.028 | 11.508 | 69.52 | 69.70 | 0.259 | 14.9 |
| 310.093 | 29.477 | 12.376 | 73.93 | 73.80 | -0.176 | 14.5 |
| 309.235 | 29.477 | 12.427 | 73.95 | 73.92 | -0.041 | 14.5 |

Data from Roder [8] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 308.527 | 29.476 | 12.469 | 74.17 | 74.01 | -0.216 | 14.5 |
| 307.869 | 29.475 | 12.508 | 74.30 | 74.10 | -0.269 | 14.4 |
| 309.694 | 33.098 | 13.346 | 78.15 | 78.21 | 0.077 | 14.2 |
| 308.929 | 33.097 | 13.390 | 78.27 | 78.32 | 0.064 | 14.2 |
| 308.143 | 33.098 | 13.436 | 78.33 | 78.44 | 0.140 | 14.2 |
| 307.480 | 33.098 | 13.475 | 78.50 | 78.54 | 0.051 | 14.2 |
| 309.498 | 36.518 | 14.135 | 81.99 | 82.10 | 0.134 | 13.9 |
| 308.688 | 36.519 | 14.181 | 82.22 | 82.23 | 0.012 | 13.9 |
| 308.056 | 36.520 | 14.218 | 82.15 | 82.34 | 0.231 | 13.9 |
| 307.447 | 36.521 | 14.253 | 82.16 | 82.44 | 0.341 | 13.9 |
| 309.222 | 39.909 | 14.831 | 85.88 | 85.79 | -0.105 | 13.7 |
| 308.550 | 39.909 | 14.869 | 86.03 | 85.90 | -0.151 | 13.6 |
| 307.881 | 39.911 | 14.906 | 86.21 | 86.02 | -0.220 | 13.6 |
| 307.206 | 39.914 | 14.945 | 86.23 | 86.15 | -0.093 | 13.6 |
| 309.943 | 43.084 | 15.364 | 89.13 | 88.92 | -0.236 | 13.5 |
| 309.132 | 43.083 | 15.408 | 89.28 | 89.07 | -0.235 | 13.4 |
| 308.403 | 43.081 | 15.447 | 89.18 | 89.20 | 0.022 | 13.5 |
| 307.807 | 43.079 | 15.479 | 89.70 | 89.31 | -0.435 | 13.4 |
| 309.716 | 46.727 | 15.968 | 93.03 | 92.56 | -0.505 | 13.2 |
| 309.019 | 46.727 | 16.004 | 93.12 | 92.69 | -0.462 | 13.2 |
| 308.324 | 46.726 | 16.040 | 93.05 | 92.82 | -0.247 | 13.2 |
| 307.749 | 46.725 | 16.071 | 93.25 | 92.94 | -0.332 | 13.2 |
| 309.703 | 50.127 | 16.468 | 96.30 | 95.79 | -0.530 | 13.0 |
| 308.899 | 50.126 | 16.509 | 96.44 | 95.95 | -0.508 | 13.0 |
| 308.226 | 50.126 | 16.543 | 96.38 | 96.09 | -0.301 | 13.0 |
| 307.650 | 50.126 | 16.573 | 96.65 | 96.21 | -0.455 | 13.0 |
| 309.618 | 53.476 | 16.924 | 99.50 | 98.89 | -0.613 | 12.9 |
| 308.897 | 53.476 | 16.960 | 99.60 | 99.04 | -0.562 | 12.9 |
| 308.209 | 53.476 | 16.994 | 99.74 | 99.19 | -0.551 | 12.9 |
| 307.616 | 53.475 | 17.023 | 99.82 | 99.31 | -0.511 | 12.9 |
| 309.416 | 57.009 | 17.372 | 102.83 | 102.09 | -0.720 | 12.7 |
| 308.753 | 57.009 | 17.404 | 103.06 | 102.24 | -0.796 | 12.7 |
| 308.134 | 57.009 | 17.434 | 103.01 | 102.37 | -0.621 | 12.7 |
| 307.513 | 57.008 | 17.464 | 103.21 | 102.51 | -0.678 | 12.7 |
| 309.315 | 60.531 | 17.781 | 106.01 | 105.17 | -0.792 | 12.6 |

Data from Roder [8] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 308.655 | 60.530 | 17.812 | 106.23 | 105.32 | -0.857 | 12.5 |
| 308.072 | 60.531 | 17.839 | 106.53 | 105.45 | -1.014 | 12.5 |
| 307.537 | 60.531 | 17.864 | 106.47 | 105.57 | -0.845 | 12.5 |
| 309.320 | 64.078 | 18.159 | 109.19 | 108.17 | -0.934 | 12.4 |
| 308.648 | 64.078 | 18.189 | 109.26 | 108.33 | -0.851 | 12.4 |
| 308.025 | 64.075 | 18.218 | 109.42 | 108.47 | -0.868 | 12.4 |
| 307.462 | 64.077 | 18.244 | 109.48 | 108.61 | -0.795 | 12.4 |
| 313.129 | 66.672 | 18.248 | 110.38 | 109.46 | -0.833 | 12.4 |
| 312.494 | 66.678 | 18.277 | 110.55 | 109.60 | -0.859 | 12.4 |
| 311.828 | 66.670 | 18.306 | 110.76 | 109.74 | -0.921 | 12.3 |
| 311.372 | 66.685 | 18.328 | 110.71 | 109.86 | -0.768 | 12.4 |
| 309.358 | 67.415 | 18.490 | 112.15 | 110.92 | -1.097 | 12.3 |
| 308.758 | 67.414 | 18.516 | 112.44 | 111.06 | -1.227 | 12.2 |
| 308.136 | 67.414 | 18.544 | 112.59 | 111.21 | -1.226 | 12.2 |
| 307.614 | 67.416 | 18.568 | 112.78 | 111.34 | -1.277 | 12.2 |

Number of Points (Ref. 8) 895

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.577 | BIAS-% | 0.069 | RMS-% | 0.942 |
| AAD | 0.387 | BIAS | 0.032 | RMS | 0.584 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Sokolova and Golubev [80]

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 238.70 | 0.10 | 0.051 | 26.08 | 26.40 | 1.227 | 0.0 |
| 238.80 | 0.20 | 0.101 | 26.13 | 26.50 | 1.416 | 0.0 |
| 238.80 | 0.26 | 0.132 | 26.16 | 26.55 | 1.491 | 0.0 |
| 238.50 | 0.69 | 0.357 | 26.22 | 26.90 | 2.593 | 0.0 |
| 238.50 | 1.06 | 0.557 | 26.80 | 27.24 | 1.642 | 0.0 |
| 238.80 | 2.09 | 1.143 | 27.71 | 28.36 | 2.346 | 0.0 |
| 239.00 | 2.09 | 1.142 | 27.90 | 28.38 | 1.720 | 0.0 |
| 238.80 | 3.04 | 1.734 | 29.17 | 29.55 | 1.303 | 0.0 |
| 239.00 | 3.19 | 1.829 | 29.12 | 29.78 | 2.266 | 0.0 |
| 238.80 | 4.02 | 2.400 | 30.52 | 31.05 | 1.737 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 238.80 | 4.02 | 2.400 | 30.48 | 31.05 | 1.870 | 0.0 |
| 239.00 | 4.33 | 2.621 | 31.19 | 31.60 | 1.315 | 0.0 |
| 239.00 | 4.33 | 2.621 | 30.73 | 31.60 | 2.831 | 0.0 |
| 238.80 | 5.04 | 3.167 | 32.28 | 32.98 | 2.169 | 0.0 |
| 239.20 | 5.36 | 3.412 | 32.99 | 33.70 | 2.152 | 0.0 |
| 239.20 | 6.49 | 4.387 | 35.76 | 36.60 | 2.349 | 0.0 |
| 238.50 | 6.86 | 4.767 | 37.18 | 37.77 | 1.587 | 0.0 |
| 238.30 | 8.53 | 6.515 | 43.50 | 44.04 | 1.241 | 0.0 |
| 239.00 | 8.72 | 6.661 | 50.45 | 44.64 | -11.516 | 0.0 |
| 238.50 | 10.01 | 8.175 | 51.61 | 50.48 | -2.189 | 0.0 |
| 238.50 | 12.41 | 10.729 | 62.05 | 60.14 | -3.078 | 0.0 |
| 238.50 | 12.41 | 10.729 | 61.67 | 60.14 | -2.481 | 0.0 |
| 238.50 | 14.62 | 12.525 | 67.78 | 66.99 | -1.166 | 0.0 |
| 238.50 | 14.81 | 12.654 | 69.04 | 67.51 | -2.216 | 0.0 |
| 238.50 | 19.72 | 15.113 | 79.13 | 78.91 | -0.278 | 0.0 |
| 238.50 | 19.72 | 15.113 | 78.42 | 78.91 | 0.625 | 0.0 |
| 238.50 | 29.42 | 17.698 | 93.99 | 95.36 | 1.458 | 0.0 |
| 238.80 | 29.53 | 17.694 | 93.66 | 95.36 | 1.815 | 0.0 |
| 239.00 | 40.22 | 19.362 | 106.60 | 109.25 | 2.486 | 0.0 |
| 239.00 | 50.13 | 20.481 | 116.90 | 120.32 | 2.926 | 0.0 |
| 239.00 | 50.23 | 20.491 | 117.20 | 120.42 | 2.747 | 0.0 |
| 231.80 | 0.10 | 0.052 | 25.25 | 25.56 | 1.228 | 0.0 |
| 231.80 | 0.43 | 0.227 | 25.39 | 25.86 | 1.851 | 0.0 |
| 231.80 | 1.08 | 0.586 | 26.00 | 26.48 | 1.846 | 0.0 |
| 231.60 | 2.07 | 1.178 | 26.69 | 27.56 | 3.260 | 0.0 |
| 231.80 | 2.07 | 1.176 | 26.77 | 27.58 | 3.026 | 0.0 |
| 231.80 | 3.04 | 1.813 | 28.24 | 28.90 | 2.337 | 0.0 |
| 231.80 | 4.12 | 2.606 | 30.45 | 30.76 | 1.018 | 0.0 |
| 231.60 | 5.20 | 3.515 | 32.66 | 33.19 | 1.623 | 0.0 |
| 231.60 | 5.20 | 3.515 | 32.57 | 33.19 | 1.904 | 0.0 |
| 231.80 | 5.99 | 4.252 | 34.96 | 35.47 | 1.459 | 0.0 |
| 231.80 | 5.99 | 4.252 | 35.29 | 35.47 | 0.510 | 0.0 |
| 231.80 | 6.58 | 4.860 | 37.22 | 37.51 | 0.779 | 0.0 |
| 232.10 | 7.16 | 5.482 | 39.82 | 39.76 | -0.151 | 0.0 |
| 231.80 | 7.16 | 5.504 | 39.90 | 39.83 | -0.175 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | mW·m$^{-1}$·K$^{-1}$ | | % | |
| 231.80 | 7.99 | 6.505 | 45.13 | 43.67 | -3.235 | 0.0 |
| 231.80 | 7.99 | 6.505 | 44.84 | 43.67 | -2.609 | 0.0 |
| 231.80 | 8.34 | 6.952 | 49.61 | 45.44 | -8.406 | 0.0 |
| 231.80 | 8.84 | 7.608 | 50.58 | 48.06 | -4.982 | 0.0 |
| 231.80 | 9.96 | 9.095 | 57.32 | 53.91 | -5.949 | 0.0 |
| 231.80 | 9.96 | 9.095 | 57.15 | 53.91 | -5.669 | 0.0 |
| 231.60 | 10.89 | 10.294 | 61.55 | 58.38 | -5.150 | 0.0 |
| 231.60 | 10.89 | 10.294 | 62.13 | 58.38 | -6.036 | 0.0 |
| 231.80 | 11.88 | 11.346 | 64.64 | 62.20 | -3.775 | 0.0 |
| 231.80 | 11.88 | 11.346 | 65.69 | 62.20 | -5.313 | 0.0 |
| 231.80 | 13.49 | 12.765 | 70.46 | 67.55 | -4.130 | 0.0 |
| 231.80 | 15.30 | 13.958 | 74.40 | 72.62 | -2.392 | 0.0 |
| 231.60 | 19.72 | 15.921 | 83.69 | 82.76 | -1.111 | 0.0 |
| 231.60 | 19.72 | 15.921 | 83.44 | 82.76 | -0.815 | 0.0 |
| 231.80 | 23.79 | 17.080 | 90.39 | 90.16 | -0.254 | 0.0 |
| 231.60 | 29.53 | 18.309 | 98.56 | 99.28 | 0.731 | 0.0 |
| 224.80 | 0.10 | 0.054 | 24.45 | 24.72 | 1.104 | 0.0 |
| 224.80 | 0.30 | 0.163 | 24.62 | 24.91 | 1.178 | 0.0 |
| 224.90 | 0.30 | 0.163 | 24.48 | 24.92 | 1.797 | 0.0 |
| 224.80 | 0.61 | 0.336 | 24.80 | 25.20 | 1.613 | 0.0 |
| 225.00 | 0.69 | 0.381 | 24.77 | 25.31 | 2.180 | 0.0 |
| 224.90 | 1.06 | 0.596 | 25.00 | 25.67 | 2.680 | 0.0 |
| 224.80 | 1.08 | 0.608 | 25.21 | 25.68 | 1.864 | 0.0 |
| 224.10 | 2.11 | 1.258 | 26.26 | 26.84 | 2.209 | 0.0 |
| 224.10 | 2.11 | 1.258 | 26.39 | 26.84 | 1.705 | 0.0 |
| 224.60 | 3.04 | 1.905 | 27.77 | 28.28 | 1.837 | 0.0 |
| 224.80 | 3.04 | 1.903 | 27.83 | 28.30 | 1.689 | 0.0 |
| 224.80 | 4.00 | 2.661 | 30.20 | 30.13 | -0.232 | 0.0 |
| 224.90 | 4.02 | 2.675 | 30.17 | 30.18 | 0.033 | 0.0 |
| 224.60 | 4.74 | 3.327 | 32.18 | 31.95 | -0.715 | 0.0 |
| 224.80 | 5.01 | 3.581 | 32.70 | 32.72 | 0.061 | 0.0 |
| 224.80 | 5.01 | 3.581 | 32.62 | 32.72 | 0.307 | 0.0 |
| 224.80 | 5.01 | 3.581 | 32.82 | 32.72 | -0.305 | 0.0 |
| 224.90 | 6.02 | 4.658 | 37.14 | 36.28 | -2.316 | 0.0 |
| 224.90 | 6.02 | 4.658 | 36.68 | 36.28 | -1.091 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | mW·m$^{-1}$·K$^{-1}$ | | % | |
| 224.90 | 6.86 | 5.712 | 42.50 | 40.25 | -5.294 | 0.0 |
| 224.80 | 6.97 | 5.872 | 43.08 | 40.88 | -5.107 | 0.0 |
| 225.40 | 7.75 | 6.927 | 53.67 | 45.23 | -15.726 | 0.0 |
| 225.60 | 7.85 | 7.050 | 54.14 | 45.74 | -15.515 | 0.0 |
| 224.80 | 8.83 | 8.734 | 61.63 | 52.65 | -14.571 | 0.0 |
| 224.10 | 9.91 | 10.562 | 66.57 | 59.45 | -10.696 | 0.0 |
| 224.80 | 9.91 | 10.402 | 65.82 | 58.86 | -10.574 | 0.0 |
| 223.80 | 11.43 | 12.479 | 71.89 | 66.16 | -7.971 | 0.0 |
| 223.80 | 11.43 | 12.479 | 70.51 | 66.16 | -6.169 | 0.0 |
| 223.30 | 12.36 | 13.420 | 73.27 | 69.77 | -4.777 | 0.0 |
| 223.30 | 12.36 | 13.420 | 72.72 | 69.77 | -4.057 | 0.0 |
| 224.10 | 14.71 | 14.818 | 78.84 | 76.10 | -3.475 | 0.0 |
| 223.30 | 14.81 | 14.996 | 79.09 | 76.93 | -2.731 | 0.0 |
| 224.80 | 16.38 | 15.515 | 82.15 | 79.80 | -2.861 | 0.0 |
| 224.10 | 20.20 | 16.944 | 89.72 | 88.40 | -1.471 | 0.0 |
| 224.10 | 20.20 | 16.944 | 89.39 | 88.40 | -1.108 | 0.0 |
| 224.10 | 25.21 | 18.157 | 96.84 | 97.19 | 0.361 | 0.0 |
| 224.40 | 29.53 | 18.926 | 102.50 | 103.56 | 1.034 | 0.0 |
| 223.40 | 38.94 | 20.310 | 113.80 | 116.52 | 2.390 | 0.0 |
| 224.90 | 39.14 | 20.226 | 112.70 | 115.85 | 2.795 | 0.0 |
| 223.40 | 48.36 | 21.287 | 123.00 | 127.23 | 3.439 | 0.0 |
| 223.40 | 48.66 | 21.315 | 122.90 | 127.55 | 3.784 | 0.0 |
| 223.40 | 48.85 | 21.332 | 123.70 | 127.76 | 3.282 | 0.0 |
| 216.40 | 0.10 | 0.056 | 23.47 | 23.71 | 1.023 | 0.0 |
| 216.30 | 0.42 | 0.239 | 23.61 | 24.02 | 1.737 | 0.0 |
| 216.10 | 1.09 | 0.643 | 24.14 | 24.72 | 2.403 | 0.0 |
| 216.10 | 1.97 | 1.225 | 25.30 | 25.85 | 2.174 | 0.0 |
| 216.10 | 3.06 | 2.049 | 27.52 | 27.68 | 0.581 | 0.0 |
| 216.30 | 4.07 | 2.948 | 30.41 | 30.05 | -1.184 | 0.0 |
| 216.30 | 5.01 | 3.962 | 33.97 | 33.24 | -2.149 | 0.0 |
| 216.30 | 5.50 | 4.584 | 37.43 | 35.49 | -5.183 | 0.0 |
| 216.30 | 5.50 | 4.584 | 37.51 | 35.49 | -5.385 | 0.0 |
| 216.10 | 6.18 | 5.608 | 44.00 | 39.64 | -9.909 | 0.0 |
| 216.30 | 6.58 | 6.267 | 51.00 | 42.53 | -16.608 | 0.0 |
| 216.30 | 6.58 | 6.267 | 50.07 | 42.53 | -15.059 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 216.60 | 6.97 | 6.948 | 57.40 | 45.59 | -20.575 | 0.0 |
| 216.60 | 6.97 | 6.948 | 57.99 | 45.59 | -21.383 | 0.0 |
| 216.30 | 7.16 | 7.385 | 60.16 | 47.59 | -20.894 | 0.0 |
| 216.30 | 7.16 | 7.385 | 59.41 | 47.59 | -19.896 | 0.0 |
| 216.30 | 7.46 | 8.017 | 63.68 | 50.40 | -20.854 | 0.0 |
| 216.30 | 7.94 | 9.067 | 66.78 | 54.75 | -18.014 | 0.0 |
| 216.30 | 7.99 | 9.176 | 67.28 | 55.17 | -17.999 | 0.0 |
| 216.30 | 8.93 | 11.074 | 71.26 | 61.70 | -13.416 | 0.0 |
| 216.60 | 11.28 | 13.907 | 77.67 | 71.52 | -7.918 | 0.0 |
| 216.60 | 12.85 | 15.030 | 81.27 | 76.61 | -5.734 | 0.0 |
| 216.60 | 15.79 | 16.434 | 88.05 | 84.38 | -4.168 | 0.0 |
| 216.60 | 19.52 | 17.620 | 94.16 | 92.30 | -1.975 | 0.0 |
| 216.60 | 19.72 | 17.673 | 93.70 | 92.69 | -1.078 | 0.0 |
| 216.30 | 25.41 | 18.938 | 102.50 | 102.71 | 0.205 | 0.0 |
| 210.00 | 0.10 | 0.058 | 22.71 | 22.96 | 1.101 | 0.0 |
| 209.80 | 1.10 | 0.673 | 23.36 | 24.04 | 2.911 | 0.0 |
| 208.40 | 1.41 | 0.887 | 23.63 | 24.30 | 2.835 | 0.0 |
| 209.30 | 1.77 | 1.135 | 24.13 | 24.89 | 3.150 | 0.0 |
| 210.30 | 2.08 | 1.355 | 24.65 | 25.47 | 3.327 | 0.0 |
| 209.80 | 2.41 | 1.615 | 25.52 | 25.98 | 1.803 | 0.0 |
| 209.80 | 2.41 | 1.615 | 25.27 | 25.98 | 2.810 | 0.0 |
| 207.50 | 2.91 | 2.071 | 26.65 | 26.83 | 0.675 | 0.0 |
| 210.30 | 3.07 | 2.161 | 27.27 | 27.34 | 0.257 | 0.0 |
| 210.30 | 3.07 | 2.161 | 27.14 | 27.34 | 0.737 | 0.0 |
| 209.00 | 3.54 | 2.634 | 29.10 | 28.48 | -2.131 | 0.0 |
| 209.00 | 3.54 | 2.634 | 28.48 | 28.48 | 0.000 | 0.0 |
| 210.30 | 3.95 | 3.019 | 31.02 | 29.72 | -4.191 | 0.0 |
| 210.30 | 3.95 | 3.019 | 30.86 | 29.72 | -3.694 | 0.0 |
| 207.50 | 4.30 | 3.541 | 32.95 | 31.21 | -5.281 | 0.0 |
| 207.50 | 4.30 | 3.541 | 32.74 | 31.21 | -4.673 | 0.0 |
| 210.10 | 5.01 | 4.348 | 38.64 | 34.33 | -11.154 | 0.0 |
| 210.10 | 5.01 | 4.348 | 38.98 | 34.33 | -11.929 | 0.0 |
| 210.60 | 5.24 | 4.653 | 42.96 | 35.56 | -17.225 | 0.0 |
| 210.60 | 5.24 | 4.653 | 42.62 | 35.56 | -16.565 | 0.0 |
| 210.10 | 5.48 | 5.090 | 49.19 | 37.43 | -23.907 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 210.10 | 5.48 | 5.090 | 50.66 | 37.43 | -26.115 | 0.0 |
| 210.10 | 5.48 | 5.090 | 49.07 | 37.43 | -23.721 | 0.0 |
| 209.50 | 5.72 | 5.602 | 55.98 | 39.79 | -28.921 | 0.0 |
| 210.10 | 5.99 | 6.061 | 63.76 | 41.95 | -34.206 | 0.0 |
| 209.60 | 6.00 | 6.166 | 68.16 | 42.52 | -37.617 | 0.0 |
| 210.10 | 6.10 | 6.299 | 69.58 | 43.12 | -38.028 | 0.0 |
| 210.10 | 6.10 | 6.299 | 70.80 | 43.12 | -39.096 | 0.0 |
| 210.10 | 6.20 | 6.524 | 72.35 | 44.24 | -38.853 | 0.0 |
| 210.10 | 6.20 | 6.524 | 75.45 | 44.24 | -41.365 | 0.0 |
| 209.80 | 6.94 | 8.586 | 77.50 | 54.26 | -29.987 | 0.0 |
| 209.80 | 6.94 | 8.586 | 78.21 | 54.26 | -30.623 | 0.0 |
| 206.60 | 7.32 | 11.237 | 72.85 | 64.12 | -11.984 | 0.0 |
| 209.60 | 7.32 | 9.815 | 73.60 | 59.08 | -19.728 | 0.0 |
| 209.60 | 7.32 | 9.815 | 73.10 | 59.08 | -19.179 | 0.0 |
| 209.50 | 7.35 | 9.947 | 72.35 | 59.55 | -17.692 | 0.0 |
| 209.60 | 7.35 | 9.903 | 71.05 | 59.37 | -16.439 | 0.0 |
| 209.60 | 7.66 | 10.773 | 72.39 | 62.00 | -14.353 | 0.0 |
| 210.70 | 8.24 | 11.672 | 74.02 | 64.24 | -13.213 | 0.0 |
| 210.80 | 8.24 | 11.634 | 74.90 | 64.11 | -14.406 | 0.0 |
| 210.80 | 9.91 | 14.023 | 78.92 | 71.89 | -8.908 | 0.0 |
| 210.10 | 12.46 | 15.983 | 83.86 | 81.19 | -3.184 | 0.0 |
| 209.80 | 14.71 | 17.007 | 89.18 | 87.39 | -2.007 | 0.0 |
| 210.30 | 14.92 | 17.011 | 90.02 | 87.46 | -2.844 | 0.0 |
| 209.80 | 16.78 | 17.684 | 93.91 | 92.05 | -1.981 | 0.0 |
| 209.80 | 16.78 | 17.684 | 93.03 | 92.05 | -1.053 | 0.0 |
| 210.00 | 19.72 | 18.423 | 98.14 | 97.70 | -0.448 | 0.0 |
| 210.00 | 30.50 | 20.287 | 112.50 | 114.61 | 1.876 | 0.0 |
| 210.00 | 31.20 | 20.380 | 113.50 | 115.56 | 1.815 | 0.0 |
| 209.60 | 39.73 | 21.385 | 122.50 | 126.55 | 3.306 | 0.0 |
| 209.60 | 39.73 | 21.385 | 122.80 | 126.55 | 3.054 | 0.0 |
| 209.60 | 48.95 | 22.218 | 131.10 | 136.83 | 4.371 | 0.0 |
| 209.60 | 48.95 | 22.218 | 131.80 | 136.83 | 3.816 | 0.0 |
| 209.60 | 50.52 | 22.344 | 133.40 | 138.48 | 3.808 | 0.0 |
| 195.90 | 2.19 | 1.611 | 25.53 | 24.57 | -3.760 | 0.0 |
| 195.90 | 2.19 | 1.611 | 25.23 | 24.57 | -2.616 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | mol·dm$^{-3}$ | mW·m$^{-1}$·K$^{-1}$ | | % | |
| 195.60 | 2.19 | 1.616 | 25.13 | 24.56 | -2.268 | 0.0 |
| 195.90 | 3.14 | 2.587 | 28.35 | 27.37 | -3.457 | 0.0 |
| 195.40 | 3.14 | 2.604 | 28.52 | 27.40 | -3.927 | 0.0 |
| 195.60 | 3.14 | 2.597 | 27.92 | 27.39 | -1.898 | 0.0 |
| 195.60 | 4.13 | 4.068 | 33.23 | 33.43 | 0.602 | 0.0 |
| 195.40 | 4.13 | 4.087 | 32.53 | 33.55 | 3.136 | 0.0 |
| 195.90 | 4.15 | 4.079 | 34.59 | 33.45 | -3.296 | 0.0 |
| 194.90 | 4.15 | 4.175 | 33.90 | 34.10 | 0.590 | 0.0 |
| 195.40 | 4.18 | 4.185 | 34.23 | 34.07 | -0.467 | 0.0 |
| 195.60 | 4.18 | 4.166 | 33.79 | 33.93 | 0.414 | 0.0 |
| 195.30 | 4.51 | 4.966 | 41.27 | 38.71 | -6.203 | 0.0 |
| 195.90 | 4.66 | 5.284 | 43.71 | 40.62 | -7.069 | 0.0 |
| 195.90 | 4.81 | 5.783 | 54.09 | 44.31 | -18.081 | 0.0 |
| 194.90 | 4.81 | 6.102 | 54.34 | 47.84 | -11.962 | 0.0 |
| 195.50 | 4.92 | 6.387 | 62.51 | 49.76 | -20.397 | 0.0 |
| 195.90 | 4.93 | 6.274 | 68.54 | 48.34 | -29.472 | 0.0 |
| 194.90 | 4.93 | 6.735 | 67.37 | 53.93 | -19.950 | 0.0 |
| 194.90 | 4.93 | 6.735 | 67.83 | 53.93 | -20.492 | 0.0 |
| 195.90 | 5.04 | 6.840 | 80.30 | 53.42 | -33.474 | 0.0 |
| 195.60 | 5.04 | 7.014 | 84.20 | 55.54 | -34.038 | 0.0 |
| 195.90 | 5.05 | 6.899 | 84.87 | 53.97 | -36.409 | 0.0 |
| 195.90 | 5.06 | 6.959 | 86.25 | 54.53 | -36.777 | 0.0 |
| 195.90 | 5.07 | 7.021 | 91.40 | 55.12 | -39.694 | 0.0 |
| 195.90 | 5.08 | 7.085 | 97.89 | 55.72 | -43.079 | 0.0 |
| 194.90 | 5.09 | 8.054 | 112.80 | 67.81 | -39.885 | 0.0 |
| 195.90 | 5.10 | 7.218 | 114.60 | 56.98 | -50.279 | 0.0 |
| 194.90 | 5.10 | 8.168 | 123.80 | 68.89 | -44.354 | 0.0 |
| 194.90 | 5.11 | 8.288 | 143.00 | 70.00 | -51.049 | 0.0 |
| 194.90 | 5.11 | 8.288 | 147.00 | 70.00 | -52.381 | 0.0 |
| 194.90 | 5.11 | 8.288 | 143.90 | 70.00 | -51.355 | 0.0 |
| 194.90 | 5.12 | 8.414 | 149.80 | 71.10 | -52.537 | 0.0 |
| 194.90 | 5.12 | 8.414 | 148.70 | 71.10 | -52.186 | 0.0 |
| 194.90 | 5.16 | 8.969 | 163.10 | 75.29 | -53.838 | 0.0 |
| 194.90 | 5.16 | 8.969 | 174.00 | 75.29 | -56.730 | 0.0 |
| 194.90 | 5.16 | 8.969 | 168.10 | 75.29 | -55.211 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 194.90 | 5.16 | 8.969 | 171.60 | 75.29 | -56.125 | 0.0 |
| 194.90 | 5.16 | 8.969 | 165.30 | 75.29 | -54.453 | 0.0 |
| 194.90 | 5.17 | 9.121 | 171.10 | 76.18 | -55.476 | 0.0 |
| 194.90 | 5.26 | 10.535 | 156.50 | 78.46 | -49.866 | 0.0 |
| 194.90 | 5.28 | 10.817 | 153.30 | 77.95 | -49.152 | 0.0 |
| 194.90 | 5.28 | 10.817 | 151.40 | 77.95 | -48.514 | 0.0 |
| 194.90 | 5.28 | 10.817 | 148.70 | 77.95 | -47.579 | 0.0 |
| 194.90 | 5.35 | 11.627 | 124.30 | 75.71 | -39.091 | 0.0 |
| 194.90 | 5.35 | 11.627 | 125.80 | 75.71 | -39.817 | 0.0 |
| 194.90 | 5.35 | 11.627 | 123.10 | 75.71 | -38.497 | 0.0 |
| 194.90 | 5.40 | 12.064 | 117.30 | 74.57 | -36.428 | 0.0 |
| 194.90 | 5.47 | 12.540 | 95.79 | 73.67 | -23.092 | 0.0 |
| 194.90 | 5.48 | 12.599 | 98.89 | 73.59 | -25.584 | 0.0 |
| 194.90 | 5.50 | 12.710 | 102.30 | 73.30 | -28.348 | 0.0 |
| 194.90 | 5.50 | 12.710 | 99.44 | 73.30 | -26.287 | 0.0 |
| 194.90 | 5.50 | 12.710 | 101.40 | 73.30 | -27.712 | 0.0 |
| 194.90 | 5.50 | 12.710 | 100.20 | 73.30 | -26.846 | 0.0 |
| 194.90 | 5.50 | 12.710 | 100.90 | 73.30 | -27.354 | 0.0 |
| 194.90 | 5.51 | 12.764 | 100.80 | 73.25 | -27.331 | 0.0 |
| 194.90 | 5.52 | 12.815 | 95.79 | 73.22 | -23.562 | 0.0 |
| 194.90 | 5.52 | 12.815 | 95.42 | 73.22 | -23.266 | 0.0 |
| 194.90 | 5.52 | 12.815 | 95.96 | 73.22 | -23.697 | 0.0 |
| 194.90 | 5.62 | 13.258 | 88.97 | 73.15 | -17.781 | 0.0 |
| 194.90 | 5.62 | 13.258 | 89.56 | 73.15 | -18.323 | 0.0 |
| 194.90 | 5.62 | 13.258 | 98.64 | 73.15 | -25.841 | 0.0 |
| 194.90 | 6.09 | 14.497 | 83.53 | 75.04 | -10.164 | 0.0 |
| 194.90 | 6.09 | 14.497 | 83.78 | 75.04 | -10.432 | 0.0 |
| 195.40 | 7.05 | 15.601 | 84.87 | 78.89 | -7.046 | 0.0 |
| 195.40 | 7.05 | 15.601 | 84.20 | 78.89 | -6.306 | 0.0 |
| 195.90 | 7.06 | 15.448 | 86.42 | 78.18 | -9.535 | 0.0 |
| 194.90 | 7.09 | 15.798 | 84.57 | 79.82 | -5.617 | 0.0 |
| 194.90 | 7.10 | 15.807 | 85.79 | 79.86 | -6.912 | 0.0 |
| 194.90 | 7.10 | 15.807 | 85.96 | 79.86 | -7.096 | 0.0 |
| 195.90 | 8.15 | 16.375 | 87.71 | 82.69 | -5.723 | 0.0 |
| 195.40 | 8.15 | 16.497 | 87.00 | 83.36 | -4.184 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 195.90 | 9.13 | 16.967 | 90.02 | 86.11 | -4.343 | 0.0 |
| 195.40 | 9.13 | 17.070 | 87.71 | 86.73 | -1.117 | 0.0 |
| 195.40 | 9.13 | 17.070 | 88.47 | 86.73 | -1.967 | 0.0 |
| 195.90 | 10.01 | 17.393 | 91.40 | 88.83 | -2.812 | 0.0 |
| 195.40 | 10.10 | 17.524 | 90.81 | 89.68 | -1.244 | 0.0 |
| 194.90 | 10.10 | 17.614 | 92.57 | 90.26 | -2.495 | 0.0 |
| 195.90 | 12.41 | 18.281 | 96.30 | 95.17 | -1.173 | 0.0 |
| 195.40 | 12.41 | 18.355 | 94.91 | 95.69 | 0.822 | 0.0 |
| 195.90 | 12.46 | 18.297 | 95.88 | 95.28 | -0.626 | 0.0 |
| 195.60 | 12.46 | 18.341 | 94.91 | 95.60 | 0.727 | 0.0 |
| 195.60 | 14.81 | 18.983 | 102.30 | 100.78 | -1.486 | 0.0 |
| 195.40 | 14.81 | 19.009 | 103.40 | 100.98 | -2.340 | 0.0 |
| 195.40 | 14.81 | 19.009 | 101.40 | 100.98 | -0.414 | 0.0 |
| 195.90 | 19.37 | 19.894 | 111.30 | 109.02 | -2.049 | 0.0 |
| 195.40 | 19.37 | 19.947 | 109.90 | 109.47 | -0.391 | 0.0 |
| 195.40 | 22.66 | 20.481 | 113.50 | 114.80 | 1.145 | 0.0 |
| 194.50 | 22.66 | 20.568 | 114.70 | 115.59 | 0.776 | 0.0 |
| 195.90 | 22.66 | 20.433 | 116.20 | 114.36 | -1.583 | 0.0 |
| 188.40 | 2.00 | 1.542 | 23.14 | 23.77 | 2.723 | 0.0 |
| 188.40 | 2.00 | 1.542 | 22.55 | 23.77 | 5.410 | 0.0 |
| 188.60 | 3.04 | 2.724 | 25.87 | 27.80 | 7.460 | 0.0 |
| 188.90 | 3.04 | 2.712 | 25.41 | 27.80 | 9.406 | 0.0 |
| 188.60 | 3.74 | 3.948 | 36.35 | 34.12 | -6.135 | 0.0 |
| 188.90 | 3.74 | 3.916 | 35.13 | 33.97 | -3.302 | 0.0 |
| 188.90 | 4.18 | 5.269 | 70.88 | 45.67 | -35.567 | 0.0 |
| 188.90 | 4.20 | 5.365 | 76.91 | 46.81 | -39.137 | 0.0 |
| 188.60 | 4.26 | 5.859 | 87.17 | 53.87 | -38.201 | 0.0 |
| 188.60 | 4.28 | 6.019 | 94.87 | 56.64 | -40.297 | 0.0 |
| 188.60 | 4.28 | 6.019 | 95.12 | 56.64 | -40.454 | 0.0 |
| 188.60 | 4.28 | 6.019 | 93.45 | 56.64 | -39.390 | 0.0 |
| 188.60 | 4.29 | 6.109 | 100.70 | 58.34 | -42.066 | 0.0 |
| 188.60 | 4.32 | 6.439 | 106.40 | 65.72 | -38.233 | 0.0 |
| 188.60 | 4.55 | 14.843 | 91.10 | 77.11 | -15.357 | 0.0 |
| 188.60 | 4.56 | 14.870 | 93.70 | 77.15 | -17.663 | 0.0 |
| 188.60 | 4.57 | 14.897 | 98.98 | 77.20 | -22.004 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 188.60 | 5.99 | 16.736 | 94.12 | 84.36 | -10.370 | 0.0 |
| 188.40 | 5.99 | 16.793 | 93.24 | 84.62 | -9.245 | 0.0 |
| 188.40 | 5.99 | 16.793 | 94.58 | 84.62 | -10.531 | 0.0 |
| 188.40 | 5.99 | 16.793 | 93.95 | 84.62 | -9.931 | 0.0 |
| 188.40 | 7.94 | 17.907 | 94.79 | 91.69 | -3.270 | 0.0 |
| 188.40 | 7.94 | 17.907 | 94.62 | 91.69 | -3.097 | 0.0 |
| 188.20 | 10.10 | 18.737 | 97.43 | 97.93 | 0.513 | 0.0 |
| 188.20 | 10.10 | 18.737 | 97.13 | 97.93 | 0.824 | 0.0 |
| 188.20 | 10.10 | 18.737 | 98.14 | 97.93 | -0.214 | 0.0 |
| 187.90 | 11.08 | 19.069 | 100.30 | 100.63 | 0.329 | 0.0 |
| 187.90 | 11.08 | 19.069 | 99.06 | 100.63 | 1.585 | 0.0 |
| 188.60 | 14.92 | 19.874 | 106.00 | 107.96 | 1.849 | 0.0 |
| 188.60 | 14.92 | 19.874 | 104.00 | 107.96 | 3.808 | 0.0 |
| 188.60 | 19.53 | 20.680 | 113.60 | 116.02 | 2.130 | 0.0 |
| 188.60 | 19.53 | 20.680 | 111.80 | 116.02 | 3.775 | 0.0 |
| 188.90 | 19.62 | 20.664 | 112.60 | 115.89 | 2.922 | 0.0 |
| 188.90 | 19.62 | 20.664 | 111.30 | 115.89 | 4.124 | 0.0 |
| 187.90 | 20.70 | 20.924 | 115.50 | 118.52 | 2.615 | 0.0 |
| 187.90 | 20.89 | 20.951 | 114.50 | 118.82 | 3.773 | 0.0 |
| 187.90 | 20.89 | 20.951 | 113.80 | 118.82 | 4.411 | 0.0 |
| 188.40 | 29.63 | 21.964 | 127.50 | 130.69 | 2.502 | 0.0 |
| 188.40 | 29.73 | 21.975 | 126.70 | 130.82 | 3.252 | 0.0 |
| 188.40 | 29.73 | 21.975 | 127.50 | 130.82 | 2.604 | 0.0 |
| 188.20 | 39.33 | 22.871 | 138.20 | 142.58 | 3.169 | 0.0 |
| 188.20 | 39.54 | 22.888 | 138.00 | 142.82 | 3.493 | 0.0 |
| 187.90 | 47.19 | 23.484 | 147.40 | 151.39 | 2.707 | 0.0 |
| 187.90 | 47.19 | 23.484 | 145.50 | 151.39 | 4.048 | 0.0 |
| 187.90 | 49.14 | 23.618 | 149.10 | 153.42 | 2.897 | 0.0 |
| 183.20 | 0.10 | 0.066 | 19.68 | 19.81 | 0.661 | 0.0 |
| 183.20 | 0.26 | 0.174 | 19.68 | 20.01 | 1.677 | 0.0 |
| 183.70 | 0.26 | 0.174 | 19.95 | 20.07 | 0.602 | 0.0 |
| 182.90 | 1.57 | 1.207 | 21.77 | 22.21 | 2.021 | 0.0 |
| 183.20 | 1.57 | 1.204 | 21.65 | 22.24 | 2.725 | 0.0 |
| 183.20 | 2.58 | 2.296 | 25.75 | 25.56 | -0.738 | 0.0 |
| 183.20 | 2.58 | 2.296 | 25.46 | 25.56 | 0.393 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 183.20 | 3.07 | 3.039 | 28.63 | 28.65 | 0.070 | 0.0 |
| 182.90 | 3.69 | 16.486 | 87.47 | 81.78 | -6.505 | 0.0 |
| 182.90 | 3.69 | 16.486 | 88.56 | 81.78 | -7.656 | 0.0 |
| 182.90 | 7.46 | 18.748 | 96.66 | 97.18 | 0.538 | 0.0 |
| 183.20 | 7.46 | 18.694 | 98.62 | 96.78 | -1.866 | 0.0 |
| 183.50 | 10.01 | 19.425 | 105.10 | 103.06 | -1.941 | 0.0 |
| 183.50 | 10.01 | 19.425 | 102.30 | 103.06 | 0.743 | 0.0 |
| 183.50 | 14.92 | 20.472 | 112.50 | 113.12 | 0.551 | 0.0 |
| 183.50 | 14.92 | 20.472 | 111.80 | 113.12 | 1.181 | 0.0 |
| 183.70 | 19.72 | 21.200 | 118.90 | 120.98 | 1.749 | 0.0 |
| 183.70 | 19.72 | 21.200 | 120.10 | 120.98 | 0.733 | 0.0 |
| 183.50 | 29.53 | 22.352 | 131.70 | 134.90 | 2.430 | 0.0 |
| 183.50 | 29.53 | 22.352 | 133.30 | 134.90 | 1.200 | 0.0 |
| 183.50 | 39.73 | 23.234 | 142.70 | 147.03 | 3.034 | 0.0 |
| 183.20 | 49.14 | 23.918 | 152.70 | 157.33 | 3.032 | 0.0 |
| 183.20 | 49.14 | 23.918 | 151.50 | 157.33 | 3.848 | 0.0 |
| 176.80 | 0.10 | 0.069 | 19.01 | 19.05 | 0.210 | 0.0 |
| 177.00 | 0.30 | 0.210 | 19.32 | 19.33 | 0.052 | 0.0 |
| 177.00 | 0.30 | 0.210 | 19.22 | 19.33 | 0.572 | 0.0 |
| 175.70 | 0.91 | 0.685 | 20.23 | 20.14 | -0.445 | 0.0 |
| 176.80 | 1.67 | 1.377 | 22.58 | 22.00 | -2.569 | 0.0 |
| 176.50 | 2.61 | 2.605 | 28.53 | 26.33 | -7.711 | 0.0 |
| 176.50 | 2.61 | 2.605 | 28.24 | 26.33 | -6.763 | 0.0 |
| 176.40 | 3.83 | 18.574 | 100.40 | 94.85 | -5.528 | 0.0 |
| 176.40 | 3.83 | 18.574 | 99.40 | 94.85 | -4.577 | 0.0 |
| 176.70 | 5.01 | 19.010 | 102.60 | 98.49 | -4.006 | 0.0 |
| 176.70 | 5.01 | 19.010 | 102.00 | 98.49 | -3.441 | 0.0 |
| 177.00 | 6.24 | 19.377 | 105.40 | 101.72 | -3.491 | 0.0 |
| 177.50 | 7.95 | 19.782 | 108.90 | 105.50 | -3.122 | 0.0 |
| 176.70 | 7.95 | 19.902 | 108.00 | 106.54 | -1.352 | 0.0 |
| 177.00 | 10.06 | 20.341 | 112.60 | 110.89 | -1.519 | 0.0 |
| 177.50 | 11.68 | 20.596 | 116.40 | 113.58 | -2.423 | 0.0 |
| 177.50 | 11.68 | 20.596 | 115.30 | 113.58 | -1.492 | 0.0 |
| 176.50 | 19.72 | 21.899 | 127.30 | 128.17 | 0.683 | 0.0 |
| 176.50 | 19.72 | 21.899 | 129.00 | 128.17 | -0.643 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 176.50 | 29.53 | 22.913 | 140.60 | 141.39 | 0.562 | 0.0 |
| 176.70 | 39.19 | 23.672 | 150.10 | 152.47 | 1.579 | 0.0 |
| 176.70 | 39.19 | 23.672 | 149.10 | 152.47 | 2.260 | 0.0 |
| 177.00 | 48.80 | 24.292 | 158.00 | 162.35 | 2.753 | 0.0 |
| 177.00 | 48.80 | 24.292 | 159.00 | 162.35 | 2.107 | 0.0 |
| 165.30 | 0.10 | 0.074 | 17.75 | 17.69 | -0.338 | 0.0 |
| 166.00 | 0.75 | 0.596 | 18.48 | 18.83 | 1.894 | 0.0 |
| 164.20 | 1.54 | 1.427 | 22.88 | 20.99 | -8.260 | 0.0 |
| 164.20 | 1.54 | 1.427 | 22.65 | 20.99 | -7.329 | 0.0 |
| 165.00 | 3.59 | 20.635 | 124.70 | 112.25 | -9.984 | 0.0 |
| 165.50 | 3.59 | 20.555 | 125.00 | 111.49 | -10.808 | 0.0 |
| 164.20 | 5.20 | 21.102 | 126.10 | 117.15 | -7.098 | 0.0 |
| 165.00 | 5.40 | 21.029 | 126.80 | 116.46 | -8.155 | 0.0 |
| 165.30 | 7.95 | 21.454 | 131.30 | 121.28 | -7.631 | 0.0 |
| 164.70 | 9.71 | 21.803 | 134.20 | 125.29 | -6.639 | 0.0 |
| 166.00 | 14.81 | 22.338 | 141.70 | 132.13 | -6.754 | 0.0 |
| 164.70 | 20.36 | 23.055 | 147.40 | 141.54 | -3.976 | 0.0 |
| 164.70 | 20.36 | 23.055 | 148.50 | 141.54 | -4.687 | 0.0 |
| 166.20 | 29.33 | 23.707 | 157.20 | 151.28 | -3.766 | 0.0 |
| 164.70 | 29.53 | 23.839 | 157.20 | 153.05 | -2.640 | 0.0 |
| 164.20 | 39.14 | 24.541 | 167.30 | 164.26 | -1.817 | 0.0 |
| 164.20 | 49.14 | 25.127 | 175.30 | 174.45 | -0.485 | 0.0 |
| 164.20 | 49.14 | 25.127 | 175.70 | 174.45 | -0.711 | 0.0 |
| 152.60 | 0.10 | 0.080 | 16.39 | 16.19 | -1.220 | 0.0 |
| 151.50 | 0.36 | 0.302 | 16.93 | 16.50 | -2.540 | 0.0 |
| 151.50 | 0.36 | 0.302 | 17.58 | 16.50 | -6.143 | 0.0 |
| 152.70 | 1.60 | 22.039 | 144.70 | 126.36 | -12.674 | 0.0 |
| 152.70 | 3.07 | 22.272 | 148.20 | 129.26 | -12.780 | 0.0 |
| 152.20 | 7.36 | 22.903 | 153.50 | 137.42 | -10.476 | 0.0 |
| 152.20 | 7.36 | 22.903 | 156.70 | 137.42 | -12.304 | 0.0 |
| 152.70 | 9.91 | 23.139 | 156.90 | 140.75 | -10.293 | 0.0 |
| 151.80 | 10.60 | 23.304 | 158.60 | 142.92 | -9.887 | 0.0 |
| 152.90 | 14.81 | 23.608 | 164.10 | 147.53 | -10.098 | 0.0 |
| 153.20 | 14.81 | 23.580 | 164.00 | 147.17 | -10.262 | 0.0 |
| 152.70 | 19.72 | 24.048 | 171.10 | 154.17 | -9.895 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 152.90 | 29.13 | 24.714 | 180.60 | 165.05 | -8.610 | 0.0 |
| 152.70 | 29.33 | 24.743 | 178.20 | 165.49 | -7.132 | 0.0 |
| 152.90 | 39.14 | 25.321 | 185.00 | 175.70 | -5.027 | 0.0 |
| 152.90 | 39.14 | 25.321 | 187.90 | 175.70 | -6.493 | 0.0 |
| 152.70 | 39.24 | 25.340 | 184.80 | 176.01 | -4.756 | 0.0 |
| 152.70 | 49.14 | 25.855 | 194.30 | 185.73 | -4.411 | 0.0 |
| 140.30 | 0.10 | 0.087 | 15.07 | 14.75 | -2.123 | 0.0 |
| 140.30 | 0.30 | 0.272 | 16.26 | 15.15 | -6.827 | 0.0 |
| 140.00 | 0.30 | 0.273 | 16.36 | 15.12 | -7.579 | 0.0 |
| 141.00 | 1.47 | 23.477 | 168.10 | 143.50 | -14.634 | 0.0 |
| 141.00 | 3.36 | 23.683 | 170.10 | 146.50 | -13.874 | 0.0 |
| 141.00 | 3.36 | 23.683 | 170.50 | 146.50 | -14.076 | 0.0 |
| 141.00 | 5.10 | 23.859 | 172.90 | 149.12 | -13.754 | 0.0 |
| 140.80 | 5.99 | 23.966 | 173.50 | 150.69 | -13.147 | 0.0 |
| 139.90 | 7.94 | 24.233 | 177.40 | 154.63 | -12.835 | 0.0 |
| 139.30 | 7.94 | 24.291 | 174.00 | 155.44 | -10.667 | 0.0 |
| 139.50 | 9.32 | 24.388 | 177.40 | 157.02 | -11.488 | 0.0 |
| 139.50 | 12.07 | 24.609 | 180.80 | 160.59 | -11.178 | 0.0 |
| 139.50 | 14.81 | 24.813 | 183.20 | 163.99 | -10.486 | 0.0 |
| 140.30 | 19.62 | 25.078 | 188.40 | 168.69 | -10.462 | 0.0 |
| 140.00 | 19.72 | 25.109 | 187.10 | 169.17 | -9.583 | 0.0 |
| 140.00 | 29.72 | 25.711 | 196.70 | 180.06 | -8.460 | 0.0 |
| 140.00 | 39.73 | 26.227 | 201.20 | 190.05 | -5.542 | 0.0 |
| 140.00 | 49.14 | 26.656 | 210.40 | 198.84 | -5.494 | 0.0 |
| 118.80 | 0.10 | 0.104 | 12.71 | 12.27 | -3.462 | 0.0 |
| 117.80 | 0.46 | 25.788 | 196.80 | 175.69 | -10.727 | 0.0 |
| 119.00 | 6.97 | 26.087 | 201.00 | 181.57 | -9.667 | 0.0 |
| 119.70 | 11.48 | 26.286 | 200.30 | 185.57 | -7.354 | 0.0 |
| 119.70 | 11.48 | 26.286 | 205.40 | 185.57 | -9.654 | 0.0 |
| 119.50 | 14.92 | 26.488 | 206.80 | 189.45 | -8.390 | 0.0 |
| 118.00 | 19.72 | 26.844 | 211.80 | 196.15 | -7.389 | 0.0 |
| 117.60 | 29.53 | 27.312 | 217.20 | 205.89 | -5.207 | 0.0 |
| 117.60 | 39.24 | 27.700 | 223.40 | 214.50 | -3.984 | 0.0 |
| 119.90 | 39.43 | 27.555 | 223.40 | 212.10 | -5.058 | 0.0 |
| 119.90 | 48.75 | 27.902 | 229.10 | 220.06 | -3.946 | 0.0 |

Data from Sokolova and Golubev [80] (continued)

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 119.90 | 48.95 | 27.909 | 226.50 | 220.22 | -2.773 | 0.0 |
| 108.90 | 2.95 | 26.741 | 208.80 | 190.84 | -8.602 | 0.0 |
| 108.90 | 2.95 | 26.741 | 209.80 | 190.84 | -9.037 | 0.0 |
| 109.40 | 4.70 | 26.790 | 209.00 | 192.00 | -8.134 | 0.0 |
| 109.40 | 4.70 | 26.790 | 211.20 | 192.00 | -9.091 | 0.0 |
| 109.20 | 9.81 | 27.063 | 213.50 | 197.45 | -7.518 | 0.0 |
| 109.90 | 14.81 | 27.241 | 215.30 | 201.43 | -6.442 | 0.0 |
| 109.90 | 14.81 | 27.241 | 216.80 | 201.43 | -7.089 | 0.0 |
| 109.20 | 19.72 | 27.509 | 220.30 | 206.87 | -6.096 | 0.0 |
| 109.20 | 19.72 | 27.509 | 220.00 | 206.87 | -5.968 | 0.0 |
| 109.40 | 29.53 | 27.888 | 225.60 | 215.36 | -4.539 | 0.0 |
| 109.40 | 38.94 | 28.231 | 230.00 | 223.28 | -2.922 | 0.0 |
| 109.40 | 39.14 | 28.238 | 230.00 | 223.45 | -2.848 | 0.0 |
| 109.40 | 49.73 | 28.591 | 237.80 | 231.96 | -2.456 | 0.0 |
| 109.40 | 49.93 | 28.597 | 235.00 | 232.11 | -1.230 | 0.0 |

Number of Points (Ref. 80) 445

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 9.654 | BIAS-% | -8.376 | RMS-% | 13.781 |
| AAD | 10.265 | BIAS | -9.301 | RMS | 17.521 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Yorizane et al. [82]

| T | P | ρ | λ,exp | λ,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 323.35 | 0.10 | 0.037 | 37.70 | 37.74 | 0.106 | 0.0 |
| 319.95 | 0.10 | 0.038 | 37.50 | 37.24 | -0.693 | 0.0 |
| 316.75 | 0.10 | 0.038 | 37.30 | 36.77 | -1.421 | 0.0 |
| 312.85 | 0.10 | 0.038 | 36.70 | 36.21 | -1.335 | 0.0 |
| 309.35 | 0.10 | 0.039 | 36.30 | 35.71 | -1.625 | 0.0 |
| 308.25 | 0.10 | 0.039 | 35.70 | 35.55 | -0.420 | 0.0 |
| 303.15 | 0.10 | 0.040 | 35.10 | 34.83 | -0.769 | 0.0 |
| 297.75 | 0.10 | 0.040 | 34.40 | 34.08 | -0.930 | 0.0 |
| 297.75 | 2.55 | 1.077 | 36.30 | 35.84 | -1.267 | 0.0 |
| 297.75 | 5.10 | 2.252 | 38.90 | 38.16 | -1.902 | 0.0 |

Data from Yorizane et al. [82] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | mPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 297.75 | 7.50 | 3.442 | 42.40 | 40.92 | -3.491 | 0.0 |
| 303.15 | 0.10 | 0.040 | 35.10 | 34.83 | -0.769 | 0.0 |
| 303.15 | 5.30 | 2.291 | 39.90 | 38.99 | -2.281 | 0.0 |
| 303.25 | 10.01 | 4.607 | 46.30 | 44.77 | -3.305 | 0.0 |
| 303.25 | 14.73 | 7.017 | 55.30 | 52.33 | -5.371 | 0.0 |
| 309.85 | 0.10 | 0.039 | 36.60 | 35.78 | -2.240 | 0.0 |
| 312.95 | 5.07 | 2.093 | 41.10 | 39.95 | -2.798 | 0.0 |
| 312.85 | 9.88 | 4.314 | 46.60 | 45.26 | -2.876 | 0.0 |
| 316.75 | 0.10 | 0.038 | 37.20 | 36.77 | -1.156 | 0.0 |
| 316.75 | 2.58 | 1.015 | 39.00 | 38.41 | -1.513 | 0.0 |
| 316.75 | 7.60 | 3.182 | 44.30 | 42.92 | -3.115 | 0.0 |
| 316.85 | 9.93 | 4.251 | 47.10 | 45.64 | -3.100 | 0.0 |
| 316.65 | 12.31 | 5.366 | 50.10 | 48.79 | -2.615 | 0.0 |
| 316.75 | 17.36 | 7.658 | 57.90 | 56.28 | -2.798 | 0.0 |
| 317.75 | 0.10 | 0.038 | 37.20 | 36.92 | -0.753 | 0.0 |
| 317.75 | 5.15 | 2.087 | 41.60 | 40.62 | -2.356 | 0.0 |
| 317.75 | 10.00 | 4.264 | 47.20 | 45.81 | -2.945 | 0.0 |
| 317.75 | 14.82 | 6.489 | 53.80 | 52.46 | -2.491 | 0.0 |
| 317.75 | 19.71 | 8.601 | 61.20 | 59.77 | -2.337 | 0.0 |
| 323.45 | 0.10 | 0.037 | 37.70 | 37.75 | 0.133 | 0.0 |
| 323.45 | 9.96 | 4.130 | 47.70 | 46.26 | -3.019 | 0.0 |
| 323.45 | 14.80 | 6.285 | 54.10 | 52.58 | -2.810 | 0.0 |

Number of Points (Ref. 82) 32

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 2.024 | BIAS-% | -2.009 | RMS-% | 1.182 |
| AAD | 0.923 | BIAS | -0.918 | RMS | 0.640 $mW \cdot m^{-1} \cdot K^{-1}$ |

Data from Zheng et al. [75]

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | mPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 299.45 | 0.10 | 0.040 | 34.74 | 34.31 | -1.238 | 0.0 |
| 299.45 | 1.07 | 0.438 | 34.92 | 34.96 | 0.115 | 0.0 |
| 299.45 | 2.04 | 0.849 | 35.99 | 35.67 | -0.889 | 0.0 |
| 299.45 | 3.00 | 1.269 | 36.56 | 36.43 | -0.356 | 0.0 |
| 299.45 | 3.97 | 1.707 | 37.68 | 37.27 | -1.088 | 0.0 |

Data from Zheng et al. [75] (continued)

| T | P | $\rho$ | $\lambda$,exp | $\lambda$,cal | Dev | Wt |
|---|---|---|---|---|---|---|
| K | mPa | $mol \cdot dm^{-3}$ | $mW \cdot m^{-1} \cdot K^{-1}$ | | % | |
| 299.45 | 4.94 | 2.159 | 38.43 | 38.20 | -0.598 | 0.0 |
| 299.45 | 5.91 | 2.624 | 39.86 | 39.21 | -1.631 | 0.0 |
| 299.45 | 6.88 | 3.101 | 40.78 | 40.32 | -1.128 | 0.0 |
| 299.45 | 7.79 | 3.559 | 42.32 | 41.44 | -2.079 | 0.0 |
| 299.45 | 7.84 | 3.584 | 42.56 | 41.51 | -2.467 | 0.0 |
| 299.45 | 8.81 | 4.082 | 43.35 | 42.81 | -1.246 | 0.0 |
| 299.45 | 9.78 | 4.587 | 44.89 | 44.21 | -1.515 | 0.0 |
| 299.45 | 10.75 | 5.098 | 46.30 | 45.69 | -1.317 | 0.0 |
| 299.45 | 11.71 | 5.606 | 47.93 | 47.24 | -1.440 | 0.0 |
| 299.45 | 12.68 | 6.119 | 49.95 | 48.87 | -2.162 | 0.0 |
| 299.45 | 13.65 | 6.628 | 51.14 | 50.54 | -1.173 | 0.0 |
| 299.45 | 14.62 | 7.132 | 52.90 | 52.25 | -1.229 | 0.0 |
| 299.45 | 15.54 | 7.601 | 54.51 | 53.89 | -1.137 | 0.0 |
| 299.45 | 15.59 | 7.626 | 54.65 | 53.98 | -1.226 | 0.0 |

Number of Points (Ref. 75) 19

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 1.265 | BIAS-% | -1.253 | RMS-% | 0.586 |
| AAD | 0.565 | BIAS | -0.561 | RMS | 0.275 $mW \cdot m^{-1} \cdot K^{-1}$ |

Number of Points Total with positive weight 920

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.518 | BIAS-% | 0.003 | RMS-% | 0.749 |
| AAD | 0.364 | BIAS | -0.002 | RMS | 0.500 $mW \cdot m^{-1} \cdot K^{-1}$ |

Number of Points Total excluding Ref.[80] (Sokolova and Golubev) 1447

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 0.805 | BIAS-% | -0.022 | RMS-% | 1.346 |
| AAD | 0.709 | BIAS | -0.030 | RMS | 2.020 $mW \cdot m^{-1} \cdot K^{-1}$ |

Number of Points Total 1892

| | | | | | |
|---|---|---|---|---|---|
| AAD-% | 2.886 | BIAS-% | -1.985 | RMS-% | 7.656 |
| AAD | 2.957 | BIAS | -2.208 | RMS | 9.528 $mW \cdot m^{-1} \cdot K^{-1}$ |

## APPENDIX B

## TABLES FOR THE THERMOPHYSICAL PROPERTIES OF METHANE



The tables in this Appendix give the values of several thermophysical properties at specified values of the independent state variables as evaluated from the correlating equations given in the main text of this report. The uncertainties in the dependent thermophysical properties are discussed in Section 4. Notes included at the head of each table should also be consulted.

TABLE B1

PROPERTIES OF IDEAL GAS AT 0.1 MPa AND
DILUTE GAS TRANSPORT PROPERTIES

Notes for Table B1. The ideal gas values of the Helmholtz energy, enthalpy, entropy and isobaric specific heat capacity are evaluated from eq (5). The conversion from atmospheric pressure to 0.1 MPa affects the values of $A^{id}$ and $S^{id}$. The dilute gas viscosity is from eq (9) and the dilute gas thermal conductivity is from eq (11).

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 90.6854 | -11.023 | 3.001 | 146.33 | 33.276 | 3.61 | 8.75 |
| 91. | -11.072 | 3.012 | 146.45 | 33.276 | 3.62 | 8.78 |
| 92. | -11.226 | 3.045 | 146.81 | 33.276 | 3.66 | 8.90 |
| 93. | -11.382 | 3.078 | 147.17 | 33.276 | 3.69 | 9.01 |
| 94. | -11.537 | 3.111 | 147.52 | 33.276 | 3.73 | 9.13 |
| 95. | -11.693 | 3.145 | 147.88 | 33.276 | 3.77 | 9.25 |
| 96. | -11.850 | 3.178 | 148.23 | 33.277 | 3.80 | 9.36 |
| 97. | -12.007 | 3.211 | 148.57 | 33.277 | 3.84 | 9.48 |
| 98. | -12.164 | 3.245 | 148.91 | 33.277 | 3.88 | 9.59 |
| 99. | -12.321 | 3.278 | 149.25 | 33.277 | 3.92 | 9.71 |
| 100. | -12.479 | 3.311 | 149.58 | 33.277 | 3.95 | 9.83 |
| 101. | -12.637 | 3.344 | 149.91 | 33.277 | 3.99 | 9.94 |
| 102. | -12.795 | 3.378 | 150.24 | 33.277 | 4.03 | 10.06 |
| 103. | -12.954 | 3.411 | 150.57 | 33.277 | 4.07 | 10.18 |
| 104. | -13.113 | 3.444 | 150.89 | 33.277 | 4.10 | 10.29 |
| 105. | -13.272 | 3.477 | 151.21 | 33.277 | 4.14 | 10.41 |
| 106. | -13.432 | 3.511 | 151.52 | 33.277 | 4.18 | 10.53 |
| 107. | -13.592 | 3.544 | 151.83 | 33.277 | 4.22 | 10.65 |
| 108. | -13.752 | 3.577 | 152.14 | 33.277 | 4.25 | 10.76 |
| 109. | -13.913 | 3.611 | 152.45 | 33.277 | 4.29 | 10.88 |
| 110. | -14.074 | 3.644 | 152.76 | 33.277 | 4.33 | 11.00 |
| 111. | -14.235 | 3.677 | 153.06 | 33.278 | 4.37 | 11.12 |
| 112. | -14.397 | 3.710 | 153.35 | 33.278 | 4.41 | 11.23 |
| 113. | -14.558 | 3.744 | 153.65 | 33.278 | 4.44 | 11.35 |
| 114. | -14.720 | 3.777 | 153.94 | 33.278 | 4.48 | 11.47 |
| 115. | -14.883 | 3.810 | 154.23 | 33.278 | 4.52 | 11.59 |
| 116. | -15.046 | 3.843 | 154.52 | 33.278 | 4.56 | 11.70 |
| 117. | -15.209 | 3.877 | 154.81 | 33.279 | 4.60 | 11.82 |
| 118. | -15.372 | 3.910 | 155.09 | 33.279 | 4.63 | 11.94 |
| 119. | -15.535 | 3.943 | 155.37 | 33.279 | 4.67 | 12.06 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 120. | -15.699 | 3.977 | 155.65 | 33.279 | 4.71 | 12.18 |
| 121. | -15.863 | 4.010 | 155.93 | 33.280 | 4.75 | 12.30 |
| 122. | -16.028 | 4.043 | 156.20 | 33.280 | 4.79 | 12.41 |
| 123. | -16.192 | 4.076 | 156.47 | 33.280 | 4.82 | 12.53 |
| 124. | -16.357 | 4.110 | 156.74 | 33.281 | 4.86 | 12.65 |
| 125. | -16.522 | 4.143 | 157.01 | 33.281 | 4.90 | 12.77 |
| 126. | -16.688 | 4.176 | 157.27 | 33.281 | 4.94 | 12.89 |
| 127. | -16.854 | 4.210 | 157.54 | 33.282 | 4.98 | 13.01 |
| 128. | -17.020 | 4.243 | 157.80 | 33.282 | 5.02 | 13.12 |
| 129. | -17.186 | 4.276 | 158.06 | 33.283 | 5.05 | 13.24 |
| 130. | -17.352 | 4.309 | 158.31 | 33.283 | 5.09 | 13.36 |
| 131. | -17.519 | 4.343 | 158.57 | 33.284 | 5.13 | 13.48 |
| 132. | -17.686 | 4.376 | 158.82 | 33.284 | 5.17 | 13.60 |
| 133. | -17.853 | 4.409 | 159.07 | 33.285 | 5.21 | 13.72 |
| 134. | -18.021 | 4.443 | 159.32 | 33.285 | 5.25 | 13.84 |
| 135. | -18.189 | 4.476 | 159.57 | 33.286 | 5.28 | 13.95 |
| 136. | -18.357 | 4.509 | 159.82 | 33.287 | 5.32 | 14.07 |
| 137. | -18.525 | 4.542 | 160.06 | 33.287 | 5.36 | 14.19 |
| 138. | -18.693 | 4.576 | 160.30 | 33.288 | 5.40 | 14.31 |
| 139. | -18.862 | 4.609 | 160.54 | 33.289 | 5.44 | 14.43 |
| 140. | -19.031 | 4.642 | 160.78 | 33.290 | 5.48 | 14.55 |
| 141. | -19.200 | 4.676 | 161.02 | 33.291 | 5.51 | 14.67 |
| 142. | -19.370 | 4.709 | 161.25 | 33.292 | 5.55 | 14.78 |
| 143. | -19.539 | 4.742 | 161.49 | 33.293 | 5.59 | 14.90 |
| 144. | -19.709 | 4.775 | 161.72 | 33.294 | 5.63 | 15.02 |
| 145. | -19.880 | 4.809 | 161.95 | 33.295 | 5.67 | 15.14 |
| 146. | -20.050 | 4.842 | 162.18 | 33.296 | 5.71 | 15.26 |
| 147. | -20.221 | 4.875 | 162.41 | 33.297 | 5.74 | 15.38 |
| 148. | -20.391 | 4.909 | 162.63 | 33.299 | 5.78 | 15.50 |
| 149. | -20.562 | 4.942 | 162.86 | 33.300 | 5.82 | 15.61 |
| 150. | -20.734 | 4.975 | 163.08 | 33.302 | 5.86 | 15.73 |
| 151. | -20.905 | 5.009 | 163.30 | 33.303 | 5.90 | 15.85 |
| 152. | -21.077 | 5.042 | 163.52 | 33.305 | 5.93 | 15.97 |
| 153. | -21.249 | 5.075 | 163.74 | 33.306 | 5.97 | 16.09 |
| 154. | -21.421 | 5.108 | 163.95 | 33.308 | 6.01 | 16.21 |
| 155. | -21.593 | 5.142 | 164.17 | 33.310 | 6.05 | 16.32 |
| 156. | -21.766 | 5.175 | 164.38 | 33.312 | 6.09 | 16.44 |
| 157. | -21.939 | 5.208 | 164.60 | 33.314 | 6.13 | 16.56 |
| 158. | -22.112 | 5.242 | 164.81 | 33.316 | 6.16 | 16.68 |
| 159. | -22.285 | 5.275 | 165.02 | 33.318 | 6.20 | 16.80 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 160. | -22.459 | 5.308 | 165.23 | 33.320 | 6.24 | 16.92 |
| 161. | -22.632 | 5.342 | 165.44 | 33.322 | 6.28 | 17.03 |
| 162. | -22.806 | 5.375 | 165.64 | 33.325 | 6.32 | 17.15 |
| 163. | -22.980 | 5.408 | 165.85 | 33.327 | 6.35 | 17.27 |
| 164. | -23.154 | 5.442 | 166.05 | 33.330 | 6.39 | 17.39 |
| 165. | -23.329 | 5.475 | 166.25 | 33.332 | 6.43 | 17.51 |
| 166. | -23.503 | 5.508 | 166.46 | 33.335 | 6.47 | 17.63 |
| 167. | -23.678 | 5.542 | 166.66 | 33.338 | 6.50 | 17.74 |
| 168. | -23.853 | 5.575 | 166.85 | 33.341 | 6.54 | 17.86 |
| 169. | -24.029 | 5.608 | 167.05 | 33.344 | 6.58 | 17.98 |
| 170. | -24.204 | 5.642 | 167.25 | 33.348 | 6.62 | 18.10 |
| 171. | -24.380 | 5.675 | 167.44 | 33.351 | 6.66 | 18.22 |
| 172. | -24.556 | 5.708 | 167.64 | 33.355 | 6.69 | 18.33 |
| 173. | -24.732 | 5.742 | 167.83 | 33.358 | 6.73 | 18.45 |
| 174. | -24.908 | 5.775 | 168.02 | 33.362 | 6.77 | 18.57 |
| 175. | -25.084 | 5.808 | 168.22 | 33.366 | 6.81 | 18.69 |
| 176. | -25.261 | 5.842 | 168.41 | 33.370 | 6.84 | 18.81 |
| 177. | -25.438 | 5.875 | 168.60 | 33.374 | 6.88 | 18.92 |
| 178. | -25.615 | 5.909 | 168.78 | 33.379 | 6.92 | 19.04 |
| 179. | -25.792 | 5.942 | 168.97 | 33.383 | 6.96 | 19.16 |
| 180. | -25.969 | 5.975 | 169.16 | 33.388 | 6.99 | 19.28 |
| 181. | -26.147 | 6.009 | 169.34 | 33.393 | 7.03 | 19.40 |
| 182. | -26.325 | 6.042 | 169.53 | 33.397 | 7.07 | 19.52 |
| 183. | -26.503 | 6.076 | 169.71 | 33.403 | 7.10 | 19.63 |
| 184. | -26.681 | 6.109 | 169.89 | 33.408 | 7.14 | 19.75 |
| 185. | -26.859 | 6.142 | 170.07 | 33.413 | 7.18 | 19.87 |
| 186. | -27.038 | 6.176 | 170.25 | 33.419 | 7.22 | 19.99 |
| 187. | -27.216 | 6.209 | 170.43 | 33.425 | 7.25 | 20.11 |
| 188. | -27.395 | 6.243 | 170.61 | 33.431 | 7.29 | 20.22 |
| 189. | -27.574 | 6.276 | 170.79 | 33.437 | 7.33 | 20.34 |
| 190. | -27.753 | 6.309 | 170.96 | 33.443 | 7.36 | 20.46 |
| 190.551 | -27.852 | 6.328 | 171.06 | 33.447 | 7.38 | 20.52 |
| 191. | -27.933 | 6.343 | 171.14 | 33.450 | 7.40 | 20.58 |
| 192. | -28.112 | 6.376 | 171.31 | 33.457 | 7.44 | 20.70 |
| 193. | -28.292 | 6.410 | 171.49 | 33.463 | 7.48 | 20.81 |
| 194. | -28.472 | 6.443 | 171.66 | 33.471 | 7.51 | 20.93 |
| 195. | -28.652 | 6.477 | 171.83 | 33.478 | 7.55 | 21.05 |
| 196. | -28.832 | 6.510 | 172.00 | 33.485 | 7.59 | 21.17 |
| 197. | -29.012 | 6.544 | 172.17 | 33.493 | 7.62 | 21.29 |
| 198. | -29.193 | 6.577 | 172.34 | 33.501 | 7.66 | 21.41 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 199. | -29.374 | 6.611 | 172.51 | 33.509 | 7.70 | 21.52 |
| 200. | -29.555 | 6.644 | 172.68 | 33.518 | 7.73 | 21.64 |
| 201. | -29.736 | 6.678 | 172.85 | 33.526 | 7.77 | 21.76 |
| 202. | -29.917 | 6.711 | 173.01 | 33.535 | 7.81 | 21.88 |
| 203. | -30.098 | 6.745 | 173.18 | 33.544 | 7.84 | 22.00 |
| 204. | -30.280 | 6.778 | 173.34 | 33.553 | 7.88 | 22.12 |
| 205. | -30.462 | 6.812 | 173.51 | 33.563 | 7.92 | 22.24 |
| 206. | -30.644 | 6.846 | 173.67 | 33.573 | 7.95 | 22.36 |
| 207. | -30.826 | 6.879 | 173.83 | 33.583 | 7.99 | 22.47 |
| 208. | -31.008 | 6.913 | 174.00 | 33.593 | 8.02 | 22.59 |
| 209. | -31.190 | 6.946 | 174.16 | 33.603 | 8.06 | 22.71 |
| 210. | -31.373 | 6.980 | 174.32 | 33.614 | 8.10 | 22.83 |
| 211. | -31.556 | 7.014 | 174.48 | 33.625 | 8.13 | 22.95 |
| 212. | -31.738 | 7.047 | 174.64 | 33.636 | 8.17 | 23.07 |
| 213. | -31.921 | 7.081 | 174.79 | 33.648 | 8.21 | 23.19 |
| 214. | -32.105 | 7.114 | 174.95 | 33.659 | 8.24 | 23.31 |
| 215. | -32.288 | 7.148 | 175.11 | 33.671 | 8.28 | 23.43 |
| 216. | -32.471 | 7.182 | 175.27 | 33.683 | 8.31 | 23.55 |
| 217. | -32.655 | 7.215 | 175.42 | 33.696 | 8.35 | 23.67 |
| 218. | -32.839 | 7.249 | 175.58 | 33.709 | 8.38 | 23.79 |
| 219. | -33.023 | 7.283 | 175.73 | 33.722 | 8.42 | 23.91 |
| 220. | -33.207 | 7.317 | 175.88 | 33.735 | 8.46 | 24.03 |
| 221. | -33.391 | 7.350 | 176.04 | 33.749 | 8.49 | 24.15 |
| 222. | -33.576 | 7.384 | 176.19 | 33.762 | 8.53 | 24.27 |
| 223. | -33.760 | 7.418 | 176.34 | 33.777 | 8.56 | 24.39 |
| 224. | -33.945 | 7.452 | 176.49 | 33.791 | 8.60 | 24.51 |
| 225. | -34.130 | 7.485 | 176.64 | 33.806 | 8.63 | 24.63 |
| 226. | -34.315 | 7.519 | 176.79 | 33.821 | 8.67 | 24.75 |
| 227. | -34.500 | 7.553 | 176.94 | 33.836 | 8.71 | 24.87 |
| 228. | -34.685 | 7.587 | 177.09 | 33.851 | 8.74 | 25.00 |
| 229. | -34.871 | 7.621 | 177.24 | 33.867 | 8.78 | 25.12 |
| 230. | -35.057 | 7.655 | 177.39 | 33.883 | 8.81 | 25.24 |
| 231. | -35.242 | 7.689 | 177.53 | 33.900 | 8.85 | 25.36 |
| 232. | -35.428 | 7.722 | 177.68 | 33.916 | 8.88 | 25.48 |
| 233. | -35.614 | 7.756 | 177.83 | 33.933 | 8.92 | 25.60 |
| 234. | -35.801 | 7.790 | 177.97 | 33.951 | 8.95 | 25.73 |
| 235. | -35.987 | 7.824 | 178.12 | 33.968 | 8.99 | 25.85 |
| 236. | -36.173 | 7.858 | 178.26 | 33.986 | 9.02 | 25.97 |
| 237. | -36.360 | 7.892 | 178.40 | 34.004 | 9.06 | 26.09 |
| 238. | -36.547 | 7.926 | 178.55 | 34.023 | 9.09 | 26.22 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ\cdot mol^{-1}$ | $kJ\cdot mol^{-1}$ | $J\cdot mol^{-1}\cdot K^{-1}$ | | $\mu Pa\cdot s$ | $mW\cdot m^{-1}\cdot K^{-1}$ |
| 239. | -36.734 | 7.960 | 178.69 | 34.041 | 9.13 | 26.34 |
| 240. | -36.921 | 7.994 | 178.83 | 34.061 | 9.16 | 26.46 |
| 241. | -37.108 | 8.028 | 178.97 | 34.080 | 9.20 | 26.59 |
| 242. | -37.295 | 8.063 | 179.12 | 34.100 | 9.23 | 26.71 |
| 243. | -37.483 | 8.097 | 179.26 | 34.120 | 9.27 | 26.84 |
| 244. | -37.671 | 8.131 | 179.40 | 34.140 | 9.30 | 26.96 |
| 245. | -37.858 | 8.165 | 179.54 | 34.161 | 9.34 | 27.08 |
| 246. | -38.046 | 8.199 | 179.67 | 34.181 | 9.37 | 27.21 |
| 247. | -38.234 | 8.233 | 179.81 | 34.203 | 9.41 | 27.33 |
| 248. | -38.423 | 8.268 | 179.95 | 34.224 | 9.44 | 27.46 |
| 249. | -38.611 | 8.302 | 180.09 | 34.246 | 9.48 | 27.58 |
| 250. | -38.799 | 8.336 | 180.23 | 34.268 | 9.51 | 27.71 |
| 251. | -38.988 | 8.370 | 180.36 | 34.291 | 9.54 | 27.83 |
| 252. | -39.177 | 8.405 | 180.50 | 34.313 | 9.58 | 27.96 |
| 253. | -39.366 | 8.439 | 180.64 | 34.337 | 9.61 | 28.09 |
| 254. | -39.555 | 8.473 | 180.77 | 34.360 | 9.65 | 28.21 |
| 255. | -39.744 | 8.508 | 180.91 | 34.384 | 9.68 | 28.34 |
| 256. | -39.933 | 8.542 | 181.04 | 34.408 | 9.72 | 28.47 |
| 257. | -40.122 | 8.576 | 181.18 | 34.432 | 9.75 | 28.59 |
| 258. | -40.312 | 8.611 | 181.31 | 34.457 | 9.79 | 28.72 |
| 259. | -40.502 | 8.645 | 181.44 | 34.482 | 9.82 | 28.85 |
| 260. | -40.692 | 8.680 | 181.58 | 34.507 | 9.85 | 28.97 |
| 261. | -40.882 | 8.714 | 181.71 | 34.533 | 9.89 | 29.10 |
| 262. | -41.072 | 8.749 | 181.84 | 34.559 | 9.92 | 29.23 |
| 263. | -41.262 | 8.783 | 181.97 | 34.585 | 9.96 | 29.36 |
| 264. | -41.452 | 8.818 | 182.10 | 34.612 | 9.99 | 29.49 |
| 265. | -41.643 | 8.853 | 182.23 | 34.638 | 10.02 | 29.62 |
| 266. | -41.833 | 8.887 | 182.36 | 34.666 | 10.06 | 29.75 |
| 267. | -42.024 | 8.922 | 182.49 | 34.693 | 10.09 | 29.88 |
| 268. | -42.215 | 8.957 | 182.62 | 34.721 | 10.12 | 30.01 |
| 269. | -42.406 | 8.991 | 182.75 | 34.749 | 10.16 | 30.14 |
| 270. | -42.597 | 9.026 | 182.88 | 34.778 | 10.19 | 30.27 |
| 271. | -42.788 | 9.061 | 183.01 | 34.806 | 10.23 | 30.40 |
| 272. | -42.980 | 9.096 | 183.14 | 34.835 | 10.26 | 30.53 |
| 273. | -43.171 | 9.131 | 183.27 | 34.865 | 10.29 | 30.66 |
| 273.15 | -43.200 | 9.136 | 183.29 | 34.869 | 10.30 | 30.68 |
| 274. | -43.363 | 9.166 | 183.40 | 34.894 | 10.33 | 30.79 |
| 275. | -43.555 | 9.201 | 183.52 | 34.924 | 10.36 | 30.92 |
| 276. | -43.747 | 9.235 | 183.65 | 34.955 | 10.39 | 31.05 |
| 277. | -43.939 | 9.270 | 183.78 | 34.985 | 10.43 | 31.19 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 278. | -44.131 | 9.305 | 183.90 | 35.016 | 10.46 | 31.32 |
| 279. | -44.323 | 9.340 | 184.03 | 35.048 | 10.49 | 31.45 |
| 280. | -44.515 | 9.376 | 184.15 | 35.079 | 10.53 | 31.59 |
| 281. | -44.708 | 9.411 | 184.28 | 35.111 | 10.56 | 31.72 |
| 282. | -44.901 | 9.446 | 184.40 | 35.143 | 10.59 | 31.85 |
| 283. | -45.093 | 9.481 | 184.53 | 35.176 | 10.63 | 31.99 |
| 284. | -45.286 | 9.516 | 184.65 | 35.208 | 10.66 | 32.12 |
| 285. | -45.479 | 9.551 | 184.78 | 35.241 | 10.69 | 32.26 |
| 286. | -45.672 | 9.587 | 184.90 | 35.275 | 10.72 | 32.39 |
| 287. | -45.866 | 9.622 | 185.02 | 35.308 | 10.76 | 32.53 |
| 288. | -46.059 | 9.657 | 185.14 | 35.342 | 10.79 | 32.66 |
| 289. | -46.253 | 9.693 | 185.27 | 35.377 | 10.82 | 32.80 |
| 290. | -46.446 | 9.728 | 185.39 | 35.411 | 10.86 | 32.94 |
| 291. | -46.640 | 9.763 | 185.51 | 35.446 | 10.89 | 33.07 |
| 292. | -46.834 | 9.799 | 185.63 | 35.481 | 10.92 | 33.21 |
| 293. | -47.028 | 9.834 | 185.75 | 35.517 | 10.95 | 33.35 |
| 294. | -47.222 | 9.870 | 185.88 | 35.552 | 10.99 | 33.48 |
| 295. | -47.416 | 9.905 | 186.00 | 35.588 | 11.02 | 33.62 |
| 296. | -47.611 | 9.941 | 186.12 | 35.625 | 11.05 | 33.76 |
| 297. | -47.805 | 9.977 | 186.24 | 35.661 | 11.08 | 33.90 |
| 298. | -48.000 | 10.012 | 186.36 | 35.698 | 11.12 | 34.04 |
| 298.15 | -48.029 | 10.018 | 186.38 | 35.704 | 11.12 | 34.06 |
| 299. | -48.195 | 10.048 | 186.48 | 35.735 | 11.15 | 34.18 |
| 300. | -48.389 | 10.084 | 186.60 | 35.773 | 11.18 | 34.32 |
| 301. | -48.584 | 10.120 | 186.72 | 35.811 | 11.21 | 34.46 |
| 302. | -48.779 | 10.155 | 186.83 | 35.848 | 11.25 | 34.60 |
| 303. | -48.975 | 10.191 | 186.95 | 35.887 | 11.28 | 34.74 |
| 304. | -49.170 | 10.227 | 187.07 | 35.925 | 11.31 | 34.88 |
| 305. | -49.365 | 10.263 | 187.19 | 35.964 | 11.34 | 35.02 |
| 306. | -49.561 | 10.299 | 187.31 | 36.003 | 11.37 | 35.16 |
| 307. | -49.757 | 10.335 | 187.42 | 36.043 | 11.41 | 35.30 |
| 308. | -49.952 | 10.371 | 187.54 | 36.082 | 11.44 | 35.44 |
| 309. | -50.148 | 10.407 | 187.66 | 36.122 | 11.47 | 35.59 |
| 310. | -50.344 | 10.443 | 187.78 | 36.162 | 11.50 | 35.73 |
| 311. | -50.541 | 10.480 | 187.89 | 36.203 | 11.53 | 35.87 |
| 312. | -50.737 | 10.516 | 188.01 | 36.243 | 11.57 | 36.02 |
| 313. | -50.933 | 10.552 | 188.12 | 36.284 | 11.60 | 36.16 |
| 314. | -51.130 | 10.588 | 188.24 | 36.326 | 11.63 | 36.31 |
| 315. | -51.326 | 10.625 | 188.36 | 36.367 | 11.66 | 36.45 |
| 316. | -51.523 | 10.661 | 188.47 | 36.409 | 11.69 | 36.59 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 317. | -51.720 | 10.698 | 188.59 | 36.451 | 11.73 | 36.74 |
| 318. | -51.917 | 10.734 | 188.70 | 36.493 | 11.76 | 36.89 |
| 319. | -52.114 | 10.771 | 188.82 | 36.535 | 11.79 | 37.03 |
| 320. | -52.311 | 10.807 | 188.93 | 36.578 | 11.82 | 37.18 |
| 321. | -52.508 | 10.844 | 189.04 | 36.621 | 11.85 | 37.32 |
| 322. | -52.706 | 10.880 | 189.16 | 36.664 | 11.88 | 37.47 |
| 323. | -52.903 | 10.917 | 189.27 | 36.708 | 11.92 | 37.62 |
| 324. | -53.101 | 10.954 | 189.39 | 36.751 | 11.95 | 37.77 |
| 325. | -53.299 | 10.991 | 189.50 | 36.795 | 11.98 | 37.91 |
| 326. | -53.497 | 11.027 | 189.61 | 36.840 | 12.01 | 38.06 |
| 327. | -53.695 | 11.064 | 189.72 | 36.884 | 12.04 | 38.21 |
| 328. | -53.893 | 11.101 | 189.84 | 36.929 | 12.07 | 38.36 |
| 329. | -54.091 | 11.138 | 189.95 | 36.973 | 12.10 | 38.51 |
| 330. | -54.289 | 11.175 | 190.06 | 37.018 | 12.13 | 38.66 |
| 331. | -54.488 | 11.212 | 190.17 | 37.064 | 12.17 | 38.81 |
| 332. | -54.686 | 11.249 | 190.29 | 37.109 | 12.20 | 38.96 |
| 333. | -54.885 | 11.286 | 190.40 | 37.155 | 12.23 | 39.11 |
| 334. | -55.084 | 11.324 | 190.51 | 37.201 | 12.26 | 39.26 |
| 335. | -55.282 | 11.361 | 190.62 | 37.247 | 12.29 | 39.41 |
| 336. | -55.481 | 11.398 | 190.73 | 37.294 | 12.32 | 39.57 |
| 337. | -55.681 | 11.435 | 190.84 | 37.340 | 12.35 | 39.72 |
| 338. | -55.880 | 11.473 | 190.95 | 37.387 | 12.38 | 39.87 |
| 339. | -56.079 | 11.510 | 191.06 | 37.434 | 12.41 | 40.02 |
| 340. | -56.279 | 11.548 | 191.17 | 37.481 | 12.44 | 40.18 |
| 341. | -56.478 | 11.585 | 191.28 | 37.529 | 12.48 | 40.33 |
| 342. | -56.678 | 11.623 | 191.39 | 37.576 | 12.51 | 40.48 |
| 343. | -56.878 | 11.660 | 191.50 | 37.624 | 12.54 | 40.64 |
| 344. | -57.077 | 11.698 | 191.61 | 37.672 | 12.57 | 40.79 |
| 345. | -57.277 | 11.736 | 191.72 | 37.720 | 12.60 | 40.95 |
| 346. | -57.477 | 11.773 | 191.83 | 37.769 | 12.63 | 41.10 |
| 347. | -57.678 | 11.811 | 191.94 | 37.817 | 12.66 | 41.26 |
| 348. | -57.878 | 11.849 | 192.05 | 37.866 | 12.69 | 41.41 |
| 349. | -58.078 | 11.887 | 192.16 | 37.915 | 12.72 | 41.57 |
| 350. | -58.279 | 11.925 | 192.27 | 37.964 | 12.75 | 41.73 |
| 351. | -58.480 | 11.963 | 192.38 | 38.014 | 12.78 | 41.88 |
| 352. | -58.680 | 12.001 | 192.48 | 38.063 | 12.81 | 42.04 |
| 353. | -58.881 | 12.039 | 192.59 | 38.113 | 12.84 | 42.20 |
| 354. | -59.082 | 12.077 | 192.70 | 38.163 | 12.87 | 42.36 |
| 355. | -59.283 | 12.115 | 192.81 | 38.213 | 12.90 | 42.51 |
| 356. | -59.484 | 12.154 | 192.92 | 38.263 | 12.93 | 42.67 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 357. | -59.686 | 12.192 | 193.02 | 38.314 | 12.96 | 42.83 |
| 358. | -59.887 | 12.230 | 193.13 | 38.364 | 12.99 | 42.99 |
| 359. | -60.089 | 12.269 | 193.24 | 38.415 | 13.02 | 43.15 |
| 360. | -60.290 | 12.307 | 193.34 | 38.466 | 13.05 | 43.31 |
| 361. | -60.492 | 12.345 | 193.45 | 38.517 | 13.08 | 43.47 |
| 362. | -60.694 | 12.384 | 193.56 | 38.568 | 13.11 | 43.63 |
| 363. | -60.896 | 12.423 | 193.66 | 38.620 | 13.14 | 43.79 |
| 364. | -61.098 | 12.461 | 193.77 | 38.671 | 13.17 | 43.95 |
| 365. | -61.300 | 12.500 | 193.88 | 38.723 | 13.20 | 44.11 |
| 366. | -61.502 | 12.539 | 193.98 | 38.775 | 13.23 | 44.28 |
| 367. | -61.704 | 12.577 | 194.09 | 38.827 | 13.26 | 44.44 |
| 368. | -61.907 | 12.616 | 194.19 | 38.879 | 13.29 | 44.60 |
| 369. | -62.109 | 12.655 | 194.30 | 38.931 | 13.32 | 44.76 |
| 370. | -62.312 | 12.694 | 194.41 | 38.984 | 13.35 | 44.93 |
| 371. | -62.515 | 12.733 | 194.51 | 39.036 | 13.38 | 45.09 |
| 372. | -62.718 | 12.772 | 194.62 | 39.089 | 13.41 | 45.25 |
| 373. | -62.921 | 12.811 | 194.72 | 39.142 | 13.44 | 45.42 |
| 374. | -63.124 | 12.851 | 194.83 | 39.195 | 13.47 | 45.58 |
| 375. | -63.327 | 12.890 | 194.93 | 39.248 | 13.50 | 45.75 |
| 376. | -63.530 | 12.929 | 195.03 | 39.301 | 13.53 | 45.91 |
| 377. | -63.734 | 12.968 | 195.14 | 39.354 | 13.56 | 46.08 |
| 378. | -63.937 | 13.008 | 195.24 | 39.408 | 13.59 | 46.24 |
| 379. | -64.141 | 13.047 | 195.35 | 39.462 | 13.62 | 46.41 |
| 380. | -64.344 | 13.087 | 195.45 | 39.515 | 13.65 | 46.57 |
| 381. | -64.548 | 13.126 | 195.56 | 39.569 | 13.68 | 46.74 |
| 382. | -64.752 | 13.166 | 195.66 | 39.623 | 13.71 | 46.91 |
| 383. | -64.956 | 13.205 | 195.76 | 39.677 | 13.74 | 47.07 |
| 384. | -65.160 | 13.245 | 195.87 | 39.732 | 13.76 | 47.24 |
| 385. | -65.365 | 13.285 | 195.97 | 39.786 | 13.79 | 47.41 |
| 386. | -65.569 | 13.325 | 196.07 | 39.840 | 13.82 | 47.58 |
| 387. | -65.773 | 13.365 | 196.18 | 39.895 | 13.85 | 47.74 |
| 388. | -65.978 | 13.405 | 196.28 | 39.950 | 13.88 | 47.91 |
| 389. | -66.183 | 13.445 | 196.38 | 40.004 | 13.91 | 48.08 |
| 390. | -66.387 | 13.485 | 196.49 | 40.059 | 13.94 | 48.25 |
| 391. | -66.592 | 13.525 | 196.59 | 40.114 | 13.97 | 48.42 |
| 392. | -66.797 | 13.565 | 196.69 | 40.169 | 14.00 | 48.59 |
| 393. | -67.002 | 13.605 | 196.79 | 40.224 | 14.03 | 48.76 |
| 394. | -67.207 | 13.645 | 196.90 | 40.280 | 14.06 | 48.93 |
| 395. | -67.413 | 13.686 | 197.00 | 40.335 | 14.08 | 49.10 |
| 396. | -67.618 | 13.726 | 197.10 | 40.391 | 14.11 | 49.27 |

Table B1 (continued)

| T | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 397. | -67.823 | 13.766 | 197.20 | 40.446 | 14.14 | 49.44 |
| 398. | -68.029 | 13.807 | 197.30 | 40.502 | 14.17 | 49.61 |
| 399. | -68.235 | 13.847 | 197.40 | 40.558 | 14.20 | 49.79 |
| 400. | -68.440 | 13.888 | 197.51 | 40.613 | 14.23 | 49.96 |
| 405. | -69.471 | 14.092 | 198.01 | 40.894 | | 50.82 |
| 410. | -70.504 | 14.297 | 198.52 | 41.176 | | 51.69 |
| 415. | -71.539 | 14.503 | 199.02 | 41.460 | | 52.57 |
| 420. | -72.577 | 14.711 | 199.52 | 41.745 | | 53.45 |
| 425. | -73.617 | 14.921 | 200.01 | 42.031 | | 54.34 |
| 430. | -74.660 | 15.132 | 200.50 | 42.319 | | 55.23 |
| 435. | -75.706 | 15.344 | 201.00 | 42.608 | | 56.14 |
| 440. | -76.753 | 15.558 | 201.48 | 42.897 | | 57.04 |
| 445. | -77.804 | 15.773 | 201.97 | 43.187 | | 57.95 |
| 450. | -78.856 | 15.990 | 202.45 | 43.477 | | 58.87 |
| 455. | -79.911 | 16.208 | 202.94 | 43.767 | | 59.79 |
| 460. | -80.969 | 16.427 | 203.42 | 44.057 | | 60.72 |
| 465. | -82.029 | 16.648 | 203.89 | 44.348 | | 61.65 |
| 470. | -83.091 | 16.871 | 204.37 | 44.638 | | 62.58 |
| 475. | -84.155 | 17.095 | 204.84 | 44.928 | | 63.52 |
| 480. | -85.222 | 17.320 | 205.32 | 45.217 | | 64.46 |
| 485. | -86.292 | 17.547 | 205.79 | 45.506 | | 65.41 |
| 490. | -87.363 | 17.775 | 206.25 | 45.794 | | 66.36 |
| 495. | -88.437 | 18.005 | 206.72 | 46.082 | | 67.31 |
| 500. | -89.514 | 18.236 | 207.18 | 46.368 | | 68.27 |
| 505. | -90.592 | 18.469 | 207.65 | 46.654 | | 69.23 |
| 510. | -91.673 | 18.703 | 208.11 | 46.938 | | 70.19 |
| 515. | -92.757 | 18.938 | 208.57 | 47.222 | | 71.15 |
| 520. | -93.842 | 19.175 | 209.03 | 47.504 | | 72.12 |
| 525. | -94.930 | 19.413 | 209.48 | 47.785 | | 73.09 |
| 530. | -96.020 | 19.653 | 209.94 | 48.065 | | 74.06 |
| 535. | -97.112 | 19.894 | 210.39 | 48.343 | | 75.03 |
| 540. | -98.207 | 20.136 | 210.84 | 48.620 | | 76.01 |
| 545. | -99.304 | 20.380 | 211.29 | 48.895 | | 76.98 |
| 550. | -100.403 | 20.625 | 211.74 | 49.169 | | 77.96 |
| 555. | -101.505 | 20.872 | 212.18 | 49.441 | | 78.94 |
| 560. | -102.608 | 21.119 | 212.63 | 49.712 | | 79.92 |
| 565. | -103.714 | 21.369 | 213.07 | 49.981 | | 80.91 |
| 570. | -104.822 | 21.619 | 213.51 | 50.248 | | 81.89 |
| 575. | -105.932 | 21.871 | 213.95 | 50.514 | | 82.87 |
| 580. | -107.045 | 22.124 | 214.39 | 50.778 | | 83.86 |

Table B1 (continued)

| $T$ | $A^{id}$ | $H^{id}$ | $S^{id}$ | $C_p^{id}$ | $\eta_0$ | $\lambda_0$ |
|---|---|---|---|---|---|---|
| K | $kJ \cdot mol^{-1}$ | $kJ \cdot mol^{-1}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 585. | -108.159 | 22.379 | 214.83 | 51.040 | | 84.85 |
| 590. | -109.276 | 22.635 | 215.26 | 51.300 | | 85.83 |
| 595. | -110.395 | 22.892 | 215.70 | 51.558 | | 86.82 |
| 600. | -111.516 | 23.150 | 216.13 | 51.815 | | 87.81 |

## TABLE B2

## PROPERTIES ALONG SATURATION BOUNDARY

Notes for Table B2. Values of the pressure, density of the saturated liquid, density of the saturated vapor, specific heat capacity, sound speed, viscosity, and thermal conductivity along the two phase liquid-vapor coexistence curve. The quantities $P_{\sigma L}$, $\rho_{\sigma L}$, and $\rho_{\sigma V}$ are from the ancillary equations, eqs (3-5). The specific heat capacity along the saturated boundary is from the equation in Table 7; the sound speed is also taken from Table 7 but the density argument is for the saturated liquid and is taken from column 3 of this table. The viscosity and thermal conductivity at saturation are from eqs (8) and (9) [with the terms evaluated from eqs (10-25)]; again the density input is from column 3 of this table.

| T | $P_\sigma$ | $\rho_{\sigma L}$ | $\rho_{\sigma V}$ | $C_{\sigma L}$ | $W_{\sigma L}$ | $\eta_{\sigma L}$ | $\lambda_{\sigma L}$ |
|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 90.6854 | 0.011694 | 28.147 | 0.01564 | 52.98 | 1549.3 | 202.20 | 211.3 |
| 91. | 0.012 | 28.12 | 0.016 | 53.08 | 1545.2 | 200.42 | 210.9 |
| 92. | 0.014 | 28.04 | 0.018 | 53.37 | 1532.7 | 194.89 | 209.7 |
| 93. | 0.016 | 27.95 | 0.020 | 53.63 | 1520.7 | 189.55 | 208.5 |
| 94. | 0.018 | 27.87 | 0.023 | 53.85 | 1509.0 | 184.39 | 207.2 |
| 95. | 0.020 | 27.78 | 0.025 | 54.05 | 1497.7 | 179.41 | 206.0 |
| 96. | 0.022 | 27.70 | 0.028 | 54.24 | 1486.6 | 174.60 | 204.7 |
| 97. | 0.025 | 27.61 | 0.031 | 54.40 | 1475.8 | 169.95 | 203.4 |
| 98. | 0.028 | 27.52 | 0.035 | 54.54 | 1465.1 | 165.47 | 202.1 |
| 99. | 0.031 | 27.44 | 0.038 | 54.68 | 1454.6 | 161.14 | 200.8 |
| 100. | 0.034 | 27.35 | 0.042 | 54.80 | 1444.3 | 156.97 | 199.5 |
| 101. | 0.038 | 27.27 | 0.046 | 54.91 | 1434.1 | 152.94 | 198.2 |
| 102. | 0.042 | 27.18 | 0.051 | 55.02 | 1424.0 | 149.04 | 196.8 |
| 103. | 0.047 | 27.09 | 0.056 | 55.12 | 1413.9 | 145.29 | 195.5 |
| 104. | 0.051 | 27.00 | 0.061 | 55.21 | 1403.9 | 141.66 | 194.2 |
| 105. | 0.056 | 26.92 | 0.066 | 55.30 | 1394.0 | 138.16 | 192.8 |
| 106. | 0.062 | 26.83 | 0.072 | 55.39 | 1384.1 | 134.79 | 191.4 |
| 107. | 0.068 | 26.74 | 0.078 | 55.47 | 1374.2 | 131.52 | 190.1 |
| 108. | 0.074 | 26.65 | 0.085 | 55.56 | 1364.4 | 128.37 | 188.7 |
| 109. | 0.081 | 26.56 | 0.092 | 55.64 | 1354.5 | 125.33 | 187.3 |
| 110. | 0.088 | 26.47 | 0.100 | 55.72 | 1344.7 | 122.39 | 186.0 |
| 111. | 0.096 | 26.38 | 0.108 | 55.81 | 1334.8 | 119.55 | 184.6 |
| 112. | 0.104 | 26.29 | 0.116 | 55.89 | 1325.0 | 116.80 | 183.2 |
| 113. | 0.113 | 26.20 | 0.125 | 55.98 | 1315.1 | 114.15 | 181.8 |
| 114. | 0.122 | 26.11 | 0.135 | 56.07 | 1305.2 | 111.59 | 180.4 |

Table B2 (continued)

| T | $P_\sigma$ | $\rho_{\sigma L}$ | $\rho_{\sigma V}$ | $C_{\sigma L}$ | $W_{\sigma L}$ | $\eta_{\sigma L}$ | $\lambda_{\sigma L}$ |
|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 115. | 0.132 | 26.02 | 0.145 | 56.16 | 1295.3 | 109.11 | 179.0 |
| 116. | 0.143 | 25.92 | 0.155 | 56.26 | 1285.4 | 106.71 | 177.6 |
| 117. | 0.154 | 25.83 | 0.167 | 56.36 | 1275.4 | 104.38 | 176.2 |
| 118. | 0.166 | 25.74 | 0.178 | 56.46 | 1265.4 | 102.14 | 174.8 |
| 119. | 0.178 | 25.64 | 0.191 | 56.57 | 1255.4 | 99.96 | 173.4 |
| 120. | 0.192 | 25.55 | 0.204 | 56.68 | 1245.3 | 97.85 | 172.0 |
| 121. | 0.206 | 25.45 | 0.217 | 56.79 | 1235.2 | 95.81 | 170.6 |
| 122. | 0.220 | 25.36 | 0.231 | 56.91 | 1225.1 | 93.83 | 169.2 |
| 123. | 0.236 | 25.26 | 0.246 | 57.03 | 1214.9 | 91.91 | 167.8 |
| 124. | 0.252 | 25.16 | 0.262 | 57.16 | 1204.7 | 90.05 | 166.3 |
| 125. | 0.269 | 25.06 | 0.279 | 57.29 | 1194.4 | 88.25 | 164.9 |
| 126. | 0.287 | 24.97 | 0.296 | 57.43 | 1184.0 | 86.49 | 163.5 |
| 127. | 0.306 | 24.87 | 0.314 | 57.58 | 1173.7 | 84.79 | 162.1 |
| 128. | 0.325 | 24.77 | 0.333 | 57.73 | 1163.2 | 83.14 | 160.7 |
| 129. | 0.346 | 24.66 | 0.352 | 57.88 | 1152.7 | 81.53 | 159.2 |
| 130. | 0.368 | 24.56 | 0.373 | 58.05 | 1142.2 | 79.97 | 157.8 |
| 131. | 0.390 | 24.46 | 0.394 | 58.21 | 1131.6 | 78.45 | 156.4 |
| 132. | 0.414 | 24.36 | 0.417 | 58.39 | 1120.9 | 76.97 | 155.0 |
| 133. | 0.438 | 24.25 | 0.440 | 58.57 | 1110.2 | 75.53 | 153.6 |
| 134. | 0.464 | 24.15 | 0.464 | 58.76 | 1099.4 | 74.13 | 152.1 |
| 135. | 0.491 | 24.04 | 0.490 | 58.96 | 1088.6 | 72.76 | 150.7 |
| 136. | 0.519 | 23.93 | 0.516 | 59.16 | 1077.7 | 71.43 | 149.3 |
| 137. | 0.548 | 23.83 | 0.544 | 59.37 | 1066.7 | 70.13 | 147.9 |
| 138. | 0.578 | 23.72 | 0.572 | 59.59 | 1055.6 | 68.86 | 146.4 |
| 139. | 0.609 | 23.61 | 0.602 | 59.82 | 1044.5 | 67.62 | 145.0 |
| 140. | 0.642 | 23.50 | 0.633 | 60.05 | 1033.3 | 66.42 | 143.6 |
| 141. | 0.675 | 23.38 | 0.665 | 60.30 | 1022.1 | 65.23 | 142.2 |
| 142. | 0.711 | 23.27 | 0.699 | 60.55 | 1010.7 | 64.08 | 140.7 |
| 143. | 0.747 | 23.15 | 0.733 | 60.82 | 999.3 | 62.95 | 139.3 |
| 144. | 0.785 | 23.04 | 0.770 | 61.09 | 987.8 | 61.85 | 137.9 |
| 145. | 0.824 | 22.92 | 0.807 | 61.37 | 976.3 | 60.76 | 136.5 |
| 146. | 0.864 | 22.80 | 0.846 | 61.67 | 964.6 | 59.70 | 135.0 |
| 147. | 0.906 | 22.68 | 0.887 | 61.98 | 952.9 | 58.67 | 133.6 |
| 148. | 0.950 | 22.56 | 0.929 | 62.30 | 941.1 | 57.65 | 132.2 |
| 149. | 0.994 | 22.44 | 0.973 | 62.63 | 929.2 | 56.65 | 130.8 |
| 150. | 1.041 | 22.31 | 1.018 | 62.98 | 917.2 | 55.67 | 129.3 |
| 151. | 1.088 | 22.19 | 1.066 | 63.34 | 905.1 | 54.70 | 127.9 |
| 152. | 1.138 | 22.06 | 1.115 | 63.72 | 892.9 | 53.76 | 126.5 |
| 153. | 1.189 | 21.93 | 1.166 | 64.11 | 880.6 | 52.83 | 125.1 |
| 154. | 1.242 | 21.80 | 1.219 | 64.52 | 868.2 | 51.91 | 123.6 |

Table B2 (continued)

| T | $P_\sigma$ | $\rho_{\sigma L}$ | $\rho_{\sigma V}$ | $C_{\sigma L}$ | $W_{\sigma L}$ | $\eta_{\sigma L}$ | $\lambda_{\sigma L}$ |
|---|---|---|---|---|---|---|---|
| K | MPa | $mol \cdot dm^{-3}$ | $mol \cdot dm^{-3}$ | $J \cdot mol^{-1} \cdot K^{-1}$ | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | $mW \cdot m^{-1} \cdot K^{-1}$ |
| 155. | 1.296 | 21.66 | 1.274 | 64.95 | 855.7 | 51.01 | 122.2 |
| 156. | 1.352 | 21.53 | 1.331 | 65.40 | 843.1 | 50.13 | 120.8 |
| 157. | 1.409 | 21.39 | 1.391 | 65.87 | 830.4 | 49.25 | 119.3 |
| 158. | 1.469 | 21.25 | 1.452 | 66.36 | 817.6 | 48.39 | 117.9 |
| 159. | 1.530 | 21.11 | 1.517 | 66.88 | 804.6 | 47.54 | 116.5 |
| 160. | 1.593 | 20.96 | 1.584 | 67.42 | 791.5 | 46.70 | 115.0 |
| 161. | 1.658 | 20.81 | 1.654 | 68.00 | 778.3 | 45.87 | 113.6 |
| 162. | 1.724 | 20.66 | 1.726 | 68.60 | 765.0 | 45.05 | 112.1 |
| 163. | 1.793 | 20.51 | 1.802 | 69.24 | 751.6 | 44.24 | 110.7 |
| 164. | 1.864 | 20.36 | 1.880 | 69.92 | 738.0 | 43.44 | 109.3 |
| 165. | 1.936 | 20.20 | 1.963 | 70.64 | 724.2 | 42.65 | 107.8 |
| 166. | 2.011 | 20.03 | 2.048 | 71.40 | 710.3 | 41.86 | 106.4 |
| 167. | 2.087 | 19.87 | 2.138 | 72.22 | 696.3 | 41.08 | 104.9 |
| 168. | 2.166 | 19.70 | 2.232 | 73.10 | 682.1 | 40.30 | 103.4 |
| 169. | 2.246 | 19.52 | 2.330 | 74.03 | 667.7 | 39.53 | 102.0 |
| 170. | 2.329 | 19.35 | 2.432 | 75.04 | 653.2 | 38.76 | 100.5 |
| 171. | 2.414 | 19.16 | 2.540 | 76.14 | 638.5 | 37.99 | 99.0 |
| 172. | 2.502 | 18.97 | 2.653 | 77.33 | 623.6 | 37.23 | 97.5 |
| 173. | 2.591 | 18.78 | 2.772 | 78.62 | 608.5 | 36.46 | 96.1 |
| 174. | 2.683 | 18.58 | 2.897 | 80.05 | 593.2 | 35.70 | 94.6 |
| 175. | 2.778 | 18.37 | 3.030 | 81.62 | 577.7 | 34.93 | 93.1 |
| 176. | 2.874 | 18.16 | 3.170 | 83.36 | 562.0 | 34.16 | 91.6 |
| 177. | 2.974 | 17.94 | 3.318 | 85.32 | 546.0 | 33.39 | 90.1 |
| 178. | 3.075 | 17.70 | 3.477 | 87.53 | 529.8 | 32.61 | 88.5 |
| 179. | 3.180 | 17.46 | 3.646 | 90.05 | 513.2 | 31.82 | 87.0 |
| 180. | 3.287 | 17.21 | 3.827 | 92.96 | 496.4 | 31.01 | 85.5 |
| 181. | 3.396 | 16.94 | 4.023 | 96.37 | 479.1 | 30.20 | 84.0 |
| 182. | 3.509 | 16.65 | 4.236 | 100.42 | 461.3 | 29.36 | 82.5 |
| 183. | 3.624 | 16.35 | 4.469 | 105.34 | 443.0 | 28.49 | 81.1 |
| 184. | 3.742 | 16.02 | 4.726 | 111.46 | 423.8 | 27.60 | 79.7 |
| 185. | 3.864 | 15.66 | 5.015 | 119.33 | 403.7 | 26.65 | 78.4 |
| 186. | 3.988 | 15.26 | 5.344 | 129.94 | 382.2 | 25.65 | 77.3 |
| 187. | 4.116 | 14.81 | 5.729 | 145.23 | 358.8 | 24.56 | 76.7 |
| 188. | 4.247 | 14.27 | 6.200 | 169.79 | 332.7 | 23.33 | 76.9 |
| 189. | 4.382 | 13.58 | 6.821 | 218.36 | 302.4 | 21.86 | 79.8 |
| 190. | 4.521 | 12.50 | 7.827 | 389.90 | 264.3 | 19.75 | 100.3 |
| 190.551 | 4.5992 | 10.139 | 10.139 | | | | |

TABLE B3

PROPERTIES IN THE SINGLE-PHASE REGION ALONG ISOBARS

Notes for Table B3. Values of the density, compressibility factor, enthalpy, entropy, isochoric and isobaric heat capacities, speed of sound, viscosity, and thermal conductivity in the single-phase region of the methane fluid. The independent variables were chosen to be temperature and pressure. The density was evaluated by inverting the pressure equation in Table 7; the quantities H, S, $C_v$, $C_p$, and W were then evaluated directly from the expressions in Table 7. The viscosity and thermal conductivity are from eqs (7) and (8) [with the terms evaluated from eqs (10-23)]; the density input is from column 3 of this table.

METHANE ISOBAR AT P = 0.012 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 90.685 | 28.145 | 0.001 | -5.745 | 67.80 | 33.40 | 52.57 | 1548.8 | 202.08 | 211.2 |
| 90.685 | 0.0157 | 0.991 | 2.969 | 163.88 | 28.31 | 37.53 | 247.1 | 3.61 | 8.8 |
| 95. | 0.0149 | 0.993 | 3.124 | 165.56 | 26.11 | 34.85 | 254.5 | 3.77 | 9.3 |
| 100. | 0.0141 | 0.994 | 3.295 | 167.32 | 25.36 | 33.92 | 261.7 | 3.95 | 9.9 |
| 105. | 0.0135 | 0.995 | 3.464 | 168.96 | 25.14 | 33.64 | 268.5 | 4.14 | 10.4 |
| 110. | 0.0128 | 0.996 | 3.632 | 170.52 | 25.07 | 33.54 | 274.9 | 4.33 | 11.0 |
| 115. | 0.0123 | 0.996 | 3.799 | 172.01 | 25.04 | 33.48 | 281.2 | 4.52 | 11.6 |
| 120. | 0.0118 | 0.997 | 3.967 | 173.44 | 25.03 | 33.45 | 287.4 | 4.71 | 12.2 |
| 125. | 0.0113 | 0.997 | 4.134 | 174.80 | 25.02 | 33.43 | 293.3 | 4.90 | 12.8 |
| 130. | 0.0108 | 0.997 | 4.301 | 176.11 | 25.02 | 33.41 | 299.2 | 5.10 | 13.4 |
| 135. | 0.0104 | 0.998 | 4.468 | 177.38 | 25.01 | 33.40 | 305.0 | 5.29 | 14.0 |
| 140. | 0.0101 | 0.998 | 4.635 | 178.59 | 25.01 | 33.39 | 310.6 | 5.48 | 14.6 |
| 145. | 0.0097 | 0.998 | 4.802 | 179.76 | 25.01 | 33.39 | 316.1 | 5.67 | 15.2 |
| 150. | 0.0094 | 0.998 | 4.969 | 180.89 | 25.01 | 33.38 | 321.5 | 5.86 | 15.8 |
| 155. | 0.0091 | 0.998 | 5.136 | 181.99 | 25.02 | 33.38 | 326.9 | 6.05 | 16.3 |
| 160. | 0.0088 | 0.999 | 5.303 | 183.05 | 25.03 | 33.38 | 332.1 | 6.24 | 16.9 |
| 165. | 0.0085 | 0.999 | 5.470 | 184.08 | 25.04 | 33.39 | 337.3 | 6.43 | 17.5 |
| 170. | 0.0083 | 0.999 | 5.637 | 185.07 | 25.05 | 33.40 | 342.3 | 6.62 | 18.1 |
| 175. | 0.0080 | 0.999 | 5.804 | 186.04 | 25.06 | 33.41 | 347.3 | 6.81 | 18.7 |
| 180. | 0.0078 | 0.999 | 5.971 | 186.98 | 25.09 | 33.43 | 352.2 | 7.00 | 19.3 |
| 185. | 0.0076 | 0.999 | 6.138 | 187.90 | 25.11 | 33.45 | 357.1 | 7.18 | 19.9 |
| 190. | 0.0074 | 0.999 | 6.305 | 188.79 | 25.14 | 33.48 | 361.8 | 7.37 | 20.5 |
| 195. | 0.0072 | 0.999 | 6.473 | 189.66 | 25.17 | 33.51 | 366.5 | 7.55 | 21.1 |
| 200. | 0.0070 | 0.999 | 6.641 | 190.51 | 25.21 | 33.55 | 371.1 | 7.73 | 21.7 |
| 205. | 0.0069 | 0.999 | 6.808 | 191.34 | 25.26 | 33.59 | 375.7 | 7.92 | 22.3 |

METHANE ISOBAR AT P = 0.012 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 210. | 0.0067 | 0.999 | 6.977 | 192.15 | 25.31 | 33.64 | 380.1 | 8.10 | 22.9 |
| 215. | 0.0065 | 0.999 | 7.145 | 192.94 | 25.36 | 33.70 | 384.5 | 8.28 | 23.5 |
| 220. | 0.0064 | 0.999 | 7.314 | 193.72 | 25.43 | 33.76 | 388.9 | 8.46 | 24.1 |
| 225. | 0.0063 | 0.999 | 7.482 | 194.48 | 25.50 | 33.83 | 393.1 | 8.64 | 24.7 |
| 230. | 0.0061 | 1.000 | 7.652 | 195.22 | 25.57 | 33.90 | 397.3 | 8.81 | 25.3 |
| 235. | 0.0060 | 1.000 | 7.822 | 195.95 | 25.66 | 33.99 | 401.5 | 8.99 | 25.9 |
| 240. | 0.0059 | 1.000 | 7.992 | 196.67 | 25.75 | 34.08 | 405.6 | 9.17 | 26.5 |
| 245. | 0.0057 | 1.000 | 8.162 | 197.37 | 25.85 | 34.18 | 409.6 | 9.34 | 27.1 |
| 250. | 0.0056 | 1.000 | 8.334 | 198.06 | 25.96 | 34.29 | 413.5 | 9.51 | 27.7 |
| 255. | 0.0055 | 1.000 | 8.505 | 198.74 | 26.07 | 34.40 | 417.4 | 9.68 | 28.4 |
| 260. | 0.0054 | 1.000 | 8.678 | 199.41 | 26.20 | 34.52 | 421.3 | 9.86 | 29.0 |
| 265. | 0.0053 | 1.000 | 8.850 | 200.07 | 26.33 | 34.65 | 425.0 | 10.02 | 29.6 |
| 270. | 0.0052 | 1.000 | 9.024 | 200.72 | 26.47 | 34.79 | 428.8 | 10.19 | 30.3 |
| 275. | 0.0051 | 1.000 | 9.198 | 201.36 | 26.61 | 34.94 | 432.4 | 10.36 | 30.9 |
| 280. | 0.0050 | 1.000 | 9.373 | 201.99 | 26.77 | 35.09 | 436.1 | 10.53 | 31.6 |
| 285. | 0.0049 | 1.000 | 9.549 | 202.61 | 26.93 | 35.25 | 439.6 | 10.69 | 32.3 |
| 290. | 0.0049 | 1.000 | 9.726 | 203.23 | 27.10 | 35.42 | 443.1 | 10.86 | 32.9 |
| 295. | 0.0048 | 1.000 | 9.904 | 203.83 | 27.28 | 35.60 | 446.6 | 11.02 | 33.6 |
| 300. | 0.0047 | 1.000 | 10.082 | 204.43 | 27.46 | 35.78 | 450.0 | 11.18 | 34.3 |
| 310. | 0.0045 | 1.000 | 10.442 | 205.61 | 27.85 | 36.17 | 456.7 | 11.50 | 35.7 |
| 320. | 0.0044 | 1.000 | 10.806 | 206.77 | 28.27 | 36.59 | 463.3 | 11.82 | 37.2 |
| 330. | 0.0043 | 1.000 | 11.174 | 207.90 | 28.71 | 37.03 | 469.6 | 12.14 | 38.7 |
| 340. | 0.0041 | 1.000 | 11.546 | 209.01 | 29.17 | 37.49 | 475.8 | 12.45 | 40.2 |
| 350. | 0.0040 | 1.000 | 11.923 | 210.11 | 29.65 | 37.97 | 481.9 | 12.75 | 41.7 |
| 360. | 0.0039 | 1.000 | 12.306 | 211.18 | 30.15 | 38.47 | 487.9 | 13.05 | 43.3 |
| 370. | 0.0038 | 1.000 | 12.693 | 212.24 | 30.67 | 38.99 | 493.7 | 13.35 | 44.9 |
| 380. | 0.0037 | 1.000 | 13.085 | 213.29 | 31.20 | 39.52 | 499.4 | 13.65 | 46.6 |
| 390. | 0.0036 | 1.000 | 13.483 | 214.33 | 31.75 | 40.06 | 505.0 | 13.94 | 48.3 |
| 400. | 0.0035 | 1.000 | 13.887 | 215.35 | 32.30 | 40.62 | 510.6 | 14.23 | 50.0 |
| 410. | 0.0034 | 1.000 | 14.296 | 216.36 | 32.86 | 41.18 | 516.0 | | 51.7 |
| 420. | 0.0033 | 1.000 | 14.710 | 217.36 | 33.43 | 41.75 | 521.4 | | 53.5 |
| 430. | 0.0033 | 1.000 | 15.131 | 218.34 | 34.01 | 42.32 | 526.6 | | 55.2 |
| 440. | 0.0032 | 1.000 | 15.557 | 219.32 | 34.58 | 42.90 | 531.9 | | 57.0 |
| 450. | 0.0031 | 1.000 | 15.989 | 220.29 | 35.16 | 43.48 | 537.0 | | 58.9 |
| 460. | 0.0031 | 1.000 | 16.427 | 221.26 | 35.74 | 44.06 | 542.1 | | 60.7 |
| 470. | 0.0030 | 1.000 | 16.870 | 222.21 | 36.32 | 44.64 | 547.1 | | 62.6 |
| 480. | 0.0029 | 1.000 | 17.319 | 223.16 | 36.90 | 45.22 | 552.1 | | 64.5 |
| 490. | 0.0029 | 1.000 | 17.774 | 224.09 | 37.48 | 45.80 | 557.0 | | 66.4 |
| 500. | 0.0028 | 1.000 | 18.235 | 225.03 | 38.05 | 46.37 | 561.9 | | 68.3 |
| 520. | 0.0027 | 1.000 | 19.174 | 226.87 | 39.19 | 47.51 | 571.6 | | 72.1 |

METHANE ISOBAR AT P = 0.012 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 540. | 0.0026 | 1.000 | 20.135 | 228.68 | 40.31 | 48.62 | 581.0 | | 76.0 |
| 560. | 0.0025 | 1.000 | 21.119 | 230.47 | 41.40 | 49.71 | 590.4 | | 79.9 |
| 580. | 0.0024 | 1.000 | 22.124 | 232.23 | 42.46 | 50.78 | 599.6 | | 83.9 |
| 600. | 0.0023 | 1.000 | 23.150 | 233.97 | 43.50 | 51.82 | 608.6 | | 87.8 |

METHANE ISOBAR AT P = 0.025 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.786 | 0.001 | -5.515 | 70.28 | 33.99 | 53.76 | 1498.6 | 179.63 | 206.1 |
| 97.034 | 27.607 | 0.001 | -5.403 | 71.44 | 34.07 | 54.18 | 1475.4 | 169.80 | 203.4 |
| 97.034 | 0.0314 | 0.986 | 3.166 | 159.75 | 28.02 | 37.36 | 254.9 | 3.85 | 9.6 |
| 100. | 0.0305 | 0.987 | 3.273 | 160.84 | 26.53 | 35.53 | 259.9 | 3.96 | 9.9 |
| 105. | 0.0289 | 0.989 | 3.448 | 162.54 | 25.56 | 34.32 | 267.3 | 4.15 | 10.5 |
| 110. | 0.0276 | 0.991 | 3.618 | 164.12 | 25.26 | 33.91 | 274.1 | 4.33 | 11.1 |
| 115. | 0.0264 | 0.992 | 3.787 | 165.63 | 25.16 | 33.75 | 280.5 | 4.53 | 11.6 |
| 120. | 0.0252 | 0.993 | 3.956 | 167.06 | 25.11 | 33.67 | 286.7 | 4.72 | 12.2 |
| 125. | 0.0242 | 0.994 | 4.124 | 168.43 | 25.09 | 33.61 | 292.7 | 4.91 | 12.8 |
| 130. | 0.0233 | 0.994 | 4.292 | 169.75 | 25.07 | 33.57 | 298.7 | 5.10 | 13.4 |
| 135. | 0.0224 | 0.995 | 4.459 | 171.02 | 25.06 | 33.53 | 304.5 | 5.29 | 14.0 |
| 140. | 0.0216 | 0.996 | 4.627 | 172.24 | 25.05 | 33.51 | 310.1 | 5.48 | 14.6 |
| 145. | 0.0208 | 0.996 | 4.795 | 173.41 | 25.04 | 33.49 | 315.7 | 5.67 | 15.2 |
| 150. | 0.0201 | 0.996 | 4.962 | 174.55 | 25.04 | 33.47 | 321.2 | 5.86 | 15.8 |
| 155. | 0.0195 | 0.997 | 5.129 | 175.64 | 25.04 | 33.46 | 326.5 | 6.05 | 16.4 |
| 160. | 0.0188 | 0.997 | 5.297 | 176.71 | 25.05 | 33.46 | 331.8 | 6.24 | 17.0 |
| 165. | 0.0183 | 0.997 | 5.464 | 177.74 | 25.05 | 33.46 | 337.0 | 6.43 | 17.6 |
| 170. | 0.0177 | 0.997 | 5.631 | 178.73 | 25.07 | 33.46 | 342.1 | 6.62 | 18.1 |
| 175. | 0.0172 | 0.998 | 5.799 | 179.70 | 25.08 | 33.47 | 347.1 | 6.81 | 18.7 |
| 180. | 0.0167 | 0.998 | 5.966 | 180.65 | 25.10 | 33.48 | 352.0 | 7.00 | 19.3 |
| 185. | 0.0163 | 0.998 | 6.133 | 181.57 | 25.12 | 33.50 | 356.9 | 7.18 | 19.9 |
| 190. | 0.0159 | 0.998 | 6.301 | 182.46 | 25.15 | 33.52 | 361.6 | 7.37 | 20.5 |
| 195. | 0.0154 | 0.998 | 6.469 | 183.33 | 25.18 | 33.55 | 366.3 | 7.55 | 21.1 |
| 200. | 0.0151 | 0.998 | 6.636 | 184.18 | 25.22 | 33.59 | 370.9 | 7.74 | 21.7 |
| 205. | 0.0147 | 0.999 | 6.804 | 185.01 | 25.26 | 33.63 | 375.5 | 7.92 | 22.3 |
| 210. | 0.0143 | 0.999 | 6.973 | 185.82 | 25.31 | 33.67 | 380.0 | 8.10 | 22.9 |
| 215. | 0.0140 | 0.999 | 7.141 | 186.61 | 25.37 | 33.73 | 384.4 | 8.28 | 23.5 |
| 220. | 0.0137 | 0.999 | 7.310 | 187.39 | 25.43 | 33.79 | 388.7 | 8.46 | 24.1 |
| 225. | 0.0134 | 0.999 | 7.479 | 188.15 | 25.50 | 33.85 | 393.0 | 8.64 | 24.7 |
| 230. | 0.0131 | 0.999 | 7.649 | 188.89 | 25.58 | 33.93 | 397.2 | 8.82 | 25.3 |

METHANE ISOBAR AT P = 0.025 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 235. | 0.0128 | 0.999 | 7.818 | 189.63 | 25.66 | 34.01 | 401.4 | 8.99 | 25.9 |
| 240. | 0.0125 | 0.999 | 7.989 | 190.34 | 25.75 | 34.10 | 405.5 | 9.17 | 26.5 |
| 245. | 0.0123 | 0.999 | 8.159 | 191.05 | 25.85 | 34.20 | 409.5 | 9.34 | 27.1 |
| 250. | 0.0120 | 0.999 | 8.331 | 191.74 | 25.96 | 34.30 | 413.4 | 9.51 | 27.7 |
| 255. | 0.0118 | 0.999 | 8.502 | 192.42 | 26.08 | 34.42 | 417.3 | 9.69 | 28.4 |
| 260. | 0.0116 | 0.999 | 8.675 | 193.09 | 26.20 | 34.54 | 421.2 | 9.86 | 29.0 |
| 265. | 0.0114 | 0.999 | 8.848 | 193.75 | 26.33 | 34.67 | 425.0 | 10.03 | 29.6 |
| 270. | 0.0111 | 0.999 | 9.022 | 194.40 | 26.47 | 34.81 | 428.7 | 10.20 | 30.3 |
| 275. | 0.0109 | 0.999 | 9.196 | 195.04 | 26.62 | 34.95 | 432.4 | 10.36 | 30.9 |
| 280. | 0.0107 | 0.999 | 9.371 | 195.67 | 26.77 | 35.11 | 436.0 | 10.53 | 31.6 |
| 285. | 0.0106 | 0.999 | 9.547 | 196.29 | 26.93 | 35.27 | 439.6 | 10.70 | 32.3 |
| 290. | 0.0104 | 1.000 | 9.724 | 196.91 | 27.10 | 35.44 | 443.1 | 10.86 | 33.0 |
| 295. | 0.0102 | 1.000 | 9.901 | 197.51 | 27.28 | 35.61 | 446.6 | 11.02 | 33.6 |
| 300. | 0.0100 | 1.000 | 10.080 | 198.11 | 27.46 | 35.80 | 450.0 | 11.19 | 34.3 |
| 310. | 0.0097 | 1.000 | 10.440 | 199.29 | 27.85 | 36.18 | 456.7 | 11.51 | 35.8 |
| 320. | 0.0094 | 1.000 | 10.804 | 200.45 | 28.27 | 36.60 | 463.2 | 11.82 | 37.2 |
| 330. | 0.0091 | 1.000 | 11.172 | 201.58 | 28.71 | 37.04 | 469.6 | 12.14 | 38.7 |
| 340. | 0.0088 | 1.000 | 11.544 | 202.69 | 29.17 | 37.50 | 475.8 | 12.45 | 40.2 |
| 350. | 0.0086 | 1.000 | 11.922 | 203.79 | 29.65 | 37.98 | 481.9 | 12.75 | 41.7 |
| 360. | 0.0084 | 1.000 | 12.304 | 204.86 | 30.15 | 38.48 | 487.9 | 13.06 | 43.3 |
| 370. | 0.0081 | 1.000 | 12.692 | 205.93 | 30.67 | 39.00 | 493.7 | 13.36 | 44.9 |
| 380. | 0.0079 | 1.000 | 13.084 | 206.97 | 31.20 | 39.53 | 499.4 | 13.65 | 46.6 |
| 390. | 0.0077 | 1.000 | 13.482 | 208.01 | 31.75 | 40.07 | 505.0 | 13.94 | 48.3 |
| 400. | 0.0075 | 1.000 | 13.886 | 209.03 | 32.30 | 40.62 | 510.6 | 14.23 | 50.0 |
| 410. | 0.0073 | 1.000 | 14.295 | 210.04 | 32.86 | 41.19 | 516.0 | | 51.7 |
| 420. | 0.0072 | 1.000 | 14.709 | 211.04 | 33.43 | 41.76 | 521.4 | | 53.5 |
| 430. | 0.0070 | 1.000 | 15.130 | 212.03 | 34.01 | 42.33 | 526.6 | | 55.2 |
| 440. | 0.0068 | 1.000 | 15.556 | 213.01 | 34.58 | 42.91 | 531.9 | | 57.1 |
| 450. | 0.0067 | 1.000 | 15.988 | 213.98 | 35.16 | 43.49 | 537.0 | | 58.9 |
| 460. | 0.0065 | 1.000 | 16.426 | 214.94 | 35.74 | 44.07 | 542.1 | | 60.7 |
| 470. | 0.0064 | 1.000 | 16.869 | 215.89 | 36.32 | 44.65 | 547.1 | | 62.6 |
| 480. | 0.0063 | 1.000 | 17.319 | 216.84 | 36.90 | 45.22 | 552.1 | | 64.5 |
| 490. | 0.0061 | 1.000 | 17.774 | 217.78 | 37.48 | 45.80 | 557.1 | | 66.4 |
| 500. | 0.0060 | 1.000 | 18.235 | 218.71 | 38.05 | 46.37 | 561.9 | | 68.3 |
| 520. | 0.0058 | 1.000 | 19.173 | 220.55 | 39.19 | 47.51 | 571.6 | | 72.1 |
| 540. | 0.0056 | 1.000 | 20.135 | 222.36 | 40.31 | 48.63 | 581.1 | | 76.0 |
| 560. | 0.0054 | 1.000 | 21.118 | 224.15 | 41.40 | 49.72 | 590.4 | | 79.9 |
| 580. | 0.0052 | 1.000 | 22.123 | 225.92 | 42.46 | 50.78 | 599.6 | | 83.9 |
| 600. | 0.0050 | 1.000 | 23.149 | 227.65 | 43.50 | 51.82 | 608.6 | | 87.8 |

METHANE ISOBAR AT P = 0.050 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | µPa·s | mW/(m·K) |
| 95. | 27.787 | 0.002 | -5.514 | 70.27 | 33.99 | 53.75 | 1498.8 | 179.68 | 206.1 |
| 100. | 27.363 | 0.002 | -5.243 | 73.05 | 34.08 | 54.64 | 1446.4 | 157.39 | 199.7 |
| 103.729 | 27.027 | 0.002 | -5.035 | 75.10 | 33.92 | 55.17 | 1406.6 | 142.63 | 194.5 |
| 103.729 | 0.0593 | 0.977 | 3.367 | 156.09 | 27.52 | 37.02 | 262.5 | 4.10 | 10.4 |
| 105. | 0.0586 | 0.978 | 3.413 | 156.54 | 26.94 | 36.29 | 264.7 | 4.15 | 10.6 |
| 110. | 0.0557 | 0.981 | 3.590 | 158.19 | 25.80 | 34.84 | 272.2 | 4.34 | 11.1 |
| 115. | 0.0532 | 0.984 | 3.763 | 159.72 | 25.43 | 34.33 | 279.0 | 4.53 | 11.7 |
| 120. | 0.0508 | 0.986 | 3.934 | 161.18 | 25.29 | 34.09 | 285.4 | 4.72 | 12.3 |
| 125. | 0.0487 | 0.987 | 4.104 | 162.57 | 25.22 | 33.96 | 291.6 | 4.91 | 12.9 |
| 130. | 0.0468 | 0.989 | 4.274 | 163.90 | 25.18 | 33.86 | 297.6 | 5.10 | 13.5 |
| 135. | 0.0450 | 0.990 | 4.443 | 165.17 | 25.15 | 33.79 | 303.5 | 5.30 | 14.0 |
| 140. | 0.0433 | 0.991 | 4.612 | 166.40 | 25.13 | 33.73 | 309.3 | 5.49 | 14.6 |
| 145. | 0.0418 | 0.992 | 4.780 | 167.58 | 25.11 | 33.69 | 314.9 | 5.68 | 15.2 |
| 150. | 0.0404 | 0.993 | 4.949 | 168.72 | 25.10 | 33.65 | 320.5 | 5.87 | 15.8 |
| 155. | 0.0391 | 0.993 | 5.117 | 169.83 | 25.09 | 33.62 | 325.9 | 6.06 | 16.4 |
| 160. | 0.0378 | 0.994 | 5.285 | 170.89 | 25.09 | 33.60 | 331.2 | 6.25 | 17.0 |
| 165. | 0.0367 | 0.994 | 5.453 | 171.93 | 25.09 | 33.59 | 336.4 | 6.44 | 17.6 |
| 170. | 0.0356 | 0.995 | 5.621 | 172.93 | 25.10 | 33.58 | 341.6 | 6.63 | 18.2 |
| 175. | 0.0345 | 0.995 | 5.789 | 173.90 | 25.11 | 33.57 | 346.6 | 6.82 | 18.8 |
| 180. | 0.0336 | 0.996 | 5.956 | 174.85 | 25.12 | 33.58 | 351.6 | 7.00 | 19.4 |
| 185. | 0.0326 | 0.996 | 6.124 | 175.77 | 25.14 | 33.59 | 356.4 | 7.19 | 20.0 |
| 190. | 0.0318 | 0.996 | 6.292 | 176.67 | 25.17 | 33.60 | 361.2 | 7.37 | 20.6 |
| 195. | 0.0309 | 0.997 | 6.460 | 177.54 | 25.20 | 33.63 | 366.0 | 7.56 | 21.1 |
| 200. | 0.0302 | 0.997 | 6.629 | 178.39 | 25.24 | 33.66 | 370.6 | 7.74 | 21.7 |
| 205. | 0.0294 | 0.997 | 6.797 | 179.22 | 25.28 | 33.69 | 375.2 | 7.92 | 22.3 |
| 210. | 0.0287 | 0.997 | 6.965 | 180.03 | 25.33 | 33.73 | 379.7 | 8.11 | 22.9 |
| 215. | 0.0280 | 0.997 | 7.134 | 180.83 | 25.38 | 33.78 | 384.1 | 8.29 | 23.5 |
| 220. | 0.0274 | 0.998 | 7.303 | 181.61 | 25.44 | 33.84 | 388.5 | 8.47 | 24.1 |
| 225. | 0.0268 | 0.998 | 7.473 | 182.37 | 25.51 | 33.90 | 392.8 | 8.64 | 24.7 |
| 230. | 0.0262 | 0.998 | 7.642 | 183.11 | 25.59 | 33.98 | 397.0 | 8.82 | 25.3 |
| 235. | 0.0256 | 0.998 | 7.812 | 183.85 | 25.67 | 34.05 | 401.2 | 9.00 | 25.9 |
| 240. | 0.0251 | 0.998 | 7.983 | 184.56 | 25.76 | 34.14 | 405.3 | 9.17 | 26.5 |
| 245. | 0.0246 | 0.998 | 8.154 | 185.27 | 25.86 | 34.24 | 409.3 | 9.35 | 27.1 |
| 250. | 0.0241 | 0.998 | 8.325 | 185.96 | 25.97 | 34.34 | 413.3 | 9.52 | 27.8 |
| 255. | 0.0236 | 0.999 | 8.497 | 186.64 | 26.08 | 34.45 | 417.2 | 9.69 | 28.4 |
| 260. | 0.0232 | 0.999 | 8.670 | 187.31 | 26.20 | 34.57 | 421.0 | 9.86 | 29.0 |
| 265. | 0.0227 | 0.999 | 8.843 | 187.97 | 26.34 | 34.70 | 424.8 | 10.03 | 29.7 |
| 270. | 0.0223 | 0.999 | 9.017 | 188.62 | 26.47 | 34.84 | 428.6 | 10.20 | 30.3 |
| 275. | 0.0219 | 0.999 | 9.191 | 189.26 | 26.62 | 34.98 | 432.3 | 10.37 | 31.0 |
| 280. | 0.0215 | 0.999 | 9.367 | 189.89 | 26.77 | 35.13 | 435.9 | 10.53 | 31.6 |

METHANE ISOBAR AT P = 0.050 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 285. | 0.0211 | 0.999 | 9.543 | 190.52 | 26.94 | 35.29 | 439.5 | 10.70 | 32.3 |
| 290. | 0.0208 | 0.999 | 9.720 | 191.13 | 27.11 | 35.46 | 443.0 | 10.86 | 33.0 |
| 295. | 0.0204 | 0.999 | 9.897 | 191.74 | 27.28 | 35.64 | 446.5 | 11.03 | 33.7 |
| 300. | 0.0201 | 0.999 | 10.076 | 192.34 | 27.47 | 35.82 | 449.9 | 11.19 | 34.4 |
| 310. | 0.0194 | 0.999 | 10.436 | 193.52 | 27.85 | 36.20 | 456.6 | 11.51 | 35.8 |
| 320. | 0.0188 | 0.999 | 10.800 | 194.68 | 28.27 | 36.62 | 463.2 | 11.83 | 37.2 |
| 330. | 0.0182 | 0.999 | 11.169 | 195.81 | 28.71 | 37.05 | 469.6 | 12.14 | 38.7 |
| 340. | 0.0177 | 0.999 | 11.541 | 196.92 | 29.17 | 37.51 | 475.8 | 12.45 | 40.2 |
| 350. | 0.0172 | 1.000 | 11.919 | 198.02 | 29.66 | 38.00 | 481.9 | 12.76 | 41.8 |
| 360. | 0.0167 | 1.000 | 12.301 | 199.10 | 30.16 | 38.50 | 487.8 | 13.06 | 43.3 |
| 370. | 0.0163 | 1.000 | 12.689 | 200.16 | 30.67 | 39.01 | 493.7 | 13.36 | 45.0 |
| 380. | 0.0158 | 1.000 | 13.082 | 201.20 | 31.20 | 39.54 | 499.4 | 13.65 | 46.6 |
| 390. | 0.0154 | 1.000 | 13.480 | 202.24 | 31.75 | 40.08 | 505.0 | 13.95 | 48.3 |
| 400. | 0.0150 | 1.000 | 13.883 | 203.26 | 32.30 | 40.64 | 510.6 | 14.23 | 50.0 |
| 410. | 0.0147 | 1.000 | 14.292 | 204.27 | 32.86 | 41.20 | 516.0 | | 51.7 |
| 420. | 0.0143 | 1.000 | 14.707 | 205.27 | 33.43 | 41.77 | 521.4 | | 53.5 |
| 430. | 0.0140 | 1.000 | 15.128 | 206.26 | 34.01 | 42.34 | 526.7 | | 55.3 |
| 440. | 0.0137 | 1.000 | 15.554 | 207.24 | 34.59 | 42.91 | 531.9 | | 57.1 |
| 450. | 0.0134 | 1.000 | 15.986 | 208.21 | 35.16 | 43.49 | 537.0 | | 58.9 |
| 460. | 0.0131 | 1.000 | 16.424 | 209.17 | 35.75 | 44.07 | 542.1 | | 60.7 |
| 470. | 0.0128 | 1.000 | 16.868 | 210.13 | 36.33 | 44.65 | 547.2 | | 62.6 |
| 480. | 0.0125 | 1.000 | 17.317 | 211.07 | 36.91 | 45.23 | 552.2 | | 64.5 |
| 490. | 0.0123 | 1.000 | 17.772 | 212.01 | 37.48 | 45.81 | 557.1 | | 66.4 |
| 500. | 0.0120 | 1.000 | 18.233 | 212.94 | 38.06 | 46.38 | 562.0 | | 68.3 |
| 520. | 0.0116 | 1.000 | 19.172 | 214.78 | 39.19 | 47.52 | 571.6 | | 72.1 |
| 540. | 0.0111 | 1.000 | 20.134 | 216.60 | 40.31 | 48.63 | 581.1 | | 76.0 |
| 560. | 0.0107 | 1.000 | 21.117 | 218.39 | 41.40 | 49.72 | 590.4 | | 79.9 |
| 580. | 0.0104 | 1.000 | 22.122 | 220.15 | 42.46 | 50.79 | 599.6 | | 83.9 |
| 600. | 0.0100 | 1.000 | 23.149 | 221.89 | 43.50 | 51.82 | 608.7 | | 87.8 |

METHANE ISOBAR AT P = 0.075 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 95. | 27.788 | 0.003 | -5.513 | 70.27 | 33.99 | 53.75 | 1499.0 | 179.73 | 206.1 |
| 100. | 27.364 | 0.003 | -5.242 | 73.05 | 34.08 | 54.64 | 1446.6 | 157.43 | 199.7 |
| 105. | 26.930 | 0.003 | -4.967 | 75.73 | 33.86 | 55.28 | 1396.6 | 138.62 | 193.1 |
| 108.127 | 26.639 | 0.003 | -4.790 | 77.39 | 33.63 | 55.68 | 1363.1 | 127.98 | 188.5 |
| 108.127 | 0.0860 | 0.970 | 3.493 | 154.00 | 27.19 | 36.85 | 267.1 | 4.28 | 11.0 |

METHANE ISOBAR AT P = 0.075 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 110. | 0.0844 | 0.971 | 3.561 | 154.63 | 26.56 | 36.04 | 270.1 | 4.35 | 11.2 |
| 115. | 0.0804 | 0.975 | 3.739 | 156.20 | 25.76 | 34.98 | 277.4 | 4.54 | 11.8 |
| 120. | 0.0768 | 0.978 | 3.912 | 157.68 | 25.48 | 34.55 | 284.1 | 4.73 | 12.3 |
| 125. | 0.0736 | 0.981 | 4.084 | 159.09 | 25.36 | 34.32 | 290.4 | 4.92 | 12.9 |
| 130. | 0.0706 | 0.983 | 4.256 | 160.43 | 25.29 | 34.17 | 296.6 | 5.11 | 13.5 |
| 135. | 0.0678 | 0.985 | 4.426 | 161.72 | 25.24 | 34.06 | 302.6 | 5.30 | 14.1 |
| 140. | 0.0653 | 0.986 | 4.596 | 162.96 | 25.20 | 33.97 | 308.4 | 5.49 | 14.7 |
| 145. | 0.0630 | 0.988 | 4.766 | 164.15 | 25.18 | 33.89 | 314.1 | 5.68 | 15.3 |
| 150. | 0.0608 | 0.989 | 4.935 | 165.29 | 25.16 | 33.83 | 319.7 | 5.88 | 15.8 |
| 155. | 0.0588 | 0.990 | 5.104 | 166.40 | 25.14 | 33.78 | 325.2 | 6.07 | 16.4 |
| 160. | 0.0569 | 0.991 | 5.273 | 167.47 | 25.13 | 33.74 | 330.6 | 6.26 | 17.0 |
| 165. | 0.0551 | 0.992 | 5.442 | 168.51 | 25.13 | 33.71 | 335.9 | 6.45 | 17.6 |
| 170. | 0.0535 | 0.992 | 5.610 | 169.52 | 25.13 | 33.69 | 341.0 | 6.63 | 18.2 |
| 175. | 0.0519 | 0.993 | 5.778 | 170.50 | 25.14 | 33.68 | 346.1 | 6.82 | 18.8 |
| 180. | 0.0504 | 0.993 | 5.947 | 171.44 | 25.15 | 33.68 | 351.1 | 7.01 | 19.4 |
| 185. | 0.0491 | 0.994 | 6.115 | 172.37 | 25.17 | 33.68 | 356.0 | 7.19 | 20.0 |
| 190. | 0.0477 | 0.994 | 6.284 | 173.26 | 25.19 | 33.69 | 360.9 | 7.38 | 20.6 |
| 195. | 0.0465 | 0.995 | 6.452 | 174.14 | 25.22 | 33.70 | 365.6 | 7.56 | 21.2 |
| 200. | 0.0453 | 0.995 | 6.621 | 174.99 | 25.25 | 33.72 | 370.3 | 7.75 | 21.8 |
| 205. | 0.0442 | 0.996 | 6.789 | 175.83 | 25.29 | 33.76 | 374.9 | 7.93 | 22.3 |
| 210. | 0.0431 | 0.996 | 6.958 | 176.64 | 25.34 | 33.79 | 379.4 | 8.11 | 22.9 |
| 215. | 0.0421 | 0.996 | 7.127 | 177.44 | 25.39 | 33.84 | 383.9 | 8.29 | 23.5 |
| 220. | 0.0411 | 0.996 | 7.297 | 178.21 | 25.45 | 33.89 | 388.2 | 8.47 | 24.1 |
| 225. | 0.0402 | 0.997 | 7.466 | 178.98 | 25.52 | 33.95 | 392.6 | 8.65 | 24.7 |
| 230. | 0.0393 | 0.997 | 7.636 | 179.72 | 25.60 | 34.02 | 396.8 | 8.83 | 25.3 |
| 235. | 0.0385 | 0.997 | 7.806 | 180.46 | 25.68 | 34.10 | 401.0 | 9.00 | 25.9 |
| 240. | 0.0377 | 0.997 | 7.977 | 181.18 | 25.77 | 34.18 | 405.1 | 9.18 | 26.5 |
| 245. | 0.0369 | 0.997 | 8.148 | 181.88 | 25.87 | 34.28 | 409.1 | 9.35 | 27.2 |
| 250. | 0.0362 | 0.998 | 8.320 | 182.57 | 25.97 | 34.38 | 413.1 | 9.52 | 27.8 |
| 255. | 0.0355 | 0.998 | 8.492 | 183.26 | 26.09 | 34.49 | 417.0 | 9.70 | 28.4 |
| 260. | 0.0348 | 0.998 | 8.665 | 183.93 | 26.21 | 34.61 | 420.9 | 9.87 | 29.0 |
| 265. | 0.0341 | 0.998 | 8.838 | 184.59 | 26.34 | 34.73 | 424.7 | 10.04 | 29.7 |
| 270. | 0.0335 | 0.998 | 9.012 | 185.24 | 26.48 | 34.87 | 428.5 | 10.20 | 30.3 |
| 275. | 0.0329 | 0.998 | 9.187 | 185.88 | 26.63 | 35.01 | 432.2 | 10.37 | 31.0 |
| 280. | 0.0323 | 0.998 | 9.362 | 186.51 | 26.78 | 35.16 | 435.8 | 10.54 | 31.6 |
| 285. | 0.0317 | 0.998 | 9.539 | 187.14 | 26.94 | 35.32 | 439.4 | 10.70 | 32.3 |
| 290. | 0.0311 | 0.999 | 9.716 | 187.75 | 27.11 | 35.49 | 442.9 | 10.87 | 33.0 |
| 295. | 0.0306 | 0.999 | 9.893 | 188.36 | 27.29 | 35.66 | 446.4 | 11.03 | 33.7 |
| 300. | 0.0301 | 0.999 | 10.072 | 188.96 | 27.47 | 35.84 | 449.8 | 11.19 | 34.4 |
| 310. | 0.0291 | 0.999 | 10.432 | 190.14 | 27.86 | 36.23 | 456.6 | 11.51 | 35.8 |

METHANE ISOBAR AT P = 0.075 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 320. | 0.0282 | 0.999 | 10.797 | 191.30 | 28.27 | 36.64 | 463.1 | 11.83 | 37.2 |
| 330. | 0.0274 | 0.999 | 11.165 | 192.43 | 28.71 | 37.07 | 469.5 | 12.15 | 38.7 |
| 340. | 0.0266 | 0.999 | 11.538 | 193.55 | 29.17 | 37.53 | 475.7 | 12.45 | 40.2 |
| 350. | 0.0258 | 0.999 | 11.916 | 194.64 | 29.66 | 38.01 | 481.8 | 12.76 | 41.8 |
| 360. | 0.0251 | 0.999 | 12.299 | 195.72 | 30.16 | 38.51 | 487.8 | 13.06 | 43.4 |
| 370. | 0.0244 | 0.999 | 12.686 | 196.78 | 30.68 | 39.02 | 493.6 | 13.36 | 45.0 |
| 380. | 0.0237 | 1.000 | 13.079 | 197.83 | 31.21 | 39.55 | 499.4 | 13.66 | 46.6 |
| 390. | 0.0231 | 1.000 | 13.477 | 198.86 | 31.75 | 40.10 | 505.0 | 13.95 | 48.3 |
| 400. | 0.0226 | 1.000 | 13.881 | 199.88 | 32.30 | 40.65 | 510.6 | 14.24 | 50.0 |
| 410. | 0.0220 | 1.000 | 14.290 | 200.89 | 32.87 | 41.21 | 516.0 | | 51.7 |
| 420. | 0.0215 | 1.000 | 14.705 | 201.89 | 33.44 | 41.78 | 521.4 | | 53.5 |
| 430. | 0.0210 | 1.000 | 15.126 | 202.88 | 34.01 | 42.35 | 526.7 | | 55.3 |
| 440. | 0.0205 | 1.000 | 15.552 | 203.86 | 34.59 | 42.92 | 531.9 | | 57.1 |
| 450. | 0.0200 | 1.000 | 15.984 | 204.84 | 35.17 | 43.50 | 537.0 | | 58.9 |
| 460. | 0.0196 | 1.000 | 16.422 | 205.80 | 35.75 | 44.08 | 542.1 | | 60.7 |
| 470. | 0.0192 | 1.000 | 16.866 | 206.75 | 36.33 | 44.66 | 547.2 | | 62.6 |
| 480. | 0.0188 | 1.000 | 17.315 | 207.70 | 36.91 | 45.24 | 552.2 | | 64.5 |
| 490. | 0.0184 | 1.000 | 17.771 | 208.64 | 37.48 | 45.82 | 557.1 | | 66.4 |
| 500. | 0.0180 | 1.000 | 18.232 | 209.57 | 38.06 | 46.39 | 562.0 | | 68.3 |
| 520. | 0.0173 | 1.000 | 19.171 | 211.41 | 39.19 | 47.52 | 571.7 | | 72.1 |
| 540. | 0.0167 | 1.000 | 20.133 | 213.22 | 40.31 | 48.64 | 581.1 | | 76.0 |
| 560. | 0.0161 | 1.000 | 21.116 | 215.01 | 41.40 | 49.73 | 590.5 | | 79.9 |
| 580. | 0.0156 | 1.000 | 22.121 | 216.78 | 42.47 | 50.79 | 599.7 | | 83.9 |
| 600. | 0.0150 | 1.000 | 23.148 | 218.52 | 43.50 | 51.83 | 608.7 | | 87.8 |

METHANE ISOBAR AT P = 0.100 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.789 | 0.005 | -5.513 | 70.27 | 33.99 | 53.75 | 1499.2 | 179.78 | 206.1 |
| 100. | 27.366 | 0.004 | -5.242 | 73.05 | 34.08 | 54.64 | 1446.8 | 157.48 | 199.8 |
| 105. | 26.932 | 0.004 | -4.967 | 75.73 | 33.86 | 55.28 | 1396.9 | 138.67 | 193.1 |
| 110. | 26.486 | 0.004 | -4.689 | 78.32 | 33.49 | 55.84 | 1347.4 | 122.80 | 186.3 |
| 111.498 | 26.336 | 0.004 | -4.601 | 79.10 | 33.36 | 56.06 | 1329.9 | 118.17 | 183.9 |
| 111.498 | 0.1120 | 0.963 | 3.587 | 152.54 | 26.97 | 36.80 | 270.3 | 4.41 | 11.5 |
| 115. | 0.1082 | 0.967 | 3.713 | 153.66 | 26.15 | 35.72 | 275.7 | 4.54 | 11.8 |
| 120. | 0.1032 | 0.971 | 3.890 | 155.17 | 25.68 | 35.03 | 282.7 | 4.73 | 12.4 |
| 125. | 0.0987 | 0.974 | 4.064 | 156.59 | 25.49 | 34.69 | 289.2 | 4.92 | 13.0 |
| 130. | 0.0947 | 0.977 | 4.237 | 157.95 | 25.39 | 34.48 | 295.5 | 5.12 | 13.5 |

METHANE ISOBAR AT P = 0.100 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 135. | 0.0909 | 0.980 | 4.409 | 159.24 | 25.33 | 34.33 | 301.6 | 5.31 | 14.1 |
| 140. | 0.0875 | 0.982 | 4.580 | 160.49 | 25.28 | 34.20 | 307.5 | 5.50 | 14.7 |
| 145. | 0.0843 | 0.984 | 4.751 | 161.69 | 25.24 | 34.10 | 313.3 | 5.69 | 15.3 |
| 150. | 0.0814 | 0.985 | 4.921 | 162.84 | 25.21 | 34.01 | 319.0 | 5.88 | 15.9 |
| 155. | 0.0787 | 0.987 | 5.091 | 163.96 | 25.19 | 33.95 | 324.5 | 6.07 | 16.5 |
| 160. | 0.0761 | 0.988 | 5.261 | 165.03 | 25.18 | 33.89 | 330.0 | 6.26 | 17.1 |
| 165. | 0.0737 | 0.989 | 5.430 | 166.08 | 25.17 | 33.85 | 335.3 | 6.45 | 17.7 |
| 170. | 0.0715 | 0.990 | 5.599 | 167.09 | 25.16 | 33.81 | 340.5 | 6.64 | 18.2 |
| 175. | 0.0694 | 0.991 | 5.768 | 168.07 | 25.17 | 33.79 | 345.6 | 6.83 | 18.8 |
| 180. | 0.0674 | 0.991 | 5.937 | 169.02 | 25.18 | 33.77 | 350.7 | 7.01 | 19.4 |
| 185. | 0.0655 | 0.992 | 6.106 | 169.94 | 25.19 | 33.77 | 355.6 | 7.20 | 20.0 |
| 190. | 0.0638 | 0.993 | 6.275 | 170.84 | 25.21 | 33.77 | 360.5 | 7.39 | 20.6 |
| 195. | 0.0621 | 0.993 | 6.444 | 171.72 | 25.24 | 33.78 | 365.3 | 7.57 | 21.2 |
| 200. | 0.0605 | 0.994 | 6.613 | 172.58 | 25.27 | 33.80 | 370.0 | 7.75 | 21.8 |
| 205. | 0.0590 | 0.994 | 6.782 | 173.41 | 25.31 | 33.82 | 374.6 | 7.93 | 22.4 |
| 210. | 0.0576 | 0.995 | 6.951 | 174.23 | 25.35 | 33.85 | 379.1 | 8.12 | 23.0 |
| 215. | 0.0562 | 0.995 | 7.120 | 175.02 | 25.41 | 33.90 | 383.6 | 8.30 | 23.5 |
| 220. | 0.0549 | 0.995 | 7.290 | 175.80 | 25.47 | 33.94 | 388.0 | 8.48 | 24.1 |
| 225. | 0.0537 | 0.996 | 7.460 | 176.57 | 25.53 | 34.00 | 392.3 | 8.65 | 24.7 |
| 230. | 0.0525 | 0.996 | 7.630 | 177.31 | 25.61 | 34.07 | 396.6 | 8.83 | 25.3 |
| 235. | 0.0514 | 0.996 | 7.801 | 178.05 | 25.69 | 34.14 | 400.8 | 9.01 | 26.0 |
| 240. | 0.0503 | 0.996 | 7.971 | 178.77 | 25.78 | 34.22 | 404.9 | 9.18 | 26.6 |
| 245. | 0.0493 | 0.997 | 8.143 | 179.47 | 25.88 | 34.32 | 409.0 | 9.36 | 27.2 |
| 250. | 0.0483 | 0.997 | 8.315 | 180.17 | 25.98 | 34.42 | 413.0 | 9.53 | 27.8 |
| 255. | 0.0473 | 0.997 | 8.487 | 180.85 | 26.10 | 34.52 | 416.9 | 9.70 | 28.4 |
| 260. | 0.0464 | 0.997 | 8.660 | 181.52 | 26.22 | 34.64 | 420.8 | 9.87 | 29.1 |
| 265. | 0.0455 | 0.997 | 8.833 | 182.18 | 26.35 | 34.76 | 424.6 | 10.04 | 29.7 |
| 270. | 0.0447 | 0.998 | 9.008 | 182.83 | 26.48 | 34.90 | 428.3 | 10.21 | 30.3 |
| 275. | 0.0438 | 0.998 | 9.182 | 183.48 | 26.63 | 35.04 | 432.0 | 10.38 | 31.0 |
| 280. | 0.0430 | 0.998 | 9.358 | 184.11 | 26.78 | 35.19 | 435.7 | 10.54 | 31.7 |
| 285. | 0.0423 | 0.998 | 9.534 | 184.73 | 26.95 | 35.35 | 439.3 | 10.71 | 32.3 |
| 290. | 0.0416 | 0.998 | 9.711 | 185.35 | 27.11 | 35.51 | 442.8 | 10.87 | 33.0 |
| 295. | 0.0408 | 0.998 | 9.889 | 185.96 | 27.29 | 35.68 | 446.3 | 11.03 | 33.7 |
| 300. | 0.0402 | 0.998 | 10.068 | 186.56 | 27.47 | 35.86 | 449.7 | 11.20 | 34.4 |
| 310. | 0.0389 | 0.998 | 10.429 | 187.74 | 27.86 | 36.25 | 456.5 | 11.52 | 35.8 |
| 320. | 0.0376 | 0.999 | 10.793 | 188.90 | 28.28 | 36.66 | 463.1 | 11.84 | 37.2 |
| 330. | 0.0365 | 0.999 | 11.162 | 190.03 | 28.72 | 37.09 | 469.5 | 12.15 | 38.7 |
| 340. | 0.0354 | 0.999 | 11.535 | 191.15 | 29.18 | 37.55 | 475.7 | 12.46 | 40.2 |
| 350. | 0.0344 | 0.999 | 11.913 | 192.24 | 29.66 | 38.03 | 481.8 | 12.76 | 41.8 |
| 360. | 0.0334 | 0.999 | 12.296 | 193.32 | 30.16 | 38.52 | 487.8 | 13.07 | 43.4 |

METHANE ISOBAR AT P = 0.100 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 370. | 0.0325 | 0.999 | 12.684 | 194.38 | 30.68 | 39.04 | 493.6 | 13.37 | 45.0 |
| 380. | 0.0317 | 0.999 | 13.077 | 195.43 | 31.21 | 39.57 | 499.4 | 13.66 | 46.6 |
| 390. | 0.0309 | 0.999 | 13.475 | 196.46 | 31.75 | 40.11 | 505.0 | 13.95 | 48.3 |
| 400. | 0.0301 | 1.000 | 13.879 | 197.49 | 32.31 | 40.66 | 510.5 | 14.24 | 50.0 |
| 410. | 0.0293 | 1.000 | 14.288 | 198.50 | 32.87 | 41.22 | 516.0 | | 51.7 |
| 420. | 0.0286 | 1.000 | 14.703 | 199.50 | 33.44 | 41.79 | 521.4 | | 53.5 |
| 430. | 0.0280 | 1.000 | 15.124 | 200.49 | 34.01 | 42.36 | 526.7 | | 55.3 |
| 440. | 0.0273 | 1.000 | 15.550 | 201.47 | 34.59 | 42.93 | 531.9 | | 57.1 |
| 450. | 0.0267 | 1.000 | 15.983 | 202.44 | 35.17 | 43.51 | 537.1 | | 58.9 |
| 460. | 0.0262 | 1.000 | 16.421 | 203.40 | 35.75 | 44.09 | 542.2 | | 60.8 |
| 470. | 0.0256 | 1.000 | 16.864 | 204.36 | 36.33 | 44.67 | 547.2 | | 62.6 |
| 480. | 0.0251 | 1.000 | 17.314 | 205.30 | 36.91 | 45.25 | 552.2 | | 64.5 |
| 490. | 0.0245 | 1.000 | 17.769 | 206.24 | 37.48 | 45.82 | 557.1 | | 66.4 |
| 500. | 0.0241 | 1.000 | 18.230 | 207.17 | 38.06 | 46.39 | 562.0 | | 68.3 |
| 520. | 0.0231 | 1.000 | 19.170 | 209.02 | 39.19 | 47.53 | 571.7 | | 72.2 |
| 540. | 0.0223 | 1.000 | 20.131 | 210.83 | 40.31 | 48.64 | 581.2 | | 76.0 |
| 560. | 0.0215 | 1.000 | 21.115 | 212.62 | 41.40 | 49.73 | 590.5 | | 80.0 |
| 580. | 0.0207 | 1.000 | 22.120 | 214.38 | 42.47 | 50.80 | 599.7 | | 83.9 |
| 600. | 0.0200 | 1.000 | 23.147 | 216.12 | 43.50 | 51.83 | 608.8 | | 87.8 |

METHANE ISOBAR AT P = 0.150 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.792 | 0.007 | -5.511 | 70.26 | 33.99 | 53.74 | 1499.6 | 179.88 | 206.2 |
| 100. | 27.368 | 0.007 | -5.240 | 73.04 | 34.08 | 54.63 | 1447.2 | 157.57 | 199.8 |
| 105. | 26.934 | 0.006 | -4.966 | 75.72 | 33.86 | 55.27 | 1397.3 | 138.75 | 193.2 |
| 110. | 26.489 | 0.006 | -4.688 | 78.31 | 33.49 | 55.83 | 1347.9 | 122.87 | 186.3 |
| 115. | 26.031 | 0.006 | -4.407 | 80.80 | 33.07 | 56.40 | 1298.0 | 109.44 | 179.3 |
| 116.645 | 25.863 | 0.006 | -4.311 | 81.64 | 32.92 | 56.66 | 1279.0 | 105.20 | 176.7 |
| 116.645 | 0.1625 | 0.952 | 3.723 | 150.51 | 26.74 | 36.94 | 274.7 | 4.62 | 12.2 |
| 120. | 0.1573 | 0.956 | 3.845 | 151.54 | 26.14 | 36.08 | 279.8 | 4.75 | 12.6 |
| 125. | 0.1502 | 0.961 | 4.023 | 153.00 | 25.77 | 35.46 | 286.8 | 4.94 | 13.1 |
| 130. | 0.1437 | 0.966 | 4.200 | 154.38 | 25.61 | 35.12 | 293.3 | 5.13 | 13.7 |
| 135. | 0.1379 | 0.969 | 4.375 | 155.70 | 25.51 | 34.88 | 299.7 | 5.32 | 14.2 |
| 140. | 0.1325 | 0.972 | 4.549 | 156.97 | 25.44 | 34.68 | 305.8 | 5.51 | 14.8 |
| 145. | 0.1276 | 0.975 | 4.722 | 158.18 | 25.38 | 34.52 | 311.7 | 5.70 | 15.4 |
| 150. | 0.1230 | 0.978 | 4.894 | 159.35 | 25.33 | 34.39 | 317.5 | 5.89 | 16.0 |
| 155. | 0.1188 | 0.980 | 5.066 | 160.48 | 25.29 | 34.28 | 323.2 | 6.08 | 16.5 |

METHANE ISOBAR AT P = 0.150 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 160. | 0.1149 | 0.981 | 5.237 | 161.56 | 25.26 | 34.19 | 328.7 | 6.27 | 17.1 |
| 165. | 0.1112 | 0.983 | 5.408 | 162.61 | 25.24 | 34.11 | 334.2 | 6.46 | 17.7 |
| 170. | 0.1078 | 0.985 | 5.578 | 163.63 | 25.23 | 34.05 | 339.5 | 6.65 | 18.3 |
| 175. | 0.1046 | 0.986 | 5.748 | 164.62 | 25.23 | 34.01 | 344.7 | 6.84 | 18.9 |
| 180. | 0.1016 | 0.987 | 5.918 | 165.58 | 25.23 | 33.97 | 349.8 | 7.02 | 19.5 |
| 185. | 0.0987 | 0.988 | 6.088 | 166.51 | 25.24 | 33.95 | 354.8 | 7.21 | 20.1 |
| 190. | 0.0960 | 0.989 | 6.258 | 167.41 | 25.25 | 33.94 | 359.7 | 7.40 | 20.7 |
| 195. | 0.0935 | 0.990 | 6.427 | 168.29 | 25.27 | 33.93 | 364.5 | 7.58 | 21.3 |
| 200. | 0.0911 | 0.990 | 6.597 | 169.15 | 25.30 | 33.94 | 369.3 | 7.76 | 21.8 |
| 205. | 0.0888 | 0.991 | 6.767 | 169.99 | 25.34 | 33.95 | 374.0 | 7.95 | 22.4 |
| 210. | 0.0866 | 0.992 | 6.936 | 170.81 | 25.38 | 33.98 | 378.5 | 8.13 | 23.0 |
| 215. | 0.0846 | 0.992 | 7.106 | 171.61 | 25.43 | 34.01 | 383.1 | 8.31 | 23.6 |
| 220. | 0.0826 | 0.993 | 7.277 | 172.39 | 25.49 | 34.05 | 387.5 | 8.49 | 24.2 |
| 225. | 0.0807 | 0.993 | 7.447 | 173.16 | 25.55 | 34.10 | 391.9 | 8.66 | 24.8 |
| 230. | 0.0789 | 0.994 | 7.618 | 173.91 | 25.63 | 34.16 | 396.1 | 8.84 | 25.4 |
| 235. | 0.0772 | 0.994 | 7.789 | 174.64 | 25.71 | 34.23 | 400.4 | 9.02 | 26.0 |
| 240. | 0.0756 | 0.995 | 7.960 | 175.36 | 25.79 | 34.31 | 404.5 | 9.19 | 26.6 |
| 245. | 0.0740 | 0.995 | 8.132 | 176.07 | 25.89 | 34.39 | 408.6 | 9.36 | 27.2 |
| 250. | 0.0725 | 0.995 | 8.304 | 176.77 | 26.00 | 34.49 | 412.6 | 9.54 | 27.8 |
| 255. | 0.0711 | 0.996 | 8.477 | 177.45 | 26.11 | 34.59 | 416.6 | 9.71 | 28.5 |
| 260. | 0.0697 | 0.996 | 8.650 | 178.12 | 26.23 | 34.71 | 420.5 | 9.88 | 29.1 |
| 265. | 0.0683 | 0.996 | 8.824 | 178.79 | 26.36 | 34.83 | 424.3 | 10.05 | 29.7 |
| 270. | 0.0671 | 0.996 | 8.998 | 179.44 | 26.50 | 34.96 | 428.1 | 10.22 | 30.4 |
| 275. | 0.0658 | 0.997 | 9.173 | 180.08 | 26.64 | 35.10 | 431.8 | 10.38 | 31.0 |
| 280. | 0.0646 | 0.997 | 9.349 | 180.71 | 26.79 | 35.24 | 435.5 | 10.55 | 31.7 |
| 285. | 0.0635 | 0.997 | 9.526 | 181.34 | 26.95 | 35.40 | 439.1 | 10.72 | 32.4 |
| 290. | 0.0624 | 0.997 | 9.703 | 181.96 | 27.12 | 35.56 | 442.6 | 10.88 | 33.0 |
| 295. | 0.0613 | 0.997 | 9.881 | 182.57 | 27.30 | 35.73 | 446.1 | 11.04 | 33.7 |
| 300. | 0.0603 | 0.997 | 10.060 | 183.17 | 27.48 | 35.91 | 449.6 | 11.20 | 34.4 |
| 310. | 0.0583 | 0.998 | 10.421 | 184.35 | 27.87 | 36.29 | 456.4 | 11.53 | 35.8 |
| 320. | 0.0565 | 0.998 | 10.786 | 185.51 | 28.28 | 36.70 | 462.9 | 11.84 | 37.3 |
| 330. | 0.0548 | 0.998 | 11.155 | 186.65 | 28.72 | 37.13 | 469.4 | 12.16 | 38.8 |
| 340. | 0.0531 | 0.998 | 11.529 | 187.76 | 29.18 | 37.58 | 475.6 | 12.47 | 40.3 |
| 350. | 0.0516 | 0.999 | 11.907 | 188.86 | 29.67 | 38.06 | 481.7 | 12.77 | 41.8 |
| 360. | 0.0502 | 0.999 | 12.290 | 189.94 | 30.17 | 38.55 | 487.7 | 13.07 | 43.4 |
| 370. | 0.0488 | 0.999 | 12.678 | 191.00 | 30.68 | 39.07 | 493.6 | 13.37 | 45.0 |
| 380. | 0.0475 | 0.999 | 13.072 | 192.05 | 31.21 | 39.59 | 499.3 | 13.67 | 46.7 |
| 390. | 0.0463 | 0.999 | 13.470 | 193.08 | 31.76 | 40.13 | 505.0 | 13.96 | 48.3 |
| 400. | 0.0451 | 0.999 | 13.874 | 194.11 | 32.31 | 40.68 | 510.5 | 14.25 | 50.0 |
| 410. | 0.0440 | 0.999 | 14.284 | 195.12 | 32.87 | 41.24 | 516.0 | | 51.8 |

METHANE ISOBAR AT P = 0.150 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 420. | 0.0430 | 0.999 | 14.699 | 196.12 | 33.44 | 41.81 | 521.4 | | 53.5 |
| 430. | 0.0420 | 1.000 | 15.120 | 197.11 | 34.01 | 42.38 | 526.7 | | 55.3 |
| 440. | 0.0410 | 1.000 | 15.547 | 198.09 | 34.59 | 42.95 | 531.9 | | 57.1 |
| 450. | 0.0401 | 1.000 | 15.979 | 199.06 | 35.17 | 43.53 | 537.1 | | 58.9 |
| 460. | 0.0392 | 1.000 | 16.417 | 200.02 | 35.75 | 44.11 | 542.2 | | 60.8 |
| 470. | 0.0384 | 1.000 | 16.861 | 200.98 | 36.33 | 44.68 | 547.3 | | 62.6 |
| 480. | 0.0376 | 1.000 | 17.311 | 201.93 | 36.91 | 45.26 | 552.2 | | 64.5 |
| 490. | 0.0368 | 1.000 | 17.766 | 202.87 | 37.49 | 45.84 | 557.2 | | 66.4 |
| 500. | 0.0361 | 1.000 | 18.228 | 203.80 | 38.06 | 46.41 | 562.1 | | 68.3 |
| 520. | 0.0347 | 1.000 | 19.167 | 205.64 | 39.20 | 47.54 | 571.8 | | 72.2 |
| 540. | 0.0334 | 1.000 | 20.129 | 207.45 | 40.31 | 48.65 | 581.2 | | 76.1 |
| 560. | 0.0322 | 1.000 | 21.113 | 209.24 | 41.40 | 49.74 | 590.6 | | 80.0 |
| 580. | 0.0311 | 1.000 | 22.119 | 211.01 | 42.47 | 50.81 | 599.8 | | 83.9 |
| 600. | 0.0301 | 1.000 | 23.145 | 212.75 | 43.50 | 51.84 | 608.9 | | 87.9 |

METHANE ISOBAR AT P = 0.200 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.794 | 0.009 | -5.510 | 70.26 | 33.99 | 53.74 | 1500.0 | 179.97 | 206.2 |
| 100. | 27.370 | 0.009 | -5.239 | 73.04 | 34.09 | 54.63 | 1447.7 | 157.66 | 199.9 |
| 105. | 26.937 | 0.009 | -4.964 | 75.72 | 33.86 | 55.27 | 1397.8 | 138.83 | 193.2 |
| 110. | 26.492 | 0.008 | -4.687 | 78.30 | 33.49 | 55.82 | 1348.4 | 122.95 | 186.4 |
| 115. | 26.034 | 0.008 | -4.406 | 80.80 | 33.07 | 56.39 | 1298.5 | 109.51 | 179.4 |
| 120. | 25.561 | 0.008 | -4.123 | 83.21 | 32.64 | 57.04 | 1247.6 | 98.10 | 172.2 |
| 120.611 | 25.489 | 0.008 | -4.085 | 83.53 | 32.59 | 57.18 | 1239.2 | 96.60 | 171.1 |
| 120.611 | 0.2118 | 0.942 | 3.821 | 149.07 | 26.65 | 37.23 | 277.7 | 4.78 | 12.8 |
| 125. | 0.2031 | 0.948 | 3.982 | 150.38 | 26.08 | 36.30 | 284.2 | 4.95 | 13.2 |
| 130. | 0.1940 | 0.954 | 4.162 | 151.79 | 25.82 | 35.78 | 291.1 | 5.14 | 13.8 |
| 135. | 0.1859 | 0.959 | 4.340 | 153.14 | 25.68 | 35.45 | 297.7 | 5.33 | 14.3 |
| 140. | 0.1784 | 0.963 | 4.516 | 154.42 | 25.59 | 35.18 | 304.0 | 5.52 | 14.9 |
| 145. | 0.1716 | 0.967 | 4.692 | 155.65 | 25.51 | 34.97 | 310.1 | 5.71 | 15.5 |
| 150. | 0.1653 | 0.970 | 4.866 | 156.83 | 25.45 | 34.78 | 316.0 | 5.91 | 16.0 |
| 155. | 0.1595 | 0.973 | 5.040 | 157.97 | 25.40 | 34.63 | 321.8 | 6.10 | 16.6 |
| 160. | 0.1542 | 0.975 | 5.212 | 159.07 | 25.35 | 34.50 | 327.5 | 6.28 | 17.2 |
| 165. | 0.1492 | 0.977 | 5.385 | 160.13 | 25.32 | 34.39 | 333.0 | 6.47 | 17.8 |
| 170. | 0.1445 | 0.979 | 5.556 | 161.15 | 25.30 | 34.30 | 338.4 | 6.66 | 18.4 |
| 175. | 0.1401 | 0.981 | 5.728 | 162.15 | 25.29 | 34.23 | 343.7 | 6.85 | 19.0 |
| 180. | 0.1360 | 0.983 | 5.899 | 163.11 | 25.28 | 34.18 | 348.9 | 7.04 | 19.6 |

METHANE ISOBAR AT P = 0.200 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 185. | 0.1322 | 0.984 | 6.069 | 164.05 | 25.28 | 34.14 | 354.0 | 7.22 | 20.2 |
| 190. | 0.1285 | 0.985 | 6.240 | 164.96 | 25.29 | 34.11 | 358.9 | 7.41 | 20.8 |
| 195. | 0.1251 | 0.986 | 6.411 | 165.84 | 25.31 | 34.09 | 363.8 | 7.59 | 21.3 |
| 200. | 0.1218 | 0.987 | 6.581 | 166.71 | 25.34 | 34.08 | 368.6 | 7.77 | 21.9 |
| 205. | 0.1187 | 0.988 | 6.751 | 167.55 | 25.37 | 34.09 | 373.3 | 7.96 | 22.5 |
| 210. | 0.1158 | 0.989 | 6.922 | 168.37 | 25.41 | 34.10 | 378.0 | 8.14 | 23.1 |
| 215. | 0.1130 | 0.990 | 7.092 | 169.17 | 25.46 | 34.12 | 382.5 | 8.32 | 23.6 |
| 220. | 0.1104 | 0.990 | 7.263 | 169.96 | 25.51 | 34.16 | 387.0 | 8.50 | 24.2 |
| 225. | 0.1079 | 0.991 | 7.434 | 170.72 | 25.57 | 34.20 | 391.4 | 8.67 | 24.8 |
| 230. | 0.1055 | 0.992 | 7.605 | 171.48 | 25.64 | 34.26 | 395.7 | 8.85 | 25.4 |
| 235. | 0.1032 | 0.992 | 7.777 | 172.21 | 25.72 | 34.32 | 400.0 | 9.03 | 26.0 |
| 240. | 0.1010 | 0.993 | 7.948 | 172.94 | 25.81 | 34.39 | 404.1 | 9.20 | 26.6 |
| 245. | 0.0989 | 0.993 | 8.121 | 173.65 | 25.91 | 34.47 | 408.3 | 9.37 | 27.3 |
| 250. | 0.0968 | 0.994 | 8.293 | 174.35 | 26.01 | 34.56 | 412.3 | 9.55 | 27.9 |
| 255. | 0.0949 | 0.994 | 8.466 | 175.03 | 26.12 | 34.66 | 416.3 | 9.72 | 28.5 |
| 260. | 0.0930 | 0.994 | 8.640 | 175.70 | 26.24 | 34.77 | 420.2 | 9.89 | 29.1 |
| 265. | 0.0913 | 0.995 | 8.814 | 176.37 | 26.37 | 34.89 | 424.1 | 10.06 | 29.8 |
| 270. | 0.0895 | 0.995 | 8.989 | 177.02 | 26.51 | 35.02 | 427.8 | 10.23 | 30.4 |
| 275. | 0.0879 | 0.995 | 9.164 | 177.67 | 26.65 | 35.15 | 431.6 | 10.39 | 31.1 |
| 280. | 0.0863 | 0.996 | 9.340 | 178.30 | 26.80 | 35.30 | 435.3 | 10.56 | 31.7 |
| 285. | 0.0847 | 0.996 | 9.517 | 178.93 | 26.96 | 35.45 | 438.9 | 10.72 | 32.4 |
| 290. | 0.0833 | 0.996 | 9.695 | 179.54 | 27.13 | 35.61 | 442.4 | 10.89 | 33.1 |
| 295. | 0.0818 | 0.996 | 9.873 | 180.15 | 27.31 | 35.78 | 446.0 | 11.05 | 33.8 |
| 300. | 0.0805 | 0.997 | 10.053 | 180.76 | 27.49 | 35.96 | 449.4 | 11.21 | 34.5 |
| 310. | 0.0778 | 0.997 | 10.414 | 181.94 | 27.88 | 36.33 | 456.2 | 11.53 | 35.9 |
| 320. | 0.0754 | 0.997 | 10.779 | 183.10 | 28.29 | 36.73 | 462.8 | 11.85 | 37.3 |
| 330. | 0.0731 | 0.998 | 11.149 | 184.24 | 28.73 | 37.16 | 469.3 | 12.16 | 38.8 |
| 340. | 0.0709 | 0.998 | 11.523 | 185.35 | 29.19 | 37.62 | 475.5 | 12.47 | 40.3 |
| 350. | 0.0689 | 0.998 | 11.901 | 186.45 | 29.67 | 38.09 | 481.7 | 12.78 | 41.8 |
| 360. | 0.0669 | 0.998 | 12.285 | 187.53 | 30.17 | 38.58 | 487.7 | 13.08 | 43.4 |
| 370. | 0.0651 | 0.999 | 12.673 | 188.60 | 30.69 | 39.09 | 493.6 | 13.38 | 45.0 |
| 380. | 0.0634 | 0.999 | 13.066 | 189.65 | 31.22 | 39.62 | 499.3 | 13.67 | 46.7 |
| 390. | 0.0617 | 0.999 | 13.465 | 190.68 | 31.76 | 40.16 | 505.0 | 13.97 | 48.4 |
| 400. | 0.0602 | 0.999 | 13.870 | 191.71 | 32.31 | 40.70 | 510.5 | 14.25 | 50.1 |
| 410. | 0.0587 | 0.999 | 14.279 | 192.72 | 32.88 | 41.26 | 516.0 | | 51.8 |
| 420. | 0.0573 | 0.999 | 14.695 | 193.72 | 33.44 | 41.83 | 521.4 | | 53.5 |
| 430. | 0.0560 | 0.999 | 15.116 | 194.71 | 34.02 | 42.40 | 526.7 | | 55.3 |
| 440. | 0.0547 | 1.000 | 15.543 | 195.69 | 34.59 | 42.97 | 532.0 | | 57.1 |
| 450. | 0.0535 | 1.000 | 15.975 | 196.66 | 35.17 | 43.55 | 537.1 | | 59.0 |
| 460. | 0.0523 | 1.000 | 16.414 | 197.63 | 35.75 | 44.12 | 542.2 | | 60.8 |

METHANE ISOBAR AT P = 0.200 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 470. | 0.0512 | 1.000 | 16.858 | 198.58 | 36.33 | 44.70 | 547.3 | | 62.7 |
| 480. | 0.0501 | 1.000 | 17.308 | 199.53 | 36.91 | 45.28 | 552.3 | | 64.5 |
| 490. | 0.0491 | 1.000 | 17.763 | 200.47 | 37.49 | 45.85 | 557.3 | | 66.4 |
| 500. | 0.0481 | 1.000 | 18.225 | 201.40 | 38.06 | 46.42 | 562.2 | | 68.3 |
| 520. | 0.0463 | 1.000 | 19.164 | 203.24 | 39.20 | 47.55 | 571.8 | | 72.2 |
| 540. | 0.0445 | 1.000 | 20.127 | 205.06 | 40.31 | 48.66 | 581.3 | | 76.1 |
| 560. | 0.0429 | 1.000 | 21.111 | 206.85 | 41.40 | 49.75 | 590.7 | | 80.0 |
| 580. | 0.0415 | 1.000 | 22.117 | 208.61 | 42.47 | 50.82 | 599.9 | | 83.9 |
| 600. | 0.0401 | 1.000 | 23.143 | 210.35 | 43.51 | 51.85 | 609.0 | | 87.9 |

METHANE ISOBAR AT P = 0.250 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.796 | 0.011 | -5.509 | 70.25 | 33.99 | 53.73 | 1500.4 | 180.07 | 206.3 |
| 100. | 27.373 | 0.011 | -5.238 | 73.03 | 34.09 | 54.62 | 1448.1 | 157.75 | 199.9 |
| 105. | 26.940 | 0.011 | -4.963 | 75.71 | 33.86 | 55.26 | 1398.3 | 138.91 | 193.3 |
| 110. | 26.495 | 0.010 | -4.685 | 78.30 | 33.50 | 55.81 | 1348.9 | 123.02 | 186.4 |
| 115. | 26.037 | 0.010 | -4.405 | 80.79 | 33.07 | 56.38 | 1299.0 | 109.58 | 179.4 |
| 120. | 25.564 | 0.010 | -4.121 | 83.20 | 32.65 | 57.03 | 1248.1 | 98.16 | 172.3 |
| 123.886 | 25.173 | 0.010 | -3.896 | 85.05 | 32.32 | 57.66 | 1205.8 | 90.26 | 166.5 |
| 123.886 | 0.2603 | 0.932 | 3.897 | 147.96 | 26.65 | 37.63 | 279.8 | 4.92 | 13.3 |
| 125. | 0.2576 | 0.934 | 3.939 | 148.29 | 26.47 | 37.32 | 281.5 | 4.96 | 13.4 |
| 130. | 0.2457 | 0.941 | 4.123 | 149.74 | 26.04 | 36.50 | 288.8 | 5.15 | 13.9 |
| 135. | 0.2350 | 0.948 | 4.304 | 151.10 | 25.85 | 36.04 | 295.6 | 5.35 | 14.5 |
| 140. | 0.2253 | 0.953 | 4.483 | 152.41 | 25.74 | 35.70 | 302.1 | 5.54 | 15.0 |
| 145. | 0.2164 | 0.958 | 4.661 | 153.66 | 25.64 | 35.42 | 308.4 | 5.73 | 15.6 |
| 150. | 0.2083 | 0.962 | 4.838 | 154.85 | 25.56 | 35.19 | 314.5 | 5.92 | 16.1 |
| 155. | 0.2009 | 0.966 | 5.013 | 156.00 | 25.50 | 34.99 | 320.4 | 6.11 | 16.7 |
| 160. | 0.1940 | 0.969 | 5.188 | 157.11 | 25.44 | 34.82 | 326.2 | 6.30 | 17.3 |
| 165. | 0.1876 | 0.972 | 5.361 | 158.18 | 25.40 | 34.68 | 331.8 | 6.49 | 17.9 |
| 170. | 0.1816 | 0.974 | 5.534 | 159.21 | 25.37 | 34.56 | 337.3 | 6.67 | 18.4 |
| 175. | 0.1760 | 0.976 | 5.707 | 160.21 | 25.35 | 34.46 | 342.7 | 6.86 | 19.0 |
| 180. | 0.1708 | 0.978 | 5.879 | 161.18 | 25.33 | 34.39 | 348.0 | 7.05 | 19.6 |
| 185. | 0.1659 | 0.980 | 6.051 | 162.13 | 25.33 | 34.33 | 353.1 | 7.23 | 20.2 |
| 190. | 0.1613 | 0.981 | 6.222 | 163.04 | 25.33 | 34.28 | 358.2 | 7.42 | 20.8 |
| 195. | 0.1569 | 0.983 | 6.394 | 163.93 | 25.35 | 34.25 | 363.1 | 7.60 | 21.4 |
| 200. | 0.1528 | 0.984 | 6.565 | 164.80 | 25.37 | 34.23 | 368.0 | 7.78 | 22.0 |
| 205. | 0.1489 | 0.985 | 6.736 | 165.64 | 25.40 | 34.22 | 372.7 | 7.97 | 22.5 |

METHANE ISOBAR AT P = 0.250 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 210. | 0.1452 | 0.986 | 6.907 | 166.47 | 25.43 | 34.23 | 377.4 | 8.15 | 23.1 |
| 215. | 0.1417 | 0.987 | 7.078 | 167.27 | 25.48 | 34.24 | 382.0 | 8.33 | 23.7 |
| 220. | 0.1383 | 0.988 | 7.250 | 168.06 | 25.53 | 34.27 | 386.5 | 8.51 | 24.3 |
| 225. | 0.1351 | 0.989 | 7.421 | 168.83 | 25.59 | 34.31 | 390.9 | 8.68 | 24.9 |
| 230. | 0.1321 | 0.990 | 7.593 | 169.58 | 25.66 | 34.35 | 395.3 | 8.86 | 25.5 |
| 235. | 0.1292 | 0.990 | 7.765 | 170.32 | 25.74 | 34.41 | 399.6 | 9.03 | 26.1 |
| 240. | 0.1264 | 0.991 | 7.937 | 171.05 | 25.83 | 34.48 | 403.8 | 9.21 | 26.7 |
| 245. | 0.1238 | 0.991 | 8.109 | 171.76 | 25.92 | 34.55 | 407.9 | 9.38 | 27.3 |
| 250. | 0.1212 | 0.992 | 8.282 | 172.46 | 26.02 | 34.64 | 412.0 | 9.56 | 27.9 |
| 255. | 0.1188 | 0.993 | 8.456 | 173.15 | 26.13 | 34.74 | 416.0 | 9.73 | 28.5 |
| 260. | 0.1165 | 0.993 | 8.630 | 173.82 | 26.25 | 34.84 | 419.9 | 9.90 | 29.2 |
| 265. | 0.1142 | 0.993 | 8.804 | 174.49 | 26.38 | 34.96 | 423.8 | 10.07 | 29.8 |
| 270. | 0.1121 | 0.994 | 8.979 | 175.14 | 26.52 | 35.08 | 427.6 | 10.23 | 30.5 |
| 275. | 0.1100 | 0.994 | 9.155 | 175.79 | 26.66 | 35.21 | 431.4 | 10.40 | 31.1 |
| 280. | 0.1080 | 0.995 | 9.331 | 176.42 | 26.81 | 35.35 | 435.0 | 10.57 | 31.8 |
| 285. | 0.1060 | 0.995 | 9.509 | 177.05 | 26.97 | 35.50 | 438.7 | 10.73 | 32.4 |
| 290. | 0.1042 | 0.995 | 9.686 | 177.67 | 27.14 | 35.66 | 442.3 | 10.90 | 33.1 |
| 295. | 0.1024 | 0.995 | 9.865 | 178.28 | 27.31 | 35.83 | 445.8 | 11.06 | 33.8 |
| 300. | 0.1007 | 0.996 | 10.045 | 178.88 | 27.50 | 36.00 | 449.3 | 11.22 | 34.5 |
| 310. | 0.0974 | 0.996 | 10.407 | 180.07 | 27.88 | 36.37 | 456.1 | 11.54 | 35.9 |
| 320. | 0.0943 | 0.997 | 10.772 | 181.23 | 28.30 | 36.77 | 462.7 | 11.86 | 37.3 |
| 330. | 0.0914 | 0.997 | 11.142 | 182.37 | 28.73 | 37.20 | 469.2 | 12.17 | 38.8 |
| 340. | 0.0887 | 0.997 | 11.516 | 183.49 | 29.19 | 37.65 | 475.5 | 12.48 | 40.3 |
| 350. | 0.0861 | 0.998 | 11.895 | 184.58 | 29.68 | 38.12 | 481.6 | 12.79 | 41.9 |
| 360. | 0.0837 | 0.998 | 12.279 | 185.66 | 30.18 | 38.61 | 487.6 | 13.09 | 43.4 |
| 370. | 0.0814 | 0.998 | 12.668 | 186.73 | 30.69 | 39.12 | 493.5 | 13.39 | 45.1 |
| 380. | 0.0792 | 0.998 | 13.061 | 187.78 | 31.22 | 39.64 | 499.3 | 13.68 | 46.7 |
| 390. | 0.0772 | 0.999 | 13.461 | 188.82 | 31.76 | 40.18 | 505.0 | 13.97 | 48.4 |
| 400. | 0.0753 | 0.999 | 13.865 | 189.84 | 32.32 | 40.73 | 510.5 | 14.26 | 50.1 |
| 410. | 0.0734 | 0.999 | 14.275 | 190.85 | 32.88 | 41.28 | 516.0 | | 51.8 |
| 420. | 0.0717 | 0.999 | 14.691 | 191.85 | 33.45 | 41.85 | 521.4 | | 53.6 |
| 430. | 0.0700 | 0.999 | 15.112 | 192.85 | 34.02 | 42.41 | 526.7 | | 55.3 |
| 440. | 0.0684 | 0.999 | 15.539 | 193.83 | 34.60 | 42.99 | 532.0 | | 57.2 |
| 450. | 0.0668 | 1.000 | 15.972 | 194.80 | 35.18 | 43.56 | 537.2 | | 59.0 |
| 460. | 0.0654 | 1.000 | 16.410 | 195.76 | 35.76 | 44.14 | 542.3 | | 60.8 |
| 470. | 0.0640 | 1.000 | 16.855 | 196.72 | 36.34 | 44.72 | 547.3 | | 62.7 |
| 480. | 0.0627 | 1.000 | 17.305 | 197.67 | 36.91 | 45.29 | 552.4 | | 64.6 |
| 490. | 0.0614 | 1.000 | 17.760 | 198.61 | 37.49 | 45.86 | 557.3 | | 66.5 |
| 500. | 0.0601 | 1.000 | 18.222 | 199.54 | 38.06 | 46.43 | 562.2 | | 68.4 |
| 520. | 0.0578 | 1.000 | 19.162 | 201.38 | 39.20 | 47.56 | 571.9 | | 72.2 |

METHANE ISOBAR AT P = 0.250 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 540. | 0.0557 | 1.000 | 20.124 | 203.20 | 40.31 | 48.68 | 581.4 | | 76.1 |
| 560. | 0.0537 | 1.000 | 21.109 | 204.99 | 41.41 | 49.76 | 590.8 | | 80.0 |
| 580. | 0.0518 | 1.000 | 22.115 | 206.75 | 42.47 | 50.82 | 600.0 | | 83.9 |
| 600. | 0.0501 | 1.000 | 23.142 | 208.49 | 43.51 | 51.86 | 609.0 | | 87.9 |

METHANE ISOBAR AT P = 0.300 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 95. | 27.798 | 0.014 | -5.508 | 70.25 | 34.00 | 53.73 | 1500.8 | 180.17 | 206.3 |
| 100. | 27.375 | 0.013 | -5.237 | 73.03 | 34.09 | 54.61 | 1448.5 | 157.83 | 200.0 |
| 105. | 26.942 | 0.013 | -4.962 | 75.71 | 33.87 | 55.25 | 1398.7 | 138.99 | 193.3 |
| 110. | 26.498 | 0.012 | -4.684 | 78.29 | 33.50 | 55.80 | 1349.4 | 123.10 | 186.5 |
| 115. | 26.040 | 0.012 | -4.404 | 80.78 | 33.08 | 56.37 | 1299.6 | 109.65 | 179.5 |
| 120. | 25.568 | 0.012 | -4.120 | 83.19 | 32.65 | 57.01 | 1248.7 | 98.23 | 172.3 |
| 125. | 25.077 | 0.012 | -3.833 | 85.54 | 32.24 | 57.78 | 1196.4 | 88.44 | 165.1 |
| 126.702 | 24.896 | 0.011 | -3.732 | 86.34 | 32.10 | 58.12 | 1176.8 | 85.29 | 162.5 |
| 126.702 | 0.3084 | 0.923 | 3.960 | 147.05 | 26.70 | 38.07 | 281.4 | 5.04 | 13.8 |
| 130. | 0.2988 | 0.929 | 4.083 | 148.01 | 26.30 | 37.31 | 286.4 | 5.17 | 14.1 |
| 135. | 0.2853 | 0.937 | 4.268 | 149.41 | 26.03 | 36.67 | 293.5 | 5.36 | 14.6 |
| 140. | 0.2732 | 0.943 | 4.450 | 150.73 | 25.88 | 36.24 | 300.3 | 5.55 | 15.1 |
| 145. | 0.2621 | 0.949 | 4.630 | 152.00 | 25.77 | 35.90 | 306.7 | 5.74 | 15.7 |
| 150. | 0.2521 | 0.954 | 4.809 | 153.21 | 25.68 | 35.61 | 313.0 | 5.93 | 16.2 |
| 155. | 0.2428 | 0.959 | 4.986 | 154.37 | 25.60 | 35.36 | 319.0 | 6.12 | 16.8 |
| 160. | 0.2343 | 0.962 | 5.163 | 155.49 | 25.53 | 35.15 | 324.9 | 6.31 | 17.4 |
| 165. | 0.2264 | 0.966 | 5.338 | 156.57 | 25.48 | 34.97 | 330.7 | 6.50 | 17.9 |
| 170. | 0.2191 | 0.969 | 5.512 | 157.61 | 25.44 | 34.82 | 336.3 | 6.69 | 18.5 |
| 175. | 0.2123 | 0.971 | 5.686 | 158.62 | 25.41 | 34.70 | 341.7 | 6.87 | 19.1 |
| 180. | 0.2059 | 0.974 | 5.859 | 159.60 | 25.39 | 34.60 | 347.1 | 7.06 | 19.7 |
| 185. | 0.1999 | 0.976 | 6.032 | 160.54 | 25.38 | 34.52 | 352.3 | 7.24 | 20.3 |
| 190. | 0.1943 | 0.978 | 6.205 | 161.46 | 25.38 | 34.46 | 357.4 | 7.43 | 20.9 |
| 195. | 0.1890 | 0.979 | 6.377 | 162.36 | 25.39 | 34.41 | 362.4 | 7.61 | 21.4 |
| 200. | 0.1839 | 0.981 | 6.549 | 163.23 | 25.40 | 34.38 | 367.3 | 7.79 | 22.0 |
| 205. | 0.1792 | 0.982 | 6.721 | 164.08 | 25.43 | 34.36 | 372.1 | 7.98 | 22.6 |
| 210. | 0.1747 | 0.983 | 6.892 | 164.90 | 25.46 | 34.35 | 376.8 | 8.16 | 23.2 |
| 215. | 0.1704 | 0.985 | 7.064 | 165.71 | 25.51 | 34.36 | 381.5 | 8.34 | 23.8 |
| 220. | 0.1664 | 0.986 | 7.236 | 166.50 | 25.56 | 34.38 | 386.0 | 8.52 | 24.3 |
| 225. | 0.1625 | 0.987 | 7.408 | 167.28 | 25.62 | 34.41 | 390.5 | 8.69 | 24.9 |
| 230. | 0.1589 | 0.988 | 7.580 | 168.03 | 25.68 | 34.45 | 394.8 | 8.87 | 25.5 |

METHANE ISOBAR AT P = 0.300 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 235. | 0.1554 | 0.988 | 7.753 | 168.77 | 25.76 | 34.50 | 399.2 | 9.04 | 26.1 |
| 240. | 0.1520 | 0.989 | 7.925 | 169.50 | 25.84 | 34.56 | 403.4 | 9.22 | 26.7 |
| 245. | 0.1488 | 0.990 | 8.098 | 170.21 | 25.94 | 34.63 | 407.6 | 9.39 | 27.3 |
| 250. | 0.1457 | 0.990 | 8.272 | 170.91 | 26.04 | 34.72 | 411.6 | 9.56 | 28.0 |
| 255. | 0.1428 | 0.991 | 8.445 | 171.60 | 26.15 | 34.81 | 415.7 | 9.74 | 28.6 |
| 260. | 0.1400 | 0.992 | 8.620 | 172.28 | 26.27 | 34.91 | 419.6 | 9.91 | 29.2 |
| 265. | 0.1372 | 0.992 | 8.794 | 172.95 | 26.39 | 35.02 | 423.5 | 10.07 | 29.9 |
| 270. | 0.1346 | 0.993 | 8.970 | 173.60 | 26.53 | 35.14 | 427.4 | 10.24 | 30.5 |
| 275. | 0.1321 | 0.993 | 9.146 | 174.25 | 26.67 | 35.27 | 431.1 | 10.41 | 31.1 |
| 280. | 0.1297 | 0.993 | 9.323 | 174.88 | 26.82 | 35.41 | 434.8 | 10.58 | 31.8 |
| 285. | 0.1274 | 0.994 | 9.500 | 175.51 | 26.98 | 35.56 | 438.5 | 10.74 | 32.5 |
| 290. | 0.1251 | 0.994 | 9.678 | 176.13 | 27.15 | 35.71 | 442.1 | 10.90 | 33.1 |
| 295. | 0.1230 | 0.995 | 9.857 | 176.74 | 27.32 | 35.88 | 445.6 | 11.07 | 33.8 |
| 300. | 0.1209 | 0.995 | 10.037 | 177.35 | 27.51 | 36.05 | 449.1 | 11.23 | 34.5 |
| 310. | 0.1169 | 0.995 | 10.399 | 178.54 | 27.89 | 36.42 | 456.0 | 11.55 | 35.9 |
| 320. | 0.1132 | 0.996 | 10.765 | 179.70 | 28.30 | 36.81 | 462.6 | 11.87 | 37.4 |
| 330. | 0.1097 | 0.996 | 11.136 | 180.84 | 28.74 | 37.24 | 469.1 | 12.18 | 38.8 |
| 340. | 0.1065 | 0.997 | 11.510 | 181.96 | 29.20 | 37.68 | 475.4 | 12.49 | 40.4 |
| 350. | 0.1034 | 0.997 | 11.889 | 183.05 | 29.68 | 38.15 | 481.6 | 12.79 | 41.9 |
| 360. | 0.1005 | 0.998 | 12.273 | 184.14 | 30.18 | 38.64 | 487.6 | 13.09 | 43.5 |
| 370. | 0.0977 | 0.998 | 12.662 | 185.20 | 30.70 | 39.15 | 493.5 | 13.39 | 45.1 |
| 380. | 0.0951 | 0.998 | 13.056 | 186.25 | 31.23 | 39.67 | 499.3 | 13.69 | 46.7 |
| 390. | 0.0927 | 0.998 | 13.456 | 187.29 | 31.77 | 40.20 | 505.0 | 13.98 | 48.4 |
| 400. | 0.0903 | 0.999 | 13.860 | 188.31 | 32.32 | 40.75 | 510.5 | 14.27 | 50.1 |
| 410. | 0.0881 | 0.999 | 14.271 | 189.33 | 32.88 | 41.30 | 516.0 | | 51.8 |
| 420. | 0.0860 | 0.999 | 14.687 | 190.33 | 33.45 | 41.87 | 521.4 | | 53.6 |
| 430. | 0.0840 | 0.999 | 15.108 | 191.32 | 34.02 | 42.43 | 526.8 | | 55.4 |
| 440. | 0.0821 | 0.999 | 15.535 | 192.30 | 34.60 | 43.01 | 532.0 | | 57.2 |
| 450. | 0.0802 | 0.999 | 15.968 | 193.28 | 35.18 | 43.58 | 537.2 | | 59.0 |
| 460. | 0.0785 | 1.000 | 16.407 | 194.24 | 35.76 | 44.16 | 542.3 | | 60.8 |
| 470. | 0.0768 | 1.000 | 16.851 | 195.20 | 36.34 | 44.73 | 547.4 | | 62.7 |
| 480. | 0.0752 | 1.000 | 17.301 | 196.14 | 36.92 | 45.31 | 552.4 | | 64.6 |
| 490. | 0.0736 | 1.000 | 17.757 | 197.08 | 37.49 | 45.88 | 557.4 | | 66.5 |
| 500. | 0.0722 | 1.000 | 18.219 | 198.02 | 38.07 | 46.45 | 562.3 | | 68.4 |
| 520. | 0.0694 | 1.000 | 19.159 | 199.86 | 39.20 | 47.58 | 572.0 | | 72.2 |
| 540. | 0.0668 | 1.000 | 20.122 | 201.68 | 40.32 | 48.69 | 581.5 | | 76.1 |
| 560. | 0.0644 | 1.000 | 21.107 | 203.47 | 41.41 | 49.77 | 590.8 | | 80.0 |
| 580. | 0.0622 | 1.000 | 22.113 | 205.23 | 42.47 | 50.83 | 600.1 | | 84.0 |
| 600. | 0.0601 | 1.000 | 23.140 | 206.97 | 43.51 | 51.87 | 609.1 | | 87.9 |

METHANE ISOBAR AT P = 0.350 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol\cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m\cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.800 | 0.016 | -5.506 | 70.24 | 34.00 | 53.72 | 1501.2 | 180.27 | 206.4 |
| 100. | 27.377 | 0.015 | -5.235 | 73.02 | 34.09 | 54.61 | 1449.0 | 157.92 | 200.0 |
| 105. | 26.945 | 0.015 | -4.961 | 75.70 | 33.87 | 55.24 | 1399.2 | 139.07 | 193.4 |
| 110. | 26.501 | 0.014 | -4.683 | 78.28 | 33.50 | 55.80 | 1349.9 | 123.17 | 186.5 |
| 115. | 26.044 | 0.014 | -4.403 | 80.78 | 33.08 | 56.36 | 1300.1 | 109.72 | 179.5 |
| 120. | 25.571 | 0.014 | -4.119 | 83.19 | 32.65 | 57.00 | 1249.3 | 98.29 | 172.4 |
| 125. | 25.081 | 0.013 | -3.832 | 85.53 | 32.24 | 57.77 | 1197.1 | 88.51 | 165.2 |
| 129.188 | 24.646 | 0.013 | -3.587 | 87.46 | 31.92 | 58.57 | 1150.7 | 81.23 | 159.0 |
| 129.188 | 0.3562 | 0.915 | 4.011 | 146.28 | 26.78 | 38.56 | 282.7 | 5.15 | 14.2 |
| 130. | 0.3535 | 0.916 | 4.042 | 146.51 | 26.65 | 38.32 | 283.9 | 5.18 | 14.3 |
| 135. | 0.3369 | 0.925 | 4.231 | 147.94 | 26.22 | 37.35 | 291.4 | 5.37 | 14.7 |
| 140. | 0.3221 | 0.933 | 4.416 | 149.28 | 26.03 | 36.80 | 298.3 | 5.56 | 15.2 |
| 145. | 0.3087 | 0.940 | 4.599 | 150.57 | 25.90 | 36.39 | 305.0 | 5.75 | 15.8 |
| 150. | 0.2966 | 0.946 | 4.780 | 151.80 | 25.80 | 36.04 | 311.4 | 5.94 | 16.3 |
| 155. | 0.2855 | 0.951 | 4.959 | 152.97 | 25.71 | 35.74 | 317.6 | 6.13 | 16.9 |
| 160. | 0.2752 | 0.956 | 5.137 | 154.10 | 25.63 | 35.49 | 323.6 | 6.32 | 17.4 |
| 165. | 0.2658 | 0.960 | 5.314 | 155.19 | 25.56 | 35.27 | 329.5 | 6.51 | 18.0 |
| 170. | 0.2571 | 0.963 | 5.490 | 156.24 | 25.51 | 35.09 | 335.2 | 6.70 | 18.6 |
| 175. | 0.2489 | 0.966 | 5.665 | 157.26 | 25.47 | 34.94 | 340.7 | 6.88 | 19.2 |
| 180. | 0.2413 | 0.969 | 5.840 | 158.24 | 25.44 | 34.82 | 346.1 | 7.07 | 19.8 |
| 185. | 0.2342 | 0.972 | 6.013 | 159.19 | 25.43 | 34.72 | 351.4 | 7.26 | 20.3 |
| 190. | 0.2275 | 0.974 | 6.187 | 160.12 | 25.42 | 34.64 | 356.6 | 7.44 | 21.0 |
| 195. | 0.2212 | 0.976 | 6.360 | 161.02 | 25.42 | 34.58 | 361.7 | 7.62 | 21.5 |
| 200. | 0.2153 | 0.978 | 6.533 | 161.89 | 25.44 | 34.53 | 366.6 | 7.81 | 22.1 |
| 205. | 0.2097 | 0.979 | 6.705 | 162.74 | 25.46 | 34.50 | 371.5 | 7.99 | 22.6 |
| 210. | 0.2044 | 0.981 | 6.878 | 163.57 | 25.49 | 34.48 | 376.2 | 8.17 | 23.2 |
| 215. | 0.1994 | 0.982 | 7.050 | 164.39 | 25.53 | 34.48 | 380.9 | 8.35 | 23.8 |
| 220. | 0.1946 | 0.983 | 7.222 | 165.18 | 25.58 | 34.49 | 385.5 | 8.53 | 24.4 |
| 225. | 0.1901 | 0.984 | 7.395 | 165.95 | 25.64 | 34.51 | 390.0 | 8.70 | 25.0 |
| 230. | 0.1857 | 0.985 | 7.568 | 166.71 | 25.70 | 34.55 | 394.4 | 8.88 | 25.6 |
| 235. | 0.1816 | 0.986 | 7.740 | 167.46 | 25.78 | 34.59 | 398.8 | 9.05 | 26.2 |
| 240. | 0.1777 | 0.987 | 7.914 | 168.19 | 25.86 | 34.65 | 403.0 | 9.23 | 26.8 |
| 245. | 0.1739 | 0.988 | 8.087 | 168.90 | 25.95 | 34.71 | 407.2 | 9.40 | 27.4 |
| 250. | 0.1703 | 0.989 | 8.261 | 169.60 | 26.05 | 34.79 | 411.3 | 9.57 | 28.0 |
| 255. | 0.1668 | 0.990 | 8.435 | 170.29 | 26.16 | 34.88 | 415.4 | 9.74 | 28.6 |
| 260. | 0.1635 | 0.990 | 8.610 | 170.97 | 26.28 | 34.98 | 419.3 | 9.91 | 29.3 |
| 265. | 0.1603 | 0.991 | 8.785 | 171.64 | 26.40 | 35.09 | 423.3 | 10.08 | 29.9 |
| 270. | 0.1573 | 0.991 | 8.960 | 172.29 | 26.54 | 35.20 | 427.1 | 10.25 | 30.5 |
| 275. | 0.1543 | 0.992 | 9.137 | 172.94 | 26.68 | 35.33 | 430.9 | 10.42 | 31.2 |
| 280. | 0.1515 | 0.992 | 9.314 | 173.58 | 26.83 | 35.47 | 434.6 | 10.58 | 31.8 |

METHANE ISOBAR AT P = 0.350 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 285. | 0.1488 | 0.993 | 9.491 | 174.21 | 26.99 | 35.61 | 438.3 | 10.75 | 32.5 |
| 290. | 0.1461 | 0.993 | 9.670 | 174.83 | 27.16 | 35.76 | 441.9 | 10.91 | 33.2 |
| 295. | 0.1436 | 0.994 | 9.849 | 175.44 | 27.33 | 35.93 | 445.5 | 11.07 | 33.9 |
| 300. | 0.1412 | 0.994 | 10.029 | 176.05 | 27.51 | 36.10 | 449.0 | 11.24 | 34.6 |
| 310. | 0.1365 | 0.995 | 10.392 | 177.24 | 27.90 | 36.46 | 455.8 | 11.56 | 36.0 |
| 320. | 0.1322 | 0.995 | 10.758 | 178.40 | 28.31 | 36.85 | 462.5 | 11.87 | 37.4 |
| 330. | 0.1281 | 0.996 | 11.129 | 179.54 | 28.75 | 37.27 | 469.0 | 12.19 | 38.9 |
| 340. | 0.1243 | 0.996 | 11.504 | 180.66 | 29.21 | 37.72 | 475.3 | 12.49 | 40.4 |
| 350. | 0.1207 | 0.997 | 11.883 | 181.76 | 29.69 | 38.18 | 481.5 | 12.80 | 41.9 |
| 360. | 0.1173 | 0.997 | 12.268 | 182.84 | 30.18 | 38.67 | 487.5 | 13.10 | 43.5 |
| 370. | 0.1141 | 0.998 | 12.657 | 183.91 | 30.70 | 39.18 | 493.5 | 13.40 | 45.1 |
| 380. | 0.1110 | 0.998 | 13.051 | 184.96 | 31.23 | 39.70 | 499.3 | 13.69 | 46.8 |
| 390. | 0.1081 | 0.998 | 13.451 | 186.00 | 31.77 | 40.23 | 504.9 | 13.98 | 48.4 |
| 400. | 0.1054 | 0.998 | 13.856 | 187.02 | 32.32 | 40.77 | 510.5 | 14.27 | 50.1 |
| 410. | 0.1028 | 0.999 | 14.266 | 188.04 | 32.89 | 41.33 | 516.0 | | 51.9 |
| 420. | 0.1003 | 0.999 | 14.682 | 189.04 | 33.45 | 41.89 | 521.4 | | 53.6 |
| 430. | 0.0980 | 0.999 | 15.104 | 190.03 | 34.03 | 42.45 | 526.8 | | 55.4 |
| 440. | 0.0957 | 0.999 | 15.532 | 191.01 | 34.60 | 43.02 | 532.0 | | 57.2 |
| 450. | 0.0936 | 0.999 | 15.965 | 191.99 | 35.18 | 43.60 | 537.2 | | 59.0 |
| 460. | 0.0916 | 0.999 | 16.403 | 192.95 | 35.76 | 44.17 | 542.4 | | 60.9 |
| 470. | 0.0896 | 1.000 | 16.848 | 193.91 | 36.34 | 44.75 | 547.4 | | 62.7 |
| 480. | 0.0877 | 1.000 | 17.298 | 194.86 | 36.92 | 45.32 | 552.5 | | 64.6 |
| 490. | 0.0859 | 1.000 | 17.754 | 195.80 | 37.50 | 45.89 | 557.4 | | 66.5 |
| 500. | 0.0842 | 1.000 | 18.216 | 196.73 | 38.07 | 46.46 | 562.3 | | 68.4 |
| 520. | 0.0809 | 1.000 | 19.157 | 198.57 | 39.20 | 47.59 | 572.0 | | 72.2 |
| 540. | 0.0779 | 1.000 | 20.120 | 200.39 | 40.32 | 48.70 | 581.5 | | 76.1 |
| 560. | 0.0751 | 1.000 | 21.105 | 202.18 | 41.41 | 49.78 | 590.9 | | 80.0 |
| 580. | 0.0725 | 1.000 | 22.111 | 203.95 | 42.47 | 50.84 | 600.1 | | 84.0 |
| 600. | 0.0701 | 1.001 | 23.138 | 205.69 | 43.51 | 51.88 | 609.2 | | 87.9 |

METHANE ISOBAR AT P = 0.400 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 27.803 | 0.018 | -5.505 | 70.24 | 34.00 | 53.72 | 1501.6 | 180.36 | 206.4 |
| 100. | 27.380 | 0.018 | -5.234 | 73.01 | 34.09 | 54.60 | 1449.4 | 158.01 | 200.1 |
| 105. | 26.947 | 0.017 | -4.959 | 75.69 | 33.87 | 55.24 | 1399.6 | 139.15 | 193.4 |
| 110. | 26.504 | 0.017 | -4.682 | 78.28 | 33.50 | 55.79 | 1350.4 | 123.25 | 186.6 |
| 115. | 26.047 | 0.016 | -4.402 | 80.77 | 33.08 | 56.35 | 1300.6 | 109.79 | 179.6 |

METHANE ISOBAR AT P = 0.400 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 120. | 25.575 | 0.016 | -4.118 | 83.18 | 32.65 | 56.99 | 1249.9 | 98.36 | 172.5 |
| 125. | 25.085 | 0.015 | -3.831 | 85.52 | 32.24 | 57.75 | 1197.7 | 88.57 | 165.3 |
| 130. | 24.574 | 0.015 | -3.540 | 87.80 | 31.86 | 58.68 | 1143.9 | 80.11 | 158.0 |
| 131.423 | 24.417 | 0.015 | -3.455 | 88.46 | 31.76 | 59.02 | 1127.1 | 77.82 | 155.8 |
| 131.423 | 0.4037 | 0.907 | 4.055 | 145.60 | 26.88 | 39.07 | 283.6 | 5.25 | 14.6 |
| 135. | 0.3900 | 0.914 | 4.192 | 146.63 | 26.45 | 38.14 | 289.1 | 5.39 | 14.9 |
| 140. | 0.3722 | 0.923 | 4.381 | 148.01 | 26.18 | 37.41 | 296.4 | 5.58 | 15.4 |
| 145. | 0.3563 | 0.931 | 4.567 | 149.31 | 26.03 | 36.90 | 303.2 | 5.77 | 15.9 |
| 150. | 0.3419 | 0.938 | 4.750 | 150.55 | 25.91 | 36.49 | 309.8 | 5.96 | 16.4 |
| 155. | 0.3288 | 0.944 | 4.932 | 151.74 | 25.81 | 36.14 | 316.2 | 6.15 | 17.0 |
| 160. | 0.3167 | 0.949 | 5.112 | 152.89 | 25.72 | 35.84 | 322.3 | 6.33 | 17.5 |
| 165. | 0.3057 | 0.954 | 5.290 | 153.98 | 25.64 | 35.59 | 328.3 | 6.52 | 18.1 |
| 170. | 0.2954 | 0.958 | 5.468 | 155.04 | 25.58 | 35.37 | 334.1 | 6.71 | 18.7 |
| 175. | 0.2859 | 0.961 | 5.644 | 156.07 | 25.53 | 35.19 | 339.7 | 6.90 | 19.2 |
| 180. | 0.2771 | 0.965 | 5.820 | 157.06 | 25.50 | 35.04 | 345.2 | 7.08 | 19.8 |
| 185. | 0.2688 | 0.967 | 5.995 | 158.01 | 25.48 | 34.92 | 350.6 | 7.27 | 20.4 |
| 190. | 0.2611 | 0.970 | 6.169 | 158.94 | 25.46 | 34.82 | 355.8 | 7.45 | 21.0 |
| 195. | 0.2538 | 0.972 | 6.343 | 159.85 | 25.46 | 34.74 | 360.9 | 7.63 | 21.6 |
| 200. | 0.2469 | 0.974 | 6.516 | 160.73 | 25.47 | 34.68 | 365.9 | 7.82 | 22.1 |
| 205. | 0.2404 | 0.976 | 6.690 | 161.58 | 25.49 | 34.64 | 370.8 | 8.00 | 22.7 |
| 210. | 0.2343 | 0.978 | 6.863 | 162.42 | 25.52 | 34.61 | 375.7 | 8.18 | 23.3 |
| 215. | 0.2285 | 0.979 | 7.036 | 163.23 | 25.56 | 34.60 | 380.4 | 8.36 | 23.9 |
| 220. | 0.2230 | 0.981 | 7.209 | 164.03 | 25.60 | 34.60 | 385.0 | 8.54 | 24.4 |
| 225. | 0.2177 | 0.982 | 7.382 | 164.80 | 25.66 | 34.62 | 389.5 | 8.71 | 25.0 |
| 230. | 0.2127 | 0.983 | 7.555 | 165.57 | 25.72 | 34.65 | 394.0 | 8.89 | 25.6 |
| 235. | 0.2080 | 0.984 | 7.728 | 166.31 | 25.79 | 34.68 | 398.4 | 9.06 | 26.2 |
| 240. | 0.2034 | 0.985 | 7.902 | 167.04 | 25.88 | 34.73 | 402.6 | 9.24 | 26.8 |
| 245. | 0.1991 | 0.986 | 8.076 | 167.76 | 25.97 | 34.80 | 406.9 | 9.41 | 27.4 |
| 250. | 0.1949 | 0.987 | 8.250 | 168.46 | 26.07 | 34.87 | 411.0 | 9.58 | 28.0 |
| 255. | 0.1909 | 0.988 | 8.424 | 169.15 | 26.17 | 34.95 | 415.1 | 9.75 | 28.7 |
| 260. | 0.1871 | 0.989 | 8.599 | 169.83 | 26.29 | 35.05 | 419.1 | 9.92 | 29.3 |
| 265. | 0.1835 | 0.989 | 8.775 | 170.50 | 26.42 | 35.15 | 423.0 | 10.09 | 29.9 |
| 270. | 0.1800 | 0.990 | 8.951 | 171.16 | 26.55 | 35.27 | 426.9 | 10.26 | 30.6 |
| 275. | 0.1766 | 0.991 | 9.128 | 171.81 | 26.69 | 35.39 | 430.7 | 10.43 | 31.2 |
| 280. | 0.1733 | 0.991 | 9.305 | 172.45 | 26.84 | 35.52 | 434.4 | 10.59 | 31.9 |
| 285. | 0.1702 | 0.992 | 9.483 | 173.08 | 27.00 | 35.66 | 438.1 | 10.76 | 32.5 |
| 290. | 0.1672 | 0.992 | 9.662 | 173.70 | 27.17 | 35.82 | 441.7 | 10.92 | 33.2 |
| 295. | 0.1643 | 0.993 | 9.841 | 174.31 | 27.34 | 35.98 | 445.3 | 11.08 | 33.9 |
| 300. | 0.1615 | 0.993 | 10.021 | 174.92 | 27.52 | 36.14 | 448.8 | 11.24 | 34.6 |
| 310. | 0.1561 | 0.994 | 10.384 | 176.11 | 27.90 | 36.50 | 455.7 | 11.56 | 36.0 |

METHANE ISOBAR AT P = 0.400 MPa (continued)

| T<br>K | ρ<br>mol·dm⁻³ | Z | H<br>kJ/mol | S<br>J/(mol·K) | $C_v$<br>J/(mol·K) | $C_p$<br>J/(mol·K) | W<br>m·s⁻¹ | η<br>μPa·s | λ<br>mW/(m·K) |
|---|---|---|---|---|---|---|---|---|---|
| 320. | 0.1511 | 0.995 | 10.751 | 177.27 | 28.32 | 36.89 | 462.4 | 11.88 | 37.4 |
| 330. | 0.1465 | 0.995 | 11.122 | 178.42 | 28.75 | 37.31 | 468.9 | 12.19 | 38.9 |
| 340. | 0.1421 | 0.996 | 11.498 | 179.54 | 29.21 | 37.75 | 475.2 | 12.50 | 40.4 |
| 350. | 0.1380 | 0.996 | 11.878 | 180.64 | 29.69 | 38.22 | 481.4 | 12.81 | 42.0 |
| 360. | 0.1341 | 0.997 | 12.262 | 181.72 | 30.19 | 38.70 | 487.5 | 13.11 | 43.5 |
| 370. | 0.1304 | 0.997 | 12.652 | 182.79 | 30.70 | 39.20 | 493.4 | 13.41 | 45.1 |
| 380. | 0.1269 | 0.998 | 13.046 | 183.84 | 31.23 | 39.72 | 499.2 | 13.70 | 46.8 |
| 390. | 0.1236 | 0.998 | 13.446 | 184.88 | 31.78 | 40.25 | 504.9 | 13.99 | 48.5 |
| 400. | 0.1205 | 0.998 | 13.851 | 185.90 | 32.33 | 40.80 | 510.5 | 14.28 | 50.2 |
| 410. | 0.1175 | 0.998 | 14.262 | 186.92 | 32.89 | 41.35 | 516.0 | | 51.9 |
| 420. | 0.1147 | 0.999 | 14.678 | 187.92 | 33.46 | 41.91 | 521.5 | | 53.6 |
| 430. | 0.1120 | 0.999 | 15.100 | 188.91 | 34.03 | 42.47 | 526.8 | | 55.4 |
| 440. | 0.1094 | 0.999 | 15.528 | 189.90 | 34.61 | 43.04 | 532.1 | | 57.2 |
| 450. | 0.1070 | 0.999 | 15.961 | 190.87 | 35.18 | 43.61 | 537.3 | | 59.0 |
| 460. | 0.1046 | 0.999 | 16.400 | 191.84 | 35.76 | 44.19 | 542.4 | | 60.9 |
| 470. | 0.1024 | 1.000 | 16.845 | 192.79 | 36.34 | 44.76 | 547.5 | | 62.7 |
| 480. | 0.1003 | 1.000 | 17.295 | 193.74 | 36.92 | 45.33 | 552.5 | | 64.6 |
| 490. | 0.0982 | 1.000 | 17.751 | 194.68 | 37.50 | 45.91 | 557.5 | | 66.5 |
| 500. | 0.0962 | 1.000 | 18.213 | 195.61 | 38.07 | 46.47 | 562.4 | | 68.4 |
| 520. | 0.0925 | 1.000 | 19.154 | 197.46 | 39.21 | 47.60 | 572.1 | | 72.3 |
| 540. | 0.0891 | 1.000 | 20.117 | 199.28 | 40.32 | 48.71 | 581.6 | | 76.1 |
| 560. | 0.0859 | 1.000 | 21.102 | 201.07 | 41.41 | 49.79 | 591.0 | | 80.1 |
| 580. | 0.0829 | 1.001 | 22.109 | 202.83 | 42.48 | 50.85 | 600.2 | | 84.0 |
| 600. | 0.0801 | 1.001 | 23.136 | 204.57 | 43.51 | 51.88 | 609.3 | | 87.9 |

METHANE ISOBAR AT P = 0.450 MPa

| T<br>K | ρ<br>mol·dm⁻³ | Z | H<br>kJ/mol | S<br>J/(mol·K) | $C_v$<br>J/(mol·K) | $C_p$<br>J/(mol·K) | W<br>m·s⁻¹ | η<br>μPa·s | λ<br>mW/(m·K) |
|---|---|---|---|---|---|---|---|---|---|
| 95. | 27.805 | 0.020 | -5.504 | 70.23 | 34.00 | 53.71 | 1502.0 | 180.46 | 206.5 |
| 100. | 27.382 | 0.020 | -5.233 | 73.01 | 34.09 | 54.59 | 1449.8 | 158.10 | 200.1 |
| 105. | 26.950 | 0.019 | -4.958 | 75.69 | 33.87 | 55.23 | 1400.1 | 139.24 | 193.5 |
| 110. | 26.506 | 0.019 | -4.681 | 78.27 | 33.50 | 55.78 | 1350.9 | 123.32 | 186.6 |
| 115. | 26.050 | 0.018 | -4.400 | 80.76 | 33.08 | 56.34 | 1301.2 | 109.86 | 179.6 |
| 120. | 25.578 | 0.018 | -4.117 | 83.17 | 32.65 | 56.98 | 1250.5 | 98.42 | 172.5 |
| 125. | 25.088 | 0.017 | -3.830 | 85.51 | 32.24 | 57.73 | 1198.4 | 88.63 | 165.3 |
| 130. | 24.578 | 0.017 | -3.540 | 87.80 | 31.86 | 58.66 | 1144.6 | 80.17 | 158.1 |
| 133.461 | 24.205 | 0.017 | -3.334 | 89.36 | 31.62 | 59.46 | 1105.2 | 74.88 | 152.9 |
| 133.461 | 0.4511 | 0.899 | 4.093 | 145.01 | 26.99 | 39.60 | 284.4 | 5.35 | 14.9 |

METHANE ISOBAR AT P = 0.450 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 135. | 0.4445 | 0.902 | 4.153 | 145.45 | 26.75 | 39.10 | 286.8 | 5.40 | 15.1 |
| 140. | 0.4235 | 0.913 | 4.345 | 146.85 | 26.35 | 38.07 | 294.4 | 5.59 | 15.5 |
| 145. | 0.4048 | 0.922 | 4.534 | 148.18 | 26.17 | 37.45 | 301.5 | 5.78 | 16.0 |
| 150. | 0.3880 | 0.930 | 4.720 | 149.44 | 26.03 | 36.96 | 308.2 | 5.97 | 16.5 |
| 155. | 0.3728 | 0.937 | 4.904 | 150.64 | 25.91 | 36.55 | 314.7 | 6.16 | 17.1 |
| 160. | 0.3589 | 0.943 | 5.086 | 151.80 | 25.81 | 36.20 | 321.0 | 6.35 | 17.6 |
| 165. | 0.3461 | 0.948 | 5.266 | 152.91 | 25.73 | 35.91 | 327.1 | 6.54 | 18.2 |
| 170. | 0.3343 | 0.952 | 5.445 | 153.97 | 25.65 | 35.66 | 333.0 | 6.72 | 18.7 |
| 175. | 0.3234 | 0.956 | 5.623 | 155.00 | 25.60 | 35.45 | 338.7 | 6.91 | 19.3 |
| 180. | 0.3132 | 0.960 | 5.799 | 156.00 | 25.55 | 35.27 | 344.3 | 7.09 | 19.9 |
| 185. | 0.3037 | 0.963 | 5.975 | 156.97 | 25.52 | 35.13 | 349.7 | 7.28 | 20.5 |
| 190. | 0.2949 | 0.966 | 6.151 | 157.90 | 25.51 | 35.01 | 355.0 | 7.46 | 21.1 |
| 195. | 0.2865 | 0.969 | 6.326 | 158.81 | 25.50 | 34.92 | 360.2 | 7.65 | 21.6 |
| 200. | 0.2787 | 0.971 | 6.500 | 159.69 | 25.51 | 34.84 | 365.3 | 7.83 | 22.2 |
| 205. | 0.2713 | 0.973 | 6.674 | 160.55 | 25.52 | 34.79 | 370.2 | 8.01 | 22.8 |
| 210. | 0.2643 | 0.975 | 6.848 | 161.39 | 25.55 | 34.75 | 375.1 | 8.19 | 23.3 |
| 215. | 0.2577 | 0.977 | 7.022 | 162.21 | 25.58 | 34.73 | 379.8 | 8.37 | 23.9 |
| 220. | 0.2514 | 0.978 | 7.195 | 163.00 | 25.63 | 34.72 | 384.5 | 8.55 | 24.5 |
| 225. | 0.2455 | 0.980 | 7.369 | 163.78 | 25.68 | 34.72 | 389.1 | 8.72 | 25.1 |
| 230. | 0.2398 | 0.981 | 7.542 | 164.55 | 25.74 | 34.74 | 393.6 | 8.90 | 25.7 |
| 235. | 0.2344 | 0.982 | 7.716 | 165.30 | 25.81 | 34.78 | 398.0 | 9.07 | 26.3 |
| 240. | 0.2293 | 0.984 | 7.890 | 166.03 | 25.89 | 34.82 | 402.3 | 9.25 | 26.9 |
| 245. | 0.2243 | 0.985 | 8.064 | 166.75 | 25.98 | 34.88 | 406.5 | 9.42 | 27.5 |
| 250. | 0.2196 | 0.986 | 8.239 | 167.45 | 26.08 | 34.95 | 410.7 | 9.59 | 28.1 |
| 255. | 0.2151 | 0.987 | 8.414 | 168.15 | 26.19 | 35.03 | 414.8 | 9.76 | 28.7 |
| 260. | 0.2108 | 0.987 | 8.589 | 168.83 | 26.30 | 35.12 | 418.8 | 9.93 | 29.3 |
| 265. | 0.2067 | 0.988 | 8.765 | 169.50 | 26.43 | 35.22 | 422.7 | 10.10 | 30.0 |
| 270. | 0.2027 | 0.989 | 8.941 | 170.16 | 26.56 | 35.33 | 426.6 | 10.27 | 30.6 |
| 275. | 0.1989 | 0.990 | 9.118 | 170.80 | 26.70 | 35.45 | 430.4 | 10.44 | 31.3 |
| 280. | 0.1952 | 0.990 | 9.296 | 171.44 | 26.85 | 35.58 | 434.2 | 10.60 | 31.9 |
| 285. | 0.1917 | 0.991 | 9.474 | 172.08 | 27.01 | 35.72 | 437.9 | 10.77 | 32.6 |
| 290. | 0.1883 | 0.991 | 9.653 | 172.70 | 27.17 | 35.87 | 441.5 | 10.93 | 33.3 |
| 295. | 0.1850 | 0.992 | 9.833 | 173.31 | 27.35 | 36.02 | 445.1 | 11.09 | 33.9 |
| 300. | 0.1818 | 0.992 | 10.013 | 173.92 | 27.53 | 36.19 | 448.7 | 11.25 | 34.6 |
| 310. | 0.1758 | 0.993 | 10.377 | 175.11 | 27.91 | 36.55 | 455.6 | 11.57 | 36.0 |
| 320. | 0.1701 | 0.994 | 10.744 | 176.28 | 28.32 | 36.93 | 462.3 | 11.89 | 37.5 |
| 330. | 0.1649 | 0.995 | 11.116 | 177.42 | 28.76 | 37.35 | 468.8 | 12.20 | 38.9 |
| 340. | 0.1599 | 0.995 | 11.491 | 178.54 | 29.22 | 37.79 | 475.2 | 12.51 | 40.4 |
| 350. | 0.1553 | 0.996 | 11.872 | 179.64 | 29.70 | 38.25 | 481.4 | 12.81 | 42.0 |
| 360. | 0.1509 | 0.996 | 12.257 | 180.73 | 30.19 | 38.73 | 487.5 | 13.11 | 43.6 |

METHANE ISOBAR AT P = 0.450 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 370. | 0.1467 | 0.997 | 12.646 | 181.80 | 30.71 | 39.23 | 493.4 | 13.41 | 45.2 |
| 380. | 0.1428 | 0.997 | 13.041 | 182.85 | 31.24 | 39.75 | 499.2 | 13.71 | 46.8 |
| 390. | 0.1391 | 0.998 | 13.441 | 183.89 | 31.78 | 40.28 | 504.9 | 14.00 | 48.5 |
| 400. | 0.1356 | 0.998 | 13.847 | 184.92 | 32.33 | 40.82 | 510.5 | 14.28 | 50.2 |
| 410. | 0.1322 | 0.998 | 14.258 | 185.93 | 32.89 | 41.37 | 516.0 | | 51.9 |
| 420. | 0.1291 | 0.998 | 14.674 | 186.93 | 33.46 | 41.93 | 521.5 | | 53.7 |
| 430. | 0.1260 | 0.999 | 15.096 | 187.93 | 34.03 | 42.49 | 526.8 | | 55.4 |
| 440. | 0.1231 | 0.999 | 15.524 | 188.91 | 34.61 | 43.06 | 532.1 | | 57.2 |
| 450. | 0.1204 | 0.999 | 15.957 | 189.88 | 35.19 | 43.63 | 537.3 | | 59.1 |
| 460. | 0.1177 | 0.999 | 16.397 | 190.85 | 35.77 | 44.20 | 542.4 | | 60.9 |
| 470. | 0.1152 | 0.999 | 16.842 | 191.81 | 36.35 | 44.78 | 547.5 | | 62.8 |
| 480. | 0.1128 | 1.000 | 17.292 | 192.75 | 36.92 | 45.35 | 552.6 | | 64.6 |
| 490. | 0.1105 | 1.000 | 17.749 | 193.70 | 37.50 | 45.92 | 557.5 | | 66.5 |
| 500. | 0.1083 | 1.000 | 18.211 | 194.63 | 38.07 | 46.49 | 562.5 | | 68.4 |
| 520. | 0.1041 | 1.000 | 19.152 | 196.47 | 39.21 | 47.61 | 572.2 | | 72.3 |
| 540. | 0.1002 | 1.000 | 20.115 | 198.29 | 40.32 | 48.72 | 581.7 | | 76.2 |
| 560. | 0.0966 | 1.000 | 21.100 | 200.08 | 41.41 | 49.80 | 591.1 | | 80.1 |
| 580. | 0.0933 | 1.001 | 22.107 | 201.85 | 42.48 | 50.86 | 600.3 | | 84.0 |
| 600. | 0.0901 | 1.001 | 23.135 | 203.59 | 43.51 | 51.89 | 609.4 | | 87.9 |

METHANE ISOBAR AT P = 0.500 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 27.807 | 0.023 | -5.502 | 70.22 | 34.00 | 53.71 | 1502.4 | 180.56 | 206.5 |
| 100. | 27.385 | 0.022 | -5.232 | 73.00 | 34.10 | 54.59 | 1450.3 | 158.19 | 200.2 |
| 105. | 26.953 | 0.021 | -4.957 | 75.68 | 33.87 | 55.22 | 1400.6 | 139.32 | 193.5 |
| 110. | 26.509 | 0.021 | -4.679 | 78.26 | 33.50 | 55.77 | 1351.4 | 123.40 | 186.7 |
| 115. | 26.053 | 0.020 | -4.399 | 80.76 | 33.08 | 56.33 | 1301.7 | 109.93 | 179.7 |
| 120. | 25.581 | 0.020 | -4.116 | 83.17 | 32.66 | 56.96 | 1251.0 | 98.49 | 172.6 |
| 125. | 25.092 | 0.019 | -3.829 | 85.51 | 32.25 | 57.72 | 1199.0 | 88.69 | 165.4 |
| 130. | 24.582 | 0.019 | -3.539 | 87.79 | 31.87 | 58.64 | 1145.3 | 80.22 | 158.1 |
| 135. | 24.047 | 0.019 | -3.243 | 90.02 | 31.52 | 59.79 | 1089.5 | 72.83 | 150.8 |
| 135.338 | 24.005 | 0.019 | -3.221 | 90.18 | 31.50 | 59.90 | 1084.9 | 72.31 | 150.2 |
| 135.338 | 0.4985 | 0.891 | 4.126 | 144.47 | 27.11 | 40.15 | 284.9 | 5.43 | 15.3 |
| 140. | 0.4761 | 0.902 | 4.309 | 145.80 | 26.55 | 38.82 | 292.3 | 5.61 | 15.7 |
| 145. | 0.4545 | 0.913 | 4.501 | 147.14 | 26.31 | 38.03 | 299.6 | 5.80 | 16.1 |
| 150. | 0.4351 | 0.922 | 4.689 | 148.42 | 26.15 | 37.45 | 306.6 | 5.99 | 16.6 |
| 155. | 0.4175 | 0.929 | 4.875 | 149.64 | 26.02 | 36.98 | 313.2 | 6.17 | 17.2 |

METHANE ISOBAR AT P = 0.500 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol\cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m\cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 160. | 0.4016 | 0.936 | 5.059 | 150.81 | 25.91 | 36.58 | 319.6 | 6.36 | 17.7 |
| 165. | 0.3870 | 0.942 | 5.241 | 151.93 | 25.81 | 36.24 | 325.8 | 6.55 | 18.3 |
| 170. | 0.3736 | 0.947 | 5.422 | 153.01 | 25.73 | 35.95 | 331.8 | 6.74 | 18.8 |
| 175. | 0.3612 | 0.951 | 5.601 | 154.05 | 25.66 | 35.71 | 337.7 | 6.92 | 19.4 |
| 180. | 0.3497 | 0.955 | 5.779 | 155.05 | 25.61 | 35.51 | 343.3 | 7.11 | 20.0 |
| 185. | 0.3390 | 0.959 | 5.956 | 156.02 | 25.58 | 35.34 | 348.8 | 7.29 | 20.5 |
| 190. | 0.3289 | 0.962 | 6.133 | 156.96 | 25.55 | 35.20 | 354.2 | 7.47 | 21.2 |
| 195. | 0.3195 | 0.965 | 6.308 | 157.87 | 25.54 | 35.09 | 359.5 | 7.66 | 21.7 |
| 200. | 0.3107 | 0.968 | 6.483 | 158.76 | 25.54 | 35.00 | 364.6 | 7.84 | 22.2 |
| 205. | 0.3024 | 0.970 | 6.658 | 159.62 | 25.55 | 34.93 | 369.6 | 8.02 | 22.8 |
| 210. | 0.2945 | 0.972 | 6.833 | 160.46 | 25.58 | 34.88 | 374.5 | 8.20 | 23.4 |
| 215. | 0.2871 | 0.974 | 7.007 | 161.29 | 25.61 | 34.85 | 379.3 | 8.38 | 24.0 |
| 220. | 0.2801 | 0.976 | 7.181 | 162.09 | 25.65 | 34.83 | 384.0 | 8.56 | 24.5 |
| 225. | 0.2734 | 0.978 | 7.356 | 162.87 | 25.70 | 34.83 | 388.6 | 8.73 | 25.1 |
| 230. | 0.2670 | 0.979 | 7.530 | 163.63 | 25.76 | 34.85 | 393.1 | 8.91 | 25.7 |
| 235. | 0.2610 | 0.980 | 7.704 | 164.38 | 25.83 | 34.87 | 397.5 | 9.08 | 26.3 |
| 240. | 0.2552 | 0.982 | 7.878 | 165.12 | 25.91 | 34.91 | 401.9 | 9.26 | 26.9 |
| 245. | 0.2497 | 0.983 | 8.053 | 165.84 | 26.00 | 34.96 | 406.2 | 9.43 | 27.5 |
| 250. | 0.2444 | 0.984 | 8.228 | 166.55 | 26.09 | 35.03 | 410.4 | 9.60 | 28.1 |
| 255. | 0.2394 | 0.985 | 8.403 | 167.24 | 26.20 | 35.10 | 414.5 | 9.77 | 28.7 |
| 260. | 0.2346 | 0.986 | 8.579 | 167.92 | 26.32 | 35.19 | 418.5 | 9.94 | 29.4 |
| 265. | 0.2300 | 0.987 | 8.755 | 168.59 | 26.44 | 35.28 | 422.5 | 10.11 | 30.0 |
| 270. | 0.2255 | 0.988 | 8.932 | 169.25 | 26.57 | 35.39 | 426.4 | 10.28 | 30.6 |
| 275. | 0.2212 | 0.988 | 9.109 | 169.91 | 26.71 | 35.51 | 430.2 | 10.44 | 31.3 |
| 280. | 0.2171 | 0.989 | 9.287 | 170.55 | 26.86 | 35.64 | 434.0 | 10.61 | 32.0 |
| 285. | 0.2132 | 0.990 | 9.466 | 171.18 | 27.02 | 35.77 | 437.7 | 10.77 | 32.6 |
| 290. | 0.2094 | 0.990 | 9.645 | 171.80 | 27.18 | 35.92 | 441.4 | 10.94 | 33.3 |
| 295. | 0.2057 | 0.991 | 9.825 | 172.42 | 27.36 | 36.07 | 445.0 | 11.10 | 34.0 |
| 300. | 0.2022 | 0.992 | 10.006 | 173.02 | 27.54 | 36.24 | 448.5 | 11.26 | 34.7 |
| 310. | 0.1955 | 0.993 | 10.370 | 174.22 | 27.92 | 36.59 | 455.4 | 11.58 | 36.1 |
| 320. | 0.1892 | 0.993 | 10.737 | 175.39 | 28.33 | 36.97 | 462.2 | 11.90 | 37.5 |
| 330. | 0.1833 | 0.994 | 11.109 | 176.53 | 28.76 | 37.38 | 468.7 | 12.21 | 39.0 |
| 340. | 0.1778 | 0.995 | 11.485 | 177.65 | 29.22 | 37.82 | 475.1 | 12.52 | 40.5 |
| 350. | 0.1726 | 0.995 | 11.866 | 178.76 | 29.70 | 38.28 | 481.3 | 12.82 | 42.0 |
| 360. | 0.1677 | 0.996 | 12.251 | 179.84 | 30.20 | 38.76 | 487.4 | 13.12 | 43.6 |
| 370. | 0.1631 | 0.996 | 12.641 | 180.91 | 30.71 | 39.26 | 493.4 | 13.42 | 45.2 |
| 380. | 0.1587 | 0.997 | 13.036 | 181.96 | 31.24 | 39.77 | 499.2 | 13.71 | 46.8 |
| 390. | 0.1546 | 0.997 | 13.437 | 183.00 | 31.78 | 40.30 | 504.9 | 14.00 | 48.5 |
| 400. | 0.1507 | 0.998 | 13.842 | 184.03 | 32.34 | 40.84 | 510.5 | 14.29 | 50.2 |
| 410. | 0.1470 | 0.998 | 14.253 | 185.04 | 32.90 | 41.39 | 516.1 | | 51.9 |

METHANE ISOBAR AT P = 0.500 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 420. | 0.1434 | 0.998 | 14.670 | 186.05 | 33.46 | 41.95 | 521.5 | | 53.7 |
| 430. | 0.1400 | 0.999 | 15.092 | 187.04 | 34.04 | 42.51 | 526.8 | | 55.5 |
| 440. | 0.1368 | 0.999 | 15.520 | 188.03 | 34.61 | 43.08 | 532.1 | | 57.3 |
| 450. | 0.1338 | 0.999 | 15.954 | 189.00 | 35.19 | 43.65 | 537.3 | | 59.1 |
| 460. | 0.1308 | 0.999 | 16.393 | 189.97 | 35.77 | 44.22 | 542.5 | | 60.9 |
| 470. | 0.1280 | 0.999 | 16.838 | 190.92 | 36.35 | 44.79 | 547.6 | | 62.8 |
| 480. | 0.1253 | 1.000 | 17.289 | 191.87 | 36.93 | 45.36 | 552.6 | | 64.7 |
| 490. | 0.1228 | 1.000 | 17.746 | 192.81 | 37.50 | 45.93 | 557.6 | | 66.6 |
| 500. | 0.1203 | 1.000 | 18.208 | 193.75 | 38.08 | 46.50 | 562.5 | | 68.5 |
| 520. | 0.1156 | 1.000 | 19.149 | 195.59 | 39.21 | 47.63 | 572.2 | | 72.3 |
| 540. | 0.1113 | 1.000 | 20.113 | 197.41 | 40.32 | 48.73 | 581.8 | | 76.2 |
| 560. | 0.1073 | 1.001 | 21.098 | 199.20 | 41.41 | 49.81 | 591.2 | | 80.1 |
| 580. | 0.1036 | 1.001 | 22.105 | 200.97 | 42.48 | 50.87 | 600.4 | | 84.0 |
| 600. | 0.1001 | 1.001 | 23.133 | 202.71 | 43.52 | 51.90 | 609.5 | | 88.0 |

METHANE ISOBAR AT P = 0.550 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 27.809 | 0.025 | -5.501 | 70.22 | 34.00 | 53.70 | 1502.8 | 180.66 | 206.5 |
| 100. | 27.387 | 0.024 | -5.230 | 73.00 | 34.10 | 54.58 | 1450.7 | 158.28 | 200.2 |
| 105. | 26.955 | 0.023 | -4.956 | 75.68 | 33.87 | 55.21 | 1401.0 | 139.40 | 193.6 |
| 110. | 26.512 | 0.023 | -4.678 | 78.26 | 33.51 | 55.76 | 1351.9 | 123.47 | 186.8 |
| 115. | 26.056 | 0.022 | -4.398 | 80.75 | 33.08 | 56.32 | 1302.2 | 110.00 | 179.8 |
| 120. | 25.585 | 0.022 | -4.115 | 83.16 | 32.66 | 56.95 | 1251.6 | 98.55 | 172.7 |
| 125. | 25.096 | 0.021 | -3.828 | 85.50 | 32.25 | 57.70 | 1199.6 | 88.75 | 165.5 |
| 130. | 24.587 | 0.021 | -3.538 | 87.78 | 31.87 | 58.62 | 1145.9 | 80.28 | 158.2 |
| 135. | 24.052 | 0.020 | -3.242 | 90.01 | 31.52 | 59.76 | 1090.3 | 72.88 | 150.9 |
| 137.082 | 23.817 | 0.020 | -3.116 | 90.94 | 31.39 | 60.34 | 1065.8 | 70.02 | 147.7 |
| 137.082 | 0.5459 | 0.884 | 4.155 | 143.98 | 27.23 | 40.71 | 285.4 | 5.52 | 15.6 |
| 140. | 0.5302 | 0.891 | 4.271 | 144.82 | 26.80 | 39.69 | 290.1 | 5.62 | 15.9 |
| 145. | 0.5052 | 0.903 | 4.467 | 146.19 | 26.46 | 38.66 | 297.7 | 5.81 | 16.3 |
| 150. | 0.4830 | 0.913 | 4.658 | 147.49 | 26.27 | 37.97 | 304.9 | 6.00 | 16.8 |
| 155. | 0.4631 | 0.922 | 4.847 | 148.72 | 26.13 | 37.43 | 311.7 | 6.19 | 17.3 |
| 160. | 0.4450 | 0.929 | 5.033 | 149.90 | 26.00 | 36.97 | 318.3 | 6.38 | 17.8 |
| 165. | 0.4285 | 0.936 | 5.217 | 151.03 | 25.89 | 36.59 | 324.6 | 6.56 | 18.3 |
| 170. | 0.4134 | 0.941 | 5.399 | 152.12 | 25.80 | 36.26 | 330.7 | 6.75 | 18.9 |
| 175. | 0.3995 | 0.946 | 5.579 | 153.17 | 25.73 | 35.98 | 336.6 | 6.93 | 19.5 |
| 180. | 0.3865 | 0.951 | 5.759 | 154.18 | 25.67 | 35.75 | 342.4 | 7.12 | 20.0 |

METHANE ISOBAR AT P = 0.550 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 185. | 0.3745 | 0.955 | 5.937 | 155.16 | 25.63 | 35.56 | 348.0 | 7.30 | 20.6 |
| 190. | 0.3633 | 0.958 | 6.114 | 156.10 | 25.60 | 35.40 | 353.4 | 7.49 | 21.2 |
| 195. | 0.3528 | 0.962 | 6.291 | 157.02 | 25.58 | 35.27 | 358.7 | 7.67 | 21.8 |
| 200. | 0.3430 | 0.964 | 6.467 | 157.91 | 25.58 | 35.16 | 363.9 | 7.85 | 22.3 |
| 205. | 0.3337 | 0.967 | 6.643 | 158.78 | 25.59 | 35.08 | 369.0 | 8.03 | 22.9 |
| 210. | 0.3249 | 0.969 | 6.818 | 159.62 | 25.60 | 35.02 | 373.9 | 8.21 | 23.4 |
| 215. | 0.3167 | 0.972 | 6.993 | 160.45 | 25.63 | 34.98 | 378.8 | 8.39 | 24.0 |
| 220. | 0.3089 | 0.974 | 7.168 | 161.25 | 25.67 | 34.95 | 383.5 | 8.57 | 24.6 |
| 225. | 0.3014 | 0.975 | 7.342 | 162.04 | 25.72 | 34.94 | 388.1 | 8.74 | 25.2 |
| 230. | 0.2944 | 0.977 | 7.517 | 162.80 | 25.78 | 34.95 | 392.7 | 8.92 | 25.8 |
| 235. | 0.2877 | 0.979 | 7.692 | 163.56 | 25.85 | 34.97 | 397.1 | 9.09 | 26.4 |
| 240. | 0.2813 | 0.980 | 7.867 | 164.29 | 25.93 | 35.00 | 401.5 | 9.27 | 27.0 |
| 245. | 0.2752 | 0.981 | 8.042 | 165.01 | 26.01 | 35.05 | 405.8 | 9.44 | 27.6 |
| 250. | 0.2693 | 0.982 | 8.217 | 165.72 | 26.11 | 35.10 | 410.0 | 9.61 | 28.2 |
| 255. | 0.2638 | 0.984 | 8.393 | 166.42 | 26.21 | 35.18 | 414.2 | 9.78 | 28.8 |
| 260. | 0.2584 | 0.985 | 8.569 | 167.10 | 26.33 | 35.26 | 418.2 | 9.95 | 29.4 |
| 265. | 0.2533 | 0.986 | 8.745 | 167.78 | 26.45 | 35.35 | 422.2 | 10.12 | 30.0 |
| 270. | 0.2484 | 0.986 | 8.922 | 168.44 | 26.58 | 35.45 | 426.1 | 10.29 | 30.7 |
| 275. | 0.2436 | 0.987 | 9.100 | 169.09 | 26.72 | 35.57 | 430.0 | 10.45 | 31.3 |
| 280. | 0.2391 | 0.988 | 9.278 | 169.73 | 26.87 | 35.69 | 433.8 | 10.62 | 32.0 |
| 285. | 0.2347 | 0.989 | 9.457 | 170.36 | 27.03 | 35.83 | 437.5 | 10.78 | 32.6 |
| 290. | 0.2305 | 0.989 | 9.636 | 170.99 | 27.19 | 35.97 | 441.2 | 10.95 | 33.3 |
| 295. | 0.2265 | 0.990 | 9.817 | 171.60 | 27.36 | 36.12 | 444.8 | 11.11 | 34.0 |
| 300. | 0.2226 | 0.991 | 9.998 | 172.21 | 27.54 | 36.29 | 448.4 | 11.27 | 34.7 |
| 310. | 0.2152 | 0.992 | 10.362 | 173.41 | 27.93 | 36.63 | 455.3 | 11.59 | 36.1 |
| 320. | 0.2082 | 0.993 | 10.731 | 174.58 | 28.34 | 37.01 | 462.1 | 11.90 | 37.5 |
| 330. | 0.2018 | 0.994 | 11.103 | 175.72 | 28.77 | 37.42 | 468.6 | 12.22 | 39.0 |
| 340. | 0.1957 | 0.994 | 11.479 | 176.85 | 29.23 | 37.85 | 475.0 | 12.52 | 40.5 |
| 350. | 0.1899 | 0.995 | 11.860 | 177.95 | 29.71 | 38.31 | 481.3 | 12.83 | 42.0 |
| 360. | 0.1846 | 0.996 | 12.245 | 179.04 | 30.20 | 38.79 | 487.4 | 13.13 | 43.6 |
| 370. | 0.1795 | 0.996 | 12.636 | 180.11 | 30.72 | 39.29 | 493.3 | 13.43 | 45.2 |
| 380. | 0.1747 | 0.997 | 13.031 | 181.16 | 31.25 | 39.80 | 499.2 | 13.72 | 46.9 |
| 390. | 0.1701 | 0.997 | 13.432 | 182.20 | 31.79 | 40.33 | 504.9 | 14.01 | 48.5 |
| 400. | 0.1658 | 0.997 | 13.838 | 183.23 | 32.34 | 40.86 | 510.5 | 14.30 | 50.2 |
| 410. | 0.1617 | 0.998 | 14.249 | 184.24 | 32.90 | 41.41 | 516.1 | | 51.9 |
| 420. | 0.1578 | 0.998 | 14.666 | 185.25 | 33.47 | 41.97 | 521.5 | | 53.7 |
| 430. | 0.1541 | 0.998 | 15.088 | 186.24 | 34.04 | 42.53 | 526.9 | | 55.5 |
| 440. | 0.1505 | 0.999 | 15.517 | 187.23 | 34.61 | 43.10 | 532.2 | | 57.3 |
| 450. | 0.1472 | 0.999 | 15.950 | 188.20 | 35.19 | 43.67 | 537.4 | | 59.1 |
| 460. | 0.1439 | 0.999 | 16.390 | 189.17 | 35.77 | 44.24 | 542.5 | | 60.9 |

METHANE ISOBAR AT P = 0.550 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 470. | 0.1408 | 0.999 | 16.835 | 190.12 | 36.35 | 44.81 | 547.6 | | 62.8 |
| 480. | 0.1379 | 1.000 | 17.286 | 191.07 | 36.93 | 45.38 | 552.7 | | 64.7 |
| 490. | 0.1350 | 1.000 | 17.743 | 192.02 | 37.51 | 45.95 | 557.6 | | 66.6 |
| 500. | 0.1323 | 1.000 | 18.205 | 192.95 | 38.08 | 46.51 | 562.6 | | 68.5 |
| 520. | 0.1272 | 1.000 | 19.147 | 194.80 | 39.21 | 47.64 | 572.3 | | 72.3 |
| 540. | 0.1224 | 1.000 | 20.110 | 196.61 | 40.33 | 48.74 | 581.8 | | 76.2 |
| 560. | 0.1181 | 1.001 | 21.096 | 198.41 | 41.42 | 49.82 | 591.2 | | 80.1 |
| 580. | 0.1140 | 1.001 | 22.103 | 200.17 | 42.48 | 50.88 | 600.5 | | 84.0 |
| 600. | 0.1102 | 1.001 | 23.131 | 201.92 | 43.52 | 51.91 | 609.6 | | 88.0 |

METHANE ISOBAR AT P = 0.600 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.811 | 0.027 | -5.500 | 70.21 | 34.01 | 53.70 | 1503.3 | 180.75 | 206.6 |
| 100. | 27.389 | 0.026 | -5.229 | 72.99 | 34.10 | 54.58 | 1451.1 | 158.37 | 200.3 |
| 105. | 26.958 | 0.025 | -4.955 | 75.67 | 33.87 | 55.21 | 1401.5 | 139.48 | 193.6 |
| 110. | 26.515 | 0.025 | -4.677 | 78.25 | 33.51 | 55.75 | 1352.4 | 123.55 | 186.8 |
| 115. | 26.059 | 0.024 | -4.397 | 80.74 | 33.09 | 56.31 | 1302.8 | 110.07 | 179.8 |
| 120. | 25.588 | 0.024 | -4.114 | 83.15 | 32.66 | 56.94 | 1252.2 | 98.62 | 172.7 |
| 125. | 25.100 | 0.023 | -3.827 | 85.49 | 32.25 | 57.69 | 1200.3 | 88.81 | 165.5 |
| 130. | 24.591 | 0.023 | -3.537 | 87.77 | 31.87 | 58.60 | 1146.6 | 80.34 | 158.3 |
| 135. | 24.057 | 0.022 | -3.241 | 90.00 | 31.52 | 59.73 | 1091.0 | 72.94 | 150.9 |
| 138.715 | 23.638 | 0.022 | -3.016 | 91.64 | 31.29 | 60.78 | 1047.7 | 67.97 | 145.4 |
| 138.715 | 0.5933 | 0.877 | 4.181 | 143.53 | 27.36 | 41.28 | 285.7 | 5.59 | 15.9 |
| 140. | 0.5858 | 0.880 | 4.232 | 143.90 | 27.12 | 40.73 | 287.9 | 5.64 | 16.0 |
| 145. | 0.5572 | 0.893 | 4.432 | 145.30 | 26.63 | 39.35 | 295.8 | 5.83 | 16.4 |
| 150. | 0.5320 | 0.904 | 4.626 | 146.62 | 26.40 | 38.52 | 303.2 | 6.02 | 16.9 |
| 155. | 0.5094 | 0.914 | 4.817 | 147.87 | 26.23 | 37.90 | 310.2 | 6.20 | 17.4 |
| 160. | 0.4891 | 0.922 | 5.006 | 149.06 | 26.10 | 37.38 | 316.9 | 6.39 | 17.9 |
| 165. | 0.4706 | 0.929 | 5.191 | 150.21 | 25.98 | 36.94 | 323.4 | 6.58 | 18.4 |
| 170. | 0.4537 | 0.936 | 5.375 | 151.30 | 25.88 | 36.57 | 329.6 | 6.76 | 19.0 |
| 175. | 0.4381 | 0.941 | 5.557 | 152.36 | 25.79 | 36.26 | 335.6 | 6.95 | 19.5 |
| 180. | 0.4238 | 0.946 | 5.738 | 153.38 | 25.73 | 36.00 | 341.4 | 7.13 | 20.1 |
| 185. | 0.4104 | 0.950 | 5.917 | 154.36 | 25.68 | 35.78 | 347.1 | 7.32 | 20.7 |
| 190. | 0.3980 | 0.954 | 6.096 | 155.31 | 25.64 | 35.60 | 352.6 | 7.50 | 21.3 |
| 195. | 0.3863 | 0.958 | 6.273 | 156.24 | 25.62 | 35.45 | 358.0 | 7.68 | 21.8 |
| 200. | 0.3754 | 0.961 | 6.450 | 157.13 | 25.61 | 35.33 | 363.2 | 7.86 | 22.4 |
| 205. | 0.3652 | 0.964 | 6.627 | 158.00 | 25.62 | 35.23 | 368.3 | 8.04 | 22.9 |

METHANE ISOBAR AT P = 0.600 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 210. | 0.3555 | 0.967 | 6.803 | 158.85 | 25.63 | 35.16 | 373.3 | 8.22 | 23.5 |
| 215. | 0.3464 | 0.969 | 6.978 | 159.68 | 25.66 | 35.11 | 378.2 | 8.40 | 24.1 |
| 220. | 0.3378 | 0.971 | 7.154 | 160.48 | 25.70 | 35.07 | 383.0 | 8.58 | 24.6 |
| 225. | 0.3296 | 0.973 | 7.329 | 161.27 | 25.74 | 35.05 | 387.7 | 8.75 | 25.2 |
| 230. | 0.3218 | 0.975 | 7.504 | 162.04 | 25.80 | 35.05 | 392.3 | 8.93 | 25.8 |
| 235. | 0.3145 | 0.977 | 7.680 | 162.80 | 25.87 | 35.06 | 396.7 | 9.10 | 26.4 |
| 240. | 0.3074 | 0.978 | 7.855 | 163.54 | 25.94 | 35.09 | 401.1 | 9.28 | 27.0 |
| 245. | 0.3007 | 0.980 | 8.030 | 164.26 | 26.03 | 35.13 | 405.5 | 9.45 | 27.6 |
| 250. | 0.2943 | 0.981 | 8.206 | 164.97 | 26.12 | 35.18 | 409.7 | 9.62 | 28.2 |
| 255. | 0.2882 | 0.982 | 8.382 | 165.67 | 26.23 | 35.25 | 413.9 | 9.79 | 28.8 |
| 260. | 0.2823 | 0.983 | 8.559 | 166.35 | 26.34 | 35.33 | 417.9 | 9.96 | 29.5 |
| 265. | 0.2767 | 0.984 | 8.736 | 167.03 | 26.46 | 35.42 | 422.0 | 10.13 | 30.1 |
| 270. | 0.2713 | 0.985 | 8.913 | 167.69 | 26.59 | 35.52 | 425.9 | 10.30 | 30.7 |
| 275. | 0.2661 | 0.986 | 9.091 | 168.34 | 26.73 | 35.63 | 429.8 | 10.46 | 31.4 |
| 280. | 0.2611 | 0.987 | 9.269 | 168.98 | 26.88 | 35.75 | 433.6 | 10.63 | 32.0 |
| 285. | 0.2563 | 0.988 | 9.448 | 169.62 | 27.04 | 35.88 | 437.3 | 10.79 | 32.7 |
| 290. | 0.2517 | 0.988 | 9.628 | 170.24 | 27.20 | 36.02 | 441.0 | 10.95 | 33.4 |
| 295. | 0.2473 | 0.989 | 9.809 | 170.86 | 27.37 | 36.17 | 444.6 | 11.12 | 34.0 |
| 300. | 0.2430 | 0.990 | 9.990 | 171.47 | 27.55 | 36.33 | 448.2 | 11.28 | 34.7 |
| 310. | 0.2349 | 0.991 | 10.355 | 172.67 | 27.93 | 36.68 | 455.2 | 11.60 | 36.1 |
| 320. | 0.2273 | 0.992 | 10.724 | 173.84 | 28.34 | 37.05 | 462.0 | 11.91 | 37.6 |
| 330. | 0.2202 | 0.993 | 11.096 | 174.98 | 28.78 | 37.46 | 468.5 | 12.22 | 39.0 |
| 340. | 0.2136 | 0.994 | 11.473 | 176.11 | 29.23 | 37.89 | 475.0 | 12.53 | 40.5 |
| 350. | 0.2073 | 0.995 | 11.854 | 177.21 | 29.71 | 38.34 | 481.2 | 12.84 | 42.1 |
| 360. | 0.2014 | 0.995 | 12.240 | 178.30 | 30.21 | 38.82 | 487.3 | 13.14 | 43.6 |
| 370. | 0.1959 | 0.996 | 12.630 | 179.37 | 30.72 | 39.31 | 493.3 | 13.43 | 45.2 |
| 380. | 0.1906 | 0.996 | 13.026 | 180.43 | 31.25 | 39.83 | 499.2 | 13.73 | 46.9 |
| 390. | 0.1856 | 0.997 | 13.427 | 181.47 | 31.79 | 40.35 | 504.9 | 14.02 | 48.5 |
| 400. | 0.1809 | 0.997 | 13.833 | 182.49 | 32.34 | 40.89 | 510.5 | 14.30 | 50.2 |
| 410. | 0.1764 | 0.998 | 14.245 | 183.51 | 32.90 | 41.43 | 516.1 | | 52.0 |
| 420. | 0.1722 | 0.998 | 14.662 | 184.52 | 33.47 | 41.99 | 521.5 | | 53.7 |
| 430. | 0.1681 | 0.998 | 15.084 | 185.51 | 34.04 | 42.55 | 526.9 | | 55.5 |
| 440. | 0.1642 | 0.999 | 15.513 | 186.50 | 34.62 | 43.11 | 532.2 | | 57.3 |
| 450. | 0.1605 | 0.999 | 15.947 | 187.47 | 35.20 | 43.68 | 537.4 | | 59.1 |
| 460. | 0.1570 | 0.999 | 16.386 | 188.44 | 35.77 | 44.25 | 542.6 | | 61.0 |
| 470. | 0.1536 | 0.999 | 16.832 | 189.39 | 36.35 | 44.82 | 547.7 | | 62.8 |
| 480. | 0.1504 | 1.000 | 17.283 | 190.34 | 36.93 | 45.39 | 552.7 | | 64.7 |
| 490. | 0.1473 | 1.000 | 17.740 | 191.29 | 37.51 | 45.96 | 557.7 | | 66.6 |
| 500. | 0.1443 | 1.000 | 18.202 | 192.22 | 38.08 | 46.53 | 562.6 | | 68.5 |
| 520. | 0.1387 | 1.000 | 19.144 | 194.07 | 39.21 | 47.65 | 572.4 | | 72.3 |

METHANE ISOBAR AT P = 0.600 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 540. | 0.1336 | 1.000 | 20.108 | 195.89 | 40.33 | 48.75 | 581.9 | | 76.2 |
| 560. | 0.1288 | 1.001 | 21.094 | 197.68 | 41.42 | 49.83 | 591.3 | | 80.1 |
| 580. | 0.1243 | 1.001 | 22.101 | 199.45 | 42.48 | 50.89 | 600.6 | | 84.1 |
| 600. | 0.1202 | 1.001 | 23.129 | 201.19 | 43.52 | 51.92 | 609.7 | | 88.0 |

METHANE ISOBAR AT P = 0.650 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 95. | 27.814 | 0.030 | -5.499 | 70.21 | 34.01 | 53.69 | 1503.7 | 180.85 | 206.6 |
| 100. | 27.392 | 0.029 | -5.228 | 72.99 | 34.10 | 54.57 | 1451.6 | 158.46 | 200.3 |
| 105. | 26.960 | 0.028 | -4.953 | 75.66 | 33.88 | 55.20 | 1401.9 | 139.56 | 193.7 |
| 110. | 26.518 | 0.027 | -4.676 | 78.24 | 33.51 | 55.74 | 1352.8 | 123.62 | 186.9 |
| 115. | 26.062 | 0.026 | -4.396 | 80.73 | 33.09 | 56.30 | 1303.3 | 110.14 | 179.9 |
| 120. | 25.592 | 0.025 | -4.113 | 83.14 | 32.66 | 56.92 | 1252.8 | 98.68 | 172.8 |
| 125. | 25.104 | 0.025 | -3.826 | 85.48 | 32.25 | 57.67 | 1200.9 | 88.87 | 165.6 |
| 130. | 24.595 | 0.024 | -3.536 | 87.76 | 31.87 | 58.58 | 1147.3 | 80.40 | 158.3 |
| 135. | 24.062 | 0.024 | -3.240 | 89.99 | 31.53 | 59.71 | 1091.8 | 73.00 | 151.0 |
| 140. | 23.499 | 0.024 | -2.938 | 92.19 | 31.22 | 61.13 | 1033.9 | 66.45 | 143.6 |
| 140.251 | 23.468 | 0.024 | -2.922 | 92.30 | 31.21 | 61.23 | 1030.5 | 66.12 | 143.2 |
| 140.251 | 0.6408 | 0.870 | 4.203 | 143.11 | 27.49 | 41.86 | 286.0 | 5.67 | 16.3 |
| 145. | 0.6105 | 0.883 | 4.396 | 144.46 | 26.82 | 40.13 | 293.8 | 5.85 | 16.6 |
| 150. | 0.5820 | 0.895 | 4.594 | 145.80 | 26.53 | 39.11 | 301.4 | 6.03 | 17.0 |
| 155. | 0.5567 | 0.906 | 4.788 | 147.07 | 26.34 | 38.39 | 308.6 | 6.22 | 17.5 |
| 160. | 0.5339 | 0.915 | 4.978 | 148.28 | 26.19 | 37.80 | 315.5 | 6.41 | 18.0 |
| 165. | 0.5133 | 0.923 | 5.166 | 149.44 | 26.06 | 37.31 | 322.1 | 6.59 | 18.5 |
| 170. | 0.4945 | 0.930 | 5.351 | 150.54 | 25.95 | 36.90 | 328.4 | 6.78 | 19.1 |
| 175. | 0.4773 | 0.936 | 5.535 | 151.61 | 25.86 | 36.55 | 334.5 | 6.96 | 19.6 |
| 180. | 0.4614 | 0.941 | 5.717 | 152.63 | 25.79 | 36.26 | 340.5 | 7.15 | 20.2 |
| 185. | 0.4466 | 0.946 | 5.898 | 153.62 | 25.73 | 36.01 | 346.2 | 7.33 | 20.8 |
| 190. | 0.4329 | 0.950 | 6.077 | 154.58 | 25.69 | 35.81 | 351.8 | 7.51 | 21.4 |
| 195. | 0.4201 | 0.954 | 6.256 | 155.51 | 25.66 | 35.64 | 357.2 | 7.69 | 21.9 |
| 200. | 0.4081 | 0.958 | 6.434 | 156.41 | 25.65 | 35.50 | 362.5 | 7.87 | 22.4 |
| 205. | 0.3969 | 0.961 | 6.611 | 157.28 | 25.65 | 35.39 | 367.7 | 8.05 | 23.0 |
| 210. | 0.3863 | 0.964 | 6.787 | 158.14 | 25.66 | 35.30 | 372.7 | 8.23 | 23.5 |
| 215. | 0.3763 | 0.966 | 6.964 | 158.97 | 25.69 | 35.24 | 377.7 | 8.41 | 24.1 |
| 220. | 0.3669 | 0.969 | 7.140 | 159.78 | 25.72 | 35.19 | 382.5 | 8.59 | 24.7 |
| 225. | 0.3579 | 0.971 | 7.316 | 160.57 | 25.76 | 35.16 | 387.2 | 8.76 | 25.3 |
| 230. | 0.3494 | 0.973 | 7.491 | 161.34 | 25.82 | 35.15 | 391.8 | 8.94 | 25.9 |

METHANE ISOBAR AT P = 0.650 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 235. | 0.3413 | 0.975 | 7.667 | 162.10 | 25.88 | 35.16 | 396.3 | 9.11 | 26.4 |
| 240. | 0.3337 | 0.976 | 7.843 | 162.84 | 25.96 | 35.18 | 400.8 | 9.29 | 27.0 |
| 245. | 0.3263 | 0.978 | 8.019 | 163.56 | 26.04 | 35.22 | 405.1 | 9.46 | 27.6 |
| 250. | 0.3193 | 0.979 | 8.195 | 164.27 | 26.14 | 35.26 | 409.4 | 9.63 | 28.3 |
| 255. | 0.3127 | 0.981 | 8.372 | 164.97 | 26.24 | 35.33 | 413.6 | 9.80 | 28.9 |
| 260. | 0.3063 | 0.982 | 8.549 | 165.66 | 26.35 | 35.40 | 417.7 | 9.97 | 29.5 |
| 265. | 0.3001 | 0.983 | 8.726 | 166.33 | 26.47 | 35.49 | 421.7 | 10.14 | 30.1 |
| 270. | 0.2943 | 0.984 | 8.903 | 167.00 | 26.60 | 35.58 | 425.7 | 10.30 | 30.8 |
| 275. | 0.2886 | 0.985 | 9.082 | 167.65 | 26.74 | 35.69 | 429.6 | 10.47 | 31.4 |
| 280. | 0.2832 | 0.986 | 9.260 | 168.30 | 26.89 | 35.81 | 433.4 | 10.64 | 32.1 |
| 285. | 0.2780 | 0.987 | 9.440 | 168.93 | 27.05 | 35.94 | 437.1 | 10.80 | 32.7 |
| 290. | 0.2730 | 0.988 | 9.620 | 169.56 | 27.21 | 36.08 | 440.8 | 10.96 | 33.4 |
| 295. | 0.2681 | 0.988 | 9.801 | 170.18 | 27.38 | 36.22 | 444.5 | 11.12 | 34.1 |
| 300. | 0.2635 | 0.989 | 9.982 | 170.79 | 27.56 | 36.38 | 448.1 | 11.29 | 34.8 |
| 310. | 0.2547 | 0.990 | 10.348 | 171.98 | 27.94 | 36.72 | 455.1 | 11.60 | 36.1 |
| 320. | 0.2464 | 0.991 | 10.717 | 173.16 | 28.35 | 37.09 | 461.8 | 11.92 | 37.6 |
| 330. | 0.2387 | 0.992 | 11.089 | 174.30 | 28.78 | 37.49 | 468.5 | 12.23 | 39.0 |
| 340. | 0.2315 | 0.993 | 11.467 | 175.43 | 29.24 | 37.92 | 474.9 | 12.54 | 40.6 |
| 350. | 0.2247 | 0.994 | 11.848 | 176.53 | 29.72 | 38.38 | 481.2 | 12.84 | 42.1 |
| 360. | 0.2183 | 0.995 | 12.234 | 177.62 | 30.21 | 38.85 | 487.3 | 13.14 | 43.7 |
| 370. | 0.2123 | 0.995 | 12.625 | 178.69 | 30.73 | 39.34 | 493.3 | 13.44 | 45.3 |
| 380. | 0.2065 | 0.996 | 13.021 | 179.75 | 31.25 | 39.85 | 499.1 | 13.73 | 46.9 |
| 390. | 0.2011 | 0.997 | 13.422 | 180.79 | 31.80 | 40.37 | 504.9 | 14.02 | 48.6 |
| 400. | 0.1960 | 0.997 | 13.829 | 181.82 | 32.35 | 40.91 | 510.5 | 14.31 | 50.3 |
| 410. | 0.1912 | 0.997 | 14.240 | 182.84 | 32.91 | 41.46 | 516.1 | | 52.0 |
| 420. | 0.1865 | 0.998 | 14.658 | 183.84 | 33.47 | 42.01 | 521.5 | | 53.7 |
| 430. | 0.1821 | 0.998 | 15.081 | 184.84 | 34.04 | 42.57 | 526.9 | | 55.5 |
| 440. | 0.1779 | 0.998 | 15.509 | 185.82 | 34.62 | 43.13 | 532.2 | | 57.3 |
| 450. | 0.1739 | 0.999 | 15.943 | 186.80 | 35.20 | 43.70 | 537.5 | | 59.1 |
| 460. | 0.1701 | 0.999 | 16.383 | 187.76 | 35.78 | 44.27 | 542.6 | | 61.0 |
| 470. | 0.1665 | 0.999 | 16.829 | 188.72 | 36.36 | 44.84 | 547.7 | | 62.8 |
| 480. | 0.1629 | 0.999 | 17.280 | 189.67 | 36.93 | 45.41 | 552.8 | | 64.7 |
| 490. | 0.1596 | 1.000 | 17.737 | 190.62 | 37.51 | 45.98 | 557.8 | | 66.6 |
| 500. | 0.1564 | 1.000 | 18.199 | 191.55 | 38.08 | 46.54 | 562.7 | | 68.5 |
| 520. | 0.1503 | 1.000 | 19.141 | 193.40 | 39.22 | 47.66 | 572.4 | | 72.4 |
| 540. | 0.1447 | 1.000 | 20.106 | 195.22 | 40.33 | 48.76 | 582.0 | | 76.2 |
| 560. | 0.1395 | 1.001 | 21.092 | 197.01 | 41.42 | 49.84 | 591.4 | | 80.1 |
| 580. | 0.1347 | 1.001 | 22.099 | 198.78 | 42.48 | 50.90 | 600.7 | | 84.1 |
| 600. | 0.1302 | 1.001 | 23.128 | 200.52 | 43.52 | 51.93 | 609.8 | | 88.0 |

METHANE ISOBAR AT P = 0.700 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 27.816 | 0.032 | -5.497 | 70.20 | 34.01 | 53.69 | 1504.1 | 180.95 | 206.7 |
| 100. | 27.394 | 0.031 | -5.227 | 72.98 | 34.10 | 54.56 | 1452.0 | 158.55 | 200.4 |
| 105. | 26.963 | 0.030 | -4.952 | 75.66 | 33.88 | 55.19 | 1402.4 | 139.65 | 193.7 |
| 110. | 26.521 | 0.029 | -4.675 | 78.24 | 33.51 | 55.73 | 1353.3 | 123.70 | 186.9 |
| 115. | 26.065 | 0.028 | -4.395 | 80.73 | 33.09 | 56.29 | 1303.8 | 110.21 | 179.9 |
| 120. | 25.595 | 0.027 | -4.112 | 83.14 | 32.66 | 56.91 | 1253.3 | 98.75 | 172.8 |
| 125. | 25.108 | 0.027 | -3.825 | 85.47 | 32.25 | 57.65 | 1201.5 | 88.93 | 165.7 |
| 130. | 24.600 | 0.026 | -3.535 | 87.75 | 31.87 | 58.56 | 1148.0 | 80.46 | 158.4 |
| 135. | 24.067 | 0.026 | -3.239 | 89.98 | 31.53 | 59.68 | 1092.6 | 73.06 | 151.1 |
| 140. | 23.505 | 0.026 | -2.938 | 92.18 | 31.22 | 61.10 | 1034.8 | 66.51 | 143.7 |
| 141.703 | 23.303 | 0.025 | -2.833 | 92.92 | 31.13 | 61.68 | 1014.1 | 64.42 | 141.2 |
| 141.703 | 0.6885 | 0.863 | 4.223 | 142.71 | 27.62 | 42.46 | 286.2 | 5.74 | 16.6 |
| 145. | 0.6653 | 0.873 | 4.359 | 143.66 | 27.06 | 41.02 | 291.8 | 5.86 | 16.8 |
| 150. | 0.6331 | 0.886 | 4.561 | 145.03 | 26.67 | 39.75 | 299.7 | 6.05 | 17.2 |
| 155. | 0.6048 | 0.898 | 4.757 | 146.32 | 26.46 | 38.91 | 307.1 | 6.23 | 17.6 |
| 160. | 0.5795 | 0.908 | 4.950 | 147.55 | 26.29 | 38.24 | 314.1 | 6.42 | 18.1 |
| 165. | 0.5566 | 0.917 | 5.140 | 148.71 | 26.15 | 37.69 | 320.8 | 6.61 | 18.6 |
| 170. | 0.5359 | 0.924 | 5.327 | 149.83 | 26.03 | 37.23 | 327.3 | 6.79 | 19.2 |
| 175. | 0.5169 | 0.931 | 5.512 | 150.91 | 25.93 | 36.84 | 333.5 | 6.98 | 19.7 |
| 180. | 0.4994 | 0.937 | 5.696 | 151.94 | 25.84 | 36.52 | 339.5 | 7.16 | 20.3 |
| 185. | 0.4832 | 0.942 | 5.878 | 152.94 | 25.78 | 36.24 | 345.3 | 7.34 | 20.8 |
| 190. | 0.4682 | 0.946 | 6.058 | 153.90 | 25.73 | 36.02 | 351.0 | 7.52 | 21.4 |
| 195. | 0.4542 | 0.951 | 6.238 | 154.83 | 25.70 | 35.83 | 356.5 | 7.71 | 21.9 |
| 200. | 0.4411 | 0.954 | 6.417 | 155.74 | 25.69 | 35.67 | 361.8 | 7.89 | 22.5 |
| 205. | 0.4288 | 0.958 | 6.595 | 156.62 | 25.68 | 35.54 | 367.1 | 8.07 | 23.0 |
| 210. | 0.4172 | 0.961 | 6.772 | 157.47 | 25.69 | 35.44 | 372.1 | 8.24 | 23.6 |
| 215. | 0.4064 | 0.964 | 6.949 | 158.30 | 25.71 | 35.37 | 377.1 | 8.42 | 24.2 |
| 220. | 0.3961 | 0.966 | 7.126 | 159.12 | 25.74 | 35.31 | 382.0 | 8.60 | 24.7 |
| 225. | 0.3864 | 0.968 | 7.302 | 159.91 | 25.79 | 35.28 | 386.7 | 8.78 | 25.3 |
| 230. | 0.3771 | 0.971 | 7.479 | 160.68 | 25.84 | 35.26 | 391.4 | 8.95 | 25.9 |
| 235. | 0.3684 | 0.973 | 7.655 | 161.44 | 25.90 | 35.26 | 395.9 | 9.12 | 26.5 |
| 240. | 0.3600 | 0.974 | 7.831 | 162.19 | 25.98 | 35.27 | 400.4 | 9.30 | 27.1 |
| 245. | 0.3521 | 0.976 | 8.008 | 162.91 | 26.06 | 35.30 | 404.8 | 9.47 | 27.7 |
| 250. | 0.3445 | 0.978 | 8.184 | 163.63 | 26.15 | 35.35 | 409.1 | 9.64 | 28.3 |
| 255. | 0.3372 | 0.979 | 8.361 | 164.33 | 26.25 | 35.40 | 413.3 | 9.81 | 28.9 |
| 260. | 0.3303 | 0.980 | 8.538 | 165.02 | 26.37 | 35.47 | 417.4 | 9.98 | 29.5 |
| 265. | 0.3237 | 0.982 | 8.716 | 165.69 | 26.49 | 35.55 | 421.4 | 10.15 | 30.2 |
| 270. | 0.3173 | 0.983 | 8.894 | 166.36 | 26.62 | 35.65 | 425.4 | 10.31 | 30.8 |
| 275. | 0.3112 | 0.984 | 9.072 | 167.01 | 26.75 | 35.75 | 429.3 | 10.48 | 31.4 |
| 280. | 0.3053 | 0.985 | 9.251 | 167.66 | 26.90 | 35.87 | 433.2 | 10.64 | 32.1 |

METHANE ISOBAR AT P = 0.700 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 285. | 0.2997 | 0.986 | 9.431 | 168.29 | 27.05 | 35.99 | 436.9 | 10.81 | 32.8 |
| 290. | 0.2943 | 0.987 | 9.611 | 168.92 | 27.22 | 36.13 | 440.7 | 10.97 | 33.4 |
| 295. | 0.2890 | 0.987 | 9.792 | 169.54 | 27.39 | 36.27 | 444.3 | 11.13 | 34.1 |
| 300. | 0.2840 | 0.988 | 9.974 | 170.15 | 27.57 | 36.43 | 447.9 | 11.29 | 34.8 |
| 310. | 0.2745 | 0.990 | 10.340 | 171.35 | 27.95 | 36.76 | 454.9 | 11.61 | 36.2 |
| 320. | 0.2656 | 0.991 | 10.710 | 172.52 | 28.35 | 37.13 | 461.7 | 11.93 | 37.6 |
| 330. | 0.2572 | 0.992 | 11.083 | 173.67 | 28.79 | 37.53 | 468.4 | 12.24 | 39.1 |
| 340. | 0.2494 | 0.993 | 11.460 | 174.80 | 29.24 | 37.96 | 474.8 | 12.55 | 40.6 |
| 350. | 0.2421 | 0.994 | 11.842 | 175.91 | 29.72 | 38.41 | 481.1 | 12.85 | 42.1 |
| 360. | 0.2352 | 0.994 | 12.229 | 176.99 | 30.22 | 38.88 | 487.2 | 13.15 | 43.7 |
| 370. | 0.2287 | 0.995 | 12.620 | 178.07 | 30.73 | 39.37 | 493.2 | 13.45 | 45.3 |
| 380. | 0.2225 | 0.996 | 13.016 | 179.12 | 31.26 | 39.88 | 499.1 | 13.74 | 46.9 |
| 390. | 0.2167 | 0.996 | 13.417 | 180.16 | 31.80 | 40.40 | 504.9 | 14.03 | 48.6 |
| 400. | 0.2112 | 0.997 | 13.824 | 181.19 | 32.35 | 40.93 | 510.5 | 14.32 | 50.3 |
| 410. | 0.2059 | 0.997 | 14.236 | 182.21 | 32.91 | 41.48 | 516.1 | | 52.0 |
| 420. | 0.2009 | 0.998 | 14.654 | 183.22 | 33.48 | 42.03 | 521.6 | | 53.8 |
| 430. | 0.1962 | 0.998 | 15.077 | 184.21 | 34.05 | 42.59 | 526.9 | | 55.5 |
| 440. | 0.1917 | 0.998 | 15.505 | 185.20 | 34.62 | 43.15 | 532.3 | | 57.3 |
| 450. | 0.1873 | 0.999 | 15.940 | 186.17 | 35.20 | 43.72 | 537.5 | | 59.2 |
| 460. | 0.1832 | 0.999 | 16.380 | 187.14 | 35.78 | 44.29 | 542.7 | | 61.0 |
| 470. | 0.1793 | 0.999 | 16.825 | 188.10 | 36.36 | 44.85 | 547.8 | | 62.9 |
| 480. | 0.1755 | 0.999 | 17.277 | 189.05 | 36.94 | 45.42 | 552.8 | | 64.7 |
| 490. | 0.1719 | 1.000 | 17.734 | 189.99 | 37.51 | 45.99 | 557.8 | | 66.6 |
| 500. | 0.1684 | 1.000 | 18.197 | 190.93 | 38.08 | 46.55 | 562.8 | | 68.5 |
| 520. | 0.1619 | 1.000 | 19.139 | 192.78 | 39.22 | 47.67 | 572.5 | | 72.4 |
| 540. | 0.1558 | 1.001 | 20.103 | 194.60 | 40.33 | 48.78 | 582.1 | | 76.3 |
| 560. | 0.1502 | 1.001 | 21.090 | 196.39 | 41.42 | 49.85 | 591.5 | | 80.2 |
| 580. | 0.1450 | 1.001 | 22.097 | 198.16 | 42.49 | 50.91 | 600.7 | | 84.1 |
| 600. | 0.1402 | 1.001 | 23.126 | 199.90 | 43.52 | 51.94 | 609.9 | | 88.0 |

METHANE ISOBAR AT P = 0.750 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.818 | 0.034 | -5.496 | 70.20 | 34.01 | 53.68 | 1504.5 | 181.05 | 206.7 |
| 100. | 27.396 | 0.033 | -5.225 | 72.97 | 34.10 | 54.56 | 1452.4 | 158.64 | 200.4 |
| 105. | 26.965 | 0.032 | -4.951 | 75.65 | 33.88 | 55.18 | 1402.9 | 139.73 | 193.8 |
| 110. | 26.523 | 0.031 | -4.674 | 78.23 | 33.51 | 55.73 | 1353.8 | 123.77 | 187.0 |
| 115. | 26.069 | 0.030 | -4.394 | 80.72 | 33.09 | 56.28 | 1304.4 | 110.28 | 180.0 |

METHANE ISOBAR AT P = 0.750 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 120. | 25.599 | 0.029 | -4.111 | 83.13 | 32.66 | 56.90 | 1253.9 | 98.81 | 172.9 |
| 125. | 25.112 | 0.029 | -3.824 | 85.47 | 32.25 | 57.64 | 1202.1 | 88.99 | 165.7 |
| 130. | 24.604 | 0.028 | -3.534 | 87.74 | 31.87 | 58.54 | 1148.7 | 80.52 | 158.5 |
| 135. | 24.072 | 0.028 | -3.239 | 89.97 | 31.53 | 59.66 | 1093.4 | 73.11 | 151.2 |
| 140. | 23.511 | 0.027 | -2.937 | 92.17 | 31.23 | 61.06 | 1035.6 | 66.56 | 143.8 |
| 143.082 | 23.145 | 0.027 | -2.747 | 93.51 | 31.06 | 62.13 | 998.4 | 62.86 | 139.2 |
| 143.082 | 0.7363 | 0.856 | 4.241 | 142.35 | 27.75 | 43.06 | 286.3 | 5.81 | 16.9 |
| 145. | 0.7216 | 0.862 | 4.321 | 142.90 | 27.36 | 42.07 | 289.6 | 5.88 | 17.0 |
| 150. | 0.6855 | 0.877 | 4.527 | 144.30 | 26.84 | 40.46 | 297.8 | 6.07 | 17.3 |
| 155. | 0.6539 | 0.890 | 4.727 | 145.61 | 26.58 | 39.46 | 305.4 | 6.25 | 17.8 |
| 160. | 0.6258 | 0.901 | 4.922 | 146.85 | 26.39 | 38.71 | 312.6 | 6.44 | 18.2 |
| 165. | 0.6006 | 0.910 | 5.114 | 148.03 | 26.24 | 38.09 | 319.5 | 6.62 | 18.7 |
| 170. | 0.5778 | 0.918 | 5.303 | 149.16 | 26.11 | 37.58 | 326.1 | 6.81 | 19.2 |
| 175. | 0.5569 | 0.926 | 5.490 | 150.24 | 26.00 | 37.15 | 332.4 | 6.99 | 19.8 |
| 180. | 0.5378 | 0.932 | 5.675 | 151.28 | 25.90 | 36.79 | 338.5 | 7.17 | 20.3 |
| 185. | 0.5201 | 0.937 | 5.858 | 152.29 | 25.83 | 36.48 | 344.4 | 7.36 | 20.9 |
| 190. | 0.5037 | 0.942 | 6.039 | 153.26 | 25.78 | 36.23 | 350.2 | 7.54 | 21.5 |
| 195. | 0.4885 | 0.947 | 6.220 | 154.20 | 25.74 | 36.02 | 355.7 | 7.72 | 22.0 |
| 200. | 0.4743 | 0.951 | 6.400 | 155.11 | 25.72 | 35.85 | 361.1 | 7.90 | 22.5 |
| 205. | 0.4609 | 0.955 | 6.579 | 155.99 | 25.71 | 35.70 | 366.4 | 8.08 | 23.1 |
| 210. | 0.4484 | 0.958 | 6.757 | 156.85 | 25.72 | 35.59 | 371.6 | 8.26 | 23.7 |
| 215. | 0.4366 | 0.961 | 6.935 | 157.68 | 25.74 | 35.50 | 376.6 | 8.43 | 24.2 |
| 220. | 0.4255 | 0.964 | 7.112 | 158.50 | 25.77 | 35.44 | 381.5 | 8.61 | 24.8 |
| 225. | 0.4149 | 0.966 | 7.289 | 159.30 | 25.81 | 35.39 | 386.3 | 8.79 | 25.4 |
| 230. | 0.4049 | 0.968 | 7.466 | 160.07 | 25.86 | 35.37 | 391.0 | 8.96 | 25.9 |
| 235. | 0.3955 | 0.971 | 7.643 | 160.83 | 25.92 | 35.36 | 395.5 | 9.14 | 26.5 |
| 240. | 0.3865 | 0.973 | 7.819 | 161.58 | 25.99 | 35.37 | 400.0 | 9.31 | 27.1 |
| 245. | 0.3779 | 0.974 | 7.996 | 162.31 | 26.07 | 35.39 | 404.4 | 9.48 | 27.7 |
| 250. | 0.3697 | 0.976 | 8.173 | 163.02 | 26.17 | 35.43 | 408.7 | 9.65 | 28.3 |
| 255. | 0.3619 | 0.978 | 8.351 | 163.72 | 26.27 | 35.48 | 413.0 | 9.82 | 29.0 |
| 260. | 0.3544 | 0.979 | 8.528 | 164.41 | 26.38 | 35.54 | 417.1 | 9.99 | 29.6 |
| 265. | 0.3472 | 0.980 | 8.706 | 165.09 | 26.50 | 35.62 | 421.2 | 10.16 | 30.2 |
| 270. | 0.3404 | 0.981 | 8.884 | 165.76 | 26.63 | 35.71 | 425.2 | 10.32 | 30.8 |
| 275. | 0.3338 | 0.983 | 9.063 | 166.41 | 26.76 | 35.81 | 429.1 | 10.49 | 31.5 |
| 280. | 0.3275 | 0.984 | 9.243 | 167.06 | 26.91 | 35.92 | 433.0 | 10.65 | 32.1 |
| 285. | 0.3214 | 0.985 | 9.422 | 167.70 | 27.06 | 36.05 | 436.8 | 10.82 | 32.8 |
| 290. | 0.3156 | 0.986 | 9.603 | 168.33 | 27.23 | 36.18 | 440.5 | 10.98 | 33.5 |
| 295. | 0.3100 | 0.986 | 9.784 | 168.95 | 27.40 | 36.32 | 444.2 | 11.14 | 34.1 |
| 300. | 0.3045 | 0.987 | 9.966 | 169.56 | 27.58 | 36.48 | 447.8 | 11.30 | 34.8 |
| 310. | 0.2943 | 0.989 | 10.333 | 170.76 | 27.95 | 36.81 | 454.8 | 11.62 | 36.2 |

METHANE ISOBAR AT P = 0.750 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 320. | 0.2847 | 0.990 | 10.703 | 171.93 | 28.36 | 37.17 | 461.6 | 11.94 | 37.6 |
| 330. | 0.2758 | 0.991 | 11.076 | 173.08 | 28.79 | 37.57 | 468.3 | 12.25 | 39.1 |
| 340. | 0.2674 | 0.992 | 11.454 | 174.21 | 29.25 | 37.99 | 474.7 | 12.55 | 40.6 |
| 350. | 0.2595 | 0.993 | 11.836 | 175.32 | 29.73 | 38.44 | 481.0 | 12.86 | 42.1 |
| 360. | 0.2521 | 0.994 | 12.223 | 176.41 | 30.22 | 38.91 | 487.2 | 13.16 | 43.7 |
| 370. | 0.2451 | 0.995 | 12.614 | 177.48 | 30.74 | 39.40 | 493.2 | 13.45 | 45.3 |
| 380. | 0.2385 | 0.995 | 13.011 | 178.54 | 31.26 | 39.90 | 499.1 | 13.75 | 47.0 |
| 390. | 0.2322 | 0.996 | 13.413 | 179.58 | 31.80 | 40.42 | 504.9 | 14.04 | 48.6 |
| 400. | 0.2263 | 0.997 | 13.819 | 180.61 | 32.35 | 40.96 | 510.5 | 14.32 | 50.3 |
| 410. | 0.2207 | 0.997 | 14.232 | 181.63 | 32.91 | 41.50 | 516.1 | | 52.0 |
| 420. | 0.2153 | 0.997 | 14.649 | 182.64 | 33.48 | 42.05 | 521.6 | | 53.8 |
| 430. | 0.2102 | 0.998 | 15.073 | 183.63 | 34.05 | 42.61 | 527.0 | | 55.6 |
| 440. | 0.2054 | 0.998 | 15.502 | 184.62 | 34.63 | 43.17 | 532.3 | | 57.4 |
| 450. | 0.2007 | 0.999 | 15.936 | 185.59 | 35.20 | 43.73 | 537.5 | | 59.2 |
| 460. | 0.1963 | 0.999 | 16.376 | 186.56 | 35.78 | 44.30 | 542.7 | | 61.0 |
| 470. | 0.1921 | 0.999 | 16.822 | 187.52 | 36.36 | 44.87 | 547.8 | | 62.9 |
| 480. | 0.1880 | 0.999 | 17.274 | 188.47 | 36.94 | 45.44 | 552.9 | | 64.8 |
| 490. | 0.1842 | 1.000 | 17.731 | 189.41 | 37.51 | 46.00 | 557.9 | | 66.6 |
| 500. | 0.1804 | 1.000 | 18.194 | 190.35 | 38.09 | 46.57 | 562.8 | | 68.5 |
| 520. | 0.1734 | 1.000 | 19.136 | 192.20 | 39.22 | 47.69 | 572.6 | | 72.4 |
| 540. | 0.1670 | 1.001 | 20.101 | 194.02 | 40.33 | 48.79 | 582.2 | | 76.3 |
| 560. | 0.1609 | 1.001 | 21.088 | 195.81 | 41.42 | 49.86 | 591.6 | | 80.2 |
| 580. | 0.1554 | 1.001 | 22.095 | 197.58 | 42.49 | 50.92 | 600.8 | | 84.1 |
| 600. | 0.1502 | 1.001 | 23.124 | 199.32 | 43.52 | 51.94 | 610.0 | | 88.0 |

METHANE ISOBAR AT P = 0.800 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.820 | 0.036 | -5.495 | 70.19 | 34.01 | 53.68 | 1504.9 | 181.15 | 206.8 |
| 100. | 27.399 | 0.035 | -5.224 | 72.97 | 34.11 | 54.55 | 1452.8 | 158.73 | 200.5 |
| 105. | 26.968 | 0.034 | -4.950 | 75.65 | 33.88 | 55.18 | 1403.3 | 139.81 | 193.9 |
| 110. | 26.526 | 0.033 | -4.672 | 78.23 | 33.51 | 55.72 | 1354.3 | 123.85 | 187.0 |
| 115. | 26.072 | 0.032 | -4.392 | 80.71 | 33.09 | 56.26 | 1304.9 | 110.35 | 180.1 |
| 120. | 25.602 | 0.031 | -4.110 | 83.12 | 32.67 | 56.88 | 1254.5 | 98.87 | 173.0 |
| 125. | 25.116 | 0.031 | -3.823 | 85.46 | 32.26 | 57.62 | 1202.8 | 89.06 | 165.8 |
| 130. | 24.609 | 0.030 | -3.533 | 87.74 | 31.88 | 58.52 | 1149.4 | 80.58 | 158.5 |
| 135. | 24.077 | 0.030 | -3.238 | 89.96 | 31.53 | 59.63 | 1094.1 | 73.17 | 151.2 |
| 140. | 23.516 | 0.029 | -2.936 | 92.16 | 31.23 | 61.03 | 1036.5 | 66.62 | 143.9 |

METHANE ISOBAR AT P = 0.800 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 144.396 | 22.992 | 0.029 | -2.664 | 94.07 | 31.00 | 62.59 | 983.3 | 61.41 | 137.3 |
| 144.396 | 0.7843 | 0.850 | 4.256 | 142.00 | 27.88 | 43.68 | 286.3 | 5.88 | 17.1 |
| 145. | 0.7796 | 0.851 | 4.281 | 142.17 | 27.74 | 43.31 | 287.4 | 5.90 | 17.2 |
| 150. | 0.7391 | 0.868 | 4.492 | 143.60 | 27.02 | 41.23 | 296.0 | 6.08 | 17.5 |
| 155. | 0.7040 | 0.882 | 4.695 | 144.93 | 26.70 | 40.05 | 303.8 | 6.27 | 17.9 |
| 160. | 0.6730 | 0.894 | 4.893 | 146.19 | 26.50 | 39.19 | 311.2 | 6.45 | 18.3 |
| 165. | 0.6453 | 0.904 | 5.087 | 147.38 | 26.33 | 38.51 | 318.2 | 6.64 | 18.8 |
| 170. | 0.6203 | 0.912 | 5.278 | 148.52 | 26.18 | 37.94 | 324.9 | 6.82 | 19.3 |
| 175. | 0.5975 | 0.920 | 5.467 | 149.62 | 26.06 | 37.46 | 331.3 | 7.00 | 19.9 |
| 180. | 0.5766 | 0.927 | 5.653 | 150.67 | 25.97 | 37.06 | 337.5 | 7.19 | 20.4 |
| 185. | 0.5574 | 0.933 | 5.838 | 151.68 | 25.89 | 36.73 | 343.5 | 7.37 | 21.0 |
| 190. | 0.5396 | 0.938 | 6.020 | 152.65 | 25.83 | 36.45 | 349.3 | 7.55 | 21.6 |
| 195. | 0.5231 | 0.943 | 6.202 | 153.60 | 25.79 | 36.22 | 355.0 | 7.73 | 22.1 |
| 200. | 0.5077 | 0.948 | 6.383 | 154.51 | 25.76 | 36.02 | 360.5 | 7.91 | 22.6 |
| 205. | 0.4933 | 0.952 | 6.562 | 155.40 | 25.75 | 35.87 | 365.8 | 8.09 | 23.2 |
| 210. | 0.4797 | 0.955 | 6.741 | 156.26 | 25.75 | 35.74 | 371.0 | 8.27 | 23.7 |
| 215. | 0.4670 | 0.958 | 6.920 | 157.10 | 25.76 | 35.64 | 376.0 | 8.45 | 24.3 |
| 220. | 0.4550 | 0.961 | 7.098 | 157.92 | 25.79 | 35.56 | 381.0 | 8.62 | 24.8 |
| 225. | 0.4436 | 0.964 | 7.275 | 158.72 | 25.83 | 35.51 | 385.8 | 8.80 | 25.4 |
| 230. | 0.4329 | 0.966 | 7.453 | 159.50 | 25.88 | 35.47 | 390.5 | 8.97 | 26.0 |
| 235. | 0.4227 | 0.969 | 7.630 | 160.26 | 25.94 | 35.46 | 395.1 | 9.15 | 26.6 |
| 240. | 0.4130 | 0.971 | 7.808 | 161.01 | 26.01 | 35.46 | 399.7 | 9.32 | 27.2 |
| 245. | 0.4038 | 0.973 | 7.985 | 161.74 | 26.09 | 35.48 | 404.1 | 9.49 | 27.8 |
| 250. | 0.3950 | 0.974 | 8.162 | 162.45 | 26.18 | 35.51 | 408.4 | 9.66 | 28.4 |
| 255. | 0.3866 | 0.976 | 8.340 | 163.16 | 26.28 | 35.56 | 412.7 | 9.83 | 29.0 |
| 260. | 0.3786 | 0.978 | 8.518 | 163.85 | 26.39 | 35.62 | 416.8 | 10.00 | 29.6 |
| 265. | 0.3709 | 0.979 | 8.696 | 164.53 | 26.51 | 35.69 | 420.9 | 10.17 | 30.2 |
| 270. | 0.3635 | 0.980 | 8.875 | 165.20 | 26.64 | 35.78 | 424.9 | 10.33 | 30.9 |
| 275. | 0.3565 | 0.981 | 9.054 | 165.85 | 26.77 | 35.87 | 428.9 | 10.50 | 31.5 |
| 280. | 0.3497 | 0.983 | 9.234 | 166.50 | 26.92 | 35.98 | 432.8 | 10.66 | 32.2 |
| 285. | 0.3432 | 0.984 | 9.414 | 167.14 | 27.07 | 36.10 | 436.6 | 10.83 | 32.8 |
| 290. | 0.3370 | 0.985 | 9.595 | 167.77 | 27.24 | 36.23 | 440.3 | 10.99 | 33.5 |
| 295. | 0.3309 | 0.986 | 9.776 | 168.39 | 27.41 | 36.38 | 444.0 | 11.15 | 34.2 |
| 300. | 0.3251 | 0.986 | 9.958 | 169.00 | 27.58 | 36.53 | 447.6 | 11.31 | 34.9 |
| 310. | 0.3141 | 0.988 | 10.325 | 170.20 | 27.96 | 36.85 | 454.7 | 11.63 | 36.2 |
| 320. | 0.3039 | 0.989 | 10.696 | 171.38 | 28.37 | 37.21 | 461.5 | 11.94 | 37.7 |
| 330. | 0.2943 | 0.991 | 11.070 | 172.53 | 28.80 | 37.61 | 468.2 | 12.25 | 39.1 |
| 340. | 0.2853 | 0.992 | 11.448 | 173.66 | 29.25 | 38.03 | 474.7 | 12.56 | 40.6 |
| 350. | 0.2769 | 0.993 | 11.830 | 174.77 | 29.73 | 38.47 | 481.0 | 12.86 | 42.2 |
| 360. | 0.2690 | 0.994 | 12.217 | 175.86 | 30.23 | 38.94 | 487.2 | 13.16 | 43.7 |

METHANE ISOBAR AT P = 0.800 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 370. | 0.2615 | 0.994 | 12.609 | 176.93 | 30.74 | 39.43 | 493.2 | 13.46 | 45.3 |
| 380. | 0.2544 | 0.995 | 13.006 | 177.99 | 31.27 | 39.93 | 499.1 | 13.75 | 47.0 |
| 390. | 0.2478 | 0.996 | 13.408 | 179.03 | 31.81 | 40.45 | 504.9 | 14.04 | 48.6 |
| 400. | 0.2414 | 0.996 | 13.815 | 180.06 | 32.36 | 40.98 | 510.5 | 14.33 | 50.3 |
| 410. | 0.2354 | 0.997 | 14.227 | 181.08 | 32.92 | 41.52 | 516.1 | | 52.1 |
| 420. | 0.2297 | 0.997 | 14.645 | 182.09 | 33.48 | 42.07 | 521.6 | | 53.8 |
| 430. | 0.2243 | 0.998 | 15.069 | 183.09 | 34.05 | 42.63 | 527.0 | | 55.6 |
| 440. | 0.2191 | 0.998 | 15.498 | 184.07 | 34.63 | 43.19 | 532.3 | | 57.4 |
| 450. | 0.2141 | 0.999 | 15.933 | 185.05 | 35.21 | 43.75 | 537.6 | | 59.2 |
| 460. | 0.2094 | 0.999 | 16.373 | 186.02 | 35.79 | 44.32 | 542.7 | | 61.0 |
| 470. | 0.2049 | 0.999 | 16.819 | 186.98 | 36.36 | 44.89 | 547.9 | | 62.9 |
| 480. | 0.2006 | 0.999 | 17.271 | 187.93 | 36.94 | 45.45 | 552.9 | | 64.8 |
| 490. | 0.1964 | 1.000 | 17.728 | 188.87 | 37.52 | 46.02 | 557.9 | | 66.7 |
| 500. | 0.1925 | 1.000 | 18.191 | 189.81 | 38.09 | 46.58 | 562.9 | | 68.6 |
| 520. | 0.1850 | 1.000 | 19.134 | 191.66 | 39.22 | 47.70 | 572.6 | | 72.4 |
| 540. | 0.1781 | 1.001 | 20.099 | 193.48 | 40.33 | 48.80 | 582.2 | | 76.3 |
| 560. | 0.1717 | 1.001 | 21.086 | 195.27 | 41.42 | 49.87 | 591.7 | | 80.2 |
| 580. | 0.1657 | 1.001 | 22.094 | 197.04 | 42.49 | 50.93 | 600.9 | | 84.1 |
| 600. | 0.1602 | 1.001 | 23.122 | 198.78 | 43.52 | 51.95 | 610.1 | | 88.1 |

METHANE ISOBAR AT P = 0.850 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.822 | 0.039 | -5.493 | 70.19 | 34.01 | 53.67 | 1505.3 | 181.24 | 206.8 |
| 100. | 27.401 | 0.037 | -5.223 | 72.96 | 34.11 | 54.55 | 1453.3 | 158.82 | 200.5 |
| 105. | 26.971 | 0.036 | -4.948 | 75.64 | 33.88 | 55.17 | 1403.8 | 139.89 | 193.9 |
| 110. | 26.529 | 0.035 | -4.671 | 78.22 | 33.52 | 55.71 | 1354.8 | 123.92 | 187.1 |
| 115. | 26.075 | 0.034 | -4.391 | 80.71 | 33.10 | 56.25 | 1305.4 | 110.42 | 180.1 |
| 120. | 25.606 | 0.033 | -4.109 | 83.11 | 32.67 | 56.87 | 1255.1 | 98.94 | 173.0 |
| 125. | 25.119 | 0.033 | -3.822 | 85.45 | 32.26 | 57.61 | 1203.4 | 89.12 | 165.9 |
| 130. | 24.613 | 0.032 | -3.532 | 87.73 | 31.88 | 58.50 | 1150.1 | 80.63 | 158.6 |
| 135. | 24.082 | 0.031 | -3.237 | 89.95 | 31.53 | 59.61 | 1094.9 | 73.23 | 151.3 |
| 140. | 23.522 | 0.031 | -2.936 | 92.15 | 31.23 | 61.00 | 1037.4 | 66.68 | 144.0 |
| 145. | 22.926 | 0.031 | -2.626 | 94.32 | 30.97 | 62.78 | 977.0 | 60.80 | 136.5 |
| 145.651 | 22.844 | 0.031 | -2.585 | 94.60 | 30.94 | 63.06 | 968.7 | 60.07 | 135.5 |
| 145.651 | 0.8324 | 0.843 | 4.270 | 141.67 | 28.01 | 44.30 | 286.3 | 5.94 | 17.4 |
| 150. | 0.7941 | 0.858 | 4.456 | 142.93 | 27.23 | 42.10 | 294.0 | 6.10 | 17.7 |
| 155. | 0.7552 | 0.873 | 4.663 | 144.28 | 26.84 | 40.68 | 302.1 | 6.29 | 18.0 |

METHANE ISOBAR AT P = 0.850 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 160. | 0.7211 | 0.886 | 4.864 | 145.56 | 26.60 | 39.70 | 309.7 | 6.47 | 18.5 |
| 165. | 0.6907 | 0.897 | 5.060 | 146.77 | 26.42 | 38.94 | 316.8 | 6.65 | 18.9 |
| 170. | 0.6633 | 0.907 | 5.253 | 147.92 | 26.26 | 38.31 | 323.7 | 6.84 | 19.4 |
| 175. | 0.6385 | 0.915 | 5.444 | 149.02 | 26.13 | 37.78 | 330.2 | 7.02 | 20.0 |
| 180. | 0.6159 | 0.922 | 5.631 | 150.08 | 26.03 | 37.35 | 336.5 | 7.20 | 20.5 |
| 185. | 0.5950 | 0.929 | 5.817 | 151.10 | 25.94 | 36.98 | 342.6 | 7.38 | 21.1 |
| 190. | 0.5758 | 0.934 | 6.001 | 152.08 | 25.88 | 36.67 | 348.5 | 7.56 | 21.7 |
| 195. | 0.5580 | 0.940 | 6.184 | 153.03 | 25.83 | 36.42 | 354.2 | 7.74 | 22.2 |
| 200. | 0.5413 | 0.944 | 6.366 | 153.95 | 25.80 | 36.21 | 359.8 | 7.92 | 22.7 |
| 205. | 0.5258 | 0.948 | 6.546 | 154.84 | 25.78 | 36.03 | 365.1 | 8.10 | 23.2 |
| 210. | 0.5113 | 0.952 | 6.726 | 155.71 | 25.78 | 35.89 | 370.4 | 8.28 | 23.8 |
| 215. | 0.4976 | 0.956 | 6.905 | 156.55 | 25.79 | 35.78 | 375.5 | 8.46 | 24.3 |
| 220. | 0.4847 | 0.959 | 7.084 | 157.37 | 25.82 | 35.69 | 380.5 | 8.63 | 24.9 |
| 225. | 0.4725 | 0.962 | 7.262 | 158.17 | 25.85 | 35.62 | 385.3 | 8.81 | 25.5 |
| 230. | 0.4610 | 0.964 | 7.440 | 158.95 | 25.90 | 35.58 | 390.1 | 8.98 | 26.0 |
| 235. | 0.4500 | 0.967 | 7.618 | 159.72 | 25.96 | 35.56 | 394.7 | 9.16 | 26.6 |
| 240. | 0.4397 | 0.969 | 7.796 | 160.47 | 26.03 | 35.55 | 399.3 | 9.33 | 27.2 |
| 245. | 0.4298 | 0.971 | 7.973 | 161.20 | 26.11 | 35.56 | 403.7 | 9.50 | 27.8 |
| 250. | 0.4204 | 0.973 | 8.151 | 161.92 | 26.20 | 35.59 | 408.1 | 9.67 | 28.4 |
| 255. | 0.4114 | 0.974 | 8.329 | 162.63 | 26.29 | 35.63 | 412.4 | 9.84 | 29.0 |
| 260. | 0.4028 | 0.976 | 8.508 | 163.32 | 26.40 | 35.69 | 416.6 | 10.01 | 29.7 |
| 265. | 0.3946 | 0.978 | 8.686 | 164.00 | 26.52 | 35.76 | 420.7 | 10.18 | 30.3 |
| 270. | 0.3868 | 0.979 | 8.865 | 164.67 | 26.65 | 35.84 | 424.7 | 10.34 | 30.9 |
| 275. | 0.3792 | 0.980 | 9.045 | 165.33 | 26.78 | 35.94 | 428.7 | 10.51 | 31.6 |
| 280. | 0.3720 | 0.982 | 9.225 | 165.97 | 26.93 | 36.04 | 432.6 | 10.67 | 32.2 |
| 285. | 0.3650 | 0.983 | 9.405 | 166.61 | 27.08 | 36.16 | 436.4 | 10.84 | 32.9 |
| 290. | 0.3584 | 0.984 | 9.586 | 167.24 | 27.24 | 36.29 | 440.1 | 11.00 | 33.5 |
| 295. | 0.3519 | 0.985 | 9.768 | 167.86 | 27.41 | 36.43 | 443.8 | 11.16 | 34.2 |
| 300. | 0.3457 | 0.986 | 9.951 | 168.48 | 27.59 | 36.57 | 447.5 | 11.32 | 34.9 |
| 310. | 0.3340 | 0.987 | 10.318 | 169.68 | 27.97 | 36.90 | 454.6 | 11.64 | 36.3 |
| 320. | 0.3231 | 0.989 | 10.689 | 170.86 | 28.37 | 37.26 | 461.4 | 11.95 | 37.7 |
| 330. | 0.3129 | 0.990 | 11.063 | 172.01 | 28.81 | 37.64 | 468.1 | 12.26 | 39.2 |
| 340. | 0.3033 | 0.991 | 11.442 | 173.14 | 29.26 | 38.06 | 474.6 | 12.57 | 40.7 |
| 350. | 0.2944 | 0.992 | 11.824 | 174.25 | 29.74 | 38.50 | 480.9 | 12.87 | 42.2 |
| 360. | 0.2859 | 0.993 | 12.212 | 175.34 | 30.23 | 38.97 | 487.1 | 13.17 | 43.8 |
| 370. | 0.2779 | 0.994 | 12.604 | 176.42 | 30.74 | 39.45 | 493.2 | 13.47 | 45.4 |
| 380. | 0.2704 | 0.995 | 13.001 | 177.48 | 31.27 | 39.96 | 499.1 | 13.76 | 47.0 |
| 390. | 0.2633 | 0.996 | 13.403 | 178.52 | 31.81 | 40.47 | 504.9 | 14.05 | 48.7 |
| 400. | 0.2566 | 0.996 | 13.810 | 179.55 | 32.36 | 41.00 | 510.5 | 14.34 | 50.4 |
| 410. | 0.2502 | 0.997 | 14.223 | 180.57 | 32.92 | 41.54 | 516.1 | | 52.1 |

METHANE ISOBAR AT P = 0.850 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 420. | 0.2441 | 0.997 | 14.641 | 181.58 | 33.49 | 42.09 | 521.6 | | 53.8 |
| 430. | 0.2383 | 0.998 | 15.065 | 182.58 | 34.06 | 42.64 | 527.0 | | 55.6 |
| 440. | 0.2328 | 0.998 | 15.494 | 183.56 | 34.63 | 43.20 | 532.3 | | 57.4 |
| 450. | 0.2275 | 0.998 | 15.929 | 184.54 | 35.21 | 43.77 | 537.6 | | 59.2 |
| 460. | 0.2225 | 0.999 | 16.369 | 185.51 | 35.79 | 44.33 | 542.8 | | 61.1 |
| 470. | 0.2177 | 0.999 | 16.816 | 186.47 | 36.37 | 44.90 | 547.9 | | 62.9 |
| 480. | 0.2131 | 0.999 | 17.268 | 187.42 | 36.94 | 45.47 | 553.0 | | 64.8 |
| 490. | 0.2087 | 1.000 | 17.725 | 188.36 | 37.52 | 46.03 | 558.0 | | 66.7 |
| 500. | 0.2045 | 1.000 | 18.188 | 189.30 | 38.09 | 46.59 | 563.0 | | 68.6 |
| 520. | 0.1965 | 1.000 | 19.131 | 191.15 | 39.22 | 47.71 | 572.7 | | 72.4 |
| 540. | 0.1892 | 1.001 | 20.096 | 192.97 | 40.34 | 48.81 | 582.3 | | 76.3 |
| 560. | 0.1824 | 1.001 | 21.083 | 194.76 | 41.43 | 49.88 | 591.7 | | 80.2 |
| 580. | 0.1761 | 1.001 | 22.092 | 196.53 | 42.49 | 50.94 | 601.0 | | 84.1 |
| 600. | 0.1701 | 1.001 | 23.121 | 198.28 | 43.53 | 51.96 | 610.1 | | 88.1 |

METHANE ISOBAR AT P = 0.900 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.824 | 0.041 | -5.492 | 70.18 | 34.02 | 53.67 | 1505.7 | 181.34 | 206.9 |
| 100. | 27.403 | 0.040 | -5.222 | 72.96 | 34.11 | 54.54 | 1453.7 | 158.91 | 200.6 |
| 105. | 26.973 | 0.038 | -4.947 | 75.63 | 33.88 | 55.16 | 1404.2 | 139.97 | 194.0 |
| 110. | 26.532 | 0.037 | -4.670 | 78.21 | 33.52 | 55.70 | 1355.3 | 124.00 | 187.1 |
| 115. | 26.078 | 0.036 | -4.390 | 80.70 | 33.10 | 56.24 | 1305.9 | 110.49 | 180.2 |
| 120. | 25.609 | 0.035 | -4.107 | 83.11 | 32.67 | 56.86 | 1255.6 | 99.00 | 173.1 |
| 125. | 25.123 | 0.034 | -3.821 | 85.44 | 32.26 | 57.59 | 1204.0 | 89.18 | 165.9 |
| 130. | 24.617 | 0.034 | -3.531 | 87.72 | 31.88 | 58.48 | 1150.8 | 80.69 | 158.7 |
| 135. | 24.087 | 0.033 | -3.236 | 89.95 | 31.53 | 59.58 | 1095.7 | 73.28 | 151.4 |
| 140. | 23.528 | 0.033 | -2.935 | 92.14 | 31.23 | 60.97 | 1038.2 | 66.73 | 144.0 |
| 145. | 22.932 | 0.033 | -2.626 | 94.30 | 30.97 | 62.74 | 978.0 | 60.86 | 136.6 |
| 146.855 | 22.699 | 0.032 | -2.509 | 95.11 | 30.89 | 63.53 | 954.6 | 58.81 | 133.8 |
| 146.855 | 0.8808 | 0.837 | 4.282 | 141.35 | 28.15 | 44.94 | 286.2 | 6.01 | 17.7 |
| 150. | 0.8506 | 0.848 | 4.419 | 142.27 | 27.49 | 43.09 | 292.0 | 6.12 | 17.9 |
| 155. | 0.8076 | 0.865 | 4.630 | 143.66 | 26.98 | 41.36 | 300.4 | 6.30 | 18.2 |
| 160. | 0.7701 | 0.879 | 4.834 | 144.95 | 26.71 | 40.24 | 308.2 | 6.49 | 18.6 |
| 165. | 0.7368 | 0.890 | 5.033 | 146.18 | 26.51 | 39.39 | 315.5 | 6.67 | 19.0 |
| 170. | 0.7070 | 0.901 | 5.228 | 147.34 | 26.35 | 38.69 | 322.5 | 6.85 | 19.5 |
| 175. | 0.6801 | 0.909 | 5.420 | 148.45 | 26.21 | 38.12 | 329.1 | 7.03 | 20.0 |
| 180. | 0.6556 | 0.917 | 5.609 | 149.52 | 26.09 | 37.64 | 335.5 | 7.22 | 20.6 |

METHANE ISOBAR AT P = 0.900 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 185. | 0.6331 | 0.924 | 5.797 | 150.55 | 26.00 | 37.24 | 341.7 | 7.40 | 21.1 |
| 190. | 0.6123 | 0.930 | 5.982 | 151.53 | 25.92 | 36.90 | 347.7 | 7.58 | 21.8 |
| 195. | 0.5931 | 0.936 | 6.166 | 152.49 | 25.87 | 36.62 | 353.5 | 7.76 | 22.2 |
| 200. | 0.5753 | 0.941 | 6.348 | 153.41 | 25.83 | 36.39 | 359.1 | 7.94 | 22.7 |
| 205. | 0.5586 | 0.945 | 6.530 | 154.31 | 25.81 | 36.20 | 364.5 | 8.11 | 23.3 |
| 210. | 0.5430 | 0.949 | 6.710 | 155.18 | 25.81 | 36.04 | 369.8 | 8.29 | 23.8 |
| 215. | 0.5283 | 0.953 | 6.890 | 156.03 | 25.82 | 35.92 | 374.9 | 8.47 | 24.4 |
| 220. | 0.5145 | 0.956 | 7.070 | 156.85 | 25.84 | 35.82 | 380.0 | 8.65 | 24.9 |
| 225. | 0.5015 | 0.959 | 7.248 | 157.66 | 25.87 | 35.74 | 384.9 | 8.82 | 25.5 |
| 230. | 0.4892 | 0.962 | 7.427 | 158.44 | 25.92 | 35.69 | 389.7 | 8.99 | 26.1 |
| 235. | 0.4775 | 0.965 | 7.605 | 159.21 | 25.98 | 35.66 | 394.3 | 9.17 | 26.7 |
| 240. | 0.4664 | 0.967 | 7.784 | 159.96 | 26.04 | 35.65 | 398.9 | 9.34 | 27.3 |
| 245. | 0.4559 | 0.969 | 7.962 | 160.69 | 26.12 | 35.65 | 403.4 | 9.51 | 27.9 |
| 250. | 0.4458 | 0.971 | 8.140 | 161.41 | 26.21 | 35.68 | 407.8 | 9.68 | 28.5 |
| 255. | 0.4363 | 0.973 | 8.319 | 162.12 | 26.31 | 35.71 | 412.1 | 9.85 | 29.1 |
| 260. | 0.4271 | 0.975 | 8.497 | 162.81 | 26.42 | 35.76 | 416.3 | 10.02 | 29.7 |
| 265. | 0.4184 | 0.976 | 8.676 | 163.50 | 26.53 | 35.83 | 420.4 | 10.19 | 30.3 |
| 270. | 0.4100 | 0.978 | 8.856 | 164.17 | 26.66 | 35.91 | 424.5 | 10.35 | 31.0 |
| 275. | 0.4020 | 0.979 | 9.035 | 164.83 | 26.79 | 36.00 | 428.5 | 10.52 | 31.6 |
| 280. | 0.3943 | 0.980 | 9.216 | 165.48 | 26.94 | 36.10 | 432.4 | 10.68 | 32.2 |
| 285. | 0.3869 | 0.982 | 9.396 | 166.12 | 27.09 | 36.22 | 436.2 | 10.84 | 32.9 |
| 290. | 0.3798 | 0.983 | 9.578 | 166.75 | 27.25 | 36.34 | 440.0 | 11.01 | 33.6 |
| 295. | 0.3730 | 0.984 | 9.760 | 167.37 | 27.42 | 36.48 | 443.7 | 11.17 | 34.2 |
| 300. | 0.3664 | 0.985 | 9.943 | 167.98 | 27.60 | 36.62 | 447.3 | 11.33 | 34.9 |
| 310. | 0.3539 | 0.987 | 10.310 | 169.19 | 27.98 | 36.94 | 454.4 | 11.65 | 36.3 |
| 320. | 0.3423 | 0.988 | 10.682 | 170.37 | 28.38 | 37.30 | 461.3 | 11.96 | 37.7 |
| 330. | 0.3315 | 0.990 | 11.056 | 171.52 | 28.81 | 37.68 | 468.0 | 12.27 | 39.2 |
| 340. | 0.3213 | 0.991 | 11.435 | 172.65 | 29.27 | 38.10 | 474.5 | 12.58 | 40.7 |
| 350. | 0.3118 | 0.992 | 11.818 | 173.76 | 29.74 | 38.54 | 480.9 | 12.88 | 42.2 |
| 360. | 0.3028 | 0.993 | 12.206 | 174.86 | 30.24 | 39.00 | 487.1 | 13.18 | 43.8 |
| 370. | 0.2944 | 0.994 | 12.599 | 175.93 | 30.75 | 39.48 | 493.1 | 13.47 | 45.4 |
| 380. | 0.2864 | 0.995 | 12.996 | 176.99 | 31.28 | 39.98 | 499.0 | 13.77 | 47.0 |
| 390. | 0.2789 | 0.995 | 13.398 | 178.03 | 31.81 | 40.50 | 504.8 | 14.06 | 48.7 |
| 400. | 0.2717 | 0.996 | 13.806 | 179.07 | 32.36 | 41.02 | 510.5 | 14.34 | 50.4 |
| 410. | 0.2649 | 0.996 | 14.219 | 180.09 | 32.92 | 41.56 | 516.1 | | 52.1 |
| 420. | 0.2585 | 0.997 | 14.637 | 181.09 | 33.49 | 42.11 | 521.6 | | 53.9 |
| 430. | 0.2524 | 0.997 | 15.061 | 182.09 | 34.06 | 42.66 | 527.0 | | 55.6 |
| 440. | 0.2465 | 0.998 | 15.490 | 183.08 | 34.63 | 43.22 | 532.4 | | 57.4 |
| 450. | 0.2409 | 0.998 | 15.925 | 184.06 | 35.21 | 43.79 | 537.6 | | 59.3 |
| 460. | 0.2356 | 0.999 | 16.366 | 185.03 | 35.79 | 44.35 | 542.8 | | 61.1 |

METHANE ISOBAR AT P = 0.900 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 470. | 0.2305 | 0.999 | 16.812 | 185.99 | 36.37 | 44.92 | 548.0 | | 62.9 |
| 480. | 0.2257 | 0.999 | 17.264 | 186.94 | 36.95 | 45.48 | 553.0 | | 64.8 |
| 490. | 0.2210 | 1.000 | 17.722 | 187.88 | 37.52 | 46.05 | 558.1 | | 66.7 |
| 500. | 0.2165 | 1.000 | 18.185 | 188.82 | 38.09 | 46.61 | 563.0 | | 68.6 |
| 520. | 0.2081 | 1.000 | 19.129 | 190.67 | 39.23 | 47.72 | 572.8 | | 72.4 |
| 540. | 0.2003 | 1.001 | 20.094 | 192.49 | 40.34 | 48.82 | 582.4 | | 76.3 |
| 560. | 0.1931 | 1.001 | 21.081 | 194.28 | 41.43 | 49.90 | 591.8 | | 80.2 |
| 580. | 0.1864 | 1.001 | 22.090 | 196.05 | 42.49 | 50.95 | 601.1 | | 84.1 |
| 600. | 0.1801 | 1.001 | 23.119 | 197.80 | 43.53 | 51.97 | 610.2 | | 88.1 |

METHANE ISOBAR AT P = 0.950 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 95. | 27.827 | 0.043 | -5.491 | 70.18 | 34.02 | 53.66 | 1506.1 | 181.44 | 206.9 |
| 100. | 27.406 | 0.042 | -5.220 | 72.95 | 34.11 | 54.53 | 1454.1 | 159.00 | 200.6 |
| 105. | 26.976 | 0.040 | -4.946 | 75.63 | 33.89 | 55.16 | 1404.7 | 140.05 | 194.0 |
| 110. | 26.535 | 0.039 | -4.669 | 78.21 | 33.52 | 55.69 | 1355.8 | 124.07 | 187.2 |
| 115. | 26.081 | 0.038 | -4.389 | 80.69 | 33.10 | 56.23 | 1306.5 | 110.55 | 180.2 |
| 120. | 25.613 | 0.037 | -4.106 | 83.10 | 32.67 | 56.85 | 1256.2 | 99.07 | 173.1 |
| 125. | 25.127 | 0.036 | -3.820 | 85.43 | 32.26 | 57.57 | 1204.6 | 89.24 | 166.0 |
| 130. | 24.621 | 0.036 | -3.530 | 87.71 | 31.88 | 58.46 | 1151.5 | 80.75 | 158.8 |
| 135. | 24.092 | 0.035 | -3.235 | 89.94 | 31.54 | 59.56 | 1096.4 | 73.34 | 151.5 |
| 140. | 23.533 | 0.035 | -2.934 | 92.13 | 31.23 | 60.93 | 1039.1 | 66.79 | 144.1 |
| 145. | 22.939 | 0.034 | -2.625 | 94.29 | 30.97 | 62.69 | 978.9 | 60.92 | 136.7 |
| 148.011 | 22.559 | 0.034 | -2.435 | 95.60 | 30.84 | 64.01 | 940.9 | 57.64 | 132.2 |
| 148.011 | 0.9295 | 0.831 | 4.293 | 141.05 | 28.28 | 45.59 | 286.1 | 6.07 | 18.0 |
| 150. | 0.9088 | 0.838 | 4.381 | 141.64 | 27.79 | 44.23 | 289.9 | 6.14 | 18.1 |
| 155. | 0.8611 | 0.856 | 4.597 | 143.05 | 27.15 | 42.11 | 298.6 | 6.32 | 18.4 |
| 160. | 0.8200 | 0.871 | 4.804 | 144.37 | 26.83 | 40.82 | 306.6 | 6.50 | 18.7 |
| 165. | 0.7837 | 0.884 | 5.005 | 145.61 | 26.61 | 39.86 | 314.1 | 6.69 | 19.2 |
| 170. | 0.7514 | 0.894 | 5.203 | 146.79 | 26.43 | 39.09 | 321.2 | 6.87 | 19.6 |
| 175. | 0.7222 | 0.904 | 5.396 | 147.91 | 26.28 | 38.46 | 328.0 | 7.05 | 20.1 |
| 180. | 0.6957 | 0.912 | 5.587 | 148.99 | 26.15 | 37.94 | 334.5 | 7.23 | 20.7 |
| 185. | 0.6715 | 0.920 | 5.776 | 150.02 | 26.05 | 37.50 | 340.8 | 7.41 | 21.2 |
| 190. | 0.6492 | 0.926 | 5.963 | 151.02 | 25.97 | 37.14 | 346.8 | 7.59 | 21.8 |
| 195. | 0.6286 | 0.932 | 6.147 | 151.98 | 25.91 | 36.83 | 352.7 | 7.77 | 22.3 |
| 200. | 0.6094 | 0.937 | 6.331 | 152.90 | 25.87 | 36.58 | 358.4 | 7.95 | 22.8 |
| 205. | 0.5916 | 0.942 | 6.513 | 153.81 | 25.85 | 36.37 | 363.8 | 8.13 | 23.3 |

METHANE ISOBAR AT P = 0.950 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 210. | 0.5749 | 0.946 | 6.695 | 154.68 | 25.84 | 36.20 | 369.2 | 8.30 | 23.9 |
| 215. | 0.5593 | 0.950 | 6.875 | 155.53 | 25.85 | 36.06 | 374.4 | 8.48 | 24.4 |
| 220. | 0.5445 | 0.954 | 7.055 | 156.36 | 25.86 | 35.95 | 379.5 | 8.66 | 25.0 |
| 225. | 0.5306 | 0.957 | 7.235 | 157.16 | 25.90 | 35.86 | 384.4 | 8.83 | 25.6 |
| 230. | 0.5175 | 0.960 | 7.414 | 157.95 | 25.94 | 35.80 | 389.2 | 9.01 | 26.1 |
| 235. | 0.5051 | 0.963 | 7.593 | 158.72 | 25.99 | 35.76 | 393.9 | 9.18 | 26.7 |
| 240. | 0.4933 | 0.965 | 7.772 | 159.47 | 26.06 | 35.74 | 398.5 | 9.35 | 27.3 |
| 245. | 0.4821 | 0.967 | 7.950 | 160.21 | 26.14 | 35.74 | 403.0 | 9.52 | 27.9 |
| 250. | 0.4714 | 0.970 | 8.129 | 160.93 | 26.22 | 35.76 | 407.5 | 9.69 | 28.5 |
| 255. | 0.4612 | 0.971 | 8.308 | 161.64 | 26.32 | 35.79 | 411.8 | 9.86 | 29.1 |
| 260. | 0.4515 | 0.973 | 8.487 | 162.34 | 26.43 | 35.84 | 416.0 | 10.03 | 29.7 |
| 265. | 0.4422 | 0.975 | 8.666 | 163.02 | 26.54 | 35.90 | 420.2 | 10.19 | 30.4 |
| 270. | 0.4333 | 0.977 | 8.846 | 163.69 | 26.67 | 35.97 | 424.2 | 10.36 | 31.0 |
| 275. | 0.4248 | 0.978 | 9.026 | 164.35 | 26.80 | 36.06 | 428.2 | 10.53 | 31.6 |
| 280. | 0.4167 | 0.979 | 9.207 | 165.00 | 26.95 | 36.16 | 432.2 | 10.69 | 32.3 |
| 285. | 0.4088 | 0.981 | 9.388 | 165.64 | 27.10 | 36.27 | 436.0 | 10.85 | 32.9 |
| 290. | 0.4013 | 0.982 | 9.569 | 166.28 | 27.26 | 36.40 | 439.8 | 11.02 | 33.6 |
| 295. | 0.3941 | 0.983 | 9.752 | 166.90 | 27.43 | 36.53 | 443.5 | 11.18 | 34.3 |
| 300. | 0.3871 | 0.984 | 9.935 | 167.51 | 27.61 | 36.67 | 447.2 | 11.34 | 35.0 |
| 310. | 0.3739 | 0.986 | 10.303 | 168.72 | 27.98 | 36.99 | 454.3 | 11.65 | 36.3 |
| 320. | 0.3616 | 0.987 | 10.675 | 169.90 | 28.39 | 37.34 | 461.2 | 11.97 | 37.8 |
| 330. | 0.3501 | 0.989 | 11.050 | 171.06 | 28.82 | 37.72 | 467.9 | 12.28 | 39.2 |
| 340. | 0.3394 | 0.990 | 11.429 | 172.19 | 29.27 | 38.13 | 474.5 | 12.58 | 40.7 |
| 350. | 0.3293 | 0.991 | 11.813 | 173.30 | 29.75 | 38.57 | 480.8 | 12.89 | 42.3 |
| 360. | 0.3198 | 0.992 | 12.201 | 174.39 | 30.24 | 39.03 | 487.0 | 13.19 | 43.8 |
| 370. | 0.3109 | 0.993 | 12.593 | 175.47 | 30.75 | 39.51 | 493.1 | 13.48 | 45.4 |
| 380. | 0.3024 | 0.994 | 12.991 | 176.53 | 31.28 | 40.01 | 499.0 | 13.77 | 47.1 |
| 390. | 0.2944 | 0.995 | 13.393 | 177.58 | 31.82 | 40.52 | 504.8 | 14.06 | 48.7 |
| 400. | 0.2869 | 0.996 | 13.801 | 178.61 | 32.37 | 41.05 | 510.5 | 14.35 | 50.4 |
| 410. | 0.2797 | 0.996 | 14.214 | 179.63 | 32.93 | 41.58 | 516.1 | | 52.1 |
| 420. | 0.2729 | 0.997 | 14.633 | 180.64 | 33.49 | 42.13 | 521.7 | | 53.9 |
| 430. | 0.2664 | 0.997 | 15.057 | 181.63 | 34.06 | 42.68 | 527.1 | | 55.7 |
| 440. | 0.2602 | 0.998 | 15.487 | 182.62 | 34.64 | 43.24 | 532.4 | | 57.5 |
| 450. | 0.2544 | 0.998 | 15.922 | 183.60 | 35.21 | 43.80 | 537.7 | | 59.3 |
| 460. | 0.2487 | 0.999 | 16.363 | 184.57 | 35.79 | 44.37 | 542.9 | | 61.1 |
| 470. | 0.2434 | 0.999 | 16.809 | 185.53 | 36.37 | 44.93 | 548.0 | | 63.0 |
| 480. | 0.2382 | 0.999 | 17.261 | 186.48 | 36.95 | 45.50 | 553.1 | | 64.8 |
| 490. | 0.2333 | 1.000 | 17.719 | 187.42 | 37.52 | 46.06 | 558.1 | | 66.7 |
| 500. | 0.2285 | 1.000 | 18.183 | 188.36 | 38.10 | 46.62 | 563.1 | | 68.6 |
| 520. | 0.2197 | 1.000 | 19.126 | 190.21 | 39.23 | 47.73 | 572.9 | | 72.5 |

METHANE ISOBAR AT P = 0.950 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 540. | 0.2114 | 1.001 | 20.092 | 192.03 | 40.34 | 48.83 | 582.5 | | 76.3 |
| 560. | 0.2038 | 1.001 | 21.079 | 193.83 | 41.43 | 49.91 | 591.9 | | 80.2 |
| 580. | 0.1967 | 1.001 | 22.088 | 195.60 | 42.49 | 50.96 | 601.2 | | 84.2 |
| 600. | 0.1901 | 1.002 | 23.117 | 197.34 | 43.53 | 51.98 | 610.3 | | 88.1 |

METHANE ISOBAR AT P = 1.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.829 | 0.045 | -5.490 | 70.17 | 34.02 | 53.66 | 1506.5 | 181.54 | 207.0 |
| 100. | 27.408 | 0.044 | -5.219 | 72.95 | 34.11 | 54.53 | 1454.5 | 159.09 | 200.7 |
| 105. | 26.978 | 0.042 | -4.945 | 75.62 | 33.89 | 55.15 | 1405.1 | 140.14 | 194.1 |
| 110. | 26.538 | 0.041 | -4.668 | 78.20 | 33.52 | 55.68 | 1356.3 | 124.15 | 187.2 |
| 115. | 26.084 | 0.040 | -4.388 | 80.69 | 33.10 | 56.22 | 1307.0 | 110.62 | 180.3 |
| 120. | 25.616 | 0.039 | -4.105 | 83.09 | 32.67 | 56.83 | 1256.8 | 99.13 | 173.2 |
| 125. | 25.131 | 0.038 | -3.819 | 85.43 | 32.26 | 57.56 | 1205.3 | 89.30 | 166.1 |
| 130. | 24.626 | 0.038 | -3.529 | 87.70 | 31.88 | 58.44 | 1152.2 | 80.81 | 158.8 |
| 135. | 24.097 | 0.037 | -3.235 | 89.93 | 31.54 | 59.53 | 1097.2 | 73.40 | 151.5 |
| 140. | 23.539 | 0.036 | -2.934 | 92.12 | 31.23 | 60.90 | 1040.0 | 66.84 | 144.2 |
| 145. | 22.945 | 0.036 | -2.625 | 94.28 | 30.97 | 62.65 | 979.9 | 60.97 | 136.8 |
| 149.124 | 22.422 | 0.036 | -2.363 | 96.06 | 30.80 | 64.50 | 927.7 | 56.53 | 130.6 |
| 149.124 | 0.9783 | 0.824 | 4.302 | 140.76 | 28.41 | 46.26 | 286.0 | 6.13 | 18.2 |
| 150. | 0.9687 | 0.828 | 4.342 | 141.02 | 28.16 | 45.57 | 287.7 | 6.16 | 18.3 |
| 155. | 0.9160 | 0.847 | 4.562 | 142.47 | 27.33 | 42.94 | 296.8 | 6.34 | 18.5 |
| 160. | 0.8709 | 0.863 | 4.773 | 143.80 | 26.95 | 41.43 | 305.0 | 6.52 | 18.9 |
| 165. | 0.8315 | 0.877 | 4.977 | 145.06 | 26.71 | 40.35 | 312.7 | 6.70 | 19.3 |
| 170. | 0.7964 | 0.888 | 5.177 | 146.25 | 26.51 | 39.51 | 320.0 | 6.88 | 19.7 |
| 175. | 0.7649 | 0.898 | 5.372 | 147.39 | 26.35 | 38.82 | 326.9 | 7.06 | 20.2 |
| 180. | 0.7364 | 0.907 | 5.565 | 148.47 | 26.22 | 38.25 | 333.5 | 7.24 | 20.8 |
| 185. | 0.7103 | 0.915 | 5.755 | 149.52 | 26.11 | 37.77 | 339.9 | 7.43 | 21.3 |
| 190. | 0.6864 | 0.922 | 5.943 | 150.52 | 26.02 | 37.38 | 346.0 | 7.60 | 21.9 |
| 195. | 0.6644 | 0.928 | 6.129 | 151.48 | 25.96 | 37.05 | 351.9 | 7.78 | 22.4 |
| 200. | 0.6439 | 0.934 | 6.313 | 152.42 | 25.91 | 36.77 | 357.6 | 7.96 | 22.9 |
| 205. | 0.6248 | 0.939 | 6.497 | 153.32 | 25.88 | 36.54 | 363.2 | 8.14 | 23.4 |
| 210. | 0.6070 | 0.943 | 6.679 | 154.20 | 25.87 | 36.35 | 368.6 | 8.32 | 23.9 |
| 215. | 0.5904 | 0.948 | 6.860 | 155.06 | 25.87 | 36.20 | 373.8 | 8.49 | 24.5 |
| 220. | 0.5747 | 0.951 | 7.041 | 155.89 | 25.89 | 36.08 | 378.9 | 8.67 | 25.1 |
| 225. | 0.5599 | 0.955 | 7.221 | 156.70 | 25.92 | 35.98 | 383.9 | 8.84 | 25.6 |
| 230. | 0.5460 | 0.958 | 7.401 | 157.49 | 25.96 | 35.91 | 388.8 | 9.02 | 26.2 |

METHANE ISOBAR AT P = 1.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 235. | 0.5328 | 0.961 | 7.580 | 158.26 | 26.01 | 35.87 | 393.5 | 9.19 | 26.8 |
| 240. | 0.5202 | 0.963 | 7.760 | 159.01 | 26.08 | 35.84 | 398.2 | 9.36 | 27.4 |
| 245. | 0.5084 | 0.966 | 7.939 | 159.75 | 26.15 | 35.83 | 402.7 | 9.53 | 28.0 |
| 250. | 0.4970 | 0.968 | 8.118 | 160.48 | 26.24 | 35.84 | 407.1 | 9.70 | 28.6 |
| 255. | 0.4863 | 0.970 | 8.297 | 161.19 | 26.33 | 35.87 | 411.5 | 9.87 | 29.2 |
| 260. | 0.4760 | 0.972 | 8.477 | 161.88 | 26.44 | 35.91 | 415.7 | 10.04 | 29.8 |
| 265. | 0.4661 | 0.974 | 8.656 | 162.57 | 26.56 | 35.97 | 419.9 | 10.20 | 30.4 |
| 270. | 0.4567 | 0.975 | 8.836 | 163.24 | 26.68 | 36.04 | 424.0 | 10.37 | 31.0 |
| 275. | 0.4477 | 0.977 | 9.017 | 163.90 | 26.82 | 36.12 | 428.0 | 10.54 | 31.7 |
| 280. | 0.4391 | 0.978 | 9.198 | 164.55 | 26.96 | 36.22 | 432.0 | 10.70 | 32.3 |
| 285. | 0.4308 | 0.980 | 9.379 | 165.20 | 27.11 | 36.33 | 435.8 | 10.86 | 33.0 |
| 290. | 0.4228 | 0.981 | 9.561 | 165.83 | 27.27 | 36.45 | 439.6 | 11.02 | 33.6 |
| 295. | 0.4152 | 0.982 | 9.744 | 166.45 | 27.44 | 36.58 | 443.4 | 11.19 | 34.3 |
| 300. | 0.4078 | 0.983 | 9.927 | 167.07 | 27.61 | 36.72 | 447.0 | 11.35 | 35.0 |
| 310. | 0.3939 | 0.985 | 10.296 | 168.28 | 27.99 | 37.03 | 454.2 | 11.66 | 36.4 |
| 320. | 0.3809 | 0.987 | 10.668 | 169.46 | 28.39 | 37.38 | 461.1 | 11.98 | 37.8 |
| 330. | 0.3687 | 0.988 | 11.043 | 170.62 | 28.82 | 37.76 | 467.9 | 12.29 | 39.3 |
| 340. | 0.3574 | 0.990 | 11.423 | 171.75 | 29.28 | 38.17 | 474.4 | 12.59 | 40.8 |
| 350. | 0.3468 | 0.991 | 11.807 | 172.86 | 29.75 | 38.60 | 480.8 | 12.89 | 42.3 |
| 360. | 0.3368 | 0.992 | 12.195 | 173.95 | 30.25 | 39.06 | 487.0 | 13.19 | 43.9 |
| 370. | 0.3273 | 0.993 | 12.588 | 175.03 | 30.76 | 39.54 | 493.1 | 13.49 | 45.5 |
| 380. | 0.3184 | 0.994 | 12.986 | 176.09 | 31.28 | 40.03 | 499.0 | 13.78 | 47.1 |
| 390. | 0.3100 | 0.995 | 13.389 | 177.14 | 31.82 | 40.55 | 504.8 | 14.07 | 48.7 |
| 400. | 0.3021 | 0.995 | 13.797 | 178.17 | 32.37 | 41.07 | 510.5 | 14.36 | 50.4 |
| 410. | 0.2945 | 0.996 | 14.210 | 179.19 | 32.93 | 41.61 | 516.2 | | 52.2 |
| 420. | 0.2873 | 0.997 | 14.629 | 180.20 | 33.50 | 42.15 | 521.7 | | 53.9 |
| 430. | 0.2805 | 0.997 | 15.053 | 181.20 | 34.07 | 42.70 | 527.1 | | 55.7 |
| 440. | 0.2740 | 0.998 | 15.483 | 182.19 | 34.64 | 43.26 | 532.4 | | 57.5 |
| 450. | 0.2678 | 0.998 | 15.918 | 183.17 | 35.22 | 43.82 | 537.7 | | 59.3 |
| 460. | 0.2618 | 0.999 | 16.359 | 184.14 | 35.80 | 44.38 | 542.9 | | 61.1 |
| 470. | 0.2562 | 0.999 | 16.806 | 185.10 | 36.37 | 44.95 | 548.1 | | 63.0 |
| 480. | 0.2508 | 0.999 | 17.258 | 186.05 | 36.95 | 45.51 | 553.1 | | 64.9 |
| 490. | 0.2456 | 1.000 | 17.716 | 186.99 | 37.53 | 46.07 | 558.2 | | 66.7 |
| 500. | 0.2406 | 1.000 | 18.180 | 187.93 | 38.10 | 46.63 | 563.1 | | 68.6 |
| 520. | 0.2312 | 1.000 | 19.124 | 189.78 | 39.23 | 47.75 | 572.9 | | 72.5 |
| 540. | 0.2226 | 1.001 | 20.090 | 191.60 | 40.34 | 48.84 | 582.5 | | 76.4 |
| 560. | 0.2145 | 1.001 | 21.077 | 193.40 | 41.43 | 49.92 | 592.0 | | 80.3 |
| 580. | 0.2071 | 1.001 | 22.086 | 195.17 | 42.49 | 50.96 | 601.3 | | 84.2 |
| 600. | 0.2001 | 1.002 | 23.116 | 196.91 | 43.53 | 51.99 | 610.4 | | 88.1 |

METHANE ISOBAR AT P = 1.5 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 27.850 | 0.068 | -5.477 | 70.12 | 34.04 | 53.61 | 1510.4 | 182.52 | 207.4 |
| 100. | 27.432 | 0.066 | -5.206 | 72.89 | 34.13 | 54.47 | 1458.8 | 159.98 | 201.1 |
| 105. | 27.004 | 0.064 | -4.932 | 75.56 | 33.90 | 55.08 | 1409.7 | 140.96 | 194.6 |
| 110. | 26.566 | 0.062 | -4.656 | 78.14 | 33.54 | 55.60 | 1361.1 | 124.90 | 187.8 |
| 115. | 26.115 | 0.060 | -4.376 | 80.62 | 33.12 | 56.12 | 1312.2 | 111.32 | 180.9 |
| 120. | 25.650 | 0.059 | -4.094 | 83.02 | 32.69 | 56.71 | 1262.4 | 99.78 | 173.8 |
| 125. | 25.169 | 0.057 | -3.809 | 85.35 | 32.28 | 57.41 | 1211.4 | 89.91 | 166.7 |
| 130. | 24.668 | 0.056 | -3.520 | 87.62 | 31.90 | 58.25 | 1159.0 | 81.39 | 159.5 |
| 135. | 24.145 | 0.055 | -3.226 | 89.83 | 31.55 | 59.29 | 1104.7 | 73.96 | 152.3 |
| 140. | 23.595 | 0.055 | -2.927 | 92.01 | 31.25 | 60.59 | 1048.4 | 67.40 | 145.0 |
| 145. | 23.010 | 0.054 | -2.620 | 94.17 | 30.98 | 62.23 | 989.6 | 61.53 | 137.7 |
| 150. | 22.383 | 0.054 | -2.304 | 96.31 | 30.77 | 64.37 | 927.4 | 56.20 | 130.2 |
| 155. | 21.700 | 0.054 | -1.975 | 98.47 | 30.61 | 67.25 | 861.0 | 51.26 | 122.6 |
| 158.514 | 21.176 | 0.054 | -1.734 | 100.00 | 30.55 | 69.98 | 810.9 | 47.95 | 117.2 |
| 158.514 | 1.485 | 0.766 | 4.339 | 138.32 | 29.70 | 53.79 | 283.4 | 6.70 | 20.8 |
| 160. | 1.454 | 0.775 | 4.417 | 138.81 | 29.11 | 51.72 | 286.9 | 6.75 | 20.8 |
| 165. | 1.365 | 0.801 | 4.664 | 140.32 | 28.02 | 47.41 | 297.3 | 6.91 | 20.8 |
| 170. | 1.291 | 0.822 | 4.894 | 141.70 | 27.50 | 44.95 | 306.6 | 7.08 | 21.1 |
| 175. | 1.227 | 0.840 | 5.115 | 142.98 | 27.16 | 43.26 | 315.0 | 7.25 | 21.4 |
| 180. | 1.172 | 0.855 | 5.328 | 144.18 | 26.91 | 41.98 | 322.9 | 7.42 | 21.8 |
| 185. | 1.123 | 0.868 | 5.535 | 145.31 | 26.71 | 40.97 | 330.3 | 7.59 | 22.3 |
| 190. | 1.080 | 0.879 | 5.738 | 146.39 | 26.55 | 40.15 | 337.3 | 7.76 | 22.8 |
| 195. | 1.040 | 0.890 | 5.937 | 147.43 | 26.42 | 39.48 | 344.0 | 7.93 | 23.2 |
| 200. | 1.004 | 0.899 | 6.133 | 148.42 | 26.32 | 38.92 | 350.5 | 8.11 | 23.6 |
| 205. | 0.9708 | 0.906 | 6.326 | 149.38 | 26.24 | 38.46 | 356.6 | 8.28 | 24.1 |
| 210. | 0.9403 | 0.914 | 6.517 | 150.30 | 26.19 | 38.08 | 362.6 | 8.45 | 24.6 |
| 215. | 0.9120 | 0.920 | 6.707 | 151.19 | 26.16 | 37.76 | 368.3 | 8.62 | 25.1 |
| 220. | 0.8856 | 0.926 | 6.895 | 152.06 | 26.15 | 37.50 | 373.9 | 8.80 | 25.6 |
| 225. | 0.8610 | 0.931 | 7.082 | 152.90 | 26.15 | 37.28 | 379.2 | 8.97 | 26.2 |
| 230. | 0.8380 | 0.936 | 7.268 | 153.71 | 26.17 | 37.11 | 384.5 | 9.14 | 26.7 |
| 235. | 0.8163 | 0.940 | 7.453 | 154.51 | 26.20 | 36.97 | 389.5 | 9.31 | 27.3 |
| 240. | 0.7959 | 0.945 | 7.638 | 155.29 | 26.25 | 36.86 | 394.5 | 9.47 | 27.9 |
| 245. | 0.7766 | 0.948 | 7.822 | 156.05 | 26.31 | 36.78 | 399.3 | 9.64 | 28.4 |
| 250. | 0.7583 | 0.952 | 8.006 | 156.79 | 26.39 | 36.73 | 404.0 | 9.81 | 29.0 |
| 255. | 0.7410 | 0.955 | 8.189 | 157.52 | 26.47 | 36.70 | 408.6 | 9.98 | 29.6 |
| 260. | 0.7245 | 0.958 | 8.373 | 158.23 | 26.57 | 36.69 | 413.1 | 10.14 | 30.2 |
| 265. | 0.7089 | 0.960 | 8.556 | 158.93 | 26.67 | 36.70 | 417.4 | 10.31 | 30.8 |
| 270. | 0.6939 | 0.963 | 8.740 | 159.61 | 26.79 | 36.73 | 421.7 | 10.47 | 31.4 |
| 275. | 0.6797 | 0.965 | 8.923 | 160.29 | 26.92 | 36.77 | 425.9 | 10.63 | 32.1 |
| 280. | 0.6660 | 0.967 | 9.107 | 160.95 | 27.06 | 36.84 | 430.0 | 10.80 | 32.7 |

METHANE ISOBAR AT P = 1.5 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 285. | 0.6530 | 0.969 | 9.292 | 161.60 | 27.20 | 36.91 | 434.0 | 10.96 | 33.4 |
| 290. | 0.6405 | 0.971 | 9.476 | 162.25 | 27.36 | 37.00 | 438.0 | 11.12 | 34.0 |
| 295. | 0.6285 | 0.973 | 9.662 | 162.88 | 27.52 | 37.11 | 441.8 | 11.28 | 34.7 |
| 300. | 0.6170 | 0.975 | 9.848 | 163.50 | 27.69 | 37.22 | 445.6 | 11.43 | 35.3 |
| 310. | 0.5952 | 0.978 | 10.221 | 164.73 | 28.06 | 37.49 | 453.0 | 11.75 | 36.7 |
| 320. | 0.5751 | 0.980 | 10.597 | 165.92 | 28.46 | 37.80 | 460.2 | 12.06 | 38.1 |
| 330. | 0.5563 | 0.983 | 10.977 | 167.09 | 28.88 | 38.14 | 467.1 | 12.37 | 39.6 |
| 340. | 0.5388 | 0.985 | 11.360 | 168.24 | 29.33 | 38.52 | 473.8 | 12.67 | 41.1 |
| 350. | 0.5225 | 0.987 | 11.748 | 169.36 | 29.80 | 38.93 | 480.3 | 12.97 | 42.6 |
| 360. | 0.5071 | 0.988 | 12.139 | 170.46 | 30.29 | 39.36 | 486.7 | 13.27 | 44.1 |
| 370. | 0.4927 | 0.990 | 12.535 | 171.55 | 30.80 | 39.82 | 492.9 | 13.56 | 45.7 |
| 380. | 0.4791 | 0.991 | 12.935 | 172.61 | 31.32 | 40.30 | 498.9 | 13.85 | 47.3 |
| 390. | 0.4662 | 0.992 | 13.341 | 173.67 | 31.86 | 40.79 | 504.8 | 14.14 | 49.0 |
| 400. | 0.4541 | 0.993 | 13.751 | 174.71 | 32.41 | 41.30 | 510.6 | 14.42 | 50.7 |
| 410. | 0.4426 | 0.994 | 14.167 | 175.73 | 32.96 | 41.82 | 516.3 | | 52.4 |
| 420. | 0.4316 | 0.995 | 14.588 | 176.75 | 33.53 | 42.36 | 521.9 | | 54.1 |
| 430. | 0.4213 | 0.996 | 15.014 | 177.75 | 34.10 | 42.90 | 527.4 | | 55.9 |
| 440. | 0.4114 | 0.997 | 15.446 | 178.74 | 34.67 | 43.44 | 532.8 | | 57.7 |
| 450. | 0.4020 | 0.997 | 15.883 | 179.72 | 35.25 | 43.99 | 538.2 | | 59.5 |
| 460. | 0.3930 | 0.998 | 16.326 | 180.70 | 35.82 | 44.55 | 543.4 | | 61.3 |
| 470. | 0.3844 | 0.998 | 16.774 | 181.66 | 36.40 | 45.10 | 548.6 | | 63.2 |
| 480. | 0.3762 | 0.999 | 17.228 | 182.62 | 36.97 | 45.66 | 553.7 | | 65.1 |
| 490. | 0.3684 | 0.999 | 17.687 | 183.56 | 37.55 | 46.21 | 558.8 | | 66.9 |
| 500. | 0.3609 | 1.000 | 18.152 | 184.50 | 38.12 | 46.77 | 563.8 | | 68.8 |
| 520. | 0.3467 | 1.001 | 19.098 | 186.36 | 39.25 | 47.87 | 573.7 | | 72.7 |
| 540. | 0.3337 | 1.001 | 20.067 | 188.19 | 40.36 | 48.95 | 583.3 | | 76.5 |
| 560. | 0.3216 | 1.002 | 21.056 | 189.99 | 41.45 | 50.02 | 592.8 | | 80.4 |
| 580. | 0.3104 | 1.002 | 22.067 | 191.76 | 42.51 | 51.06 | 602.2 | | 84.3 |
| 600. | 0.2999 | 1.003 | 23.098 | 193.51 | 43.54 | 52.07 | 611.4 | | 88.3 |

METHANE ISOBAR AT P = 2.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.872 | 0.091 | -5.464 | 70.06 | 34.05 | 53.56 | 1514.4 | 183.50 | 207.9 |
| 100. | 27.455 | 0.088 | -5.194 | 72.83 | 34.14 | 54.41 | 1463.0 | 160.88 | 201.6 |
| 105. | 27.029 | 0.085 | -4.920 | 75.50 | 33.92 | 55.01 | 1414.1 | 141.78 | 195.1 |
| 110. | 26.593 | 0.082 | -4.644 | 78.07 | 33.56 | 55.51 | 1365.9 | 125.65 | 188.3 |
| 115. | 26.145 | 0.080 | -4.365 | 80.55 | 33.14 | 56.02 | 1317.4 | 112.02 | 181.4 |

METHANE ISOBAR AT P = 2.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 120. | 25.684 | 0.078 | -4.084 | 82.95 | 32.71 | 56.59 | 1268.0 | 100.43 | 174.4 |
| 125. | 25.206 | 0.076 | -3.799 | 85.27 | 32.30 | 57.26 | 1217.5 | 90.52 | 167.3 |
| 130. | 24.711 | 0.075 | -3.511 | 87.53 | 31.92 | 58.07 | 1165.6 | 81.97 | 160.2 |
| 135. | 24.193 | 0.074 | -3.218 | 89.74 | 31.57 | 59.06 | 1112.1 | 74.52 | 153.0 |
| 140. | 23.649 | 0.073 | -2.920 | 91.91 | 31.26 | 60.29 | 1056.7 | 67.96 | 145.8 |
| 145. | 23.073 | 0.072 | -2.615 | 94.05 | 30.99 | 61.84 | 998.9 | 62.09 | 138.5 |
| 150. | 22.458 | 0.071 | -2.301 | 96.18 | 30.77 | 63.83 | 938.2 | 56.76 | 131.2 |
| 155. | 21.791 | 0.071 | -1.975 | 98.32 | 30.61 | 66.48 | 873.7 | 51.85 | 123.7 |
| 160. | 21.054 | 0.071 | -1.634 | 100.48 | 30.52 | 70.18 | 804.0 | 47.23 | 116.0 |
| 165. | 20.215 | 0.072 | -1.270 | 102.72 | 30.54 | 75.82 | 726.6 | 42.74 | 108.0 |
| 165.860 | 20.057 | 0.072 | -1.205 | 103.12 | 30.56 | 77.11 | 712.3 | 41.97 | 106.6 |
| 165.860 | 2.036 | 0.712 | 4.303 | 136.32 | 30.99 | 63.76 | 279.2 | 7.24 | 23.5 |
| 170. | 1.904 | 0.743 | 4.548 | 137.78 | 29.24 | 55.59 | 290.3 | 7.35 | 23.1 |
| 175. | 1.779 | 0.773 | 4.812 | 139.32 | 28.30 | 50.57 | 301.4 | 7.49 | 23.1 |
| 180. | 1.678 | 0.796 | 5.057 | 140.70 | 27.78 | 47.53 | 311.1 | 7.64 | 23.2 |
| 185. | 1.593 | 0.816 | 5.289 | 141.97 | 27.42 | 45.42 | 319.9 | 7.79 | 23.5 |
| 190. | 1.519 | 0.833 | 5.512 | 143.16 | 27.15 | 43.83 | 328.1 | 7.95 | 24.0 |
| 195. | 1.454 | 0.848 | 5.728 | 144.28 | 26.94 | 42.59 | 335.8 | 8.11 | 24.1 |
| 200. | 1.397 | 0.861 | 5.939 | 145.34 | 26.77 | 41.60 | 343.0 | 8.28 | 24.5 |
| 205. | 1.345 | 0.872 | 6.144 | 146.36 | 26.63 | 40.79 | 349.9 | 8.44 | 24.9 |
| 210. | 1.298 | 0.883 | 6.347 | 147.34 | 26.53 | 40.13 | 356.4 | 8.61 | 25.3 |
| 215. | 1.255 | 0.892 | 6.546 | 148.27 | 26.46 | 39.58 | 362.7 | 8.77 | 25.8 |
| 220. | 1.215 | 0.900 | 6.743 | 149.18 | 26.42 | 39.13 | 368.8 | 8.94 | 26.3 |
| 225. | 1.178 | 0.907 | 6.937 | 150.05 | 26.39 | 38.76 | 374.6 | 9.10 | 26.8 |
| 230. | 1.144 | 0.914 | 7.130 | 150.90 | 26.39 | 38.45 | 380.2 | 9.27 | 27.3 |
| 235. | 1.113 | 0.920 | 7.322 | 151.73 | 26.40 | 38.19 | 385.6 | 9.44 | 27.8 |
| 240. | 1.083 | 0.925 | 7.512 | 152.53 | 26.43 | 37.98 | 390.9 | 9.60 | 28.4 |
| 245. | 1.055 | 0.931 | 7.702 | 153.31 | 26.48 | 37.82 | 396.0 | 9.76 | 28.9 |
| 250. | 1.029 | 0.935 | 7.891 | 154.07 | 26.54 | 37.69 | 400.9 | 9.93 | 29.5 |
| 255. | 1.004 | 0.940 | 8.079 | 154.82 | 26.61 | 37.59 | 405.8 | 10.09 | 30.1 |
| 260. | 0.9806 | 0.943 | 8.267 | 155.55 | 26.70 | 37.52 | 410.5 | 10.25 | 30.7 |
| 265. | 0.9584 | 0.947 | 8.454 | 156.26 | 26.80 | 37.48 | 415.1 | 10.42 | 31.3 |
| 270. | 0.9373 | 0.951 | 8.641 | 156.96 | 26.90 | 37.46 | 419.5 | 10.58 | 31.9 |
| 275. | 0.9172 | 0.954 | 8.829 | 157.65 | 27.02 | 37.46 | 423.9 | 10.74 | 32.5 |
| 280. | 0.8981 | 0.957 | 9.016 | 158.32 | 27.15 | 37.48 | 428.2 | 10.90 | 33.1 |
| 285. | 0.8798 | 0.959 | 9.204 | 158.99 | 27.29 | 37.52 | 432.3 | 11.06 | 33.7 |
| 290. | 0.8624 | 0.962 | 9.391 | 159.64 | 27.44 | 37.58 | 436.4 | 11.22 | 34.4 |
| 295. | 0.8457 | 0.964 | 9.579 | 160.28 | 27.60 | 37.65 | 440.4 | 11.37 | 35.0 |
| 300. | 0.8297 | 0.966 | 9.768 | 160.92 | 27.77 | 37.74 | 444.3 | 11.53 | 35.7 |
| 310. | 0.7996 | 0.970 | 10.146 | 162.16 | 28.13 | 37.96 | 452.0 | 11.84 | 37.1 |

METHANE ISOBAR AT P = 2.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 320. | 0.7718 | 0.974 | 10.527 | 163.37 | 28.52 | 38.22 | 459.3 | 12.15 | 38.5 |
| 330. | 0.7460 | 0.977 | 10.911 | 164.55 | 28.94 | 38.53 | 466.4 | 12.45 | 39.9 |
| 340. | 0.7221 | 0.980 | 11.298 | 165.70 | 29.39 | 38.88 | 473.3 | 12.75 | 41.4 |
| 350. | 0.6997 | 0.982 | 11.689 | 166.83 | 29.85 | 39.26 | 479.9 | 13.05 | 42.9 |
| 360. | 0.6787 | 0.984 | 12.083 | 167.95 | 30.34 | 39.67 | 486.4 | 13.35 | 44.4 |
| 370. | 0.6591 | 0.986 | 12.482 | 169.04 | 30.84 | 40.11 | 492.7 | 13.64 | 46.0 |
| 380. | 0.6406 | 0.988 | 12.885 | 170.11 | 31.37 | 40.56 | 498.9 | 13.93 | 47.6 |
| 390. | 0.6232 | 0.990 | 13.293 | 171.17 | 31.90 | 41.04 | 504.9 | 14.21 | 49.3 |
| 400. | 0.6067 | 0.991 | 13.706 | 172.22 | 32.44 | 41.53 | 510.8 | 14.49 | 50.9 |
| 410. | 0.5911 | 0.992 | 14.124 | 173.25 | 33.00 | 42.04 | 516.5 | | 52.6 |
| 420. | 0.5764 | 0.994 | 14.547 | 174.27 | 33.56 | 42.56 | 522.2 | | 54.4 |
| 430. | 0.5624 | 0.995 | 14.975 | 175.28 | 34.13 | 43.09 | 527.8 | | 56.1 |
| 440. | 0.5491 | 0.996 | 15.409 | 176.28 | 34.70 | 43.62 | 533.2 | | 57.9 |
| 450. | 0.5364 | 0.997 | 15.848 | 177.26 | 35.27 | 44.16 | 538.6 | | 59.7 |
| 460. | 0.5243 | 0.997 | 16.292 | 178.24 | 35.85 | 44.71 | 543.9 | | 61.6 |
| 470. | 0.5128 | 0.998 | 16.742 | 179.21 | 36.42 | 45.26 | 549.2 | | 63.4 |
| 480. | 0.5018 | 0.999 | 17.197 | 180.16 | 37.00 | 45.80 | 554.3 | | 65.3 |
| 490. | 0.4912 | 0.999 | 17.658 | 181.11 | 37.57 | 46.35 | 559.5 | | 67.1 |
| 500. | 0.4812 | 1.000 | 18.124 | 182.06 | 38.14 | 46.90 | 564.5 | | 69.0 |
| 520. | 0.4622 | 1.001 | 19.073 | 183.92 | 39.27 | 47.99 | 574.4 | | 72.8 |
| 540. | 0.4447 | 1.002 | 20.044 | 185.75 | 40.38 | 49.06 | 584.2 | | 76.7 |
| 560. | 0.4285 | 1.002 | 21.036 | 187.55 | 41.46 | 50.12 | 593.7 | | 80.6 |
| 580. | 0.4135 | 1.003 | 22.048 | 189.33 | 42.53 | 51.15 | 603.1 | | 84.5 |
| 600. | 0.3995 | 1.003 | 23.081 | 191.08 | 43.56 | 52.16 | 612.3 | | 88.4 |

METHANE ISOBAR AT P = 2.5 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.893 | 0.113 | -5.451 | 70.01 | 34.07 | 53.51 | 1518.2 | 184.49 | 208.3 |
| 100. | 27.478 | 0.109 | -5.181 | 72.78 | 34.16 | 54.35 | 1467.1 | 161.78 | 202.1 |
| 105. | 27.054 | 0.106 | -4.908 | 75.44 | 33.94 | 54.94 | 1418.6 | 142.60 | 195.6 |
| 110. | 26.621 | 0.103 | -4.632 | 78.01 | 33.57 | 55.43 | 1370.6 | 126.41 | 188.9 |
| 115. | 26.176 | 0.100 | -4.354 | 80.49 | 33.16 | 55.92 | 1322.4 | 112.71 | 182.0 |
| 120. | 25.717 | 0.097 | -4.073 | 82.88 | 32.73 | 56.47 | 1273.5 | 101.08 | 175.0 |
| 125. | 25.243 | 0.095 | -3.789 | 85.20 | 32.32 | 57.11 | 1223.5 | 91.13 | 168.0 |
| 130. | 24.752 | 0.093 | -3.501 | 87.45 | 31.94 | 57.89 | 1172.2 | 82.55 | 160.9 |
| 135. | 24.240 | 0.092 | -3.210 | 89.65 | 31.59 | 58.84 | 1119.3 | 75.08 | 153.8 |
| 140. | 23.702 | 0.091 | -2.913 | 91.81 | 31.28 | 60.01 | 1064.8 | 68.50 | 146.6 |

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 145. | 23.135 | 0.090 | -2.609 | 93.94 | 31.01 | 61.47 | 1008.0 | 62.63 | 139.4 |
| 150. | 22.530 | 0.089 | -2.297 | 96.06 | 30.78 | 63.33 | 948.7 | 57.32 | 132.1 |
| 155. | 21.878 | 0.089 | -1.975 | 98.17 | 30.60 | 65.77 | 885.9 | 52.44 | 124.8 |
| 160. | 21.162 | 0.089 | -1.638 | 100.31 | 30.49 | 69.11 | 818.6 | 47.85 | 117.2 |
| 165. | 20.357 | 0.090 | -1.281 | 102.51 | 30.48 | 74.02 | 744.8 | 43.45 | 109.4 |
| 170. | 19.412 | 0.091 | -0.893 | 104.82 | 30.63 | 82.14 | 661.1 | 39.04 | 101.1 |
| 171.980 | 18.978 | 0.092 | -0.726 | 105.80 | 30.77 | 87.13 | 623.9 | 37.24 | 97.6 |
| 171.980 | 2.651 | 0.660 | 4.211 | 134.51 | 32.36 | 78.20 | 274.3 | 7.80 | 26.5 |
| 175. | 2.490 | 0.690 | 4.428 | 135.76 | 30.48 | 66.54 | 284.3 | 7.84 | 25.8 |
| 180. | 2.293 | 0.728 | 4.735 | 137.48 | 29.05 | 57.23 | 297.4 | 7.93 | 25.3 |
| 185. | 2.143 | 0.758 | 5.007 | 138.98 | 28.33 | 52.26 | 308.4 | 8.06 | 25.2 |
| 190. | 2.021 | 0.783 | 5.260 | 140.33 | 27.87 | 49.05 | 318.2 | 8.19 | 25.5 |
| 195. | 1.919 | 0.804 | 5.499 | 141.57 | 27.53 | 46.76 | 327.0 | 8.33 | 25.3 |
| 200. | 1.831 | 0.821 | 5.728 | 142.73 | 27.27 | 45.03 | 335.3 | 8.48 | 25.5 |
| 205. | 1.753 | 0.837 | 5.950 | 143.83 | 27.07 | 43.69 | 343.0 | 8.63 | 25.8 |
| 210. | 1.684 | 0.850 | 6.166 | 144.86 | 26.91 | 42.61 | 350.2 | 8.79 | 26.2 |
| 215. | 1.622 | 0.862 | 6.377 | 145.86 | 26.79 | 41.74 | 357.1 | 8.94 | 26.6 |
| 220. | 1.566 | 0.873 | 6.583 | 146.81 | 26.71 | 41.03 | 363.7 | 9.10 | 27.0 |
| 225. | 1.514 | 0.883 | 6.787 | 147.72 | 26.65 | 40.44 | 370.0 | 9.26 | 27.5 |
| 230. | 1.467 | 0.891 | 6.988 | 148.61 | 26.62 | 39.96 | 376.0 | 9.42 | 28.0 |
| 235. | 1.423 | 0.899 | 7.187 | 149.46 | 26.61 | 39.56 | 381.8 | 9.58 | 28.5 |
| 240. | 1.382 | 0.906 | 7.384 | 150.29 | 26.62 | 39.22 | 387.4 | 9.74 | 29.0 |
| 245. | 1.345 | 0.913 | 7.579 | 151.10 | 26.65 | 38.95 | 392.8 | 9.90 | 29.5 |
| 250. | 1.309 | 0.919 | 7.773 | 151.88 | 26.69 | 38.73 | 398.0 | 10.06 | 30.0 |
| 255. | 1.276 | 0.924 | 7.967 | 152.65 | 26.75 | 38.55 | 403.1 | 10.22 | 30.6 |
| 260. | 1.245 | 0.929 | 8.159 | 153.39 | 26.83 | 38.41 | 408.0 | 10.38 | 31.2 |
| 265. | 1.215 | 0.934 | 8.351 | 154.12 | 26.92 | 38.30 | 412.8 | 10.54 | 31.7 |
| 270. | 1.187 | 0.938 | 8.542 | 154.84 | 27.02 | 38.23 | 417.5 | 10.69 | 32.3 |
| 275. | 1.161 | 0.942 | 8.733 | 155.54 | 27.13 | 38.18 | 422.0 | 10.85 | 32.9 |
| 280. | 1.135 | 0.946 | 8.924 | 156.23 | 27.25 | 38.16 | 426.4 | 11.01 | 33.5 |
| 285. | 1.111 | 0.949 | 9.115 | 156.90 | 27.39 | 38.16 | 430.7 | 11.16 | 34.2 |
| 290. | 1.089 | 0.952 | 9.305 | 157.57 | 27.53 | 38.18 | 435.0 | 11.32 | 34.8 |
| 295. | 1.067 | 0.955 | 9.496 | 158.22 | 27.69 | 38.22 | 439.1 | 11.48 | 35.4 |
| 300. | 1.046 | 0.958 | 9.688 | 158.86 | 27.85 | 38.28 | 443.1 | 11.63 | 36.1 |
| 310. | 1.007 | 0.963 | 10.071 | 160.12 | 28.20 | 38.44 | 451.0 | 11.94 | 37.4 |
| 320. | 0.9711 | 0.968 | 10.457 | 161.34 | 28.59 | 38.66 | 458.5 | 12.24 | 38.8 |
| 330. | 0.9379 | 0.972 | 10.845 | 162.54 | 29.00 | 38.93 | 465.8 | 12.54 | 40.2 |
| 340. | 0.9070 | 0.975 | 11.235 | 163.70 | 29.44 | 39.25 | 472.8 | 12.84 | 41.7 |
| 350. | 0.8784 | 0.978 | 11.630 | 164.85 | 29.90 | 39.60 | 479.6 | 13.13 | 43.2 |
| 360. | 0.8516 | 0.981 | 12.027 | 165.97 | 30.39 | 39.98 | 486.2 | 13.43 | 44.7 |

METHANE ISOBAR AT P = 2.5 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 370. | 0.8265 | 0.983 | 12.429 | 167.07 | 30.89 | 40.39 | 492.6 | 13.71 | 46.3 |
| 380. | 0.8030 | 0.985 | 12.835 | 168.15 | 31.41 | 40.83 | 498.9 | 14.00 | 47.9 |
| 390. | 0.7808 | 0.987 | 13.246 | 169.22 | 31.94 | 41.29 | 505.0 | 14.28 | 49.5 |
| 400. | 0.7599 | 0.989 | 13.661 | 170.27 | 32.48 | 41.77 | 511.0 | 14.56 | 51.2 |
| 410. | 0.7402 | 0.991 | 14.081 | 171.31 | 33.03 | 42.26 | 516.8 | | 52.9 |
| 420. | 0.7215 | 0.992 | 14.507 | 172.33 | 33.59 | 42.77 | 522.5 | | 54.6 |
| 430. | 0.7038 | 0.994 | 14.937 | 173.34 | 34.16 | 43.28 | 528.2 | | 56.4 |
| 440. | 0.6870 | 0.995 | 15.372 | 174.35 | 34.73 | 43.81 | 533.7 | | 58.1 |
| 450. | 0.6710 | 0.996 | 15.813 | 175.34 | 35.30 | 44.34 | 539.1 | | 59.9 |
| 460. | 0.6558 | 0.997 | 16.259 | 176.32 | 35.87 | 44.87 | 544.5 | | 61.8 |
| 470. | 0.6412 | 0.998 | 16.710 | 177.29 | 36.45 | 45.41 | 549.8 | | 63.6 |
| 480. | 0.6274 | 0.998 | 17.167 | 178.25 | 37.02 | 45.95 | 555.0 | | 65.5 |
| 490. | 0.6141 | 0.999 | 17.629 | 179.20 | 37.59 | 46.49 | 560.1 | | 67.3 |
| 500. | 0.6014 | 1.000 | 18.097 | 180.15 | 38.16 | 47.03 | 565.2 | | 69.2 |
| 520. | 0.5776 | 1.001 | 19.048 | 182.01 | 39.29 | 48.11 | 575.2 | | 73.0 |
| 540. | 0.5556 | 1.002 | 20.021 | 183.85 | 40.40 | 49.17 | 585.0 | | 76.9 |
| 560. | 0.5353 | 1.003 | 21.015 | 185.65 | 41.48 | 50.22 | 594.6 | | 80.8 |
| 580. | 0.5165 | 1.004 | 22.030 | 187.43 | 42.54 | 51.24 | 604.1 | | 84.7 |
| 600. | 0.4990 | 1.004 | 23.065 | 189.19 | 43.57 | 52.24 | 613.3 | | 88.6 |

METHANE ISOBAR AT P = 3.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.914 | 0.136 | -5.438 | 69.96 | 34.09 | 53.47 | 1522.1 | 185.48 | 208.8 |
| 100. | 27.501 | 0.131 | -5.168 | 72.72 | 34.18 | 54.30 | 1471.2 | 162.69 | 202.6 |
| 105. | 27.079 | 0.127 | -4.895 | 75.39 | 33.96 | 54.87 | 1422.9 | 143.43 | 196.1 |
| 110. | 26.648 | 0.123 | -4.620 | 77.95 | 33.59 | 55.35 | 1375.3 | 127.17 | 189.4 |
| 115. | 26.206 | 0.120 | -4.342 | 80.42 | 33.17 | 55.83 | 1327.5 | 113.41 | 182.6 |
| 120. | 25.750 | 0.117 | -4.062 | 82.81 | 32.75 | 56.35 | 1278.9 | 101.73 | 175.6 |
| 125. | 25.280 | 0.114 | -3.778 | 85.12 | 32.34 | 56.97 | 1229.3 | 91.74 | 168.6 |
| 130. | 24.793 | 0.112 | -3.492 | 87.37 | 31.96 | 57.72 | 1178.6 | 83.13 | 161.6 |
| 135. | 24.285 | 0.110 | -3.201 | 89.56 | 31.61 | 58.62 | 1126.4 | 75.64 | 154.5 |
| 140. | 23.754 | 0.108 | -2.905 | 91.72 | 31.30 | 59.74 | 1072.6 | 69.05 | 147.4 |
| 145. | 23.195 | 0.107 | -2.603 | 93.83 | 31.02 | 61.12 | 1016.9 | 63.18 | 140.2 |
| 150. | 22.600 | 0.106 | -2.293 | 95.93 | 30.79 | 62.86 | 958.7 | 57.87 | 133.0 |
| 155. | 21.962 | 0.106 | -1.974 | 98.03 | 30.60 | 65.12 | 897.6 | 53.01 | 125.8 |
| 160. | 21.265 | 0.106 | -1.641 | 100.14 | 30.48 | 68.15 | 832.4 | 48.46 | 118.4 |
| 165. | 20.489 | 0.107 | -1.290 | 102.30 | 30.44 | 72.48 | 761.8 | 44.13 | 110.7 |

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 170. | 19.593 | 0.108 | -0.912 | 104.56 | 30.53 | 79.26 | 683.1 | 39.85 | 102.7 |
| 175. | 18.493 | 0.111 | -0.488 | 107.02 | 30.87 | 91.95 | 590.9 | 35.39 | 94.0 |
| 177.262 | 17.876 | 0.114 | -0.270 | 108.26 | 31.19 | 102.68 | 541.8 | 33.18 | 89.7 |
| 177.262 | 3.359 | 0.606 | 4.064 | 132.70 | 33.91 | 101.61 | 268.7 | 8.43 | 30.3 |
| 180. | 3.120 | 0.642 | 4.309 | 134.08 | 31.56 | 80.48 | 280.0 | 8.39 | 28.9 |
| 185. | 2.825 | 0.690 | 4.666 | 136.03 | 29.68 | 64.62 | 295.2 | 8.42 | 27.8 |
| 190. | 2.615 | 0.726 | 4.969 | 137.65 | 28.79 | 57.18 | 307.3 | 8.50 | 27.6 |
| 195. | 2.452 | 0.755 | 5.243 | 139.07 | 28.24 | 52.68 | 317.8 | 8.61 | 26.9 |
| 200. | 2.317 | 0.779 | 5.498 | 140.36 | 27.85 | 49.62 | 327.2 | 8.73 | 26.8 |
| 205. | 2.203 | 0.799 | 5.740 | 141.56 | 27.55 | 47.38 | 335.9 | 8.86 | 26.9 |
| 210. | 2.105 | 0.816 | 5.973 | 142.68 | 27.32 | 45.67 | 344.0 | 9.00 | 27.2 |
| 215. | 2.018 | 0.832 | 6.197 | 143.74 | 27.15 | 44.33 | 351.5 | 9.14 | 27.5 |
| 220. | 1.940 | 0.845 | 6.416 | 144.75 | 27.02 | 43.26 | 358.7 | 9.29 | 27.8 |
| 225. | 1.870 | 0.857 | 6.630 | 145.71 | 26.92 | 42.39 | 365.4 | 9.44 | 28.2 |
| 230. | 1.807 | 0.868 | 6.840 | 146.63 | 26.86 | 41.67 | 371.9 | 9.59 | 28.7 |
| 235. | 1.749 | 0.878 | 7.047 | 147.52 | 26.83 | 41.08 | 378.1 | 9.74 | 29.1 |
| 240. | 1.695 | 0.887 | 7.251 | 148.38 | 26.81 | 40.59 | 384.0 | 9.89 | 29.6 |
| 245. | 1.646 | 0.895 | 7.453 | 149.21 | 26.82 | 40.19 | 389.7 | 10.05 | 30.1 |
| 250. | 1.600 | 0.902 | 7.653 | 150.02 | 26.85 | 39.86 | 395.2 | 10.20 | 30.6 |
| 255. | 1.557 | 0.909 | 7.852 | 150.81 | 26.90 | 39.58 | 400.5 | 10.35 | 31.2 |
| 260. | 1.517 | 0.915 | 8.049 | 151.57 | 26.96 | 39.36 | 405.7 | 10.51 | 31.7 |
| 265. | 1.479 | 0.921 | 8.246 | 152.32 | 27.04 | 39.18 | 410.7 | 10.66 | 32.3 |
| 270. | 1.443 | 0.926 | 8.441 | 153.05 | 27.13 | 39.04 | 415.5 | 10.82 | 32.8 |
| 275. | 1.410 | 0.931 | 8.636 | 153.77 | 27.24 | 38.94 | 420.2 | 10.97 | 33.4 |
| 280. | 1.378 | 0.935 | 8.831 | 154.47 | 27.35 | 38.87 | 424.8 | 11.13 | 34.0 |
| 285. | 1.348 | 0.939 | 9.025 | 155.16 | 27.48 | 38.82 | 429.3 | 11.28 | 34.6 |
| 290. | 1.319 | 0.943 | 9.219 | 155.83 | 27.62 | 38.80 | 433.6 | 11.43 | 35.2 |
| 295. | 1.292 | 0.947 | 9.413 | 156.50 | 27.77 | 38.81 | 437.9 | 11.58 | 35.9 |
| 300. | 1.266 | 0.950 | 9.607 | 157.15 | 27.93 | 38.83 | 442.1 | 11.74 | 36.5 |
| 310. | 1.217 | 0.956 | 9.996 | 158.42 | 28.27 | 38.94 | 450.1 | 12.04 | 37.8 |
| 320. | 1.173 | 0.961 | 10.386 | 159.66 | 28.65 | 39.11 | 457.8 | 12.34 | 39.2 |
| 330. | 1.132 | 0.966 | 10.778 | 160.87 | 29.06 | 39.34 | 465.3 | 12.63 | 40.6 |
| 340. | 1.094 | 0.970 | 11.173 | 162.05 | 29.49 | 39.62 | 472.4 | 12.93 | 42.0 |
| 350. | 1.059 | 0.974 | 11.571 | 163.20 | 29.95 | 39.94 | 479.4 | 13.22 | 43.5 |
| 360. | 1.026 | 0.977 | 11.972 | 164.33 | 30.43 | 40.30 | 486.1 | 13.51 | 45.0 |
| 370. | 0.9950 | 0.980 | 12.377 | 165.44 | 30.93 | 40.69 | 492.6 | 13.80 | 46.6 |
| 380. | 0.9662 | 0.983 | 12.786 | 166.53 | 31.45 | 41.10 | 499.0 | 14.08 | 48.2 |
| 390. | 0.9392 | 0.985 | 13.199 | 167.60 | 31.97 | 41.54 | 505.2 | 14.36 | 49.8 |
| 400. | 0.9137 | 0.987 | 13.617 | 168.66 | 32.51 | 42.00 | 511.2 | 14.64 | 51.5 |
| 410. | 0.8897 | 0.989 | 14.039 | 169.70 | 33.06 | 42.48 | 517.1 | | 53.1 |

METHANE ISOBAR AT P = 3.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 420. | 0.8670 | 0.991 | 14.466 | 170.73 | 33.62 | 42.97 | 522.9 | | 54.9 |
| 430. | 0.8455 | 0.992 | 14.899 | 171.75 | 34.19 | 43.48 | 528.6 | | 56.6 |
| 440. | 0.8251 | 0.994 | 15.336 | 172.76 | 34.75 | 43.99 | 534.2 | | 58.4 |
| 450. | 0.8058 | 0.995 | 15.778 | 173.75 | 35.33 | 44.51 | 539.7 | | 60.2 |
| 460. | 0.7873 | 0.996 | 16.226 | 174.73 | 35.90 | 45.03 | 545.1 | | 62.0 |
| 470. | 0.7697 | 0.997 | 16.679 | 175.71 | 36.47 | 45.56 | 550.4 | | 63.8 |
| 480. | 0.7530 | 0.998 | 17.137 | 176.67 | 37.04 | 46.10 | 555.7 | | 65.7 |
| 490. | 0.7369 | 0.999 | 17.601 | 177.63 | 37.61 | 46.63 | 560.9 | | 67.5 |
| 500. | 0.7216 | 1.000 | 18.070 | 178.58 | 38.18 | 47.16 | 566.0 | | 69.4 |
| 520. | 0.6929 | 1.001 | 19.024 | 180.45 | 39.31 | 48.23 | 576.1 | | 73.2 |
| 540. | 0.6664 | 1.003 | 19.999 | 182.29 | 40.41 | 49.28 | 585.9 | | 77.1 |
| 560. | 0.6420 | 1.004 | 20.995 | 184.10 | 41.50 | 50.32 | 595.6 | | 80.9 |
| 580. | 0.6193 | 1.005 | 22.011 | 185.88 | 42.56 | 51.33 | 605.0 | | 84.8 |
| 600. | 0.5982 | 1.005 | 23.048 | 187.64 | 43.59 | 52.33 | 614.3 | | 88.8 |

METHANE ISOBAR AT P = 4.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 27.956 | 0.181 | -5.412 | 69.85 | 34.12 | 53.37 | 1529.7 | 187.47 | 209.7 |
| 100. | 27.546 | 0.175 | -5.143 | 72.61 | 34.21 | 54.19 | 1479.3 | 164.51 | 203.5 |
| 105. | 27.129 | 0.169 | -4.871 | 75.27 | 33.99 | 54.74 | 1431.6 | 145.09 | 197.1 |
| 110. | 26.702 | 0.164 | -4.596 | 77.83 | 33.63 | 55.20 | 1384.5 | 128.69 | 190.5 |
| 115. | 26.264 | 0.159 | -4.319 | 80.29 | 33.21 | 55.64 | 1337.3 | 114.81 | 183.7 |
| 120. | 25.815 | 0.155 | -4.039 | 82.67 | 32.79 | 56.13 | 1289.5 | 103.03 | 176.8 |
| 125. | 25.352 | 0.152 | -3.757 | 84.97 | 32.38 | 56.71 | 1240.8 | 92.96 | 169.9 |
| 130. | 24.873 | 0.149 | -3.472 | 87.21 | 32.00 | 57.39 | 1191.1 | 84.29 | 162.9 |
| 135. | 24.375 | 0.146 | -3.183 | 89.39 | 31.65 | 58.22 | 1140.2 | 76.75 | 155.9 |
| 140. | 23.856 | 0.144 | -2.890 | 91.53 | 31.33 | 59.23 | 1087.9 | 70.13 | 148.9 |
| 145. | 23.311 | 0.142 | -2.590 | 93.62 | 31.05 | 60.47 | 1033.9 | 64.25 | 141.9 |
| 150. | 22.735 | 0.141 | -2.284 | 95.70 | 30.81 | 62.01 | 978.0 | 58.95 | 134.8 |
| 155. | 22.121 | 0.140 | -1.970 | 97.76 | 30.61 | 63.95 | 919.7 | 54.12 | 127.7 |
| 160. | 21.458 | 0.140 | -1.644 | 99.83 | 30.46 | 66.50 | 858.3 | 49.64 | 120.6 |
| 165. | 20.730 | 0.141 | -1.303 | 101.93 | 30.38 | 69.95 | 792.8 | 45.40 | 113.3 |
| 170. | 19.913 | 0.142 | -0.942 | 104.09 | 30.39 | 74.95 | 721.8 | 41.31 | 105.7 |
| 175. | 18.958 | 0.145 | -0.549 | 106.36 | 30.55 | 82.98 | 642.7 | 37.21 | 97.8 |
| 180. | 17.758 | 0.151 | -0.100 | 108.89 | 31.00 | 98.73 | 550.0 | 32.84 | 89.2 |
| 185. | 15.923 | 0.163 | 0.494 | 112.14 | 32.37 | 154.98 | 424.3 | 27.36 | 79.5 |
| 186.094 | 15.222 | 0.170 | 0.691 | 113.20 | 33.27 | 208.48 | 380.1 | 25.55 | 77.3 |

METHANE ISOBAR AT P = 4.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | $\mu$Pa·s | mW/(m·K) |
| 186.094 | 5.377 | 0.481 | 3.518 | 128.40 | 38.57 | 271.14 | 254.9 | 10.25 | 47.9 |
| 190. | 4.416 | 0.573 | 4.132 | 131.67 | 32.58 | 110.14 | 279.6 | 9.66 | 37.9 |
| 195. | 3.877 | 0.636 | 4.588 | 134.04 | 30.40 | 78.39 | 297.0 | 9.48 | 32.6 |
| 200. | 3.535 | 0.680 | 4.945 | 135.84 | 29.38 | 65.92 | 310.2 | 9.45 | 30.9 |
| 205. | 3.283 | 0.715 | 5.256 | 137.38 | 28.74 | 59.01 | 321.5 | 9.49 | 30.2 |
| 210. | 3.083 | 0.743 | 5.539 | 138.75 | 28.30 | 54.54 | 331.5 | 9.55 | 29.9 |
| 215. | 2.918 | 0.767 | 5.803 | 139.99 | 27.96 | 51.40 | 340.6 | 9.65 | 29.8 |
| 220. | 2.778 | 0.787 | 6.054 | 141.14 | 27.71 | 49.07 | 348.9 | 9.75 | 29.9 |
| 225. | 2.656 | 0.805 | 6.295 | 142.23 | 27.52 | 47.27 | 356.8 | 9.87 | 30.1 |
| 230. | 2.549 | 0.821 | 6.528 | 143.25 | 27.38 | 45.86 | 364.1 | 9.99 | 30.4 |
| 235. | 2.453 | 0.835 | 6.754 | 144.22 | 27.29 | 44.72 | 371.1 | 10.12 | 30.7 |
| 240. | 2.366 | 0.847 | 6.975 | 145.15 | 27.22 | 43.80 | 377.7 | 10.25 | 31.1 |
| 245. | 2.287 | 0.858 | 7.192 | 146.05 | 27.19 | 43.04 | 384.0 | 10.39 | 31.5 |
| 250. | 2.215 | 0.869 | 7.406 | 146.91 | 27.18 | 42.41 | 390.1 | 10.52 | 31.9 |
| 255. | 2.149 | 0.878 | 7.617 | 147.75 | 27.20 | 41.89 | 395.9 | 10.67 | 32.4 |
| 260. | 2.087 | 0.886 | 7.825 | 148.56 | 27.24 | 41.46 | 401.5 | 10.81 | 32.9 |
| 265. | 2.030 | 0.894 | 8.031 | 149.34 | 27.29 | 41.11 | 406.9 | 10.95 | 33.4 |
| 270. | 1.977 | 0.901 | 8.236 | 150.11 | 27.36 | 40.81 | 412.1 | 11.09 | 33.9 |
| 275. | 1.927 | 0.908 | 8.440 | 150.85 | 27.45 | 40.57 | 417.1 | 11.24 | 34.4 |
| 280. | 1.880 | 0.914 | 8.642 | 151.58 | 27.55 | 40.38 | 422.0 | 11.38 | 35.0 |
| 285. | 1.836 | 0.920 | 8.844 | 152.30 | 27.67 | 40.24 | 426.8 | 11.53 | 35.6 |
| 290. | 1.794 | 0.925 | 9.044 | 153.00 | 27.80 | 40.12 | 431.4 | 11.67 | 36.2 |
| 295. | 1.754 | 0.930 | 9.245 | 153.68 | 27.93 | 40.04 | 435.9 | 11.82 | 36.8 |
| 300. | 1.717 | 0.934 | 9.445 | 154.35 | 28.08 | 39.99 | 440.3 | 11.97 | 37.4 |
| 310. | 1.647 | 0.942 | 9.845 | 155.66 | 28.41 | 39.97 | 448.8 | 12.26 | 38.6 |
| 320. | 1.584 | 0.949 | 10.245 | 156.93 | 28.78 | 40.04 | 456.8 | 12.55 | 39.9 |
| 330. | 1.526 | 0.956 | 10.646 | 158.17 | 29.17 | 40.18 | 464.6 | 12.83 | 41.3 |
| 340. | 1.472 | 0.961 | 11.048 | 159.37 | 29.60 | 40.38 | 472.0 | 13.12 | 42.7 |
| 350. | 1.423 | 0.966 | 11.454 | 160.54 | 30.05 | 40.64 | 479.2 | 13.40 | 44.2 |
| 360. | 1.377 | 0.970 | 11.861 | 161.69 | 30.52 | 40.94 | 486.1 | 13.69 | 45.7 |
| 370. | 1.335 | 0.974 | 12.272 | 162.82 | 31.01 | 41.28 | 492.8 | 13.97 | 47.2 |
| 380. | 1.295 | 0.978 | 12.687 | 163.92 | 31.52 | 41.65 | 499.4 | 14.24 | 48.8 |
| 390. | 1.258 | 0.981 | 13.105 | 165.01 | 32.05 | 42.05 | 505.7 | 14.52 | 50.4 |
| 400. | 1.223 | 0.984 | 13.528 | 166.08 | 32.58 | 42.48 | 511.9 | 14.79 | 52.0 |
| 410. | 1.190 | 0.986 | 13.955 | 167.14 | 33.13 | 42.92 | 518.0 | | 53.7 |
| 420. | 1.159 | 0.988 | 14.387 | 168.18 | 33.68 | 43.39 | 523.9 | | 55.4 |
| 430. | 1.130 | 0.990 | 14.823 | 169.20 | 34.24 | 43.86 | 529.7 | | 57.1 |
| 440. | 1.102 | 0.992 | 15.264 | 170.22 | 34.81 | 44.35 | 535.4 | | 58.9 |
| 450. | 1.076 | 0.994 | 15.710 | 171.22 | 35.38 | 44.85 | 541.0 | | 60.6 |
| 460. | 1.051 | 0.995 | 16.161 | 172.21 | 35.95 | 45.36 | 546.5 | | 62.4 |

METHANE ISOBAR AT P = 4.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 470. | 1.027 | 0.997 | 16.617 | 173.19 | 36.52 | 45.87 | 551.9 | | 64.3 |
| 480. | 1.004 | 0.998 | 17.078 | 174.16 | 37.09 | 46.39 | 557.2 | | 66.1 |
| 490. | 0.9825 | 0.999 | 17.545 | 175.12 | 37.66 | 46.91 | 562.4 | | 68.0 |
| 500. | 0.9618 | 1.000 | 18.016 | 176.08 | 38.22 | 47.43 | 567.6 | | 69.8 |
| 520. | 0.9231 | 1.002 | 18.975 | 177.96 | 39.34 | 48.46 | 577.8 | | 73.6 |
| 540. | 0.8875 | 1.004 | 19.955 | 179.81 | 40.45 | 49.50 | 587.8 | | 77.4 |
| 560. | 0.8547 | 1.005 | 20.955 | 181.62 | 41.53 | 50.51 | 597.5 | | 81.3 |
| 580. | 0.8243 | 1.006 | 21.975 | 183.41 | 42.58 | 51.51 | 607.0 | | 85.2 |
| 600. | 0.7961 | 1.007 | 23.016 | 185.18 | 43.61 | 52.49 | 616.4 | | 89.1 |

METHANE ISOBAR AT P = 5.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 27.998 | 0.226 | -5.386 | 69.75 | 34.16 | 53.29 | 1537.2 | 189.48 | 210.6 |
| 100. | 27.591 | 0.218 | -5.118 | 72.50 | 34.25 | 54.08 | 1487.3 | 166.34 | 204.5 |
| 105. | 27.177 | 0.211 | -4.846 | 75.16 | 34.02 | 54.62 | 1440.0 | 146.76 | 198.1 |
| 110. | 26.755 | 0.204 | -4.572 | 77.71 | 33.66 | 55.05 | 1393.5 | 130.21 | 191.5 |
| 115. | 26.322 | 0.199 | -4.295 | 80.16 | 33.25 | 55.47 | 1346.9 | 116.21 | 184.8 |
| 120. | 25.879 | 0.194 | -4.017 | 82.53 | 32.83 | 55.92 | 1299.8 | 104.33 | 178.0 |
| 125. | 25.422 | 0.189 | -3.736 | 84.83 | 32.42 | 56.45 | 1252.0 | 94.18 | 171.1 |
| 130. | 24.950 | 0.185 | -3.452 | 87.05 | 32.04 | 57.09 | 1203.2 | 85.44 | 164.2 |
| 135. | 24.462 | 0.182 | -3.165 | 89.22 | 31.69 | 57.85 | 1153.4 | 77.86 | 157.3 |
| 140. | 23.954 | 0.179 | -2.874 | 91.34 | 31.37 | 58.76 | 1102.5 | 71.20 | 150.4 |
| 145. | 23.422 | 0.177 | -2.577 | 93.42 | 31.09 | 59.88 | 1050.1 | 65.30 | 143.4 |
| 150. | 22.863 | 0.175 | -2.274 | 95.48 | 30.84 | 61.25 | 996.2 | 60.01 | 136.5 |
| 155. | 22.270 | 0.174 | -1.964 | 97.51 | 30.63 | 62.95 | 940.3 | 55.19 | 129.6 |
| 160. | 21.635 | 0.174 | -1.644 | 99.54 | 30.46 | 65.11 | 882.0 | 50.75 | 122.6 |
| 165. | 20.948 | 0.174 | -1.312 | 101.59 | 30.35 | 67.95 | 820.7 | 46.60 | 115.6 |
| 170. | 20.189 | 0.175 | -0.963 | 103.67 | 30.30 | 71.82 | 755.4 | 42.64 | 108.4 |
| 175. | 19.330 | 0.178 | -0.591 | 105.83 | 30.36 | 77.50 | 684.7 | 38.76 | 101.0 |
| 180. | 18.316 | 0.182 | -0.182 | 108.13 | 30.58 | 86.75 | 606.4 | 34.82 | 93.3 |
| 185. | 17.023 | 0.191 | 0.292 | 110.72 | 31.11 | 105.36 | 515.9 | 30.57 | 85.2 |
| 190. | 14.994 | 0.211 | 0.939 | 114.17 | 32.57 | 172.39 | 396.8 | 25.12 | 78.2 |
| 195. | 7.142 | 0.432 | 3.274 | 126.27 | 36.88 | 311.74 | 267.3 | 12.29 | 58.0 |
| 200. | 5.459 | 0.551 | 4.144 | 130.69 | 32.02 | 116.34 | 292.0 | 10.90 | 40.4 |
| 205. | 4.776 | 0.614 | 4.632 | 133.10 | 30.42 | 84.31 | 307.4 | 10.54 | 36.1 |
| 210. | 4.340 | 0.660 | 5.015 | 134.94 | 29.53 | 70.53 | 319.8 | 10.40 | 34.3 |
| 215. | 4.021 | 0.696 | 5.347 | 136.50 | 28.94 | 62.71 | 330.6 | 10.37 | 33.4 |

METHANE ISOBAR AT P = 5.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 220. | 3.770 | 0.725 | 5.647 | 137.88 | 28.52 | 57.62 | 340.3 | 10.38 | 32.9 |
| 225. | 3.563 | 0.750 | 5.925 | 139.14 | 28.20 | 54.04 | 349.2 | 10.43 | 32.7 |
| 230. | 3.389 | 0.772 | 6.189 | 140.29 | 27.96 | 51.39 | 357.5 | 10.51 | 32.7 |
| 235. | 3.237 | 0.790 | 6.440 | 141.38 | 27.79 | 49.36 | 365.2 | 10.59 | 32.8 |
| 240. | 3.104 | 0.807 | 6.683 | 142.40 | 27.66 | 47.76 | 372.5 | 10.69 | 33.0 |
| 245. | 2.986 | 0.822 | 6.918 | 143.37 | 27.58 | 46.47 | 379.4 | 10.80 | 33.2 |
| 250. | 2.880 | 0.835 | 7.148 | 144.30 | 27.53 | 45.43 | 385.9 | 10.91 | 33.5 |
| 255. | 2.783 | 0.847 | 7.373 | 145.19 | 27.51 | 44.57 | 392.2 | 11.03 | 33.9 |
| 260. | 2.695 | 0.858 | 7.594 | 146.05 | 27.52 | 43.86 | 398.2 | 11.16 | 34.3 |
| 265. | 2.614 | 0.868 | 7.812 | 146.88 | 27.55 | 43.27 | 403.9 | 11.28 | 34.7 |
| 270. | 2.539 | 0.877 | 8.027 | 147.68 | 27.60 | 42.78 | 409.5 | 11.41 | 35.1 |
| 275. | 2.469 | 0.886 | 8.240 | 148.46 | 27.67 | 42.37 | 414.8 | 11.54 | 35.6 |
| 280. | 2.404 | 0.893 | 8.451 | 149.22 | 27.75 | 42.04 | 420.0 | 11.68 | 36.1 |
| 285. | 2.343 | 0.901 | 8.660 | 149.96 | 27.86 | 41.76 | 425.0 | 11.81 | 36.6 |
| 290. | 2.286 | 0.907 | 8.868 | 150.69 | 27.97 | 41.54 | 429.8 | 11.95 | 37.2 |
| 295. | 2.232 | 0.913 | 9.076 | 151.40 | 28.10 | 41.36 | 434.5 | 12.08 | 37.7 |
| 300. | 2.182 | 0.919 | 9.282 | 152.09 | 28.24 | 41.23 | 439.1 | 12.22 | 38.3 |
| 310. | 2.088 | 0.929 | 9.693 | 153.44 | 28.55 | 41.06 | 447.9 | 12.50 | 39.5 |
| 320. | 2.004 | 0.938 | 10.104 | 154.74 | 28.90 | 41.00 | 456.3 | 12.77 | 40.8 |
| 330. | 1.927 | 0.946 | 10.514 | 156.00 | 29.29 | 41.04 | 464.3 | 13.05 | 42.1 |
| 340. | 1.857 | 0.952 | 10.925 | 157.23 | 29.70 | 41.16 | 472.0 | 13.33 | 43.5 |
| 350. | 1.793 | 0.958 | 11.337 | 158.43 | 30.14 | 41.35 | 479.4 | 13.60 | 44.9 |
| 360. | 1.733 | 0.964 | 11.752 | 159.59 | 30.61 | 41.59 | 486.5 | 13.88 | 46.3 |
| 370. | 1.678 | 0.969 | 12.169 | 160.74 | 31.10 | 41.87 | 493.4 | 14.15 | 47.8 |
| 380. | 1.627 | 0.973 | 12.589 | 161.86 | 31.60 | 42.20 | 500.1 | 14.42 | 49.4 |
| 390. | 1.579 | 0.977 | 13.013 | 162.96 | 32.12 | 42.56 | 506.6 | 14.69 | 51.0 |
| 400. | 1.534 | 0.980 | 13.441 | 164.04 | 32.65 | 42.95 | 512.9 | 14.96 | 52.6 |
| 410. | 1.492 | 0.983 | 13.872 | 165.11 | 33.19 | 43.36 | 519.0 | | 54.2 |
| 420. | 1.452 | 0.986 | 14.308 | 166.16 | 33.74 | 43.80 | 525.1 | | 55.9 |
| 430. | 1.415 | 0.989 | 14.748 | 167.19 | 34.30 | 44.25 | 531.0 | | 57.6 |
| 440. | 1.379 | 0.991 | 15.193 | 168.22 | 34.86 | 44.72 | 536.7 | | 59.4 |
| 450. | 1.346 | 0.993 | 15.643 | 169.23 | 35.43 | 45.19 | 542.4 | | 61.1 |
| 460. | 1.314 | 0.995 | 16.097 | 170.22 | 36.00 | 45.68 | 548.0 | | 62.9 |
| 470. | 1.284 | 0.997 | 16.556 | 171.21 | 36.56 | 46.18 | 553.5 | | 64.7 |
| 480. | 1.255 | 0.998 | 17.020 | 172.19 | 37.13 | 46.68 | 558.9 | | 66.5 |
| 490. | 1.228 | 1.000 | 17.490 | 173.16 | 37.70 | 47.18 | 564.2 | | 68.4 |
| 500. | 1.202 | 1.001 | 17.964 | 174.12 | 38.26 | 47.69 | 569.4 | | 70.3 |
| 520. | 1.153 | 1.003 | 18.928 | 176.01 | 39.38 | 48.70 | 579.7 | | 74.0 |
| 540. | 1.108 | 1.005 | 19.912 | 177.86 | 40.48 | 49.71 | 589.7 | | 77.8 |
| 560. | 1.067 | 1.007 | 20.916 | 179.69 | 41.56 | 50.71 | 599.5 | | 81.7 |

METHANE ISOBAR AT P = 5.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 580. | 1.029 | 1.008 | 21.940 | 181.48 | 42.61 | 51.69 | 609.2 | | 85.5 |
| 600. | 0.9931 | 1.009 | 22.984 | 183.25 | 43.64 | 52.66 | 618.6 | | 89.4 |

METHANE ISOBAR AT P = 6.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 28.038 | 0.271 | -5.360 | 69.65 | 34.19 | 53.20 | 1544.6 | 191.49 | 211.5 |
| 100. | 27.635 | 0.261 | -5.092 | 72.40 | 34.28 | 53.98 | 1495.1 | 168.18 | 205.4 |
| 105. | 27.225 | 0.252 | -4.821 | 75.04 | 34.06 | 54.50 | 1448.3 | 148.44 | 199.1 |
| 110. | 26.807 | 0.245 | -4.547 | 77.59 | 33.70 | 54.91 | 1402.3 | 131.75 | 192.6 |
| 115. | 26.379 | 0.238 | -4.272 | 80.04 | 33.29 | 55.30 | 1356.3 | 117.62 | 185.9 |
| 120. | 25.941 | 0.232 | -3.994 | 82.40 | 32.87 | 55.72 | 1309.9 | 105.63 | 179.1 |
| 125. | 25.490 | 0.226 | -3.715 | 84.69 | 32.47 | 56.22 | 1262.8 | 95.40 | 172.3 |
| 130. | 25.026 | 0.222 | -3.432 | 86.90 | 32.09 | 56.80 | 1215.0 | 86.59 | 165.5 |
| 135. | 24.546 | 0.218 | -3.146 | 89.06 | 31.74 | 57.50 | 1166.2 | 78.95 | 158.6 |
| 140. | 24.048 | 0.214 | -2.857 | 91.16 | 31.41 | 58.34 | 1116.5 | 72.26 | 151.8 |
| 145. | 23.529 | 0.212 | -2.563 | 93.23 | 31.13 | 59.35 | 1065.6 | 66.34 | 145.0 |
| 150. | 22.985 | 0.209 | -2.263 | 95.26 | 30.87 | 60.57 | 1013.4 | 61.04 | 138.2 |
| 155. | 22.411 | 0.208 | -1.957 | 97.27 | 30.65 | 62.07 | 959.6 | 56.24 | 131.4 |
| 160. | 21.801 | 0.207 | -1.642 | 99.27 | 30.47 | 63.93 | 904.0 | 51.83 | 124.6 |
| 165. | 21.146 | 0.207 | -1.316 | 101.27 | 30.33 | 66.31 | 846.0 | 47.73 | 117.8 |
| 170. | 20.434 | 0.208 | -0.977 | 103.29 | 30.25 | 69.43 | 785.2 | 43.86 | 110.9 |
| 175. | 19.644 | 0.210 | -0.620 | 105.36 | 30.25 | 73.71 | 720.7 | 40.14 | 103.9 |
| 180. | 18.746 | 0.214 | -0.237 | 107.52 | 30.35 | 79.99 | 651.4 | 36.46 | 96.7 |
| 185. | 17.681 | 0.221 | 0.186 | 109.84 | 30.61 | 90.21 | 575.6 | 32.70 | 89.5 |
| 190. | 16.319 | 0.233 | 0.681 | 112.48 | 31.15 | 110.35 | 490.3 | 28.62 | 82.8 |
| 195. | 14.264 | 0.259 | 1.346 | 115.93 | 32.39 | 167.24 | 388.7 | 23.58 | 74.4 |
| 200. | 10.203 | 0.354 | 2.572 | 122.13 | 35.35 | 314.49 | 293.7 | 16.33 | 66.5 |
| 205. | 7.243 | 0.486 | 3.720 | 127.81 | 32.84 | 156.54 | 298.3 | 12.81 | 49.3 |
| 210. | 6.099 | 0.563 | 4.345 | 130.82 | 31.10 | 103.21 | 311.6 | 11.87 | 42.1 |
| 215. | 5.437 | 0.617 | 4.801 | 132.97 | 30.10 | 81.96 | 323.4 | 11.48 | 38.9 |
| 220. | 4.977 | 0.659 | 5.180 | 134.71 | 29.43 | 70.62 | 334.0 | 11.29 | 37.2 |
| 225. | 4.629 | 0.693 | 5.515 | 136.22 | 28.95 | 63.55 | 343.7 | 11.20 | 36.2 |
| 230. | 4.350 | 0.721 | 5.820 | 137.56 | 28.59 | 58.73 | 352.6 | 11.18 | 35.6 |
| 235. | 4.118 | 0.746 | 6.104 | 138.78 | 28.32 | 55.24 | 360.9 | 11.20 | 35.3 |
| 240. | 3.921 | 0.767 | 6.374 | 139.92 | 28.12 | 52.61 | 368.7 | 11.24 | 35.2 |

METHANE ISOBAR AT P = 6.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 245. | 3.749 | 0.786 | 6.631 | 140.98 | 27.98 | 50.57 | 376.0 | 11.30 | 35.3 |
| 250. | 3.598 | 0.802 | 6.880 | 141.98 | 27.89 | 48.94 | 383.0 | 11.38 | 35.4 |
| 255. | 3.463 | 0.817 | 7.121 | 142.94 | 27.83 | 47.63 | 389.6 | 11.47 | 35.6 |
| 260. | 3.341 | 0.831 | 7.357 | 143.85 | 27.80 | 46.56 | 395.9 | 11.57 | 35.9 |
| 265. | 3.231 | 0.843 | 7.587 | 144.73 | 27.81 | 45.67 | 401.9 | 11.67 | 36.2 |
| 270. | 3.129 | 0.854 | 7.814 | 145.58 | 27.84 | 44.94 | 407.7 | 11.78 | 36.6 |
| 275. | 3.036 | 0.864 | 8.037 | 146.40 | 27.89 | 44.33 | 413.3 | 11.89 | 37.0 |
| 280. | 2.950 | 0.874 | 8.257 | 147.19 | 27.95 | 43.82 | 418.7 | 12.01 | 37.4 |
| 285. | 2.870 | 0.882 | 8.475 | 147.96 | 28.04 | 43.39 | 423.9 | 12.13 | 37.8 |
| 290. | 2.796 | 0.890 | 8.691 | 148.71 | 28.14 | 43.04 | 429.0 | 12.25 | 38.3 |
| 295. | 2.726 | 0.897 | 8.906 | 149.45 | 28.26 | 42.75 | 433.8 | 12.38 | 38.8 |
| 300. | 2.660 | 0.904 | 9.119 | 150.16 | 28.39 | 42.52 | 438.6 | 12.50 | 39.4 |
| 310. | 2.540 | 0.916 | 9.542 | 151.55 | 28.68 | 42.18 | 447.7 | 12.76 | 40.5 |
| 320. | 2.433 | 0.927 | 9.963 | 152.89 | 29.02 | 42.00 | 456.3 | 13.02 | 41.7 |
| 330. | 2.336 | 0.936 | 10.382 | 154.18 | 29.40 | 41.93 | 464.5 | 13.28 | 42.9 |
| 340. | 2.248 | 0.944 | 10.802 | 155.43 | 29.80 | 41.96 | 472.4 | 13.55 | 44.3 |
| 350. | 2.167 | 0.952 | 11.222 | 156.65 | 30.24 | 42.07 | 480.0 | 13.81 | 45.6 |
| 360. | 2.093 | 0.958 | 11.643 | 157.84 | 30.70 | 42.24 | 487.3 | 14.08 | 47.0 |
| 370. | 2.024 | 0.964 | 12.067 | 159.00 | 31.18 | 42.47 | 494.3 | 14.34 | 48.5 |
| 380. | 1.961 | 0.969 | 12.493 | 160.13 | 31.67 | 42.75 | 501.1 | 14.60 | 50.0 |
| 390. | 1.901 | 0.973 | 12.922 | 161.25 | 32.19 | 43.07 | 507.7 | 14.87 | 51.6 |
| 400. | 1.846 | 0.977 | 13.354 | 162.34 | 32.72 | 43.42 | 514.1 | 15.13 | 53.2 |
| 410. | 1.794 | 0.981 | 13.791 | 163.42 | 33.25 | 43.80 | 520.4 | | 54.8 |
| 420. | 1.746 | 0.984 | 14.231 | 164.48 | 33.80 | 44.21 | 526.5 | | 56.5 |
| 430. | 1.700 | 0.987 | 14.675 | 165.52 | 34.36 | 44.63 | 532.5 | | 58.2 |
| 440. | 1.657 | 0.990 | 15.123 | 166.56 | 34.92 | 45.08 | 538.3 | | 59.9 |
| 450. | 1.616 | 0.992 | 15.576 | 167.57 | 35.48 | 45.53 | 544.1 | | 61.6 |
| 460. | 1.577 | 0.995 | 16.034 | 168.58 | 36.04 | 46.00 | 549.7 | | 63.4 |
| 470. | 1.541 | 0.997 | 16.496 | 169.57 | 36.61 | 46.48 | 555.2 | | 65.2 |
| 480. | 1.506 | 0.998 | 16.964 | 170.56 | 37.18 | 46.96 | 560.7 | | 67.0 |
| 490. | 1.473 | 1.000 | 17.436 | 171.53 | 37.74 | 47.45 | 566.1 | | 68.8 |
| 500. | 1.441 | 1.002 | 17.913 | 172.49 | 38.30 | 47.94 | 571.3 | | 70.7 |
| 520. | 1.382 | 1.004 | 18.881 | 174.39 | 39.42 | 48.93 | 581.7 | | 74.4 |
| 540. | 1.328 | 1.007 | 19.870 | 176.26 | 40.51 | 49.92 | 591.8 | | 78.2 |
| 560. | 1.278 | 1.008 | 20.878 | 178.09 | 41.59 | 50.90 | 601.7 | | 82.0 |
| 580. | 1.232 | 1.010 | 21.906 | 179.90 | 42.64 | 51.87 | 611.4 | | 85.9 |
| 600. | 1.189 | 1.011 | 22.953 | 181.67 | 43.67 | 52.82 | 620.8 | | 89.8 |

METHANE ISOBAR AT P = 7.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 28.079 | 0.316 | -5.334 | 69.55 | 34.23 | 53.12 | 1551.8 | 193.53 | 212.4 |
| 100. | 27.679 | 0.304 | -5.067 | 72.29 | 34.32 | 53.88 | 1502.8 | 170.04 | 206.4 |
| 105. | 27.273 | 0.294 | -4.796 | 74.93 | 34.10 | 54.38 | 1456.4 | 150.13 | 200.1 |
| 110. | 26.858 | 0.285 | -4.523 | 77.47 | 33.74 | 54.77 | 1410.9 | 133.29 | 193.6 |
| 115. | 26.435 | 0.277 | -4.248 | 79.92 | 33.33 | 55.14 | 1365.5 | 119.04 | 187.0 |
| 120. | 26.002 | 0.270 | -3.972 | 82.27 | 32.91 | 55.53 | 1319.7 | 106.94 | 180.3 |
| 125. | 25.557 | 0.264 | -3.693 | 84.55 | 32.51 | 55.99 | 1273.4 | 96.62 | 173.5 |
| 130. | 25.100 | 0.258 | -3.411 | 86.75 | 32.13 | 56.53 | 1226.4 | 87.74 | 166.7 |
| 135. | 24.628 | 0.253 | -3.127 | 88.90 | 31.78 | 57.17 | 1178.6 | 80.05 | 160.0 |
| 140. | 24.139 | 0.249 | -2.840 | 90.99 | 31.46 | 57.94 | 1130.0 | 73.32 | 153.2 |
| 145. | 23.632 | 0.246 | -2.548 | 93.04 | 31.17 | 58.86 | 1080.4 | 67.37 | 146.5 |
| 150. | 23.101 | 0.243 | -2.251 | 95.05 | 30.91 | 59.96 | 1029.8 | 62.06 | 139.8 |
| 155. | 22.545 | 0.241 | -1.948 | 97.04 | 30.68 | 61.29 | 977.9 | 57.26 | 133.1 |
| 160. | 21.956 | 0.240 | -1.637 | 99.01 | 30.49 | 62.91 | 924.5 | 52.87 | 126.5 |
| 165. | 21.329 | 0.239 | -1.318 | 100.98 | 30.33 | 64.94 | 869.4 | 48.82 | 119.8 |
| 170. | 20.655 | 0.240 | -0.987 | 102.95 | 30.23 | 67.51 | 812.2 | 45.01 | 113.2 |
| 175. | 19.919 | 0.242 | -0.641 | 104.95 | 30.18 | 70.88 | 752.4 | 41.39 | 106.5 |
| 180. | 19.101 | 0.245 | -0.276 | 107.01 | 30.21 | 75.50 | 689.4 | 37.89 | 99.7 |
| 185. | 18.170 | 0.250 | 0.117 | 109.17 | 30.34 | 82.20 | 622.5 | 34.41 | 93.0 |
| 190. | 17.067 | 0.260 | 0.552 | 111.49 | 30.61 | 92.85 | 551.0 | 30.85 | 86.7 |
| 195. | 15.679 | 0.275 | 1.059 | 114.12 | 31.10 | 112.08 | 473.8 | 27.02 | 79.3 |
| 200. | 13.764 | 0.306 | 1.704 | 117.38 | 31.98 | 149.65 | 393.4 | 22.66 | 71.8 |
| 205. | 11.100 | 0.370 | 2.579 | 121.70 | 33.07 | 195.46 | 331.6 | 17.91 | 64.4 |
| 210. | 8.693 | 0.461 | 3.489 | 126.09 | 32.44 | 156.19 | 317.7 | 14.68 | 54.7 |
| 215. | 7.316 | 0.535 | 4.149 | 129.20 | 31.25 | 112.40 | 323.7 | 13.28 | 47.4 |
| 220. | 6.475 | 0.591 | 4.648 | 131.49 | 30.36 | 89.52 | 332.7 | 12.62 | 43.3 |
| 225. | 5.893 | 0.635 | 5.060 | 133.34 | 29.71 | 76.48 | 341.9 | 12.27 | 41.0 |
| 230. | 5.455 | 0.671 | 5.420 | 134.93 | 29.23 | 68.21 | 350.7 | 12.07 | 39.5 |
| 235. | 5.108 | 0.701 | 5.746 | 136.33 | 28.86 | 62.54 | 359.1 | 11.97 | 38.6 |
| 240. | 4.822 | 0.727 | 6.048 | 137.60 | 28.59 | 58.44 | 367.0 | 11.92 | 38.1 |
| 245. | 4.581 | 0.750 | 6.332 | 138.77 | 28.39 | 55.36 | 374.6 | 11.92 | 37.8 |
| 250. | 4.372 | 0.770 | 6.603 | 139.87 | 28.24 | 52.97 | 381.7 | 11.94 | 37.6 |
| 255. | 4.189 | 0.788 | 6.863 | 140.90 | 28.15 | 51.08 | 388.5 | 11.98 | 37.6 |
| 260. | 4.027 | 0.804 | 7.114 | 141.87 | 28.09 | 49.55 | 395.0 | 12.04 | 37.7 |
| 265. | 3.881 | 0.819 | 7.359 | 142.81 | 28.06 | 48.31 | 401.2 | 12.11 | 37.9 |
| 270. | 3.749 | 0.832 | 7.598 | 143.70 | 28.07 | 47.28 | 407.2 | 12.20 | 38.2 |
| 275. | 3.629 | 0.844 | 7.832 | 144.56 | 28.10 | 46.43 | 412.9 | 12.29 | 38.5 |
| 280. | 3.518 | 0.855 | 8.062 | 145.39 | 28.15 | 45.71 | 418.4 | 12.38 | 38.8 |
| 285. | 3.416 | 0.865 | 8.289 | 146.19 | 28.22 | 45.12 | 423.8 | 12.49 | 39.2 |
| 290. | 3.322 | 0.874 | 8.514 | 146.97 | 28.31 | 44.62 | 428.9 | 12.59 | 39.6 |

METHANE ISOBAR AT P = 7.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 295. | 3.234 | 0.882 | 8.736 | 147.73 | 28.42 | 44.20 | 434.0 | 12.70 | 40.0 |
| 300. | 3.152 | 0.890 | 8.956 | 148.47 | 28.54 | 43.86 | 438.8 | 12.82 | 40.5 |
| 310. | 3.003 | 0.905 | 9.392 | 149.90 | 28.82 | 43.34 | 448.1 | 13.05 | 41.5 |
| 320. | 2.870 | 0.917 | 9.823 | 151.27 | 29.14 | 43.01 | 456.9 | 13.29 | 42.7 |
| 330. | 2.751 | 0.927 | 10.252 | 152.59 | 29.50 | 42.83 | 465.3 | 13.54 | 43.8 |
| 340. | 2.643 | 0.937 | 10.680 | 153.87 | 29.90 | 42.76 | 473.3 | 13.79 | 45.1 |
| 350. | 2.545 | 0.945 | 11.108 | 155.11 | 30.33 | 42.79 | 481.0 | 14.04 | 46.4 |
| 360. | 2.455 | 0.952 | 11.536 | 156.32 | 30.78 | 42.90 | 488.4 | 14.29 | 47.8 |
| 370. | 2.373 | 0.959 | 11.966 | 157.49 | 31.25 | 43.07 | 495.6 | 14.55 | 49.2 |
| 380. | 2.297 | 0.965 | 12.398 | 158.64 | 31.75 | 43.30 | 502.5 | 14.80 | 50.7 |
| 390. | 2.226 | 0.970 | 12.832 | 159.77 | 32.26 | 43.58 | 509.2 | 15.05 | 52.2 |
| 400. | 2.160 | 0.975 | 13.270 | 160.88 | 32.78 | 43.89 | 515.7 | 15.31 | 53.8 |
| 410. | 2.098 | 0.979 | 13.710 | 161.97 | 33.31 | 44.24 | 522.0 | | 55.4 |
| 420. | 2.040 | 0.983 | 14.155 | 163.04 | 33.86 | 44.62 | 528.2 | | 57.0 |
| 430. | 1.986 | 0.986 | 14.603 | 164.09 | 34.41 | 45.02 | 534.2 | | 58.7 |
| 440. | 1.935 | 0.989 | 15.055 | 165.13 | 34.97 | 45.43 | 540.1 | | 60.4 |
| 450. | 1.886 | 0.992 | 15.512 | 166.16 | 35.53 | 45.87 | 545.9 | | 62.1 |
| 460. | 1.840 | 0.994 | 15.972 | 167.17 | 36.09 | 46.32 | 551.6 | | 63.9 |
| 470. | 1.797 | 0.997 | 16.438 | 168.17 | 36.65 | 46.78 | 557.2 | | 65.7 |
| 480. | 1.756 | 0.999 | 16.908 | 169.16 | 37.22 | 47.24 | 562.7 | | 67.5 |
| 490. | 1.717 | 1.001 | 17.383 | 170.14 | 37.78 | 47.72 | 568.1 | | 69.3 |
| 500. | 1.680 | 1.003 | 17.862 | 171.11 | 38.34 | 48.19 | 573.4 | | 71.1 |
| 520. | 1.610 | 1.006 | 18.836 | 173.02 | 39.45 | 49.16 | 583.9 | | 74.8 |
| 540. | 1.546 | 1.008 | 19.829 | 174.89 | 40.55 | 50.13 | 594.0 | | 78.6 |
| 560. | 1.488 | 1.010 | 20.841 | 176.73 | 41.62 | 51.09 | 603.9 | | 82.4 |
| 580. | 1.434 | 1.012 | 21.872 | 178.54 | 42.67 | 52.04 | 613.7 | | 86.3 |
| 600. | 1.384 | 1.014 | 22.922 | 180.32 | 43.69 | 52.98 | 623.2 | | 90.1 |

METHANE ISOBAR AT P = 8.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 28.119 | 0.360 | -5.308 | 69.45 | 34.27 | 53.04 | 1558.9 | 195.57 | 213.2 |
| 100. | 27.722 | 0.347 | -5.041 | 72.19 | 34.35 | 53.79 | 1510.3 | 171.91 | 207.3 |
| 105. | 27.319 | 0.335 | -4.771 | 74.82 | 34.13 | 54.27 | 1464.4 | 151.83 | 201.0 |
| 110. | 26.909 | 0.325 | -4.498 | 77.36 | 33.78 | 54.64 | 1419.4 | 134.85 | 194.6 |
| 115. | 26.490 | 0.316 | -4.224 | 79.79 | 33.37 | 54.98 | 1374.5 | 120.47 | 188.0 |
| 120. | 26.062 | 0.308 | -3.949 | 82.14 | 32.96 | 55.35 | 1329.3 | 108.26 | 181.4 |

METHANE ISOBAR AT P = 8.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 125. | 25.623 | 0.300 | -3.671 | 84.41 | 32.55 | 55.78 | 1283.7 | 97.84 | 174.7 |
| 130. | 25.172 | 0.294 | -3.391 | 86.61 | 32.18 | 56.28 | 1237.5 | 88.89 | 168.0 |
| 135. | 24.708 | 0.288 | -3.108 | 88.74 | 31.83 | 56.87 | 1190.6 | 81.14 | 161.3 |
| 140. | 24.228 | 0.284 | -2.822 | 90.82 | 31.50 | 57.57 | 1143.0 | 74.37 | 154.6 |
| 145. | 23.731 | 0.280 | -2.532 | 92.86 | 31.21 | 58.41 | 1094.7 | 68.39 | 147.9 |
| 150. | 23.213 | 0.276 | -2.237 | 94.85 | 30.95 | 59.40 | 1045.4 | 63.06 | 141.3 |
| 155. | 22.672 | 0.274 | -1.938 | 96.82 | 30.71 | 60.59 | 995.2 | 58.26 | 134.8 |
| 160. | 22.102 | 0.272 | -1.631 | 98.76 | 30.51 | 62.02 | 943.8 | 53.89 | 128.3 |
| 165. | 21.500 | 0.271 | -1.317 | 100.70 | 30.35 | 63.77 | 891.1 | 49.86 | 121.8 |
| 170. | 20.857 | 0.271 | -0.993 | 102.63 | 30.22 | 65.93 | 836.9 | 46.11 | 115.3 |
| 175. | 20.164 | 0.273 | -0.657 | 104.58 | 30.14 | 68.67 | 780.8 | 42.56 | 108.8 |
| 180. | 19.407 | 0.275 | -0.305 | 106.56 | 30.12 | 72.24 | 722.5 | 39.17 | 102.4 |
| 185. | 18.567 | 0.280 | 0.068 | 108.61 | 30.17 | 77.06 | 661.9 | 35.88 | 96.0 |
| 190. | 17.613 | 0.288 | 0.469 | 110.75 | 30.31 | 83.89 | 598.6 | 32.60 | 90.1 |
| 195. | 16.494 | 0.299 | 0.912 | 113.05 | 30.58 | 94.18 | 532.7 | 29.27 | 83.3 |
| 200. | 15.130 | 0.318 | 1.420 | 115.62 | 30.98 | 110.16 | 465.7 | 25.79 | 76.6 |
| 205. | 13.426 | 0.350 | 2.025 | 118.60 | 31.55 | 132.18 | 403.5 | 22.13 | 70.0 |
| 210. | 11.433 | 0.401 | 2.735 | 122.03 | 32.00 | 148.93 | 359.5 | 18.64 | 63.7 |
| 215. | 9.592 | 0.467 | 3.459 | 125.43 | 31.74 | 135.46 | 342.0 | 16.06 | 56.9 |
| 220. | 8.273 | 0.529 | 4.071 | 128.25 | 31.05 | 110.05 | 341.4 | 14.56 | 51.1 |
| 225. | 7.368 | 0.580 | 4.572 | 130.50 | 30.37 | 91.50 | 346.6 | 13.73 | 47.1 |
| 230. | 6.712 | 0.623 | 4.997 | 132.37 | 29.82 | 79.27 | 353.5 | 13.24 | 44.4 |
| 235. | 6.211 | 0.659 | 5.371 | 133.98 | 29.38 | 70.97 | 360.9 | 12.95 | 42.7 |
| 240. | 5.811 | 0.690 | 5.711 | 135.41 | 29.04 | 65.08 | 368.3 | 12.76 | 41.5 |
| 245. | 5.481 | 0.717 | 6.025 | 136.70 | 28.78 | 60.74 | 375.5 | 12.66 | 40.8 |
| 250. | 5.202 | 0.740 | 6.320 | 137.90 | 28.59 | 57.43 | 382.5 | 12.60 | 40.3 |
| 255. | 4.961 | 0.761 | 6.600 | 139.01 | 28.46 | 54.85 | 389.2 | 12.58 | 40.0 |
| 260. | 4.750 | 0.779 | 6.869 | 140.05 | 28.37 | 52.79 | 395.7 | 12.59 | 39.9 |
| 265. | 4.563 | 0.796 | 7.129 | 141.04 | 28.32 | 51.13 | 401.9 | 12.62 | 39.9 |
| 270. | 4.395 | 0.811 | 7.381 | 141.98 | 28.30 | 49.77 | 407.9 | 12.67 | 40.0 |
| 275. | 4.244 | 0.824 | 7.627 | 142.89 | 28.31 | 48.64 | 413.7 | 12.73 | 40.1 |
| 280. | 4.106 | 0.837 | 7.867 | 143.75 | 28.34 | 47.70 | 419.3 | 12.80 | 40.4 |
| 285. | 3.979 | 0.848 | 8.104 | 144.59 | 28.40 | 46.91 | 424.7 | 12.88 | 40.6 |
| 290. | 3.863 | 0.859 | 8.337 | 145.40 | 28.48 | 46.25 | 429.9 | 12.97 | 41.0 |
| 295. | 3.755 | 0.869 | 8.567 | 146.19 | 28.57 | 45.70 | 434.9 | 13.06 | 41.4 |
| 300. | 3.655 | 0.878 | 8.794 | 146.95 | 28.68 | 45.24 | 439.8 | 13.16 | 41.8 |
| 310. | 3.474 | 0.894 | 9.243 | 148.42 | 28.94 | 44.52 | 449.2 | 13.36 | 42.7 |
| 320. | 3.314 | 0.907 | 9.685 | 149.83 | 29.25 | 44.04 | 458.2 | 13.58 | 43.7 |
| 330. | 3.171 | 0.919 | 10.124 | 151.18 | 29.61 | 43.74 | 466.6 | 13.81 | 44.8 |
| 340. | 3.043 | 0.930 | 10.560 | 152.48 | 30.00 | 43.57 | 474.8 | 14.04 | 46.0 |

METHANE ISOBAR AT P = 8.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 350. | 2.927 | 0.939 | 10.996 | 153.74 | 30.41 | 43.52 | 482.5 | 14.28 | 47.3 |
| 360. | 2.821 | 0.947 | 11.431 | 154.97 | 30.86 | 43.56 | 490.0 | 14.52 | 48.6 |
| 370. | 2.724 | 0.955 | 11.867 | 156.16 | 31.33 | 43.67 | 497.2 | 14.76 | 50.0 |
| 380. | 2.634 | 0.961 | 12.305 | 157.33 | 31.82 | 43.85 | 504.2 | 15.01 | 51.4 |
| 390. | 2.551 | 0.967 | 12.744 | 158.47 | 32.32 | 44.08 | 510.9 | 15.25 | 52.9 |
| 400. | 2.474 | 0.972 | 13.187 | 159.59 | 32.84 | 44.36 | 517.5 | 15.50 | 54.4 |
| 410. | 2.402 | 0.977 | 13.632 | 160.69 | 33.37 | 44.67 | 523.9 | | 56.0 |
| 420. | 2.335 | 0.981 | 14.080 | 161.77 | 33.91 | 45.02 | 530.1 | | 57.6 |
| 430. | 2.271 | 0.985 | 14.532 | 162.83 | 34.46 | 45.39 | 536.2 | | 59.3 |
| 440. | 2.212 | 0.989 | 14.988 | 163.88 | 35.02 | 45.79 | 542.2 | | 61.0 |
| 450. | 2.156 | 0.992 | 15.448 | 164.92 | 35.57 | 46.20 | 548.0 | | 62.7 |
| 460. | 2.103 | 0.995 | 15.912 | 165.94 | 36.13 | 46.63 | 553.7 | | 64.4 |
| 470. | 2.053 | 0.997 | 16.381 | 166.94 | 36.70 | 47.07 | 559.3 | | 66.2 |
| 480. | 2.006 | 0.999 | 16.854 | 167.94 | 37.26 | 47.52 | 564.9 | | 68.0 |
| 490. | 1.960 | 1.002 | 17.331 | 168.92 | 37.82 | 47.98 | 570.3 | | 69.8 |
| 500. | 1.917 | 1.004 | 17.813 | 169.90 | 38.38 | 48.44 | 575.6 | | 71.6 |
| 520. | 1.837 | 1.007 | 18.791 | 171.82 | 39.49 | 49.38 | 586.1 | | 75.3 |
| 540. | 1.764 | 1.010 | 19.789 | 173.70 | 40.58 | 50.33 | 596.3 | | 79.0 |
| 560. | 1.697 | 1.012 | 20.805 | 175.55 | 41.65 | 51.27 | 606.3 | | 82.8 |
| 580. | 1.636 | 1.014 | 21.840 | 177.36 | 42.70 | 52.21 | 616.1 | | 86.6 |
| 600. | 1.578 | 1.016 | 22.893 | 179.15 | 43.72 | 53.13 | 625.6 | | 90.5 |

METHANE ISOBAR AT P = 9.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 28.158 | 0.405 | -5.282 | 69.35 | 34.30 | 52.96 | 1565.9 | 197.64 | 214.1 |
| 100. | 27.765 | 0.390 | -5.015 | 72.08 | 34.39 | 53.69 | 1517.7 | 173.79 | 208.2 |
| 105. | 27.365 | 0.377 | -4.746 | 74.72 | 34.17 | 54.16 | 1472.2 | 153.55 | 202.0 |
| 110. | 26.958 | 0.365 | -4.474 | 77.24 | 33.82 | 54.51 | 1427.7 | 136.41 | 195.6 |
| 115. | 26.544 | 0.355 | -4.200 | 79.67 | 33.41 | 54.84 | 1383.3 | 121.90 | 189.1 |
| 120. | 26.120 | 0.345 | -3.925 | 82.02 | 33.00 | 55.18 | 1338.7 | 109.58 | 182.5 |
| 125. | 25.687 | 0.337 | -3.649 | 84.28 | 32.60 | 55.57 | 1293.7 | 99.06 | 175.8 |
| 130. | 25.242 | 0.330 | -3.370 | 86.46 | 32.22 | 56.03 | 1248.2 | 90.04 | 169.2 |
| 135. | 24.785 | 0.324 | -3.088 | 88.59 | 31.87 | 56.58 | 1202.2 | 82.23 | 162.5 |
| 140. | 24.314 | 0.318 | -2.804 | 90.66 | 31.55 | 57.23 | 1155.6 | 75.41 | 155.9 |

METHANE ISOBAR AT P = 9.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 145. | 23.826 | 0.313 | -2.516 | 92.68 | 31.25 | 57.99 | 1108.4 | 69.40 | 149.4 |
| 150. | 23.320 | 0.309 | -2.223 | 94.66 | 30.99 | 58.89 | 1060.4 | 64.05 | 142.9 |
| 155. | 22.793 | 0.306 | -1.926 | 96.61 | 30.75 | 59.96 | 1011.7 | 59.24 | 136.4 |
| 160. | 22.241 | 0.304 | -1.624 | 98.53 | 30.54 | 61.23 | 962.1 | 54.87 | 130.0 |
| 165. | 21.660 | 0.303 | -1.314 | 100.44 | 30.37 | 62.75 | 911.5 | 50.87 | 123.6 |
| 170. | 21.044 | 0.303 | -0.995 | 102.34 | 30.22 | 64.60 | 859.7 | 47.15 | 117.3 |
| 175. | 20.386 | 0.303 | -0.667 | 104.24 | 30.12 | 66.88 | 806.7 | 43.67 | 111.1 |
| 180. | 19.678 | 0.306 | -0.326 | 106.16 | 30.06 | 69.74 | 752.2 | 40.36 | 104.9 |
| 185. | 18.905 | 0.310 | 0.032 | 108.12 | 30.06 | 73.41 | 696.1 | 37.19 | 98.8 |
| 190. | 18.049 | 0.316 | 0.410 | 110.14 | 30.13 | 78.25 | 638.6 | 34.10 | 93.1 |
| 195. | 17.084 | 0.325 | 0.817 | 112.25 | 30.27 | 84.85 | 579.8 | 31.04 | 86.8 |
| 200. | 15.974 | 0.339 | 1.263 | 114.51 | 30.50 | 93.94 | 520.7 | 27.97 | 80.6 |
| 205. | 14.678 | 0.360 | 1.761 | 116.97 | 30.81 | 105.72 | 464.1 | 24.87 | 74.6 |
| 210. | 13.188 | 0.391 | 2.321 | 119.67 | 31.17 | 117.98 | 415.7 | 21.84 | 68.9 |
| 215. | 11.600 | 0.434 | 2.932 | 122.54 | 31.36 | 124.35 | 382.1 | 19.11 | 63.5 |
| 220. | 10.135 | 0.485 | 3.541 | 125.34 | 31.17 | 117.27 | 365.5 | 17.01 | 58.2 |
| 225. | 8.967 | 0.537 | 4.092 | 127.82 | 30.73 | 102.72 | 361.2 | 15.62 | 53.6 |
| 230. | 8.084 | 0.582 | 4.571 | 129.93 | 30.24 | 89.44 | 363.1 | 14.73 | 50.0 |
| 235. | 7.408 | 0.622 | 4.992 | 131.74 | 29.80 | 79.35 | 367.7 | 14.16 | 47.4 |
| 240. | 6.874 | 0.656 | 5.369 | 133.33 | 29.43 | 71.89 | 373.5 | 13.79 | 45.5 |
| 245. | 6.441 | 0.686 | 5.714 | 134.75 | 29.14 | 66.32 | 379.6 | 13.54 | 44.2 |
| 250. | 6.080 | 0.712 | 6.034 | 136.04 | 28.91 | 62.08 | 385.9 | 13.38 | 43.3 |
| 255. | 5.772 | 0.735 | 6.336 | 137.24 | 28.75 | 58.78 | 392.2 | 13.28 | 42.7 |
| 260. | 5.506 | 0.756 | 6.623 | 138.35 | 28.63 | 56.16 | 398.3 | 13.23 | 42.3 |
| 265. | 5.273 | 0.775 | 6.898 | 139.40 | 28.55 | 54.05 | 404.3 | 13.20 | 42.1 |
| 270. | 5.065 | 0.792 | 7.164 | 140.40 | 28.51 | 52.33 | 410.2 | 13.21 | 42.0 |
| 275. | 4.879 | 0.807 | 7.422 | 141.34 | 28.51 | 50.91 | 415.8 | 13.23 | 42.0 |
| 280. | 4.711 | 0.821 | 7.674 | 142.25 | 28.53 | 49.73 | 421.3 | 13.27 | 42.1 |
| 285. | 4.557 | 0.833 | 7.920 | 143.12 | 28.57 | 48.75 | 426.7 | 13.32 | 42.3 |
| 290. | 4.417 | 0.845 | 8.162 | 143.96 | 28.63 | 47.92 | 431.8 | 13.38 | 42.5 |
| 295. | 4.287 | 0.856 | 8.399 | 144.77 | 28.72 | 47.22 | 436.9 | 13.45 | 42.8 |
| 300. | 4.168 | 0.866 | 8.634 | 145.56 | 28.82 | 46.63 | 441.7 | 13.53 | 43.1 |
| 310. | 3.952 | 0.883 | 9.095 | 147.08 | 29.07 | 45.71 | 451.1 | 13.70 | 43.9 |
| 320. | 3.763 | 0.899 | 9.549 | 148.52 | 29.36 | 45.08 | 460.1 | 13.90 | 44.8 |
| 330. | 3.596 | 0.912 | 9.998 | 149.90 | 29.71 | 44.64 | 468.6 | 14.10 | 45.8 |
| 340. | 3.446 | 0.924 | 10.443 | 151.23 | 30.09 | 44.38 | 476.7 | 14.31 | 47.0 |
| 350. | 3.311 | 0.934 | 10.886 | 152.51 | 30.50 | 44.24 | 484.5 | 14.53 | 48.2 |
| 360. | 3.188 | 0.943 | 11.328 | 153.76 | 30.94 | 44.21 | 492.0 | 14.76 | 49.4 |
| 370. | 3.076 | 0.951 | 11.770 | 154.97 | 31.40 | 44.27 | 499.3 | 14.99 | 50.8 |
| 380. | 2.972 | 0.958 | 12.213 | 156.15 | 31.89 | 44.40 | 506.3 | 15.22 | 52.2 |

METHANE ISOBAR AT P = 9.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 390. | 2.877 | 0.965 | 12.658 | 157.30 | 32.39 | 44.58 | 513.0 | 15.46 | 53.6 |
| 400. | 2.788 | 0.971 | 13.105 | 158.44 | 32.90 | 44.82 | 519.6 | 15.70 | 55.1 |
| 410. | 2.706 | 0.976 | 13.555 | 159.55 | 33.43 | 45.10 | 526.1 | | 56.7 |
| 420. | 2.629 | 0.980 | 14.007 | 160.64 | 33.97 | 45.42 | 532.3 | | 58.3 |
| 430. | 2.557 | 0.985 | 14.463 | 161.71 | 34.51 | 45.76 | 538.4 | | 59.9 |
| 440. | 2.489 | 0.988 | 14.923 | 162.77 | 35.06 | 46.13 | 544.4 | | 61.5 |
| 450. | 2.425 | 0.992 | 15.386 | 163.81 | 35.62 | 46.53 | 550.3 | | 63.2 |
| 460. | 2.365 | 0.995 | 15.853 | 164.83 | 36.18 | 46.93 | 556.0 | | 64.9 |
| 470. | 2.308 | 0.998 | 16.325 | 165.85 | 36.74 | 47.36 | 561.7 | | 66.7 |
| 480. | 2.254 | 1.000 | 16.800 | 166.85 | 37.30 | 47.79 | 567.2 | | 68.5 |
| 490. | 2.203 | 1.003 | 17.281 | 167.84 | 37.86 | 48.24 | 572.7 | | 70.2 |
| 500. | 2.154 | 1.005 | 17.765 | 168.82 | 38.41 | 48.69 | 578.0 | | 72.0 |
| 520. | 2.064 | 1.009 | 18.748 | 170.75 | 39.52 | 49.60 | 588.5 | | 75.7 |
| 540. | 1.981 | 1.012 | 19.749 | 172.64 | 40.61 | 50.53 | 598.8 | | 79.4 |
| 560. | 1.906 | 1.014 | 20.769 | 174.49 | 41.68 | 51.46 | 608.8 | | 83.2 |
| 580. | 1.836 | 1.017 | 21.808 | 176.31 | 42.72 | 52.38 | 618.6 | | 87.0 |
| 600. | 1.771 | 1.018 | 22.864 | 178.10 | 43.74 | 53.29 | 628.1 | | 90.8 |

METHANE ISOBAR AT P = 10.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 28.197 | 0.449 | -5.256 | 69.25 | 34.34 | 52.89 | 1572.8 | 199.72 | 215.0 |
| 100. | 27.807 | 0.433 | -4.989 | 71.98 | 34.42 | 53.61 | 1525.0 | 175.69 | 209.1 |
| 105. | 27.410 | 0.418 | -4.720 | 74.61 | 34.21 | 54.06 | 1479.9 | 155.28 | 203.0 |
| 110. | 27.007 | 0.405 | -4.449 | 77.13 | 33.86 | 54.39 | 1435.8 | 137.99 | 196.6 |
| 115. | 26.597 | 0.393 | -4.176 | 79.56 | 33.46 | 54.70 | 1391.9 | 123.34 | 190.1 |
| 120. | 26.178 | 0.383 | -3.902 | 81.89 | 33.04 | 55.02 | 1347.9 | 110.90 | 183.6 |
| 125. | 25.750 | 0.374 | -3.626 | 84.14 | 32.65 | 55.38 | 1303.5 | 100.29 | 177.0 |
| 130. | 25.311 | 0.366 | -3.348 | 86.32 | 32.27 | 55.81 | 1258.7 | 91.19 | 170.4 |
| 135. | 24.861 | 0.358 | -3.068 | 88.44 | 31.92 | 56.31 | 1213.5 | 83.31 | 163.8 |
| 140. | 24.397 | 0.352 | -2.785 | 90.50 | 31.60 | 56.91 | 1167.8 | 76.45 | 157.3 |
| 145. | 23.919 | 0.347 | -2.499 | 92.51 | 31.30 | 57.60 | 1121.6 | 70.40 | 150.8 |
| 150. | 23.424 | 0.342 | -2.209 | 94.47 | 31.03 | 58.42 | 1074.8 | 65.03 | 144.3 |
| 155. | 22.909 | 0.339 | -1.914 | 96.40 | 30.79 | 59.39 | 1027.4 | 60.21 | 138.0 |
| 160. | 22.373 | 0.336 | -1.615 | 98.31 | 30.58 | 60.52 | 979.4 | 55.84 | 131.7 |
| 165. | 21.810 | 0.334 | -1.309 | 100.19 | 30.39 | 61.86 | 930.6 | 51.85 | 125.4 |

METHANE ISOBAR AT P = 10.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 170. | 21.218 | 0.333 | -0.995 | 102.06 | 30.24 | 63.46 | 881.0 | 48.16 | 119.3 |
| 175. | 20.591 | 0.334 | -0.674 | 103.93 | 30.12 | 65.39 | 830.5 | 44.72 | 113.2 |
| 180. | 19.921 | 0.335 | -0.341 | 105.80 | 30.04 | 67.74 | 779.0 | 41.48 | 107.2 |
| 185. | 19.200 | 0.339 | 0.005 | 107.69 | 30.00 | 70.65 | 726.6 | 38.39 | 101.3 |
| 190. | 18.416 | 0.344 | 0.367 | 109.62 | 30.01 | 74.30 | 673.4 | 35.43 | 95.8 |
| 195. | 17.554 | 0.351 | 0.750 | 111.61 | 30.08 | 78.97 | 619.6 | 32.54 | 89.9 |
| 200. | 16.594 | 0.362 | 1.159 | 113.68 | 30.21 | 84.94 | 566.0 | 29.72 | 84.1 |
| 205. | 15.518 | 0.378 | 1.601 | 115.87 | 30.40 | 92.29 | 514.1 | 26.93 | 78.4 |
| 210. | 14.315 | 0.400 | 2.083 | 118.19 | 30.62 | 100.26 | 467.0 | 24.22 | 73.1 |
| 215. | 13.014 | 0.430 | 2.602 | 120.63 | 30.83 | 106.87 | 428.7 | 21.68 | 68.1 |
| 220. | 11.697 | 0.467 | 3.144 | 123.12 | 30.89 | 108.93 | 401.9 | 19.47 | 63.5 |
| 225. | 10.485 | 0.510 | 3.679 | 125.53 | 30.73 | 104.07 | 386.9 | 17.72 | 59.1 |
| 230. | 9.464 | 0.553 | 4.177 | 127.72 | 30.42 | 94.96 | 381.1 | 16.46 | 55.3 |
| 235. | 8.641 | 0.592 | 4.628 | 129.66 | 30.06 | 85.63 | 380.8 | 15.59 | 52.2 |
| 240. | 7.980 | 0.628 | 5.036 | 131.38 | 29.72 | 77.75 | 383.4 | 14.99 | 49.8 |
| 245. | 7.440 | 0.660 | 5.409 | 132.91 | 29.42 | 71.46 | 387.5 | 14.57 | 48.0 |
| 250. | 6.992 | 0.688 | 5.753 | 134.31 | 29.19 | 66.52 | 392.4 | 14.28 | 46.6 |
| 255. | 6.613 | 0.713 | 6.075 | 135.58 | 29.00 | 62.61 | 397.7 | 14.08 | 45.7 |
| 260. | 6.288 | 0.736 | 6.380 | 136.77 | 28.86 | 59.48 | 403.2 | 13.94 | 45.0 |
| 265. | 6.004 | 0.756 | 6.671 | 137.87 | 28.77 | 56.95 | 408.7 | 13.85 | 44.5 |
| 270. | 5.753 | 0.774 | 6.951 | 138.92 | 28.71 | 54.89 | 414.1 | 13.80 | 44.2 |
| 275. | 5.530 | 0.791 | 7.221 | 139.91 | 28.69 | 53.18 | 419.5 | 13.78 | 44.0 |
| 280. | 5.329 | 0.806 | 7.483 | 140.86 | 28.70 | 51.76 | 424.7 | 13.78 | 44.0 |
| 285. | 5.147 | 0.820 | 7.739 | 141.76 | 28.73 | 50.58 | 429.9 | 13.80 | 44.0 |
| 290. | 4.981 | 0.833 | 7.989 | 142.63 | 28.78 | 49.58 | 434.9 | 13.83 | 44.1 |
| 295. | 4.828 | 0.844 | 8.235 | 143.47 | 28.86 | 48.73 | 439.8 | 13.88 | 44.3 |
| 300. | 4.688 | 0.855 | 8.477 | 144.28 | 28.95 | 48.02 | 444.6 | 13.93 | 44.6 |
| 310. | 4.436 | 0.875 | 8.951 | 145.84 | 29.18 | 46.90 | 453.8 | 14.07 | 45.2 |
| 320. | 4.217 | 0.891 | 9.416 | 147.32 | 29.47 | 46.10 | 462.7 | 14.23 | 46.0 |
| 330. | 4.024 | 0.906 | 9.874 | 148.73 | 29.80 | 45.54 | 471.1 | 14.41 | 46.9 |
| 340. | 3.852 | 0.918 | 10.327 | 150.08 | 30.17 | 45.18 | 479.2 | 14.60 | 48.0 |
| 350. | 3.697 | 0.930 | 10.778 | 151.39 | 30.58 | 44.96 | 487.0 | 14.80 | 49.1 |
| 360. | 3.556 | 0.939 | 11.227 | 152.65 | 31.01 | 44.86 | 494.5 | 15.01 | 50.3 |
| 370. | 3.428 | 0.948 | 11.675 | 153.88 | 31.47 | 44.85 | 501.7 | 15.23 | 51.6 |
| 380. | 3.311 | 0.956 | 12.124 | 155.08 | 31.95 | 44.93 | 508.7 | 15.45 | 53.0 |
| 390. | 3.203 | 0.963 | 12.574 | 156.24 | 32.45 | 45.07 | 515.5 | 15.67 | 54.4 |
| 400. | 3.103 | 0.969 | 13.026 | 157.39 | 32.96 | 45.27 | 522.1 | 15.90 | 55.8 |
| 410. | 3.010 | 0.975 | 13.480 | 158.51 | 33.48 | 45.52 | 528.5 | | 57.3 |
| 420. | 2.923 | 0.980 | 13.936 | 159.61 | 34.02 | 45.81 | 534.8 | | 58.9 |
| 430. | 2.842 | 0.984 | 14.396 | 160.69 | 34.56 | 46.13 | 540.9 | | 60.5 |

METHANE ISOBAR AT P = 10.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 440. | 2.765 | 0.988 | 14.859 | 161.76 | 35.11 | 46.47 | 546.9 | | 62.1 |
| 450. | 2.694 | 0.992 | 15.325 | 162.80 | 35.66 | 46.84 | 552.7 | | 63.8 |
| 460. | 2.626 | 0.996 | 15.796 | 163.84 | 36.22 | 47.23 | 558.5 | | 65.5 |
| 470. | 2.562 | 0.999 | 16.270 | 164.86 | 36.78 | 47.64 | 564.2 | | 67.2 |
| 480. | 2.502 | 1.001 | 16.749 | 165.87 | 37.34 | 48.06 | 569.7 | | 69.0 |
| 490. | 2.445 | 1.004 | 17.231 | 166.86 | 37.89 | 48.49 | 575.2 | | 70.7 |
| 500. | 2.390 | 1.006 | 17.718 | 167.84 | 38.45 | 48.93 | 580.6 | | 72.5 |
| 520. | 2.289 | 1.010 | 18.706 | 169.78 | 39.55 | 49.82 | 591.1 | | 76.2 |
| 540. | 2.197 | 1.014 | 19.711 | 171.68 | 40.64 | 50.73 | 601.4 | | 79.9 |
| 560. | 2.113 | 1.017 | 20.735 | 173.54 | 41.71 | 51.64 | 611.4 | | 83.6 |
| 580. | 2.035 | 1.019 | 21.777 | 175.37 | 42.75 | 52.54 | 621.2 | | 87.4 |
| 600. | 1.963 | 1.021 | 22.837 | 177.16 | 43.77 | 53.44 | 630.7 | | 91.2 |

METHANE ISOBAR AT P = 11.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 95. | 28.236 | 0.493 | -5.230 | 69.15 | 34.38 | 52.81 | 1579.6 | 201.81 | 215.8 |
| 100. | 27.848 | 0.475 | -4.964 | 71.88 | 34.46 | 53.52 | 1532.2 | 177.60 | 210.0 |
| 105. | 27.455 | 0.459 | -4.695 | 74.50 | 34.25 | 53.96 | 1487.5 | 157.02 | 203.9 |
| 110. | 27.055 | 0.445 | -4.424 | 77.02 | 33.90 | 54.28 | 1443.8 | 139.57 | 197.6 |
| 115. | 26.649 | 0.432 | -4.152 | 79.44 | 33.50 | 54.56 | 1400.4 | 124.79 | 191.2 |
| 120. | 26.234 | 0.420 | -3.879 | 81.77 | 33.09 | 54.86 | 1356.9 | 112.23 | 184.7 |
| 125. | 25.811 | 0.410 | -3.604 | 84.01 | 32.69 | 55.20 | 1313.1 | 101.53 | 178.1 |
| 130. | 25.378 | 0.401 | -3.327 | 86.19 | 32.32 | 55.59 | 1269.0 | 92.34 | 171.6 |
| 135. | 24.935 | 0.393 | -3.048 | 88.29 | 31.97 | 56.06 | 1224.5 | 84.40 | 165.1 |
| 140. | 24.479 | 0.386 | -2.766 | 90.34 | 31.64 | 56.61 | 1179.6 | 77.48 | 158.6 |
| 145. | 24.009 | 0.380 | -2.481 | 92.34 | 31.35 | 57.25 | 1134.4 | 71.40 | 152.1 |
| 150. | 23.524 | 0.375 | -2.193 | 94.29 | 31.08 | 57.99 | 1088.7 | 66.00 | 145.8 |
| 155. | 23.021 | 0.371 | -1.901 | 96.21 | 30.83 | 58.87 | 1042.5 | 61.16 | 139.5 |
| 160. | 22.498 | 0.368 | -1.604 | 98.09 | 30.62 | 59.88 | 995.9 | 56.79 | 133.3 |
| 165. | 21.953 | 0.365 | -1.302 | 99.95 | 30.42 | 61.07 | 948.7 | 52.80 | 127.2 |
| 170. | 21.382 | 0.364 | -0.993 | 101.80 | 30.26 | 62.47 | 901.0 | 49.13 | 121.1 |
| 175. | 20.780 | 0.364 | -0.677 | 103.63 | 30.13 | 64.12 | 852.6 | 45.72 | 115.2 |
| 180. | 20.142 | 0.365 | -0.352 | 105.46 | 30.03 | 66.10 | 803.7 | 42.53 | 109.3 |
| 185. | 19.463 | 0.367 | -0.015 | 107.30 | 29.96 | 68.47 | 754.2 | 39.51 | 103.6 |
| 190. | 18.735 | 0.372 | 0.334 | 109.17 | 29.94 | 71.34 | 704.4 | 36.63 | 98.3 |

METHANE ISOBAR AT P = 11.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 195. | 17.947 | 0.378 | 0.699 | 111.06 | 29.96 | 74.85 | 654.4 | 33.87 | 92.6 |
| 200. | 17.089 | 0.387 | 1.084 | 113.01 | 30.03 | 79.12 | 604.9 | 31.20 | 87.1 |
| 205. | 16.150 | 0.400 | 1.492 | 115.03 | 30.14 | 84.18 | 556.8 | 28.61 | 81.8 |
| 210. | 15.124 | 0.417 | 1.926 | 117.12 | 30.28 | 89.68 | 512.0 | 26.11 | 76.7 |
| 215. | 14.022 | 0.439 | 2.388 | 119.29 | 30.43 | 94.76 | 472.9 | 23.75 | 72.0 |
| 220. | 12.881 | 0.467 | 2.871 | 121.51 | 30.54 | 98.12 | 441.8 | 21.60 | 67.6 |
| 225. | 11.759 | 0.500 | 3.364 | 123.73 | 30.53 | 98.25 | 419.8 | 19.76 | 63.6 |
| 230. | 10.726 | 0.536 | 3.847 | 125.85 | 30.39 | 94.46 | 406.5 | 18.28 | 59.9 |
| 235. | 9.829 | 0.573 | 4.304 | 127.82 | 30.15 | 88.20 | 400.2 | 17.15 | 56.7 |
| 240. | 9.074 | 0.607 | 4.728 | 129.60 | 29.88 | 81.48 | 398.4 | 16.32 | 54.0 |
| 245. | 8.445 | 0.639 | 5.120 | 131.22 | 29.62 | 75.39 | 399.5 | 15.72 | 51.8 |
| 250. | 7.916 | 0.669 | 5.484 | 132.69 | 29.39 | 70.24 | 402.3 | 15.29 | 50.1 |
| 255. | 7.467 | 0.695 | 5.824 | 134.04 | 29.21 | 66.00 | 406.1 | 14.97 | 48.8 |
| 260. | 7.082 | 0.718 | 6.145 | 135.28 | 29.06 | 62.53 | 410.4 | 14.74 | 47.8 |
| 265. | 6.747 | 0.740 | 6.450 | 136.45 | 28.96 | 59.67 | 415.0 | 14.57 | 47.1 |
| 270. | 6.452 | 0.759 | 6.742 | 137.54 | 28.89 | 57.32 | 419.8 | 14.46 | 46.6 |
| 275. | 6.190 | 0.777 | 7.024 | 138.57 | 28.86 | 55.36 | 424.7 | 14.38 | 46.2 |
| 280. | 5.955 | 0.793 | 7.297 | 139.56 | 28.85 | 53.73 | 429.5 | 14.34 | 46.0 |
| 285. | 5.744 | 0.808 | 7.562 | 140.50 | 28.88 | 52.35 | 434.3 | 14.32 | 45.9 |
| 290. | 5.551 | 0.822 | 7.821 | 141.40 | 28.92 | 51.19 | 439.1 | 14.32 | 45.9 |
| 295. | 5.375 | 0.834 | 8.074 | 142.26 | 28.99 | 50.21 | 443.8 | 14.34 | 46.0 |
| 300. | 5.213 | 0.846 | 8.323 | 143.10 | 29.07 | 49.37 | 448.4 | 14.37 | 46.1 |
| 310. | 4.924 | 0.867 | 8.810 | 144.69 | 29.29 | 48.06 | 457.4 | 14.46 | 46.6 |
| 320. | 4.674 | 0.885 | 9.285 | 146.20 | 29.57 | 47.10 | 466.0 | 14.59 | 47.2 |
| 330. | 4.454 | 0.900 | 9.753 | 147.64 | 29.89 | 46.42 | 474.3 | 14.74 | 48.1 |
| 340. | 4.259 | 0.914 | 10.214 | 149.02 | 30.26 | 45.96 | 482.2 | 14.90 | 49.0 |
| 350. | 4.084 | 0.926 | 10.672 | 150.35 | 30.66 | 45.65 | 489.9 | 15.09 | 50.1 |
| 360. | 3.925 | 0.936 | 11.128 | 151.63 | 31.09 | 45.49 | 497.4 | 15.28 | 51.2 |
| 370. | 3.781 | 0.946 | 11.582 | 152.88 | 31.54 | 45.43 | 504.5 | 15.48 | 52.5 |
| 380. | 3.650 | 0.954 | 12.037 | 154.09 | 32.01 | 45.45 | 511.5 | 15.69 | 53.8 |
| 390. | 3.528 | 0.961 | 12.492 | 155.27 | 32.51 | 45.55 | 518.3 | 15.90 | 55.1 |
| 400. | 3.416 | 0.968 | 12.948 | 156.43 | 33.02 | 45.72 | 524.8 | 16.12 | 56.6 |
| 410. | 3.312 | 0.974 | 13.406 | 157.56 | 33.54 | 45.93 | 531.2 | | 58.0 |
| 420. | 3.216 | 0.980 | 13.867 | 158.67 | 34.07 | 46.19 | 537.5 | | 59.6 |
| 430. | 3.125 | 0.984 | 14.330 | 159.76 | 34.61 | 46.48 | 543.6 | | 61.1 |
| 440. | 3.041 | 0.989 | 14.797 | 160.83 | 35.16 | 46.81 | 549.6 | | 62.7 |
| 450. | 2.961 | 0.993 | 15.266 | 161.89 | 35.71 | 47.16 | 555.4 | | 64.4 |
| 460. | 2.886 | 0.996 | 15.740 | 162.93 | 36.26 | 47.53 | 561.2 | | 66.0 |
| 470. | 2.816 | 1.000 | 16.217 | 163.95 | 36.82 | 47.92 | 566.8 | | 67.8 |
| 480. | 2.749 | 1.003 | 16.698 | 164.97 | 37.37 | 48.32 | 572.4 | | 69.5 |

METHANE ISOBAR AT P = 11.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 490. | 2.685 | 1.005 | 17.183 | 165.97 | 37.93 | 48.74 | 577.9 | | 71.2 |
| 500. | 2.625 | 1.008 | 17.673 | 166.96 | 38.48 | 49.16 | 583.2 | | 73.0 |
| 520. | 2.513 | 1.012 | 18.665 | 168.90 | 39.58 | 50.03 | 593.8 | | 76.6 |
| 540. | 2.412 | 1.016 | 19.674 | 170.81 | 40.67 | 50.92 | 604.0 | | 80.3 |
| 560. | 2.318 | 1.019 | 20.702 | 172.67 | 41.73 | 51.81 | 614.1 | | 84.0 |
| 580. | 2.233 | 1.022 | 21.747 | 174.51 | 42.77 | 52.70 | 623.9 | | 87.8 |
| 600. | 2.154 | 1.024 | 22.810 | 176.31 | 43.79 | 53.59 | 633.4 | | 91.6 |

METHANE ISOBAR AT P = 12.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 28.274 | 0.537 | -5.203 | 69.06 | 34.41 | 52.74 | 1586.3 | 203.92 | 216.7 |
| 100. | 27.889 | 0.517 | -4.938 | 71.78 | 34.50 | 53.44 | 1539.3 | 179.53 | 210.9 |
| 105. | 27.499 | 0.500 | -4.669 | 74.40 | 34.28 | 53.86 | 1494.9 | 158.78 | 204.8 |
| 110. | 27.103 | 0.484 | -4.399 | 76.91 | 33.94 | 54.16 | 1451.7 | 141.17 | 198.6 |
| 115. | 26.700 | 0.470 | -4.128 | 79.32 | 33.54 | 54.43 | 1408.7 | 126.25 | 192.2 |
| 120. | 26.290 | 0.457 | -3.855 | 81.65 | 33.13 | 54.71 | 1365.7 | 113.58 | 185.7 |
| 125. | 25.872 | 0.446 | -3.581 | 83.89 | 32.74 | 55.02 | 1322.5 | 102.77 | 179.2 |
| 130. | 25.444 | 0.436 | -3.305 | 86.05 | 32.36 | 55.39 | 1279.0 | 93.50 | 172.8 |
| 135. | 25.007 | 0.428 | -3.027 | 88.15 | 32.01 | 55.82 | 1235.2 | 85.49 | 166.3 |
| 140. | 24.558 | 0.420 | -2.746 | 90.19 | 31.69 | 56.32 | 1191.1 | 78.51 | 159.9 |
| 145. | 24.096 | 0.413 | -2.463 | 92.18 | 31.40 | 56.91 | 1146.7 | 72.39 | 153.5 |
| 150. | 23.620 | 0.407 | -2.177 | 94.12 | 31.13 | 57.60 | 1102.0 | 66.96 | 147.2 |
| 155. | 23.128 | 0.403 | -1.887 | 96.02 | 30.88 | 58.39 | 1057.0 | 62.10 | 141.0 |
| 160. | 22.619 | 0.399 | -1.593 | 97.88 | 30.66 | 59.30 | 1011.6 | 57.72 | 134.9 |
| 165. | 22.089 | 0.396 | -1.294 | 99.73 | 30.46 | 60.37 | 965.9 | 53.74 | 128.8 |
| 170. | 21.536 | 0.394 | -0.989 | 101.55 | 30.29 | 61.60 | 919.8 | 50.08 | 122.9 |
| 175. | 20.956 | 0.394 | -0.678 | 103.35 | 30.15 | 63.03 | 873.4 | 46.69 | 117.1 |
| 180. | 20.347 | 0.394 | -0.358 | 105.15 | 30.03 | 64.71 | 826.6 | 43.53 | 111.4 |
| 185. | 19.702 | 0.396 | -0.030 | 106.95 | 29.95 | 66.69 | 779.5 | 40.56 | 105.8 |
| 190. | 19.018 | 0.399 | 0.309 | 108.76 | 29.90 | 69.02 | 732.4 | 37.75 | 100.6 |
| 195. | 18.287 | 0.405 | 0.661 | 110.58 | 29.88 | 71.77 | 685.4 | 35.08 | 95.1 |
| 200. | 17.503 | 0.412 | 1.028 | 112.44 | 29.91 | 75.00 | 639.1 | 32.52 | 89.9 |
| 205. | 16.659 | 0.423 | 1.412 | 114.34 | 29.96 | 78.71 | 594.1 | 30.06 | 84.8 |
| 210. | 15.753 | 0.436 | 1.815 | 116.28 | 30.05 | 82.72 | 551.6 | 27.70 | 79.9 |
| 215. | 14.789 | 0.454 | 2.239 | 118.28 | 30.15 | 86.59 | 513.2 | 25.48 | 75.4 |

METHANE ISOBAR AT P = 12.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol\cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m\cdot s^{-1}$ | $\mu Pa\cdot s$ | mW/(m·K) |
| 220. | 13.786 | 0.476 | 2.680 | 120.30 | 30.25 | 89.65 | 480.6 | 23.42 | 71.1 |
| 225. | 12.776 | 0.502 | 3.133 | 122.34 | 30.29 | 91.14 | 454.9 | 21.58 | 67.3 |
| 230. | 11.800 | 0.532 | 3.587 | 124.34 | 30.24 | 90.36 | 436.4 | 20.01 | 63.8 |
| 235. | 10.901 | 0.563 | 4.032 | 126.25 | 30.11 | 87.23 | 424.6 | 18.73 | 60.7 |
| 240. | 10.105 | 0.595 | 4.457 | 128.04 | 29.93 | 82.61 | 418.2 | 17.73 | 57.9 |
| 245. | 9.415 | 0.626 | 4.858 | 129.69 | 29.72 | 77.58 | 415.6 | 16.96 | 55.5 |
| 250. | 8.823 | 0.654 | 5.233 | 131.21 | 29.53 | 72.84 | 415.7 | 16.37 | 53.5 |
| 255. | 8.315 | 0.681 | 5.587 | 132.61 | 29.36 | 68.65 | 417.4 | 15.93 | 52.0 |
| 260. | 7.875 | 0.705 | 5.921 | 133.91 | 29.22 | 65.07 | 420.1 | 15.60 | 50.7 |
| 265. | 7.491 | 0.727 | 6.239 | 135.12 | 29.12 | 62.05 | 423.6 | 15.35 | 49.8 |
| 270. | 7.153 | 0.747 | 6.542 | 136.25 | 29.05 | 59.51 | 427.4 | 15.17 | 49.0 |
| 275. | 6.853 | 0.766 | 6.834 | 137.33 | 29.01 | 57.36 | 431.5 | 15.04 | 48.5 |
| 280. | 6.585 | 0.783 | 7.116 | 138.34 | 29.00 | 55.56 | 435.8 | 14.94 | 48.1 |
| 285. | 6.343 | 0.798 | 7.390 | 139.31 | 29.01 | 54.03 | 440.1 | 14.88 | 47.8 |
| 290. | 6.124 | 0.813 | 7.657 | 140.24 | 29.05 | 52.73 | 444.5 | 14.84 | 47.7 |
| 295. | 5.923 | 0.826 | 7.918 | 141.13 | 29.11 | 51.62 | 448.9 | 14.83 | 47.7 |
| 300. | 5.740 | 0.838 | 8.174 | 141.99 | 29.19 | 50.67 | 453.2 | 14.83 | 47.7 |
| 310. | 5.413 | 0.860 | 8.672 | 143.63 | 29.40 | 49.17 | 461.7 | 14.87 | 48.0 |
| 320. | 5.131 | 0.879 | 9.158 | 145.17 | 29.67 | 48.07 | 470.0 | 14.96 | 48.6 |
| 330. | 4.884 | 0.895 | 9.635 | 146.64 | 29.98 | 47.28 | 478.1 | 15.08 | 49.3 |
| 340. | 4.666 | 0.910 | 10.105 | 148.04 | 30.34 | 46.71 | 485.9 | 15.22 | 50.1 |
| 350. | 4.470 | 0.923 | 10.570 | 149.39 | 30.73 | 46.33 | 493.4 | 15.38 | 51.1 |
| 360. | 4.294 | 0.934 | 11.032 | 150.69 | 31.16 | 46.10 | 500.7 | 15.56 | 52.2 |
| 370. | 4.134 | 0.944 | 11.492 | 151.95 | 31.60 | 45.98 | 507.8 | 15.74 | 53.3 |
| 380. | 3.987 | 0.953 | 11.952 | 153.18 | 32.08 | 45.96 | 514.7 | 15.93 | 54.6 |
| 390. | 3.853 | 0.960 | 12.412 | 154.37 | 32.57 | 46.02 | 521.4 | 16.13 | 55.9 |
| 400. | 3.729 | 0.968 | 12.872 | 155.54 | 33.07 | 46.15 | 527.9 | 16.34 | 57.3 |
| 410. | 3.614 | 0.974 | 13.335 | 156.68 | 33.59 | 46.33 | 534.2 | | 58.7 |
| 420. | 3.508 | 0.980 | 13.799 | 157.80 | 34.12 | 46.56 | 540.5 | | 60.2 |
| 430. | 3.408 | 0.985 | 14.266 | 158.90 | 34.66 | 46.83 | 546.5 | | 61.8 |
| 440. | 3.315 | 0.990 | 14.736 | 159.98 | 35.20 | 47.13 | 552.5 | | 63.4 |
| 450. | 3.227 | 0.994 | 15.209 | 161.04 | 35.75 | 47.46 | 558.3 | | 65.0 |
| 460. | 3.145 | 0.998 | 15.685 | 162.09 | 36.30 | 47.82 | 564.1 | | 66.6 |
| 470. | 3.067 | 1.001 | 16.165 | 163.12 | 36.86 | 48.19 | 569.7 | | 68.3 |
| 480. | 2.994 | 1.004 | 16.649 | 164.14 | 37.41 | 48.58 | 575.2 | | 70.0 |
| 490. | 2.924 | 1.007 | 17.137 | 165.14 | 37.97 | 48.98 | 580.7 | | 71.8 |
| 500. | 2.858 | 1.010 | 17.629 | 166.14 | 38.52 | 49.39 | 586.1 | | 73.5 |
| 520. | 2.736 | 1.014 | 18.625 | 168.09 | 39.62 | 50.24 | 596.6 | | 77.1 |
| 540. | 2.625 | 1.018 | 19.638 | 170.00 | 40.70 | 51.11 | 606.9 | | 80.7 |
| 560. | 2.523 | 1.021 | 20.669 | 171.88 | 41.76 | 51.98 | 616.9 | | 84.4 |

METHANE ISOBAR AT P = 12.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 580. | 2.430 | 1.024 | 21.718 | 173.72 | 42.80 | 52.86 | 626.6 | | 88.2 |
| 600. | 2.343 | 1.026 | 22.784 | 175.52 | 43.81 | 53.73 | 636.2 | | 91.9 |

METHANE ISOBAR AT P = 13.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 28.312 | 0.581 | -5.177 | 68.96 | 34.45 | 52.67 | 1592.9 | 206.06 | 217.5 |
| 100. | 27.930 | 0.560 | -4.912 | 71.68 | 34.53 | 53.36 | 1546.2 | 181.48 | 211.8 |
| 105. | 27.543 | 0.541 | -4.644 | 74.30 | 34.32 | 53.77 | 1502.3 | 160.55 | 205.8 |
| 110. | 27.150 | 0.524 | -4.374 | 76.80 | 33.98 | 54.06 | 1459.4 | 142.78 | 199.6 |
| 115. | 26.751 | 0.508 | -4.104 | 79.21 | 33.58 | 54.31 | 1416.8 | 127.72 | 193.2 |
| 120. | 26.345 | 0.495 | -3.831 | 81.53 | 33.18 | 54.56 | 1374.3 | 114.92 | 186.8 |
| 125. | 25.931 | 0.482 | -3.558 | 83.76 | 32.78 | 54.85 | 1331.6 | 104.01 | 180.4 |
| 130. | 25.509 | 0.471 | -3.283 | 85.92 | 32.41 | 55.19 | 1288.7 | 94.66 | 173.9 |
| 135. | 25.077 | 0.462 | -3.006 | 88.01 | 32.06 | 55.59 | 1245.6 | 86.58 | 167.5 |
| 140. | 24.635 | 0.453 | -2.727 | 90.04 | 31.74 | 56.06 | 1202.3 | 79.55 | 161.1 |
| 145. | 24.181 | 0.446 | -2.445 | 92.02 | 31.44 | 56.60 | 1158.7 | 73.38 | 154.8 |
| 150. | 23.714 | 0.440 | -2.161 | 93.94 | 31.17 | 57.23 | 1115.0 | 67.91 | 148.6 |
| 155. | 23.232 | 0.434 | -1.873 | 95.83 | 30.92 | 57.95 | 1071.0 | 63.04 | 142.4 |
| 160. | 22.734 | 0.430 | -1.581 | 97.69 | 30.70 | 58.78 | 1026.7 | 58.64 | 136.4 |
| 165. | 22.218 | 0.426 | -1.285 | 99.51 | 30.50 | 59.73 | 982.3 | 54.65 | 130.5 |
| 170. | 21.682 | 0.424 | -0.983 | 101.31 | 30.32 | 60.82 | 937.7 | 51.00 | 124.6 |
| 175. | 21.122 | 0.423 | -0.676 | 103.09 | 30.17 | 62.08 | 892.9 | 47.63 | 118.9 |
| 180. | 20.537 | 0.423 | -0.362 | 104.86 | 30.04 | 63.53 | 847.9 | 44.50 | 113.3 |
| 185. | 19.922 | 0.424 | -0.041 | 106.62 | 29.95 | 65.20 | 802.9 | 41.56 | 107.9 |
| 190. | 19.273 | 0.427 | 0.290 | 108.38 | 29.88 | 67.14 | 758.1 | 38.80 | 102.8 |
| 195. | 18.588 | 0.431 | 0.631 | 110.16 | 29.84 | 69.36 | 713.6 | 36.19 | 97.5 |
| 200. | 17.860 | 0.438 | 0.984 | 111.94 | 29.83 | 71.91 | 669.8 | 33.71 | 92.4 |
| 205. | 17.087 | 0.446 | 1.351 | 113.75 | 29.85 | 74.75 | 627.4 | 31.34 | 87.5 |
| 210. | 16.267 | 0.458 | 1.732 | 115.59 | 29.89 | 77.81 | 586.9 | 29.09 | 82.8 |
| 215. | 15.403 | 0.472 | 2.129 | 117.46 | 29.96 | 80.81 | 549.7 | 26.97 | 78.4 |
| 220. | 14.505 | 0.490 | 2.540 | 119.35 | 30.02 | 83.37 | 516.8 | 24.99 | 74.3 |
| 225. | 13.593 | 0.511 | 2.961 | 121.24 | 30.07 | 85.07 | 489.3 | 23.19 | 70.6 |
| 230. | 12.691 | 0.536 | 3.388 | 123.12 | 30.07 | 85.47 | 467.8 | 21.60 | 67.2 |
| 235. | 11.830 | 0.562 | 3.813 | 124.95 | 30.01 | 84.28 | 452.0 | 20.25 | 64.1 |
| 240. | 11.034 | 0.590 | 4.228 | 126.69 | 29.90 | 81.62 | 441.4 | 19.12 | 61.3 |

METHANE ISOBAR AT P = 13.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 245. | 10.319 | 0.618 | 4.628 | 128.34 | 29.75 | 78.02 | 435.2 | 18.22 | 58.9 |
| 250. | 9.688 | 0.646 | 5.008 | 129.88 | 29.60 | 74.13 | 432.2 | 17.51 | 56.8 |
| 255. | 9.134 | 0.671 | 5.369 | 131.31 | 29.46 | 70.37 | 431.4 | 16.95 | 55.1 |
| 260. | 8.650 | 0.695 | 5.712 | 132.64 | 29.34 | 66.95 | 432.3 | 16.52 | 53.6 |
| 265. | 8.223 | 0.717 | 6.039 | 133.89 | 29.24 | 63.94 | 434.2 | 16.19 | 52.4 |
| 270. | 7.847 | 0.738 | 6.352 | 135.06 | 29.17 | 61.34 | 436.9 | 15.93 | 51.5 |
| 275. | 7.511 | 0.757 | 6.653 | 136.16 | 29.13 | 59.10 | 440.1 | 15.73 | 50.8 |
| 280. | 7.211 | 0.774 | 6.944 | 137.21 | 29.12 | 57.19 | 443.6 | 15.58 | 50.3 |
| 285. | 6.940 | 0.790 | 7.226 | 138.21 | 29.13 | 55.54 | 447.3 | 15.47 | 49.9 |
| 290. | 6.695 | 0.805 | 7.500 | 139.16 | 29.16 | 54.14 | 451.1 | 15.40 | 49.6 |
| 295. | 6.471 | 0.819 | 7.767 | 140.07 | 29.22 | 52.93 | 455.0 | 15.35 | 49.5 |
| 300. | 6.265 | 0.832 | 8.029 | 140.96 | 29.29 | 51.89 | 459.0 | 15.32 | 49.4 |
| 310. | 5.901 | 0.855 | 8.540 | 142.63 | 29.50 | 50.23 | 466.9 | 15.31 | 49.5 |
| 320. | 5.588 | 0.874 | 9.035 | 144.20 | 29.76 | 49.00 | 474.8 | 15.36 | 49.9 |
| 330. | 5.314 | 0.892 | 9.521 | 145.70 | 30.06 | 48.10 | 482.5 | 15.44 | 50.5 |
| 340. | 5.071 | 0.907 | 9.998 | 147.12 | 30.42 | 47.44 | 490.0 | 15.56 | 51.3 |
| 350. | 4.855 | 0.920 | 10.470 | 148.49 | 30.80 | 46.99 | 497.4 | 15.69 | 52.2 |
| 360. | 4.661 | 0.932 | 10.938 | 149.81 | 31.22 | 46.69 | 504.5 | 15.84 | 53.2 |
| 370. | 4.484 | 0.942 | 11.404 | 151.09 | 31.67 | 46.52 | 511.4 | 16.01 | 54.3 |
| 380. | 4.324 | 0.952 | 11.869 | 152.33 | 32.13 | 46.46 | 518.2 | 16.19 | 55.5 |
| 390. | 4.176 | 0.960 | 12.334 | 153.53 | 32.62 | 46.48 | 524.8 | 16.37 | 56.7 |
| 400. | 4.041 | 0.967 | 12.799 | 154.71 | 33.12 | 46.57 | 531.2 | 16.57 | 58.1 |
| 410. | 3.915 | 0.974 | 13.265 | 155.86 | 33.64 | 46.72 | 537.5 | | 59.5 |
| 420. | 3.798 | 0.980 | 13.734 | 156.99 | 34.17 | 46.92 | 543.7 | | 60.9 |
| 430. | 3.689 | 0.986 | 14.204 | 158.10 | 34.70 | 47.17 | 549.7 | | 62.4 |
| 440. | 3.587 | 0.991 | 14.677 | 159.18 | 35.24 | 47.45 | 555.6 | | 64.0 |
| 450. | 3.492 | 0.995 | 15.153 | 160.25 | 35.79 | 47.76 | 561.4 | | 65.6 |
| 460. | 3.402 | 0.999 | 15.632 | 161.31 | 36.34 | 48.09 | 567.1 | | 67.2 |
| 470. | 3.318 | 1.003 | 16.115 | 162.35 | 36.89 | 48.45 | 572.8 | | 68.9 |
| 480. | 3.238 | 1.006 | 16.601 | 163.37 | 37.45 | 48.82 | 578.3 | | 70.6 |
| 490. | 3.162 | 1.009 | 17.092 | 164.38 | 38.00 | 49.21 | 583.7 | | 72.3 |
| 500. | 3.090 | 1.012 | 17.586 | 165.38 | 38.55 | 49.61 | 589.1 | | 74.0 |
| 520. | 2.957 | 1.017 | 18.586 | 167.34 | 39.65 | 50.44 | 599.6 | | 77.6 |
| 540. | 2.837 | 1.021 | 19.603 | 169.26 | 40.73 | 51.29 | 609.8 | | 81.2 |
| 560. | 2.726 | 1.024 | 20.638 | 171.14 | 41.79 | 52.15 | 619.8 | | 84.9 |
| 580. | 2.625 | 1.027 | 21.689 | 172.99 | 42.82 | 53.01 | 629.5 | | 88.6 |
| 600. | 2.532 | 1.029 | 22.758 | 174.80 | 43.83 | 53.87 | 639.1 | | 92.3 |

METHANE ISOBAR AT P = 14.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 28.349 | 0.625 | -5.151 | 68.87 | 34.49 | 52.61 | 1599.4 | 208.21 | 218.4 |
| 100. | 27.970 | 0.602 | -4.886 | 71.58 | 34.57 | 53.28 | 1553.1 | 183.44 | 212.7 |
| 105. | 27.586 | 0.581 | -4.618 | 74.19 | 34.36 | 53.68 | 1509.5 | 162.33 | 206.7 |
| 110. | 27.196 | 0.563 | -4.349 | 76.70 | 34.02 | 53.95 | 1467.0 | 144.41 | 200.5 |
| 115. | 26.801 | 0.546 | -4.079 | 79.10 | 33.62 | 54.19 | 1424.8 | 129.20 | 194.2 |
| 120. | 26.399 | 0.532 | -3.807 | 81.41 | 33.22 | 54.42 | 1382.8 | 116.28 | 187.9 |
| 125. | 25.989 | 0.518 | -3.535 | 83.64 | 32.83 | 54.69 | 1340.6 | 105.26 | 181.5 |
| 130. | 25.572 | 0.507 | -3.260 | 85.79 | 32.46 | 55.01 | 1298.3 | 95.82 | 175.1 |
| 135. | 25.146 | 0.496 | -2.985 | 87.87 | 32.11 | 55.37 | 1255.8 | 87.67 | 168.7 |
| 140. | 24.710 | 0.487 | -2.707 | 89.89 | 31.79 | 55.81 | 1213.1 | 80.58 | 162.4 |
| 145. | 24.263 | 0.479 | -2.426 | 91.86 | 31.49 | 56.30 | 1170.4 | 74.36 | 156.1 |
| 150. | 23.804 | 0.472 | -2.143 | 93.78 | 31.22 | 56.88 | 1127.5 | 68.86 | 150.0 |
| 155. | 23.332 | 0.466 | -1.857 | 95.65 | 30.97 | 57.54 | 1084.4 | 63.96 | 143.9 |
| 160. | 22.845 | 0.461 | -1.568 | 97.49 | 30.75 | 58.29 | 1041.3 | 59.55 | 137.9 |
| 165. | 22.342 | 0.457 | -1.274 | 99.30 | 30.54 | 59.15 | 998.0 | 55.55 | 132.0 |
| 170. | 21.820 | 0.454 | -0.976 | 101.08 | 30.36 | 60.13 | 954.7 | 51.90 | 126.3 |
| 175. | 21.279 | 0.452 | -0.673 | 102.84 | 30.20 | 61.24 | 911.3 | 48.54 | 120.6 |
| 180. | 20.714 | 0.452 | -0.364 | 104.58 | 30.06 | 62.50 | 868.0 | 45.43 | 115.2 |
| 185. | 20.124 | 0.452 | -0.048 | 106.31 | 29.95 | 63.94 | 824.8 | 42.52 | 109.8 |
| 190. | 19.507 | 0.454 | 0.276 | 108.04 | 29.87 | 65.57 | 781.8 | 39.80 | 104.8 |
| 195. | 18.858 | 0.458 | 0.609 | 109.76 | 29.81 | 67.41 | 739.4 | 37.24 | 99.7 |
| 200. | 18.176 | 0.463 | 0.951 | 111.50 | 29.78 | 69.47 | 697.8 | 34.81 | 94.7 |
| 205. | 17.458 | 0.470 | 1.304 | 113.24 | 29.77 | 71.74 | 657.4 | 32.51 | 90.0 |
| 210. | 16.704 | 0.480 | 1.668 | 115.00 | 29.79 | 74.14 | 618.8 | 30.34 | 85.5 |
| 215. | 15.915 | 0.492 | 2.045 | 116.77 | 29.82 | 76.52 | 582.8 | 28.29 | 81.2 |
| 220. | 15.097 | 0.507 | 2.433 | 118.55 | 29.86 | 78.64 | 550.3 | 26.38 | 77.2 |
| 225. | 14.264 | 0.525 | 2.830 | 120.34 | 29.90 | 80.23 | 522.1 | 24.62 | 73.5 |
| 230. | 13.432 | 0.545 | 3.234 | 122.11 | 29.92 | 81.03 | 498.7 | 23.04 | 70.2 |
| 235. | 12.621 | 0.568 | 3.639 | 123.86 | 29.90 | 80.80 | 480.3 | 21.65 | 67.2 |
| 240. | 11.851 | 0.592 | 4.040 | 125.55 | 29.83 | 79.45 | 466.6 | 20.46 | 64.4 |
| 245. | 11.138 | 0.617 | 4.432 | 127.16 | 29.74 | 77.14 | 457.1 | 19.47 | 62.0 |
| 250. | 10.490 | 0.642 | 4.811 | 128.69 | 29.63 | 74.24 | 451.2 | 18.65 | 59.9 |
| 255. | 9.910 | 0.666 | 5.174 | 130.13 | 29.51 | 71.13 | 447.9 | 18.00 | 58.0 |
| 260. | 9.393 | 0.689 | 5.522 | 131.48 | 29.41 | 68.09 | 446.7 | 17.47 | 56.4 |
| 265. | 8.933 | 0.711 | 5.855 | 132.75 | 29.33 | 65.28 | 446.9 | 17.05 | 55.1 |
| 270. | 8.523 | 0.732 | 6.175 | 133.95 | 29.27 | 62.75 | 448.2 | 16.72 | 54.0 |
| 275. | 8.157 | 0.751 | 6.483 | 135.08 | 29.23 | 60.52 | 450.2 | 16.46 | 53.2 |
| 280. | 7.827 | 0.768 | 6.781 | 136.15 | 29.22 | 58.56 | 452.8 | 16.26 | 52.5 |
| 285. | 7.530 | 0.785 | 7.069 | 137.17 | 29.23 | 56.86 | 455.7 | 16.10 | 52.0 |
| 290. | 7.259 | 0.800 | 7.350 | 138.15 | 29.27 | 55.39 | 458.9 | 15.98 | 51.6 |

METHANE ISOBAR AT P = 14.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 295. | 7.013 | 0.814 | 7.624 | 139.08 | 29.32 | 54.11 | 462.3 | 15.89 | 51.3 |
| 300. | 6.787 | 0.827 | 7.891 | 139.98 | 29.39 | 53.00 | 465.8 | 15.83 | 51.1 |
| 310. | 6.386 | 0.851 | 8.412 | 141.69 | 29.59 | 51.21 | 473.0 | 15.77 | 51.1 |
| 320. | 6.041 | 0.871 | 8.917 | 143.30 | 29.84 | 49.87 | 480.3 | 15.77 | 51.3 |
| 330. | 5.741 | 0.889 | 9.410 | 144.81 | 30.14 | 48.87 | 487.6 | 15.82 | 51.8 |
| 340. | 5.475 | 0.905 | 9.895 | 146.26 | 30.49 | 48.14 | 494.8 | 15.90 | 52.4 |
| 350. | 5.238 | 0.918 | 10.374 | 147.65 | 30.87 | 47.61 | 501.8 | 16.01 | 53.2 |
| 360. | 5.026 | 0.931 | 10.848 | 148.98 | 31.29 | 47.26 | 508.7 | 16.14 | 54.2 |
| 370. | 4.833 | 0.942 | 11.320 | 150.28 | 31.73 | 47.04 | 515.5 | 16.29 | 55.2 |
| 380. | 4.658 | 0.951 | 11.789 | 151.53 | 32.19 | 46.93 | 522.1 | 16.45 | 56.3 |
| 390. | 4.498 | 0.960 | 12.258 | 152.75 | 32.67 | 46.91 | 528.6 | 16.62 | 57.6 |
| 400. | 4.350 | 0.968 | 12.728 | 153.94 | 33.17 | 46.97 | 534.9 | 16.80 | 58.9 |
| 410. | 4.213 | 0.975 | 13.198 | 155.10 | 33.69 | 47.10 | 541.1 | | 60.2 |
| 420. | 4.087 | 0.981 | 13.670 | 156.23 | 34.21 | 47.27 | 547.2 | | 61.6 |
| 430. | 3.969 | 0.987 | 14.144 | 157.35 | 34.75 | 47.49 | 553.2 | | 63.1 |
| 440. | 3.858 | 0.992 | 14.620 | 158.44 | 35.29 | 47.75 | 559.0 | | 64.6 |
| 450. | 3.755 | 0.996 | 15.099 | 159.52 | 35.83 | 48.05 | 564.8 | | 66.2 |
| 460. | 3.658 | 1.001 | 15.581 | 160.58 | 36.38 | 48.37 | 570.4 | | 67.8 |
| 470. | 3.566 | 1.005 | 16.066 | 161.62 | 36.93 | 48.71 | 576.0 | | 69.4 |
| 480. | 3.480 | 1.008 | 16.555 | 162.65 | 37.48 | 49.07 | 581.5 | | 71.1 |
| 490. | 3.398 | 1.011 | 17.048 | 163.67 | 38.03 | 49.44 | 586.9 | | 72.8 |
| 500. | 3.321 | 1.014 | 17.544 | 164.67 | 38.58 | 49.83 | 592.2 | | 74.5 |
| 520. | 3.177 | 1.019 | 18.549 | 166.64 | 39.68 | 50.64 | 602.6 | | 78.1 |
| 540. | 3.047 | 1.023 | 19.570 | 168.57 | 40.75 | 51.47 | 612.8 | | 81.6 |
| 560. | 2.928 | 1.027 | 20.607 | 170.45 | 41.81 | 52.31 | 622.8 | | 85.3 |
| 580. | 2.819 | 1.030 | 21.662 | 172.30 | 42.85 | 53.16 | 632.5 | | 89.0 |
| 600. | 2.719 | 1.032 | 22.734 | 174.12 | 43.86 | 54.01 | 642.1 | | 92.7 |

METHANE ISOBAR AT P = 15.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 95. | 28.386 | 0.669 | -5.124 | 68.77 | 34.52 | 52.54 | 1605.8 | 210.37 | 219.2 |
| 100. | 28.009 | 0.644 | -4.860 | 71.49 | 34.61 | 53.20 | 1559.9 | 185.42 | 213.6 |
| 105. | 27.628 | 0.622 | -4.593 | 74.09 | 34.40 | 53.59 | 1516.6 | 164.14 | 207.6 |
| 110. | 27.242 | 0.602 | -4.324 | 76.59 | 34.06 | 53.85 | 1474.4 | 146.05 | 201.5 |
| 115. | 26.850 | 0.584 | -4.054 | 78.99 | 33.67 | 54.07 | 1432.7 | 130.69 | 195.2 |

METHANE ISOBAR AT P = 15.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 120. | 26.452 | 0.568 | -3.784 | 81.30 | 33.27 | 54.29 | 1391.1 | 117.65 | 188.9 |
| 125. | 26.047 | 0.554 | -3.511 | 83.52 | 32.88 | 54.54 | 1349.4 | 106.52 | 182.5 |
| 130. | 25.634 | 0.541 | -3.238 | 85.66 | 32.51 | 54.83 | 1307.6 | 96.99 | 176.2 |
| 135. | 25.213 | 0.530 | -2.963 | 87.74 | 32.16 | 55.17 | 1265.7 | 88.76 | 169.9 |
| 140. | 24.784 | 0.520 | -2.686 | 89.75 | 31.84 | 55.57 | 1223.7 | 81.61 | 163.6 |
| 145. | 24.344 | 0.511 | -2.407 | 91.71 | 31.54 | 56.03 | 1181.7 | 75.35 | 157.4 |
| 150. | 23.892 | 0.503 | -2.126 | 93.62 | 31.27 | 56.56 | 1139.6 | 69.81 | 151.3 |
| 155. | 23.429 | 0.497 | -1.842 | 95.48 | 31.02 | 57.16 | 1097.4 | 64.88 | 145.3 |
| 160. | 22.952 | 0.491 | -1.554 | 97.31 | 30.79 | 57.85 | 1055.2 | 60.45 | 139.4 |
| 165. | 22.461 | 0.487 | -1.263 | 99.10 | 30.58 | 58.62 | 1013.1 | 56.44 | 133.6 |
| 170. | 21.953 | 0.483 | -0.968 | 100.86 | 30.40 | 59.50 | 970.9 | 52.79 | 127.9 |
| 175. | 21.427 | 0.481 | -0.668 | 102.60 | 30.23 | 60.49 | 928.8 | 49.43 | 122.3 |
| 180. | 20.881 | 0.480 | -0.363 | 104.32 | 30.09 | 61.60 | 886.9 | 46.33 | 116.9 |
| 185. | 20.314 | 0.480 | -0.052 | 106.02 | 29.97 | 62.85 | 845.3 | 43.45 | 111.7 |
| 190. | 19.722 | 0.481 | 0.266 | 107.72 | 29.87 | 64.24 | 804.0 | 40.75 | 106.8 |
| 195. | 19.105 | 0.484 | 0.591 | 109.41 | 29.80 | 65.80 | 763.3 | 38.22 | 101.8 |
| 200. | 18.460 | 0.489 | 0.924 | 111.09 | 29.75 | 67.50 | 723.5 | 35.84 | 96.9 |
| 205. | 17.786 | 0.495 | 1.266 | 112.78 | 29.72 | 69.35 | 684.9 | 33.60 | 92.3 |
| 210. | 17.083 | 0.503 | 1.618 | 114.48 | 29.72 | 71.29 | 647.9 | 31.48 | 87.9 |
| 215. | 16.353 | 0.513 | 1.979 | 116.18 | 29.73 | 73.22 | 613.1 | 29.49 | 83.7 |
| 220. | 15.599 | 0.526 | 2.350 | 117.88 | 29.75 | 74.98 | 581.2 | 27.63 | 79.8 |
| 225. | 14.831 | 0.541 | 2.728 | 119.58 | 29.77 | 76.39 | 552.8 | 25.91 | 76.2 |
| 230. | 14.059 | 0.558 | 3.113 | 121.27 | 29.79 | 77.28 | 528.5 | 24.35 | 72.9 |
| 235. | 13.298 | 0.577 | 3.500 | 122.94 | 29.79 | 77.49 | 508.4 | 22.95 | 69.9 |
| 240. | 12.563 | 0.598 | 3.886 | 124.56 | 29.75 | 76.90 | 492.5 | 21.72 | 67.2 |
| 245. | 11.867 | 0.620 | 4.268 | 126.14 | 29.70 | 75.52 | 480.5 | 20.67 | 64.8 |
| 250. | 11.221 | 0.643 | 4.641 | 127.64 | 29.62 | 73.50 | 471.9 | 19.78 | 62.6 |
| 255. | 10.629 | 0.666 | 5.002 | 129.07 | 29.54 | 71.10 | 466.3 | 19.04 | 60.7 |
| 260. | 10.093 | 0.687 | 5.351 | 130.43 | 29.46 | 68.55 | 462.9 | 18.43 | 59.1 |
| 265. | 9.610 | 0.708 | 5.688 | 131.71 | 29.39 | 66.06 | 461.3 | 17.94 | 57.7 |
| 270. | 9.175 | 0.728 | 6.012 | 132.93 | 29.35 | 63.71 | 461.1 | 17.54 | 56.5 |
| 275. | 8.782 | 0.747 | 6.325 | 134.07 | 29.32 | 61.57 | 461.9 | 17.22 | 55.5 |
| 280. | 8.428 | 0.765 | 6.628 | 135.17 | 29.31 | 59.66 | 463.4 | 16.96 | 54.7 |
| 285. | 8.106 | 0.781 | 6.922 | 136.21 | 29.32 | 57.96 | 465.4 | 16.75 | 54.0 |
| 290. | 7.814 | 0.796 | 7.208 | 137.20 | 29.35 | 56.46 | 467.8 | 16.59 | 53.5 |
| 295. | 7.546 | 0.810 | 7.487 | 138.16 | 29.41 | 55.14 | 470.6 | 16.46 | 53.2 |
| 300. | 7.301 | 0.824 | 7.760 | 139.07 | 29.48 | 53.99 | 473.5 | 16.36 | 52.9 |
| 310. | 6.865 | 0.848 | 8.290 | 140.81 | 29.67 | 52.11 | 479.8 | 16.25 | 52.7 |
| 320. | 6.490 | 0.869 | 8.803 | 142.44 | 29.92 | 50.67 | 486.5 | 16.20 | 52.8 |
| 330. | 6.163 | 0.887 | 9.304 | 143.98 | 30.22 | 49.59 | 493.2 | 16.21 | 53.1 |

METHANE ISOBAR AT P = 15.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 340. | 5.875 | 0.903 | 9.796 | 145.45 | 30.56 | 48.79 | 500.0 | 16.26 | 53.6 |
| 350. | 5.619 | 0.917 | 10.281 | 146.86 | 30.94 | 48.21 | 506.8 | 16.35 | 54.4 |
| 360. | 5.388 | 0.930 | 10.761 | 148.21 | 31.35 | 47.80 | 513.4 | 16.45 | 55.2 |
| 370. | 5.180 | 0.941 | 11.237 | 149.51 | 31.79 | 47.53 | 519.9 | 16.58 | 56.2 |
| 380. | 4.990 | 0.951 | 11.712 | 150.78 | 32.25 | 47.38 | 526.4 | 16.72 | 57.3 |
| 390. | 4.817 | 0.960 | 12.186 | 152.01 | 32.73 | 47.33 | 532.7 | 16.88 | 58.4 |
| 400. | 4.657 | 0.968 | 12.659 | 153.21 | 33.22 | 47.36 | 538.9 | 17.05 | 59.7 |
| 410. | 4.510 | 0.976 | 13.133 | 154.38 | 33.73 | 47.46 | 545.0 | | 61.0 |
| 420. | 4.373 | 0.982 | 13.608 | 155.52 | 34.26 | 47.61 | 550.9 | | 62.4 |
| 430. | 4.246 | 0.988 | 14.085 | 156.65 | 34.79 | 47.81 | 556.8 | | 63.8 |
| 440. | 4.127 | 0.993 | 14.565 | 157.75 | 35.33 | 48.05 | 562.6 | | 65.3 |
| 450. | 4.016 | 0.998 | 15.046 | 158.83 | 35.87 | 48.32 | 568.3 | | 66.8 |
| 460. | 3.912 | 1.003 | 15.531 | 159.90 | 36.42 | 48.63 | 573.9 | | 68.4 |
| 470. | 3.813 | 1.007 | 16.019 | 160.95 | 36.97 | 48.95 | 579.4 | | 70.0 |
| 480. | 3.720 | 1.010 | 16.510 | 161.98 | 37.52 | 49.30 | 584.8 | | 71.7 |
| 490. | 3.633 | 1.014 | 17.005 | 163.00 | 38.07 | 49.66 | 590.2 | | 73.4 |
| 500. | 3.549 | 1.017 | 17.504 | 164.01 | 38.61 | 50.04 | 595.5 | | 75.1 |
| 520. | 3.395 | 1.022 | 18.512 | 165.99 | 39.70 | 50.83 | 605.8 | | 78.6 |
| 540. | 3.256 | 1.026 | 19.537 | 167.92 | 40.78 | 51.64 | 616.0 | | 82.1 |
| 560. | 3.128 | 1.030 | 20.578 | 169.81 | 41.83 | 52.47 | 625.9 | | 85.7 |
| 580. | 3.012 | 1.033 | 21.636 | 171.67 | 42.87 | 53.31 | 635.6 | | 89.4 |
| 600. | 2.904 | 1.035 | 22.710 | 173.49 | 43.88 | 54.14 | 645.1 | | 93.1 |

METHANE ISOBAR AT P = 16.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 28.423 | 0.713 | -5.098 | 68.68 | 34.56 | 52.48 | 1612.2 | 212.56 | 220.1 |
| 100. | 28.048 | 0.686 | -4.834 | 71.39 | 34.64 | 53.13 | 1566.5 | 187.42 | 214.4 |
| 105. | 27.670 | 0.662 | -4.567 | 73.99 | 34.44 | 53.50 | 1523.6 | 165.95 | 208.5 |
| 110. | 27.287 | 0.641 | -4.299 | 76.49 | 34.10 | 53.75 | 1481.8 | 147.70 | 202.4 |
| 115. | 26.898 | 0.622 | -4.030 | 78.88 | 33.71 | 53.96 | 1440.5 | 132.20 | 196.2 |
| 120. | 26.504 | 0.605 | -3.759 | 81.18 | 33.31 | 54.16 | 1399.2 | 119.02 | 189.9 |
| 125. | 26.103 | 0.590 | -3.488 | 83.40 | 32.92 | 54.39 | 1358.0 | 107.79 | 183.6 |
| 130. | 25.695 | 0.576 | -3.215 | 85.54 | 32.55 | 54.66 | 1316.7 | 98.16 | 177.3 |
| 135. | 25.280 | 0.564 | -2.941 | 87.60 | 32.21 | 54.98 | 1275.4 | 89.86 | 171.0 |
| 140. | 24.855 | 0.553 | -2.666 | 89.61 | 31.89 | 55.34 | 1234.1 | 82.64 | 164.8 |

METHANE ISOBAR AT P = 16.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol\cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m\cdot s^{-1}$ | $\mu Pa\cdot s$ | mW/(m·K) |
| 145. | 24.422 | 0.543 | -2.388 | 91.56 | 31.59 | 55.77 | 1192.7 | 76.33 | 158.7 |
| 150. | 23.978 | 0.535 | -2.108 | 93.46 | 31.32 | 56.26 | 1151.3 | 70.75 | 152.6 |
| 155. | 23.523 | 0.528 | -1.825 | 95.31 | 31.07 | 56.81 | 1110.0 | 65.79 | 146.6 |
| 160. | 23.056 | 0.522 | -1.540 | 97.12 | 30.84 | 57.44 | 1068.7 | 61.34 | 140.8 |
| 165. | 22.575 | 0.517 | -1.251 | 98.90 | 30.63 | 58.14 | 1027.5 | 57.32 | 135.1 |
| 170. | 22.079 | 0.513 | -0.958 | 100.65 | 30.44 | 58.93 | 986.4 | 53.66 | 129.5 |
| 175. | 21.568 | 0.510 | -0.661 | 102.37 | 30.27 | 59.81 | 945.5 | 50.30 | 124.0 |
| 180. | 21.039 | 0.508 | -0.360 | 104.07 | 30.12 | 60.80 | 904.9 | 47.21 | 118.7 |
| 185. | 20.491 | 0.508 | -0.053 | 105.75 | 30.00 | 61.89 | 864.6 | 44.34 | 113.5 |
| 190. | 19.922 | 0.508 | 0.259 | 107.42 | 29.89 | 63.10 | 824.8 | 41.67 | 108.7 |
| 195. | 19.332 | 0.510 | 0.578 | 109.07 | 29.80 | 64.43 | 785.6 | 39.16 | 103.7 |
| 200. | 18.718 | 0.514 | 0.904 | 110.72 | 29.74 | 65.87 | 747.3 | 36.82 | 99.0 |
| 205. | 18.081 | 0.519 | 1.237 | 112.37 | 29.70 | 67.40 | 710.2 | 34.61 | 94.5 |
| 210. | 17.420 | 0.526 | 1.578 | 114.01 | 29.67 | 69.00 | 674.6 | 32.54 | 90.2 |
| 215. | 16.736 | 0.535 | 1.927 | 115.65 | 29.66 | 70.59 | 641.0 | 30.59 | 86.1 |
| 220. | 16.034 | 0.546 | 2.284 | 117.29 | 29.67 | 72.07 | 609.8 | 28.77 | 82.3 |
| 225. | 15.318 | 0.558 | 2.647 | 118.93 | 29.68 | 73.31 | 581.6 | 27.09 | 78.8 |
| 230. | 14.598 | 0.573 | 3.016 | 120.55 | 29.69 | 74.17 | 556.8 | 25.54 | 75.5 |
| 235. | 13.883 | 0.590 | 3.388 | 122.15 | 29.69 | 74.56 | 535.7 | 24.14 | 72.5 |
| 240. | 13.185 | 0.608 | 3.761 | 123.72 | 29.68 | 74.38 | 518.2 | 22.90 | 69.8 |
| 245. | 12.514 | 0.628 | 4.131 | 125.24 | 29.65 | 73.60 | 504.3 | 21.81 | 67.4 |
| 250. | 11.880 | 0.648 | 4.496 | 126.72 | 29.60 | 72.26 | 493.6 | 20.87 | 65.2 |
| 255. | 11.289 | 0.668 | 4.853 | 128.13 | 29.54 | 70.48 | 485.9 | 20.06 | 63.3 |
| 260. | 10.745 | 0.689 | 5.200 | 129.48 | 29.48 | 68.45 | 480.5 | 19.39 | 61.6 |
| 265. | 10.248 | 0.709 | 5.537 | 130.76 | 29.44 | 66.33 | 477.2 | 18.83 | 60.1 |
| 270. | 9.795 | 0.728 | 5.864 | 131.98 | 29.40 | 64.25 | 475.4 | 18.37 | 58.8 |
| 275. | 9.383 | 0.746 | 6.180 | 133.15 | 29.38 | 62.28 | 474.8 | 17.99 | 57.7 |
| 280. | 9.008 | 0.763 | 6.487 | 134.25 | 29.38 | 60.46 | 475.2 | 17.67 | 56.8 |
| 285. | 8.666 | 0.779 | 6.785 | 135.31 | 29.40 | 58.81 | 476.2 | 17.42 | 56.1 |
| 290. | 8.354 | 0.794 | 7.075 | 136.32 | 29.43 | 57.33 | 477.8 | 17.21 | 55.5 |
| 295. | 8.067 | 0.809 | 7.358 | 137.28 | 29.49 | 56.01 | 479.8 | 17.05 | 55.0 |
| 300. | 7.804 | 0.822 | 7.635 | 138.22 | 29.56 | 54.84 | 482.2 | 16.92 | 54.7 |
| 310. | 7.336 | 0.846 | 8.174 | 139.98 | 29.74 | 52.90 | 487.5 | 16.74 | 54.3 |
| 320. | 6.933 | 0.867 | 8.695 | 141.64 | 29.99 | 51.41 | 493.4 | 16.64 | 54.2 |
| 330. | 6.581 | 0.886 | 9.203 | 143.20 | 30.28 | 50.26 | 499.5 | 16.61 | 54.4 |
| 340. | 6.271 | 0.903 | 9.701 | 144.69 | 30.62 | 49.40 | 505.8 | 16.63 | 54.9 |
| 350. | 5.995 | 0.917 | 10.192 | 146.11 | 31.00 | 48.76 | 512.2 | 16.69 | 55.5 |
| 360. | 5.747 | 0.930 | 10.677 | 147.48 | 31.41 | 48.31 | 518.5 | 16.77 | 56.3 |
| 370. | 5.523 | 0.942 | 11.158 | 148.80 | 31.84 | 48.00 | 524.8 | 16.88 | 57.2 |
| 380. | 5.319 | 0.952 | 11.637 | 150.07 | 32.30 | 47.82 | 531.0 | 17.00 | 58.2 |

METHANE ISOBAR AT P = 16.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 390. | 5.133 | 0.961 | 12.115 | 151.31 | 32.78 | 47.73 | 537.1 | 17.14 | 59.3 |
| 400. | 4.962 | 0.970 | 12.592 | 152.52 | 33.27 | 47.73 | 543.1 | 17.29 | 60.5 |
| 410. | 4.804 | 0.977 | 13.070 | 153.70 | 33.78 | 47.80 | 549.1 | | 61.8 |
| 420. | 4.657 | 0.984 | 13.549 | 154.85 | 34.30 | 47.93 | 554.9 | | 63.1 |
| 430. | 4.521 | 0.990 | 14.029 | 155.98 | 34.83 | 48.11 | 560.7 | | 64.5 |
| 440. | 4.394 | 0.995 | 14.511 | 157.09 | 35.36 | 48.34 | 566.4 | | 66.0 |
| 450. | 4.275 | 1.000 | 14.996 | 158.18 | 35.91 | 48.59 | 572.0 | | 67.5 |
| 460. | 4.163 | 1.005 | 15.483 | 159.25 | 36.45 | 48.88 | 577.5 | | 69.0 |
| 470. | 4.058 | 1.009 | 15.973 | 160.31 | 37.00 | 49.19 | 583.0 | | 70.6 |
| 480. | 3.959 | 1.013 | 16.467 | 161.35 | 37.55 | 49.53 | 588.3 | | 72.3 |
| 490. | 3.865 | 1.016 | 16.964 | 162.37 | 38.10 | 49.88 | 593.6 | | 73.9 |
| 500. | 3.776 | 1.019 | 17.465 | 163.38 | 38.64 | 50.25 | 598.9 | | 75.6 |
| 520. | 3.612 | 1.025 | 18.477 | 165.37 | 39.73 | 51.01 | 609.2 | | 79.1 |
| 540. | 3.463 | 1.029 | 19.505 | 167.31 | 40.80 | 51.81 | 619.2 | | 82.6 |
| 560. | 3.327 | 1.033 | 20.550 | 169.21 | 41.86 | 52.63 | 629.1 | | 86.2 |
| 580. | 3.203 | 1.036 | 21.610 | 171.07 | 42.89 | 53.45 | 638.8 | | 89.8 |
| 600. | 3.088 | 1.039 | 22.688 | 172.89 | 43.90 | 54.28 | 648.2 | | 93.5 |

METHANE ISOBAR AT P = 17.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 95. | 28.459 | 0.756 | -5.072 | 68.59 | 34.60 | 52.42 | 1618.4 | 214.77 | 220.9 |
| 100. | 28.087 | 0.728 | -4.808 | 71.29 | 34.68 | 53.06 | 1573.1 | 189.44 | 215.3 |
| 105. | 27.711 | 0.703 | -4.541 | 73.89 | 34.48 | 53.42 | 1530.5 | 167.79 | 209.4 |
| 110. | 27.331 | 0.680 | -4.274 | 76.38 | 34.14 | 53.66 | 1489.0 | 149.37 | 203.4 |
| 115. | 26.946 | 0.660 | -4.005 | 78.77 | 33.75 | 53.85 | 1448.1 | 133.71 | 197.2 |
| 120. | 26.555 | 0.642 | -3.735 | 81.07 | 33.35 | 54.04 | 1407.3 | 120.41 | 190.9 |
| 125. | 26.158 | 0.625 | -3.465 | 83.28 | 32.97 | 54.25 | 1366.5 | 109.06 | 184.7 |
| 130. | 25.755 | 0.611 | -3.193 | 85.41 | 32.60 | 54.50 | 1325.7 | 99.34 | 178.4 |
| 135. | 25.344 | 0.598 | -2.919 | 87.47 | 32.26 | 54.79 | 1284.9 | 90.96 | 172.2 |
| 140. | 24.926 | 0.586 | -2.645 | 89.47 | 31.94 | 55.13 | 1244.2 | 83.68 | 166.0 |
| 145. | 24.498 | 0.576 | -2.368 | 91.41 | 31.64 | 55.52 | 1203.4 | 77.31 | 159.9 |
| 150. | 24.061 | 0.567 | -2.089 | 93.30 | 31.37 | 55.97 | 1162.8 | 71.69 | 153.9 |
| 155. | 23.614 | 0.559 | -1.808 | 95.15 | 31.12 | 56.48 | 1122.2 | 66.70 | 148.0 |
| 160. | 23.156 | 0.552 | -1.524 | 96.95 | 30.89 | 57.05 | 1081.8 | 62.23 | 142.2 |
| 165. | 22.685 | 0.546 | -1.238 | 98.71 | 30.68 | 57.69 | 1041.5 | 58.19 | 136.5 |

METHANE ISOBAR AT P = 17.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 170. | 22.201 | 0.542 | -0.947 | 100.45 | 30.48 | 58.41 | 1001.4 | 54.52 | 131.0 |
| 175. | 21.703 | 0.538 | -0.653 | 102.15 | 30.31 | 59.20 | 961.5 | 51.16 | 125.6 |
| 180. | 21.189 | 0.536 | -0.355 | 103.83 | 30.16 | 60.08 | 922.0 | 48.07 | 120.3 |
| 185. | 20.658 | 0.535 | -0.052 | 105.49 | 30.02 | 61.05 | 882.9 | 45.21 | 115.3 |
| 190. | 20.110 | 0.535 | 0.255 | 107.13 | 29.91 | 62.10 | 844.4 | 42.55 | 110.5 |
| 195. | 19.543 | 0.537 | 0.569 | 108.76 | 29.82 | 63.25 | 806.5 | 40.07 | 105.6 |
| 200. | 18.956 | 0.539 | 0.888 | 110.38 | 29.74 | 64.48 | 769.6 | 37.75 | 101.0 |
| 205. | 18.349 | 0.544 | 1.214 | 111.98 | 29.69 | 65.78 | 733.8 | 35.57 | 96.6 |
| 210. | 17.723 | 0.549 | 1.546 | 113.59 | 29.65 | 67.12 | 699.4 | 33.53 | 92.4 |
| 215. | 17.078 | 0.557 | 1.885 | 115.18 | 29.63 | 68.45 | 666.8 | 31.61 | 88.4 |
| 220. | 16.418 | 0.566 | 2.230 | 116.77 | 29.62 | 69.70 | 636.4 | 29.83 | 84.6 |
| 225. | 15.746 | 0.577 | 2.582 | 118.35 | 29.62 | 70.78 | 608.5 | 28.17 | 81.1 |
| 230. | 15.069 | 0.590 | 2.938 | 119.91 | 29.62 | 71.59 | 583.6 | 26.64 | 77.9 |
| 235. | 14.395 | 0.604 | 3.297 | 121.46 | 29.62 | 72.04 | 561.8 | 25.25 | 74.9 |
| 240. | 13.732 | 0.620 | 3.657 | 122.98 | 29.61 | 72.08 | 543.3 | 24.00 | 72.2 |
| 245. | 13.088 | 0.638 | 4.017 | 124.46 | 29.60 | 71.66 | 528.0 | 22.89 | 69.8 |
| 250. | 12.472 | 0.656 | 4.373 | 125.90 | 29.57 | 70.79 | 515.7 | 21.91 | 67.6 |
| 255. | 11.890 | 0.674 | 4.724 | 127.29 | 29.53 | 69.51 | 506.2 | 21.06 | 65.7 |
| 260. | 11.347 | 0.693 | 5.068 | 128.62 | 29.50 | 67.95 | 499.1 | 20.33 | 63.9 |
| 265. | 10.843 | 0.712 | 5.403 | 129.90 | 29.46 | 66.21 | 494.1 | 19.72 | 62.4 |
| 270. | 10.379 | 0.730 | 5.730 | 131.12 | 29.44 | 64.42 | 490.8 | 19.20 | 61.1 |
| 275. | 9.953 | 0.747 | 6.048 | 132.29 | 29.43 | 62.65 | 488.9 | 18.76 | 59.9 |
| 280. | 9.563 | 0.764 | 6.357 | 133.40 | 29.44 | 60.98 | 488.0 | 18.40 | 58.9 |
| 285. | 9.205 | 0.779 | 6.658 | 134.47 | 29.46 | 59.42 | 488.1 | 18.10 | 58.1 |
| 290. | 8.876 | 0.794 | 6.951 | 135.49 | 29.50 | 57.99 | 488.8 | 17.85 | 57.4 |
| 295. | 8.574 | 0.808 | 7.238 | 136.47 | 29.55 | 56.70 | 490.0 | 17.65 | 56.9 |
| 300. | 8.295 | 0.822 | 7.518 | 137.41 | 29.62 | 55.55 | 491.7 | 17.48 | 56.4 |
| 310. | 7.798 | 0.846 | 8.064 | 139.20 | 29.81 | 53.59 | 495.9 | 17.24 | 55.9 |
| 320. | 7.368 | 0.867 | 8.592 | 140.88 | 30.06 | 52.06 | 500.9 | 17.10 | 55.7 |
| 330. | 6.992 | 0.886 | 9.106 | 142.46 | 30.35 | 50.87 | 506.4 | 17.03 | 55.8 |
| 340. | 6.661 | 0.903 | 9.610 | 143.96 | 30.68 | 49.96 | 512.1 | 17.01 | 56.1 |
| 350. | 6.366 | 0.918 | 10.106 | 145.40 | 31.06 | 49.28 | 518.0 | 17.04 | 56.7 |
| 360. | 6.101 | 0.931 | 10.596 | 146.78 | 31.46 | 48.79 | 524.0 | 17.10 | 57.3 |
| 370. | 5.862 | 0.943 | 11.082 | 148.11 | 31.89 | 48.45 | 529.9 | 17.18 | 58.2 |
| 380. | 5.645 | 0.953 | 11.566 | 149.40 | 32.35 | 48.23 | 535.9 | 17.29 | 59.1 |
| 390. | 5.446 | 0.963 | 12.047 | 150.65 | 32.82 | 48.12 | 541.8 | 17.41 | 60.2 |
| 400. | 5.264 | 0.971 | 12.528 | 151.87 | 33.32 | 48.09 | 547.7 | 17.55 | 61.3 |
| 410. | 5.095 | 0.979 | 13.009 | 153.06 | 33.82 | 48.14 | 553.4 | | 62.6 |
| 420. | 4.939 | 0.986 | 13.491 | 154.22 | 34.34 | 48.25 | 559.2 | | 63.9 |
| 430. | 4.794 | 0.992 | 13.974 | 155.36 | 34.87 | 48.41 | 564.8 | | 65.3 |

METHANE ISOBAR AT P = 17.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 440. | 4.658 | 0.998 | 14.459 | 156.47 | 35.40 | 48.61 | 570.4 | | 66.7 |
| 450. | 4.532 | 1.003 | 14.947 | 157.57 | 35.94 | 48.85 | 575.9 | | 68.2 |
| 460. | 4.413 | 1.007 | 15.437 | 158.65 | 36.49 | 49.13 | 581.3 | | 69.7 |
| 470. | 4.301 | 1.011 | 15.929 | 159.70 | 37.03 | 49.43 | 586.7 | | 71.2 |
| 480. | 4.195 | 1.015 | 16.425 | 160.75 | 37.58 | 49.75 | 592.0 | | 72.8 |
| 490. | 4.096 | 1.019 | 16.924 | 161.78 | 38.13 | 50.09 | 597.3 | | 74.5 |
| 500. | 4.001 | 1.022 | 17.427 | 162.79 | 38.67 | 50.44 | 602.4 | | 76.2 |
| 520. | 3.827 | 1.027 | 18.443 | 164.79 | 39.76 | 51.19 | 612.6 | | 79.6 |
| 540. | 3.669 | 1.032 | 19.475 | 166.73 | 40.83 | 51.97 | 622.6 | | 83.1 |
| 560. | 3.524 | 1.036 | 20.522 | 168.64 | 41.88 | 52.78 | 632.4 | | 86.6 |
| 580. | 3.392 | 1.039 | 21.586 | 170.50 | 42.91 | 53.59 | 642.0 | | 90.3 |
| 600. | 3.271 | 1.042 | 22.666 | 172.33 | 43.92 | 54.40 | 651.4 | | 93.9 |

METHANE ISOBAR AT P = 18.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 100. | 28.126 | 0.770 | -4.782 | 71.20 | 34.72 | 52.99 | 1579.6 | 191.48 | 216.2 |
| 105. | 27.752 | 0.743 | -4.516 | 73.79 | 34.51 | 53.34 | 1537.3 | 169.64 | 210.3 |
| 110. | 27.375 | 0.719 | -4.248 | 76.28 | 34.18 | 53.57 | 1496.2 | 151.05 | 204.3 |
| 115. | 26.993 | 0.697 | -3.980 | 78.67 | 33.80 | 53.75 | 1455.6 | 135.24 | 198.2 |
| 120. | 26.606 | 0.678 | -3.711 | 80.96 | 33.40 | 53.92 | 1415.1 | 121.80 | 192.0 |
| 125. | 26.213 | 0.661 | -3.441 | 83.16 | 33.01 | 54.12 | 1374.8 | 110.34 | 185.7 |
| 130. | 25.814 | 0.645 | -3.170 | 85.29 | 32.65 | 54.34 | 1334.5 | 100.52 | 179.5 |
| 135. | 25.408 | 0.631 | -2.897 | 87.35 | 32.31 | 54.61 | 1294.2 | 92.06 | 173.3 |
| 140. | 24.994 | 0.619 | -2.623 | 89.34 | 31.99 | 54.93 | 1254.0 | 84.72 | 167.2 |
| 145. | 24.573 | 0.608 | -2.348 | 91.27 | 31.69 | 55.29 | 1213.9 | 78.29 | 161.1 |
| 150. | 24.143 | 0.598 | -2.070 | 93.15 | 31.42 | 55.70 | 1173.9 | 72.63 | 155.2 |
| 155. | 23.703 | 0.589 | -1.791 | 94.99 | 31.17 | 56.17 | 1134.0 | 67.60 | 149.3 |
| 160. | 23.253 | 0.582 | -1.509 | 96.78 | 30.94 | 56.70 | 1094.4 | 63.10 | 143.6 |
| 165. | 22.791 | 0.576 | -1.224 | 98.53 | 30.72 | 57.28 | 1054.9 | 59.05 | 138.0 |
| 170. | 22.318 | 0.571 | -0.936 | 100.25 | 30.53 | 57.93 | 1015.7 | 55.36 | 132.5 |
| 175. | 21.831 | 0.567 | -0.644 | 101.94 | 30.35 | 58.65 | 976.9 | 52.00 | 127.1 |
| 180. | 21.331 | 0.564 | -0.349 | 103.60 | 30.20 | 59.43 | 938.4 | 48.91 | 122.0 |
| 185. | 20.816 | 0.562 | -0.050 | 105.24 | 30.06 | 60.29 | 900.4 | 46.05 | 116.9 |
| 190. | 20.286 | 0.562 | 0.254 | 106.86 | 29.94 | 61.22 | 863.0 | 43.40 | 112.2 |
| 195. | 19.739 | 0.562 | 0.562 | 108.47 | 29.84 | 62.22 | 826.3 | 40.94 | 107.5 |

METHANE ISOBAR AT P = 18.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 200. | 19.176 | 0.564 | 0.876 | 110.06 | 29.75 | 63.29 | 790.5 | 38.63 | 102.9 |
| 205. | 18.595 | 0.568 | 1.195 | 111.63 | 29.69 | 64.40 | 755.9 | 36.48 | 98.5 |
| 210. | 17.999 | 0.573 | 1.520 | 113.20 | 29.64 | 65.55 | 722.6 | 34.46 | 94.4 |
| 215. | 17.387 | 0.579 | 1.851 | 114.75 | 29.60 | 66.68 | 690.9 | 32.58 | 90.5 |
| 220. | 16.762 | 0.587 | 2.187 | 116.30 | 29.58 | 67.74 | 661.2 | 30.82 | 86.8 |
| 225. | 16.127 | 0.597 | 2.528 | 117.83 | 29.57 | 68.68 | 633.7 | 29.18 | 83.3 |
| 230. | 15.487 | 0.608 | 2.873 | 119.35 | 29.57 | 69.41 | 608.9 | 27.67 | 80.1 |
| 235. | 14.848 | 0.620 | 3.222 | 120.85 | 29.57 | 69.88 | 586.8 | 26.29 | 77.2 |
| 240. | 14.217 | 0.634 | 3.572 | 122.32 | 29.56 | 70.04 | 567.6 | 25.03 | 74.5 |
| 245. | 13.600 | 0.650 | 3.922 | 123.76 | 29.56 | 69.84 | 551.3 | 23.90 | 72.1 |
| 250. | 13.005 | 0.666 | 4.270 | 125.17 | 29.54 | 69.28 | 537.7 | 22.90 | 69.9 |
| 255. | 12.436 | 0.683 | 4.614 | 126.53 | 29.52 | 68.37 | 526.8 | 22.01 | 67.9 |
| 260. | 11.899 | 0.700 | 4.953 | 127.85 | 29.50 | 67.18 | 518.2 | 21.25 | 66.1 |
| 265. | 11.395 | 0.717 | 5.285 | 129.12 | 29.48 | 65.79 | 511.7 | 20.58 | 64.6 |
| 270. | 10.927 | 0.734 | 5.611 | 130.33 | 29.47 | 64.29 | 507.0 | 20.02 | 63.2 |
| 275. | 10.493 | 0.750 | 5.928 | 131.50 | 29.47 | 62.75 | 503.8 | 19.54 | 62.0 |
| 280. | 10.091 | 0.766 | 6.238 | 132.62 | 29.48 | 61.25 | 501.8 | 19.13 | 60.9 |
| 285. | 9.721 | 0.781 | 6.541 | 133.69 | 29.51 | 59.81 | 500.7 | 18.78 | 60.0 |
| 290. | 9.379 | 0.796 | 6.836 | 134.72 | 29.56 | 58.47 | 500.5 | 18.50 | 59.3 |
| 295. | 9.063 | 0.810 | 7.126 | 135.70 | 29.61 | 57.24 | 501.0 | 18.26 | 58.7 |
| 300. | 8.771 | 0.823 | 7.409 | 136.66 | 29.69 | 56.11 | 501.9 | 18.06 | 58.2 |
| 310. | 8.247 | 0.847 | 7.960 | 138.46 | 29.88 | 54.18 | 504.9 | 17.76 | 57.5 |
| 320. | 7.793 | 0.868 | 8.494 | 140.16 | 30.12 | 52.63 | 509.0 | 17.57 | 57.2 |
| 330. | 7.396 | 0.887 | 9.014 | 141.76 | 30.41 | 51.42 | 513.7 | 17.45 | 57.2 |
| 340. | 7.045 | 0.904 | 9.523 | 143.28 | 30.74 | 50.48 | 518.9 | 17.40 | 57.4 |
| 350. | 6.732 | 0.919 | 10.024 | 144.73 | 31.11 | 49.76 | 524.3 | 17.40 | 57.8 |
| 360. | 6.451 | 0.932 | 10.519 | 146.13 | 31.51 | 49.24 | 529.8 | 17.43 | 58.4 |
| 370. | 6.197 | 0.944 | 11.009 | 147.47 | 31.94 | 48.86 | 535.5 | 17.50 | 59.2 |
| 380. | 5.966 | 0.955 | 11.497 | 148.77 | 32.40 | 48.62 | 541.1 | 17.58 | 60.1 |
| 390. | 5.755 | 0.964 | 11.982 | 150.03 | 32.87 | 48.48 | 546.8 | 17.69 | 61.1 |
| 400. | 5.562 | 0.973 | 12.466 | 151.26 | 33.36 | 48.43 | 552.5 | 17.81 | 62.2 |
| 410. | 5.383 | 0.981 | 12.951 | 152.45 | 33.86 | 48.45 | 558.1 | | 63.4 |
| 420. | 5.218 | 0.988 | 13.436 | 153.62 | 34.38 | 48.54 | 563.6 | | 64.7 |
| 430. | 5.064 | 0.994 | 13.922 | 154.76 | 34.91 | 48.68 | 569.1 | | 66.0 |
| 440. | 4.920 | 1.000 | 14.410 | 155.89 | 35.44 | 48.87 | 574.6 | | 67.4 |
| 450. | 4.786 | 1.005 | 14.899 | 156.99 | 35.98 | 49.10 | 580.0 | | 68.8 |
| 460. | 4.660 | 1.010 | 15.392 | 158.07 | 36.52 | 49.36 | 585.3 | | 70.3 |
| 470. | 4.541 | 1.014 | 15.887 | 159.13 | 37.06 | 49.65 | 590.6 | | 71.9 |
| 480. | 4.430 | 1.018 | 16.385 | 160.18 | 37.61 | 49.96 | 595.8 | | 73.4 |
| 490. | 4.324 | 1.022 | 16.886 | 161.21 | 38.16 | 50.29 | 601.0 | | 75.1 |

METHANE ISOBAR AT P = 18.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 500. | 4.224 | 1.025 | 17.391 | 162.23 | 38.70 | 50.64 | 606.1 | | 76.7 |
| 520. | 4.040 | 1.031 | 18.410 | 164.23 | 39.79 | 51.37 | 616.2 | | 80.1 |
| 540. | 3.872 | 1.035 | 19.445 | 166.19 | 40.85 | 52.13 | 626.1 | | 83.5 |
| 560. | 3.720 | 1.039 | 20.496 | 168.10 | 41.91 | 52.92 | 635.8 | | 87.1 |
| 580. | 3.580 | 1.042 | 21.562 | 169.97 | 42.93 | 53.72 | 645.4 | | 90.7 |
| 600. | 3.452 | 1.045 | 22.645 | 171.80 | 43.94 | 54.53 | 654.7 | | 94.3 |

METHANE ISOBAR AT P = 19.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 100. | 28.163 | 0.811 | -4.755 | 71.11 | 34.76 | 52.92 | 1586.0 | 193.53 | 217.0 |
| 105. | 27.793 | 0.783 | -4.490 | 73.70 | 34.55 | 53.26 | 1544.0 | 171.51 | 211.2 |
| 110. | 27.418 | 0.758 | -4.223 | 76.18 | 34.22 | 53.48 | 1503.2 | 152.75 | 205.2 |
| 115. | 27.040 | 0.735 | -3.955 | 78.56 | 33.84 | 53.65 | 1462.9 | 136.79 | 199.1 |
| 120. | 26.656 | 0.714 | -3.686 | 80.85 | 33.44 | 53.81 | 1422.9 | 123.21 | 193.0 |
| 125. | 26.267 | 0.696 | -3.417 | 83.05 | 33.06 | 53.99 | 1383.0 | 111.63 | 186.8 |
| 130. | 25.872 | 0.679 | -3.147 | 85.17 | 32.70 | 54.20 | 1343.1 | 101.72 | 180.6 |
| 135. | 25.470 | 0.665 | -2.875 | 87.22 | 32.36 | 54.44 | 1303.3 | 93.17 | 174.4 |
| 140. | 25.062 | 0.651 | -2.602 | 89.21 | 32.04 | 54.73 | 1263.7 | 85.76 | 168.3 |
| 145. | 24.646 | 0.639 | -2.328 | 91.13 | 31.74 | 55.07 | 1224.1 | 79.28 | 162.3 |
| 150. | 24.222 | 0.629 | -2.051 | 93.01 | 31.47 | 55.45 | 1184.7 | 73.57 | 156.4 |
| 155. | 23.789 | 0.620 | -1.773 | 94.83 | 31.22 | 55.88 | 1145.6 | 68.50 | 150.6 |
| 160. | 23.347 | 0.612 | -1.492 | 96.61 | 30.98 | 56.37 | 1106.6 | 63.98 | 144.9 |
| 165. | 22.894 | 0.605 | -1.209 | 98.35 | 30.77 | 56.90 | 1068.0 | 59.90 | 139.4 |
| 170. | 22.430 | 0.599 | -0.923 | 100.06 | 30.57 | 57.49 | 1029.6 | 56.20 | 133.9 |
| 175. | 21.955 | 0.595 | -0.634 | 101.74 | 30.40 | 58.14 | 991.6 | 52.83 | 128.6 |
| 180. | 21.468 | 0.591 | -0.342 | 103.39 | 30.24 | 58.85 | 954.1 | 49.73 | 123.5 |
| 185. | 20.967 | 0.589 | -0.046 | 105.01 | 30.09 | 59.61 | 917.0 | 46.88 | 118.6 |
| 190. | 20.452 | 0.588 | 0.254 | 106.61 | 29.97 | 60.44 | 880.6 | 44.24 | 113.9 |
| 195. | 19.924 | 0.588 | 0.559 | 108.19 | 29.86 | 61.32 | 845.0 | 41.78 | 109.2 |
| 200. | 19.381 | 0.590 | 0.868 | 109.75 | 29.77 | 62.25 | 810.3 | 39.49 | 104.7 |
| 205. | 18.824 | 0.592 | 1.181 | 111.30 | 29.70 | 63.22 | 776.7 | 37.35 | 100.4 |
| 210. | 18.252 | 0.596 | 1.500 | 112.84 | 29.64 | 64.20 | 744.3 | 35.36 | 96.3 |
| 215. | 17.668 | 0.602 | 1.823 | 114.36 | 29.60 | 65.17 | 713.5 | 33.49 | 92.5 |
| 220. | 17.073 | 0.608 | 2.152 | 115.87 | 29.57 | 66.09 | 684.5 | 31.75 | 88.8 |

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 225. | 16.470 | 0.617 | 2.484 | 117.36 | 29.55 | 66.91 | 657.5 | 30.13 | 85.4 |
| 230. | 15.862 | 0.626 | 2.820 | 118.84 | 29.54 | 67.57 | 632.8 | 28.63 | 82.3 |
| 235. | 15.254 | 0.637 | 3.159 | 120.30 | 29.53 | 68.03 | 610.5 | 27.26 | 79.3 |
| 240. | 14.652 | 0.650 | 3.500 | 121.73 | 29.53 | 68.24 | 590.9 | 26.00 | 76.7 |
| 245. | 14.061 | 0.663 | 3.841 | 123.14 | 29.52 | 68.17 | 573.8 | 24.86 | 74.2 |
| 250. | 13.486 | 0.678 | 4.181 | 124.52 | 29.52 | 67.82 | 559.4 | 23.84 | 72.0 |
| 255. | 12.933 | 0.693 | 4.519 | 125.85 | 29.51 | 67.18 | 547.3 | 22.93 | 70.0 |
| 260. | 12.405 | 0.708 | 4.853 | 127.15 | 29.50 | 66.28 | 537.5 | 22.13 | 68.2 |
| 265. | 11.906 | 0.724 | 5.182 | 128.40 | 29.49 | 65.18 | 529.7 | 21.43 | 66.6 |
| 270. | 11.437 | 0.740 | 5.504 | 129.61 | 29.49 | 63.95 | 523.7 | 20.82 | 65.2 |
| 275. | 10.999 | 0.755 | 5.821 | 130.77 | 29.50 | 62.63 | 519.3 | 20.30 | 64.0 |
| 280. | 10.591 | 0.771 | 6.131 | 131.89 | 29.52 | 61.31 | 516.2 | 19.85 | 62.9 |
| 285. | 10.212 | 0.785 | 6.434 | 132.96 | 29.56 | 60.01 | 514.1 | 19.47 | 61.9 |
| 290. | 9.860 | 0.799 | 6.731 | 133.99 | 29.60 | 58.77 | 513.0 | 19.14 | 61.1 |
| 295. | 9.534 | 0.813 | 7.022 | 134.99 | 29.67 | 57.61 | 512.6 | 18.87 | 60.4 |
| 300. | 9.230 | 0.825 | 7.307 | 135.95 | 29.74 | 56.54 | 512.8 | 18.64 | 59.9 |
| 310. | 8.684 | 0.849 | 7.863 | 137.77 | 29.93 | 54.66 | 514.6 | 18.28 | 59.1 |
| 320. | 8.208 | 0.870 | 8.402 | 139.48 | 30.18 | 53.12 | 517.6 | 18.04 | 58.6 |
| 330. | 7.791 | 0.889 | 8.926 | 141.09 | 30.47 | 51.90 | 521.6 | 17.89 | 58.5 |
| 340. | 7.421 | 0.906 | 9.440 | 142.63 | 30.80 | 50.94 | 526.1 | 17.80 | 58.7 |
| 350. | 7.091 | 0.921 | 9.946 | 144.09 | 31.16 | 50.20 | 531.0 | 17.77 | 59.0 |
| 360. | 6.795 | 0.934 | 10.445 | 145.50 | 31.56 | 49.65 | 536.1 | 17.77 | 59.5 |
| 370. | 6.527 | 0.946 | 10.939 | 146.86 | 31.99 | 49.25 | 541.4 | 17.81 | 60.2 |
| 380. | 6.283 | 0.957 | 11.430 | 148.16 | 32.44 | 48.98 | 546.7 | 17.88 | 61.1 |
| 390. | 6.061 | 0.967 | 11.919 | 149.43 | 32.91 | 48.82 | 552.1 | 17.97 | 62.0 |
| 400. | 5.856 | 0.976 | 12.407 | 150.67 | 33.40 | 48.75 | 557.5 | 18.08 | 63.1 |
| 410. | 5.668 | 0.983 | 12.895 | 151.87 | 33.90 | 48.75 | 562.9 | | 64.2 |
| 420. | 5.493 | 0.991 | 13.382 | 153.05 | 34.42 | 48.82 | 568.3 | | 65.4 |
| 430. | 5.331 | 0.997 | 13.871 | 154.20 | 34.94 | 48.95 | 573.7 | | 66.7 |
| 440. | 5.179 | 1.003 | 14.362 | 155.33 | 35.47 | 49.13 | 579.0 | | 68.1 |
| 450. | 5.037 | 1.008 | 14.854 | 156.43 | 36.01 | 49.34 | 584.2 | | 69.5 |
| 460. | 4.905 | 1.013 | 15.348 | 157.52 | 36.55 | 49.59 | 589.5 | | 71.0 |
| 470. | 4.780 | 1.017 | 15.846 | 158.59 | 37.10 | 49.86 | 594.7 | | 72.5 |
| 480. | 4.662 | 1.021 | 16.346 | 159.64 | 37.64 | 50.16 | 599.8 | | 74.0 |
| 490. | 4.551 | 1.025 | 16.849 | 160.68 | 38.19 | 50.48 | 604.9 | | 75.6 |
| 500. | 4.445 | 1.028 | 17.355 | 161.70 | 38.73 | 50.82 | 610.0 | | 77.3 |
| 520. | 4.251 | 1.034 | 18.379 | 163.71 | 39.81 | 51.54 | 619.9 | | 80.6 |
| 540. | 4.074 | 1.039 | 19.417 | 165.67 | 40.88 | 52.29 | 629.7 | | 84.0 |
| 560. | 3.914 | 1.043 | 20.471 | 167.58 | 41.93 | 53.07 | 639.3 | | 87.6 |
| 580. | 3.767 | 1.046 | 21.540 | 169.46 | 42.95 | 53.85 | 648.8 | | 91.1 |
| 600. | 3.632 | 1.049 | 22.625 | 171.30 | 43.96 | 54.65 | 658.1 | | 94.7 |

METHANE ISOBAR AT P = 20.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 100. | 28.201 | 0.853 | -4.729 | 71.01 | 34.79 | 52.85 | 1592.3 | 195.61 | 217.9 |
| 105. | 27.833 | 0.823 | -4.464 | 73.60 | 34.59 | 53.19 | 1550.6 | 173.40 | 212.1 |
| 110. | 27.461 | 0.796 | -4.197 | 76.08 | 34.26 | 53.40 | 1510.1 | 154.46 | 206.2 |
| 115. | 27.085 | 0.772 | -3.930 | 78.46 | 33.88 | 53.55 | 1470.2 | 138.35 | 200.1 |
| 120. | 26.705 | 0.751 | -3.662 | 80.74 | 33.49 | 53.70 | 1430.5 | 124.63 | 194.0 |
| 125. | 26.319 | 0.731 | -3.393 | 82.94 | 33.11 | 53.86 | 1391.0 | 112.94 | 187.8 |
| 130. | 25.928 | 0.714 | -3.123 | 85.05 | 32.74 | 54.05 | 1351.6 | 102.92 | 181.7 |
| 135. | 25.531 | 0.698 | -2.852 | 87.10 | 32.40 | 54.28 | 1312.3 | 94.28 | 175.5 |
| 140. | 25.128 | 0.684 | -2.580 | 89.08 | 32.09 | 54.55 | 1273.1 | 86.80 | 169.5 |
| 145. | 24.717 | 0.671 | -2.307 | 90.99 | 31.79 | 54.86 | 1234.1 | 80.26 | 163.5 |
| 150. | 24.299 | 0.660 | -2.032 | 92.86 | 31.52 | 55.21 | 1195.3 | 74.51 | 157.7 |
| 155. | 23.873 | 0.650 | -1.755 | 94.68 | 31.27 | 55.61 | 1156.8 | 69.40 | 151.9 |
| 160. | 23.438 | 0.641 | -1.476 | 96.45 | 31.03 | 56.05 | 1118.5 | 64.84 | 146.2 |
| 165. | 22.993 | 0.634 | -1.194 | 98.18 | 30.82 | 56.54 | 1080.6 | 60.74 | 140.7 |
| 170. | 22.539 | 0.628 | -0.910 | 99.88 | 30.62 | 57.08 | 1043.0 | 57.03 | 135.4 |
| 175. | 22.074 | 0.623 | -0.623 | 101.54 | 30.44 | 57.67 | 1005.8 | 53.64 | 130.1 |
| 180. | 21.598 | 0.619 | -0.333 | 103.17 | 30.28 | 58.31 | 969.1 | 50.54 | 125.1 |
| 185. | 21.110 | 0.616 | -0.040 | 104.78 | 30.13 | 59.00 | 933.0 | 47.69 | 120.2 |
| 190. | 20.610 | 0.614 | 0.257 | 106.36 | 30.00 | 59.74 | 897.5 | 45.05 | 115.5 |
| 195. | 20.098 | 0.614 | 0.557 | 107.93 | 29.89 | 60.52 | 862.8 | 42.60 | 110.9 |
| 200. | 19.573 | 0.614 | 0.862 | 109.47 | 29.79 | 61.34 | 829.1 | 40.32 | 106.5 |
| 205. | 19.036 | 0.616 | 1.171 | 110.99 | 29.71 | 62.18 | 796.4 | 38.20 | 102.2 |
| 210. | 18.487 | 0.620 | 1.484 | 112.50 | 29.65 | 63.03 | 764.9 | 36.21 | 98.2 |
| 215. | 17.927 | 0.624 | 1.801 | 114.00 | 29.60 | 63.88 | 734.8 | 34.36 | 94.4 |
| 220. | 17.358 | 0.630 | 2.123 | 115.47 | 29.56 | 64.68 | 706.4 | 32.64 | 90.8 |
| 225. | 16.782 | 0.637 | 2.448 | 116.93 | 29.53 | 65.39 | 679.9 | 31.03 | 87.4 |
| 230. | 16.201 | 0.646 | 2.776 | 118.38 | 29.52 | 65.99 | 655.4 | 29.54 | 84.3 |
| 235. | 15.621 | 0.655 | 3.107 | 119.80 | 29.51 | 66.42 | 633.1 | 28.17 | 81.4 |
| 240. | 15.045 | 0.666 | 3.440 | 121.20 | 29.50 | 66.66 | 613.2 | 26.92 | 78.7 |
| 245. | 14.477 | 0.678 | 3.774 | 122.58 | 29.50 | 66.67 | 595.7 | 25.77 | 76.3 |
| 250. | 13.923 | 0.691 | 4.107 | 123.92 | 29.50 | 66.46 | 580.5 | 24.74 | 74.0 |
| 255. | 13.386 | 0.705 | 4.438 | 125.24 | 29.50 | 66.00 | 567.6 | 23.81 | 72.0 |
| 260. | 12.870 | 0.719 | 4.766 | 126.51 | 29.50 | 65.33 | 556.7 | 22.98 | 70.2 |
| 265. | 12.378 | 0.733 | 5.091 | 127.75 | 29.50 | 64.46 | 547.9 | 22.25 | 68.6 |
| 270. | 11.913 | 0.748 | 5.411 | 128.94 | 29.51 | 63.45 | 540.8 | 21.61 | 67.2 |
| 275. | 11.474 | 0.762 | 5.725 | 130.10 | 29.53 | 62.35 | 535.3 | 21.05 | 65.9 |
| 280. | 11.063 | 0.777 | 6.034 | 131.21 | 29.56 | 61.20 | 531.1 | 20.57 | 64.7 |
| 285. | 10.678 | 0.790 | 6.337 | 132.28 | 29.60 | 60.05 | 528.1 | 20.15 | 63.7 |
| 290. | 10.319 | 0.804 | 6.635 | 133.32 | 29.65 | 58.92 | 526.0 | 19.79 | 62.9 |
| 295. | 9.984 | 0.817 | 6.926 | 134.32 | 29.71 | 57.85 | 524.8 | 19.48 | 62.2 |

METHANE ISOBAR AT P = 20.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 300. | 9.672 | 0.829 | 7.213 | 135.28 | 29.79 | 56.84 | 524.3 | 19.22 | 61.5 |
| 310. | 9.107 | 0.852 | 7.772 | 137.11 | 29.99 | 55.04 | 524.8 | 18.81 | 60.6 |
| 320. | 8.612 | 0.873 | 8.315 | 138.84 | 30.23 | 53.54 | 526.8 | 18.52 | 60.1 |
| 330. | 8.176 | 0.892 | 8.844 | 140.47 | 30.52 | 52.32 | 529.9 | 18.33 | 59.9 |
| 340. | 7.789 | 0.908 | 9.362 | 142.01 | 30.85 | 51.35 | 533.7 | 18.20 | 59.9 |
| 350. | 7.444 | 0.923 | 9.872 | 143.49 | 31.21 | 50.60 | 538.0 | 18.14 | 60.2 |
| 360. | 7.133 | 0.937 | 10.375 | 144.91 | 31.61 | 50.02 | 542.7 | 18.12 | 60.7 |
| 370. | 6.852 | 0.949 | 10.873 | 146.27 | 32.04 | 49.61 | 547.5 | 18.14 | 61.3 |
| 380. | 6.596 | 0.960 | 11.367 | 147.59 | 32.49 | 49.32 | 552.6 | 18.18 | 62.0 |
| 390. | 6.362 | 0.969 | 11.859 | 148.87 | 32.96 | 49.14 | 557.7 | 18.26 | 62.9 |
| 400. | 6.147 | 0.978 | 12.350 | 150.11 | 33.44 | 49.05 | 562.8 | 18.35 | 63.9 |
| 410. | 5.949 | 0.986 | 12.841 | 151.32 | 33.94 | 49.04 | 568.0 | | 65.0 |
| 420. | 5.765 | 0.993 | 13.331 | 152.50 | 34.46 | 49.09 | 573.2 | | 66.2 |
| 430. | 5.594 | 1.000 | 13.823 | 153.66 | 34.98 | 49.21 | 578.4 | | 67.5 |
| 440. | 5.435 | 1.006 | 14.315 | 154.79 | 35.51 | 49.37 | 583.5 | | 68.8 |
| 450. | 5.286 | 1.011 | 14.810 | 155.90 | 36.04 | 49.57 | 588.7 | | 70.2 |
| 460. | 5.147 | 1.016 | 15.307 | 157.00 | 36.58 | 49.80 | 593.8 | | 71.6 |
| 470. | 5.015 | 1.020 | 15.806 | 158.07 | 37.13 | 50.07 | 598.9 | | 73.1 |
| 480. | 4.891 | 1.024 | 16.308 | 159.13 | 37.67 | 50.36 | 603.9 | | 74.7 |
| 490. | 4.775 | 1.028 | 16.813 | 160.17 | 38.21 | 50.67 | 608.9 | | 76.2 |
| 500. | 4.664 | 1.031 | 17.322 | 161.20 | 38.76 | 51.00 | 613.9 | | 77.8 |
| 520. | 4.460 | 1.037 | 18.349 | 163.21 | 39.84 | 51.70 | 623.7 | | 81.1 |
| 540. | 4.274 | 1.042 | 19.390 | 165.17 | 40.90 | 52.44 | 633.4 | | 84.5 |
| 560. | 4.106 | 1.046 | 20.446 | 167.10 | 41.95 | 53.20 | 642.9 | | 88.0 |
| 580. | 3.952 | 1.049 | 21.518 | 168.98 | 42.97 | 53.98 | 652.3 | | 91.6 |
| 600. | 3.810 | 1.052 | 22.606 | 170.82 | 43.98 | 54.77 | 661.5 | | 95.2 |

METHANE ISOBAR AT P = 25.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 100. | 28.383 | 1.059 | -4.597 | 70.56 | 34.98 | 52.55 | 1622.8 | 206.34 | 222.0 |
| 105. | 28.027 | 1.022 | -4.334 | 73.14 | 34.79 | 52.85 | 1582.4 | 183.16 | 216.5 |
| 110. | 27.668 | 0.988 | -4.069 | 75.60 | 34.47 | 53.01 | 1543.4 | 163.31 | 210.7 |
| 115. | 27.306 | 0.958 | -3.804 | 77.96 | 34.09 | 53.11 | 1505.0 | 146.37 | 204.8 |
| 120. | 26.941 | 0.930 | -3.538 | 80.22 | 33.71 | 53.20 | 1467.0 | 131.93 | 198.8 |

METHANE ISOBAR AT P = 25.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 125. | 26.572 | 0.905 | -3.272 | 82.39 | 33.34 | 53.30 | 1429.2 | 119.61 | 192.8 |
| 130. | 26.199 | 0.883 | -3.005 | 84.49 | 32.98 | 53.43 | 1391.8 | 109.05 | 186.9 |
| 135. | 25.822 | 0.863 | -2.738 | 86.51 | 32.65 | 53.57 | 1354.5 | 99.96 | 180.9 |
| 140. | 25.440 | 0.844 | -2.469 | 88.46 | 32.33 | 53.75 | 1317.6 | 92.09 | 175.1 |
| 145. | 25.053 | 0.828 | -2.200 | 90.35 | 32.04 | 53.96 | 1281.0 | 85.23 | 169.3 |
| 150. | 24.661 | 0.813 | -1.930 | 92.18 | 31.77 | 54.19 | 1244.8 | 79.21 | 163.6 |
| 155. | 24.263 | 0.800 | -1.658 | 93.96 | 31.52 | 54.46 | 1208.9 | 73.89 | 158.0 |
| 160. | 23.859 | 0.788 | -1.385 | 95.69 | 31.28 | 54.75 | 1173.5 | 69.15 | 152.6 |
| 165. | 23.450 | 0.777 | -1.110 | 97.38 | 31.06 | 55.08 | 1138.6 | 64.91 | 147.2 |
| 170. | 23.033 | 0.768 | -0.834 | 99.03 | 30.86 | 55.43 | 1104.2 | 61.08 | 142.1 |
| 175. | 22.611 | 0.760 | -0.556 | 100.65 | 30.67 | 55.80 | 1070.3 | 57.61 | 137.1 |
| 180. | 22.181 | 0.753 | -0.276 | 102.22 | 30.50 | 56.20 | 1037.0 | 54.45 | 132.2 |
| 185. | 21.744 | 0.747 | 0.006 | 103.77 | 30.34 | 56.62 | 1004.4 | 51.55 | 127.5 |
| 190. | 21.301 | 0.743 | 0.290 | 105.28 | 30.20 | 57.07 | 972.5 | 48.89 | 123.0 |
| 195. | 20.851 | 0.740 | 0.577 | 106.77 | 30.07 | 57.52 | 941.5 | 46.43 | 118.7 |
| 200. | 20.394 | 0.737 | 0.865 | 108.24 | 29.96 | 57.99 | 911.3 | 44.16 | 114.5 |
| 205. | 19.930 | 0.736 | 1.157 | 109.67 | 29.86 | 58.47 | 882.0 | 42.05 | 110.4 |
| 210. | 19.461 | 0.736 | 1.450 | 111.09 | 29.77 | 58.94 | 853.8 | 40.09 | 106.6 |
| 215. | 18.987 | 0.737 | 1.746 | 112.48 | 29.70 | 59.40 | 826.8 | 38.27 | 103.0 |
| 220. | 18.509 | 0.738 | 2.044 | 113.85 | 29.64 | 59.83 | 801.0 | 36.57 | 99.5 |
| 225. | 18.027 | 0.741 | 2.344 | 115.20 | 29.59 | 60.23 | 776.5 | 35.00 | 96.3 |
| 230. | 17.544 | 0.745 | 2.646 | 116.53 | 29.55 | 60.58 | 753.4 | 33.53 | 93.2 |
| 235. | 17.061 | 0.750 | 2.950 | 117.83 | 29.53 | 60.87 | 731.9 | 32.17 | 90.4 |
| 240. | 16.580 | 0.756 | 3.255 | 119.12 | 29.51 | 61.08 | 711.9 | 30.91 | 87.7 |
| 245. | 16.102 | 0.762 | 3.560 | 120.38 | 29.51 | 61.20 | 693.5 | 29.75 | 85.3 |
| 250. | 15.631 | 0.769 | 3.867 | 121.61 | 29.51 | 61.23 | 676.7 | 28.68 | 83.0 |
| 255. | 15.167 | 0.777 | 4.173 | 122.83 | 29.52 | 61.15 | 661.5 | 27.69 | 80.9 |
| 260. | 14.714 | 0.786 | 4.478 | 124.01 | 29.54 | 60.98 | 648.0 | 26.80 | 79.1 |
| 265. | 14.272 | 0.795 | 4.782 | 125.17 | 29.56 | 60.71 | 635.9 | 25.98 | 77.3 |
| 270. | 13.844 | 0.804 | 5.085 | 126.30 | 29.60 | 60.34 | 625.3 | 25.23 | 75.8 |
| 275. | 13.430 | 0.814 | 5.385 | 127.41 | 29.64 | 59.90 | 616.1 | 24.56 | 74.4 |
| 280. | 13.033 | 0.824 | 5.684 | 128.48 | 29.69 | 59.38 | 608.1 | 23.95 | 73.1 |
| 285. | 12.651 | 0.834 | 5.979 | 129.53 | 29.75 | 58.81 | 601.3 | 23.41 | 71.9 |
| 290. | 12.287 | 0.844 | 6.272 | 130.54 | 29.82 | 58.21 | 595.6 | 22.92 | 70.9 |
| 295. | 11.939 | 0.854 | 6.561 | 131.53 | 29.90 | 57.58 | 590.8 | 22.49 | 70.0 |
| 300. | 11.608 | 0.863 | 6.848 | 132.50 | 29.99 | 56.95 | 586.9 | 22.10 | 69.2 |
| 310. | 10.995 | 0.882 | 7.411 | 134.34 | 30.20 | 55.71 | 581.3 | 21.46 | 68.0 |
| 320. | 10.443 | 0.900 | 7.962 | 136.09 | 30.45 | 54.56 | 578.2 | 20.95 | 67.0 |
| 330. | 9.945 | 0.916 | 8.502 | 137.76 | 30.74 | 53.55 | 576.9 | 20.57 | 66.4 |
| 340. | 9.496 | 0.931 | 9.034 | 139.34 | 31.07 | 52.69 | 576.9 | 20.28 | 66.1 |

METHANE ISOBAR AT P = 25.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 350. | 9.090 | 0.945 | 9.557 | 140.86 | 31.43 | 51.98 | 578.1 | 20.06 | 66.0 |
| 360. | 8.721 | 0.958 | 10.074 | 142.32 | 31.82 | 51.41 | 580.0 | 19.91 | 66.2 |
| 370. | 8.384 | 0.969 | 10.585 | 143.72 | 32.24 | 50.97 | 582.6 | 19.82 | 66.5 |
| 380. | 8.077 | 0.980 | 11.093 | 145.07 | 32.68 | 50.64 | 585.6 | 19.76 | 67.0 |
| 390. | 7.794 | 0.989 | 11.599 | 146.38 | 33.15 | 50.41 | 589.0 | 19.74 | 67.6 |
| 400. | 7.534 | 0.998 | 12.102 | 147.66 | 33.63 | 50.28 | 592.6 | 19.75 | 68.4 |
| 410. | 7.293 | 1.006 | 12.604 | 148.90 | 34.12 | 50.21 | 596.5 | | 69.3 |
| 420. | 7.069 | 1.013 | 13.107 | 150.11 | 34.63 | 50.22 | 600.5 | | 70.3 |
| 430. | 6.861 | 1.019 | 13.609 | 151.29 | 35.14 | 50.28 | 604.7 | | 71.3 |
| 440. | 6.666 | 1.025 | 14.112 | 152.45 | 35.66 | 50.39 | 608.9 | | 72.5 |
| 450. | 6.484 | 1.030 | 14.617 | 153.58 | 36.19 | 50.55 | 613.2 | | 73.7 |
| 460. | 6.313 | 1.035 | 15.123 | 154.70 | 36.73 | 50.74 | 617.6 | | 75.0 |
| 470. | 6.153 | 1.040 | 15.632 | 155.79 | 37.27 | 50.97 | 622.0 | | 76.4 |
| 480. | 6.001 | 1.044 | 16.143 | 156.87 | 37.80 | 51.22 | 626.5 | | 77.8 |
| 490. | 5.858 | 1.047 | 16.656 | 157.92 | 38.34 | 51.49 | 631.0 | | 79.2 |
| 500. | 5.723 | 1.051 | 17.173 | 158.97 | 38.88 | 51.79 | 635.4 | | 80.7 |
| 520. | 5.472 | 1.057 | 18.215 | 161.01 | 39.95 | 52.43 | 644.4 | | 83.8 |
| 540. | 5.246 | 1.061 | 19.270 | 163.00 | 41.01 | 53.11 | 653.3 | | 87.1 |
| 560. | 5.039 | 1.065 | 20.340 | 164.95 | 42.05 | 53.83 | 662.2 | | 90.4 |
| 580. | 4.850 | 1.069 | 21.423 | 166.85 | 43.07 | 54.56 | 671.0 | | 93.8 |
| 600. | 4.677 | 1.071 | 22.522 | 168.71 | 44.06 | 55.31 | 679.8 | | 97.3 |

METHANE ISOBAR AT P = 30.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 100. | 28.557 | 1.263 | -4.465 | 70.13 | 35.17 | 52.29 | 1651.5 | 217.69 | 226.1 |
| 105. | 28.212 | 1.218 | -4.203 | 72.69 | 34.98 | 52.55 | 1612.4 | 193.49 | 220.7 |
| 110. | 27.864 | 1.177 | -3.940 | 75.14 | 34.67 | 52.67 | 1574.6 | 172.67 | 215.1 |
| 115. | 27.515 | 1.140 | -3.676 | 77.48 | 34.30 | 52.74 | 1537.6 | 154.85 | 209.3 |
| 120. | 27.163 | 1.107 | -3.412 | 79.73 | 33.93 | 52.79 | 1501.0 | 139.62 | 203.5 |
| 125. | 26.808 | 1.077 | -3.148 | 81.88 | 33.56 | 52.84 | 1464.8 | 126.60 | 197.7 |
| 130. | 26.451 | 1.049 | -2.884 | 83.96 | 33.21 | 52.90 | 1428.9 | 115.44 | 191.9 |
| 135. | 26.090 | 1.024 | -2.619 | 85.96 | 32.88 | 52.99 | 1393.5 | 105.85 | 186.1 |
| 140. | 25.726 | 1.002 | -2.354 | 87.88 | 32.57 | 53.10 | 1358.4 | 97.54 | 180.3 |
| 145. | 25.359 | 0.981 | -2.088 | 89.75 | 32.28 | 53.23 | 1323.7 | 90.32 | 174.7 |

ETHANE ISOBAR AT P = 30.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 150. | 24.988 | 0.963 | -1.822 | 91.56 | 32.01 | 53.39 | 1289.5 | 83.99 | 169.2 |
| 155. | 24.613 | 0.946 | -1.554 | 93.31 | 31.76 | 53.56 | 1255.8 | 78.41 | 163.8 |
| 160. | 24.234 | 0.931 | -1.286 | 95.01 | 31.52 | 53.76 | 1222.6 | 73.46 | 158.5 |
| 165. | 23.851 | 0.917 | -1.017 | 96.67 | 31.30 | 53.97 | 1190.0 | 69.03 | 153.3 |
| 170. | 23.464 | 0.905 | -0.746 | 98.29 | 31.10 | 54.21 | 1157.9 | 65.06 | 148.3 |
| 175. | 23.073 | 0.894 | -0.475 | 99.86 | 30.91 | 54.45 | 1126.5 | 61.46 | 143.4 |
| 180. | 22.677 | 0.884 | -0.202 | 101.40 | 30.73 | 54.71 | 1095.7 | 58.20 | 138.7 |
| 185. | 22.277 | 0.876 | 0.073 | 102.90 | 30.57 | 54.99 | 1065.6 | 55.22 | 134.2 |
| 190. | 21.873 | 0.868 | 0.348 | 104.37 | 30.42 | 55.27 | 1036.2 | 52.49 | 129.8 |
| 195. | 21.465 | 0.862 | 0.625 | 105.81 | 30.28 | 55.55 | 1007.6 | 49.99 | 125.6 |
| 200. | 21.053 | 0.857 | 0.904 | 107.22 | 30.16 | 55.85 | 979.9 | 47.67 | 121.5 |
| 205. | 20.638 | 0.853 | 1.184 | 108.60 | 30.05 | 56.14 | 953.0 | 45.53 | 117.6 |
| 210. | 20.219 | 0.850 | 1.465 | 109.96 | 29.95 | 56.42 | 927.0 | 43.55 | 113.9 |
| 215. | 19.799 | 0.848 | 1.748 | 111.29 | 29.87 | 56.70 | 902.1 | 41.71 | 110.4 |
| 220. | 19.376 | 0.846 | 2.032 | 112.60 | 29.80 | 56.96 | 878.1 | 40.00 | 107.0 |
| 225. | 18.953 | 0.846 | 2.318 | 113.88 | 29.74 | 57.20 | 855.2 | 38.41 | 103.9 |
| 230. | 18.529 | 0.847 | 2.604 | 115.14 | 29.69 | 57.42 | 833.5 | 36.94 | 100.9 |
| 235. | 18.106 | 0.848 | 2.892 | 116.38 | 29.66 | 57.60 | 812.9 | 35.56 | 98.1 |
| 240. | 17.684 | 0.850 | 3.180 | 117.59 | 29.63 | 57.75 | 793.5 | 34.29 | 95.4 |
| 245. | 17.265 | 0.853 | 3.469 | 118.78 | 29.62 | 57.86 | 775.3 | 33.10 | 93.0 |
| 250. | 16.850 | 0.857 | 3.759 | 119.95 | 29.62 | 57.91 | 758.4 | 32.00 | 90.7 |
| 255. | 16.440 | 0.861 | 4.048 | 121.10 | 29.63 | 57.92 | 742.7 | 30.98 | 88.6 |
| 260. | 16.037 | 0.865 | 4.338 | 122.22 | 29.64 | 57.88 | 728.2 | 30.04 | 86.6 |
| 265. | 15.640 | 0.871 | 4.627 | 123.33 | 29.67 | 57.78 | 714.9 | 29.17 | 84.8 |
| 270. | 15.252 | 0.876 | 4.915 | 124.40 | 29.71 | 57.64 | 702.8 | 28.37 | 83.1 |
| 275. | 14.873 | 0.882 | 5.203 | 125.46 | 29.76 | 57.44 | 691.8 | 27.64 | 81.6 |
| 280. | 14.504 | 0.888 | 5.490 | 126.49 | 29.82 | 57.21 | 681.9 | 26.96 | 80.3 |
| 285. | 14.146 | 0.895 | 5.775 | 127.50 | 29.88 | 56.93 | 673.0 | 26.35 | 79.0 |
| 290. | 13.798 | 0.902 | 6.059 | 128.49 | 29.96 | 56.62 | 665.0 | 25.78 | 77.9 |
| 295. | 13.463 | 0.909 | 6.341 | 129.46 | 30.05 | 56.29 | 658.0 | 25.27 | 76.9 |
| 300. | 13.139 | 0.915 | 6.622 | 130.40 | 30.14 | 55.93 | 651.8 | 24.80 | 76.0 |
| 310. | 12.527 | 0.929 | 7.177 | 132.22 | 30.36 | 55.19 | 641.7 | 23.99 | 74.5 |
| 320. | 11.963 | 0.943 | 7.726 | 133.96 | 30.62 | 54.45 | 634.2 | 23.32 | 73.3 |
| 330. | 11.443 | 0.956 | 8.267 | 135.63 | 30.92 | 53.74 | 628.9 | 22.79 | 72.4 |
| 340. | 10.965 | 0.968 | 8.801 | 137.22 | 31.25 | 53.11 | 625.4 | 22.35 | 71.9 |
| 350. | 10.527 | 0.979 | 9.329 | 138.75 | 31.61 | 52.55 | 623.4 | 22.01 | 71.5 |
| 360. | 10.123 | 0.990 | 9.852 | 140.23 | 32.00 | 52.09 | 622.5 | 21.74 | 71.4 |
| 370. | 9.752 | 1.000 | 10.371 | 141.65 | 32.41 | 51.71 | 622.5 | 21.54 | 71.5 |
| 380. | 9.409 | 1.009 | 10.887 | 143.02 | 32.85 | 51.42 | 623.3 | 21.38 | 71.8 |
| 390. | 9.091 | 1.018 | 11.400 | 144.36 | 33.31 | 51.22 | 624.8 | 21.27 | 72.2 |

METHANE ISOBAR AT P = 30.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 400. | 8.797 | 1.025 | 11.911 | 145.65 | 33.78 | 51.08 | 626.7 | 21.20 | 72.8 |
| 410. | 8.524 | 1.032 | 12.422 | 146.91 | 34.27 | 51.02 | 629.0 | | 73.5 |
| 420. | 8.269 | 1.039 | 12.932 | 148.14 | 34.77 | 51.01 | 631.7 | | 74.3 |
| 430. | 8.031 | 1.045 | 13.442 | 149.34 | 35.28 | 51.06 | 634.6 | | 75.2 |
| 440. | 7.808 | 1.050 | 13.953 | 150.52 | 35.80 | 51.16 | 637.7 | | 76.2 |
| 450. | 7.599 | 1.055 | 14.465 | 151.67 | 36.33 | 51.29 | 641.0 | | 77.3 |
| 460. | 7.402 | 1.060 | 14.979 | 152.80 | 36.85 | 51.46 | 644.5 | | 78.5 |
| 470. | 7.216 | 1.064 | 15.495 | 153.90 | 37.39 | 51.67 | 648.1 | | 79.7 |
| 480. | 7.041 | 1.068 | 16.012 | 154.99 | 37.92 | 51.90 | 651.8 | | 81.0 |
| 490. | 6.876 | 1.071 | 16.533 | 156.07 | 38.46 | 52.15 | 655.6 | | 82.3 |
| 500. | 6.719 | 1.074 | 17.055 | 157.12 | 38.99 | 52.42 | 659.5 | | 83.7 |
| 520. | 6.428 | 1.079 | 18.110 | 159.19 | 40.05 | 53.02 | 667.3 | | 86.6 |
| 540. | 6.165 | 1.084 | 19.177 | 161.20 | 41.10 | 53.67 | 675.3 | | 89.7 |
| 560. | 5.925 | 1.088 | 20.257 | 163.17 | 42.14 | 54.35 | 683.4 | | 92.9 |
| 580. | 5.705 | 1.091 | 21.351 | 165.09 | 43.15 | 55.05 | 691.5 | | 96.2 |
| 600. | 5.502 | 1.093 | 22.459 | 166.97 | 44.14 | 55.76 | 699.7 | | 99.5 |

METHANE ISOBAR AT P = 35.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 100. | 28.723 | 1.466 | -4.332 | 69.72 | 35.35 | 52.05 | 1678.9 | 229.75 | 230.1 |
| 105. | 28.388 | 1.412 | -4.071 | 72.27 | 35.17 | 52.29 | 1640.9 | 204.48 | 224.8 |
| 110. | 28.051 | 1.364 | -3.809 | 74.70 | 34.87 | 52.39 | 1604.2 | 182.63 | 219.3 |
| 115. | 27.712 | 1.321 | -3.547 | 77.03 | 34.51 | 52.42 | 1568.3 | 163.86 | 213.7 |
| 120. | 27.372 | 1.282 | -3.285 | 79.26 | 34.14 | 52.43 | 1533.0 | 147.76 | 208.1 |
| 125. | 27.030 | 1.246 | -3.023 | 81.40 | 33.78 | 52.44 | 1498.1 | 133.99 | 202.4 |
| 130. | 26.686 | 1.213 | -2.761 | 83.46 | 33.44 | 52.47 | 1463.7 | 122.17 | 196.7 |
| 135. | 26.340 | 1.184 | -2.498 | 85.44 | 33.11 | 52.51 | 1429.7 | 112.01 | 191.0 |
| 140. | 25.992 | 1.157 | -2.235 | 87.35 | 32.80 | 52.56 | 1396.2 | 103.22 | 185.4 |
| 145. | 25.641 | 1.132 | -1.972 | 89.20 | 32.52 | 52.64 | 1363.2 | 95.59 | 179.9 |
| 150. | 25.288 | 1.110 | -1.709 | 90.98 | 32.25 | 52.74 | 1330.6 | 88.91 | 174.5 |
| 155. | 24.932 | 1.089 | -1.445 | 92.71 | 31.99 | 52.85 | 1298.7 | 83.03 | 169.2 |
| 160. | 24.573 | 1.071 | -1.180 | 94.39 | 31.76 | 52.97 | 1267.3 | 77.83 | 164.0 |
| 165. | 24.212 | 1.054 | -0.915 | 96.03 | 31.54 | 53.11 | 1236.5 | 73.19 | 159.0 |
| 170. | 23.848 | 1.038 | -0.649 | 97.61 | 31.33 | 53.26 | 1206.3 | 69.03 | 154.1 |

METHANE ISOBAR AT P = 35.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 175. | 23.481 | 1.024 | -0.383 | 99.16 | 31.14 | 53.43 | 1176.8 | 65.28 | 149.3 |
| 180. | 23.112 | 1.012 | -0.115 | 100.67 | 30.96 | 53.60 | 1147.9 | 61.89 | 144.7 |
| 185. | 22.739 | 1.001 | 0.153 | 102.14 | 30.79 | 53.77 | 1119.7 | 58.80 | 140.3 |
| 190. | 22.365 | 0.991 | 0.423 | 103.57 | 30.64 | 53.96 | 1092.2 | 55.98 | 136.0 |
| 195. | 21.988 | 0.982 | 0.693 | 104.98 | 30.50 | 54.14 | 1065.5 | 53.39 | 131.9 |
| 200. | 21.609 | 0.974 | 0.964 | 106.35 | 30.37 | 54.33 | 1039.6 | 51.01 | 127.9 |
| 205. | 21.228 | 0.967 | 1.236 | 107.70 | 30.25 | 54.52 | 1014.4 | 48.81 | 124.1 |
| 210. | 20.846 | 0.962 | 1.509 | 109.01 | 30.15 | 54.70 | 990.1 | 46.78 | 120.5 |
| 215. | 20.463 | 0.957 | 1.783 | 110.30 | 30.06 | 54.87 | 966.7 | 44.90 | 117.0 |
| 220. | 20.079 | 0.953 | 2.058 | 111.56 | 29.98 | 55.04 | 944.2 | 43.15 | 113.8 |
| 225. | 19.695 | 0.950 | 2.334 | 112.80 | 29.91 | 55.19 | 922.5 | 41.53 | 110.6 |
| 230. | 19.312 | 0.948 | 2.610 | 114.02 | 29.86 | 55.33 | 901.9 | 40.02 | 107.7 |
| 235. | 18.930 | 0.946 | 2.887 | 115.21 | 29.82 | 55.45 | 882.2 | 38.61 | 104.9 |
| 240. | 18.549 | 0.946 | 3.164 | 116.38 | 29.79 | 55.55 | 863.5 | 37.31 | 102.3 |
| 245. | 18.171 | 0.946 | 3.442 | 117.52 | 29.77 | 55.63 | 845.8 | 36.09 | 99.8 |
| 250. | 17.796 | 0.946 | 3.721 | 118.65 | 29.76 | 55.68 | 829.0 | 34.96 | 97.5 |
| 255. | 17.425 | 0.947 | 3.999 | 119.75 | 29.77 | 55.71 | 813.3 | 33.91 | 95.3 |
| 260. | 17.058 | 0.949 | 4.278 | 120.83 | 29.79 | 55.70 | 798.6 | 32.93 | 93.3 |
| 265. | 16.697 | 0.951 | 4.556 | 121.89 | 29.81 | 55.67 | 784.9 | 32.02 | 91.5 |
| 270. | 16.342 | 0.954 | 4.834 | 122.93 | 29.85 | 55.61 | 772.1 | 31.17 | 89.7 |
| 275. | 15.993 | 0.957 | 5.112 | 123.95 | 29.90 | 55.52 | 760.3 | 30.39 | 88.1 |
| 280. | 15.651 | 0.961 | 5.389 | 124.95 | 29.96 | 55.40 | 749.4 | 29.67 | 86.7 |
| 285. | 15.317 | 0.964 | 5.666 | 125.93 | 30.03 | 55.26 | 739.4 | 29.00 | 85.4 |
| 290. | 14.991 | 0.968 | 5.942 | 126.89 | 30.10 | 55.10 | 730.2 | 28.38 | 84.1 |
| 295. | 14.673 | 0.972 | 6.217 | 127.83 | 30.19 | 54.92 | 721.8 | 27.81 | 83.0 |
| 300. | 14.364 | 0.977 | 6.491 | 128.75 | 30.29 | 54.73 | 714.2 | 27.28 | 82.0 |
| 310. | 13.773 | 0.986 | 7.036 | 130.54 | 30.52 | 54.30 | 701.0 | 26.35 | 80.3 |
| 320. | 13.218 | 0.995 | 7.577 | 132.26 | 30.78 | 53.85 | 690.5 | 25.57 | 79.0 |
| 330. | 12.699 | 1.004 | 8.113 | 133.91 | 31.07 | 53.41 | 682.1 | 24.91 | 77.9 |
| 340. | 12.215 | 1.014 | 8.645 | 135.50 | 31.40 | 52.99 | 675.7 | 24.37 | 77.2 |
| 350. | 11.764 | 1.022 | 9.173 | 137.03 | 31.76 | 52.61 | 670.9 | 23.92 | 76.7 |
| 360. | 11.345 | 1.031 | 9.698 | 138.50 | 32.15 | 52.28 | 667.4 | 23.55 | 76.4 |
| 370. | 10.954 | 1.039 | 10.219 | 139.93 | 32.56 | 52.01 | 665.1 | 23.24 | 76.3 |
| 380. | 10.591 | 1.046 | 10.738 | 141.32 | 32.99 | 51.80 | 663.8 | 23.00 | 76.4 |
| 390. | 10.251 | 1.053 | 11.255 | 142.66 | 33.45 | 51.65 | 663.3 | 22.81 | 76.6 |
| 400. | 9.935 | 1.059 | 11.771 | 143.97 | 33.92 | 51.56 | 663.5 | 22.66 | 77.0 |
| 410. | 9.639 | 1.065 | 12.287 | 145.24 | 34.40 | 51.52 | 664.2 | | 77.6 |
| 420. | 9.361 | 1.071 | 12.802 | 146.48 | 34.90 | 51.53 | 665.4 | | 78.2 |
| 430. | 9.101 | 1.076 | 13.317 | 147.69 | 35.40 | 51.59 | 667.0 | | 79.0 |
| 440. | 8.856 | 1.080 | 13.834 | 148.88 | 35.92 | 51.69 | 669.0 | | 79.9 |

METHANE ISOBAR AT P = 35.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 450. | 8.626 | 1.084 | 14.351 | 150.04 | 36.44 | 51.82 | 671.2 | | 80.8 |
| 460. | 8.408 | 1.088 | 14.870 | 151.18 | 36.97 | 51.99 | 673.7 | | 81.9 |
| 470. | 8.203 | 1.092 | 15.391 | 152.30 | 37.49 | 52.19 | 676.4 | | 83.0 |
| 480. | 8.009 | 1.095 | 15.914 | 153.40 | 38.03 | 52.41 | 679.2 | | 84.2 |
| 490. | 7.824 | 1.098 | 16.439 | 154.49 | 38.56 | 52.65 | 682.3 | | 85.4 |
| 500. | 7.650 | 1.101 | 16.967 | 155.55 | 39.09 | 52.92 | 685.4 | | 86.7 |
| 520. | 7.325 | 1.105 | 18.031 | 157.64 | 40.14 | 53.49 | 692.0 | | 89.4 |
| 540. | 7.030 | 1.109 | 19.107 | 159.67 | 41.19 | 54.12 | 698.9 | | 92.4 |
| 560. | 6.760 | 1.112 | 20.196 | 161.65 | 42.22 | 54.77 | 706.1 | | 95.4 |
| 580. | 6.513 | 1.114 | 21.298 | 163.58 | 43.23 | 55.45 | 713.4 | | 98.5 |
| 600. | 6.285 | 1.116 | 22.414 | 165.48 | 44.21 | 56.15 | 720.8 | | 101.8 |

METHANE ISOBAR AT P = 40.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 105. | 28.556 | 1.604 | -3.938 | 71.86 | 35.36 | 52.06 | 1667.9 | 216.24 | 228.8 |
| 110. | 28.229 | 1.549 | -3.678 | 74.28 | 35.06 | 52.13 | 1632.3 | 193.30 | 223.5 |
| 115. | 27.900 | 1.499 | -3.417 | 76.60 | 34.71 | 52.14 | 1597.4 | 173.48 | 218.0 |
| 120. | 27.571 | 1.454 | -3.156 | 78.82 | 34.35 | 52.12 | 1563.2 | 156.46 | 212.5 |
| 125. | 27.240 | 1.413 | -2.896 | 80.94 | 33.99 | 52.10 | 1529.6 | 141.85 | 206.9 |
| 130. | 26.908 | 1.375 | -2.635 | 82.99 | 33.65 | 52.09 | 1496.4 | 129.30 | 201.3 |
| 135. | 26.575 | 1.341 | -2.375 | 84.95 | 33.33 | 52.10 | 1463.7 | 118.51 | 195.8 |
| 140. | 26.240 | 1.310 | -2.114 | 86.85 | 33.03 | 52.11 | 1431.5 | 109.18 | 190.3 |
| 145. | 25.903 | 1.281 | -1.854 | 88.68 | 32.74 | 52.15 | 1399.9 | 101.08 | 184.9 |
| 150. | 25.565 | 1.255 | -1.593 | 90.45 | 32.47 | 52.20 | 1368.8 | 94.01 | 179.6 |
| 155. | 25.225 | 1.230 | -1.332 | 92.16 | 32.22 | 52.26 | 1338.3 | 87.80 | 174.4 |
| 160. | 24.884 | 1.208 | -1.070 | 93.82 | 31.98 | 52.33 | 1308.5 | 82.31 | 169.3 |
| 165. | 24.540 | 1.188 | -0.808 | 95.43 | 31.76 | 52.42 | 1279.2 | 77.42 | 164.4 |
| 170. | 24.195 | 1.170 | -0.546 | 97.00 | 31.55 | 52.51 | 1250.5 | 73.05 | 159.6 |
| 175. | 23.848 | 1.153 | -0.283 | 98.52 | 31.36 | 52.62 | 1222.5 | 69.13 | 154.9 |
| 180. | 23.500 | 1.137 | -0.020 | 100.00 | 31.18 | 52.73 | 1195.2 | 65.58 | 150.4 |
| 185. | 23.150 | 1.123 | 0.244 | 101.45 | 31.01 | 52.84 | 1168.5 | 62.35 | 146.0 |
| 190. | 22.799 | 1.111 | 0.509 | 102.86 | 30.85 | 52.96 | 1142.6 | 59.41 | 141.9 |
| 195. | 22.446 | 1.099 | 0.774 | 104.24 | 30.71 | 53.08 | 1117.3 | 56.73 | 137.8 |
| 200. | 22.092 | 1.089 | 1.039 | 105.58 | 30.57 | 53.20 | 1092.8 | 54.26 | 133.9 |

METHANE ISOBAR AT P = 40.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 205. | 21.738 | 1.080 | 1.306 | 106.90 | 30.45 | 53.32 | 1069.1 | 51.98 | 130.2 |
| 210. | 21.383 | 1.071 | 1.573 | 108.18 | 30.35 | 53.43 | 1046.1 | 49.88 | 126.6 |
| 215. | 21.028 | 1.064 | 1.840 | 109.44 | 30.25 | 53.54 | 1023.9 | 47.94 | 123.2 |
| 220. | 20.673 | 1.058 | 2.108 | 110.68 | 30.17 | 53.65 | 1002.4 | 46.14 | 119.9 |
| 225. | 20.319 | 1.052 | 2.377 | 111.88 | 30.10 | 53.75 | 981.9 | 44.46 | 116.8 |
| 230. | 19.966 | 1.048 | 2.645 | 113.06 | 30.04 | 53.84 | 962.1 | 42.91 | 113.9 |
| 235. | 19.613 | 1.044 | 2.915 | 114.22 | 29.99 | 53.92 | 943.2 | 41.46 | 111.1 |
| 240. | 19.263 | 1.041 | 3.185 | 115.36 | 29.96 | 53.99 | 925.1 | 40.11 | 108.5 |
| 245. | 18.915 | 1.038 | 3.455 | 116.47 | 29.94 | 54.04 | 907.9 | 38.86 | 106.0 |
| 250. | 18.570 | 1.036 | 3.725 | 117.57 | 29.93 | 54.08 | 891.5 | 37.68 | 103.7 |
| 255. | 18.228 | 1.035 | 3.996 | 118.64 | 29.93 | 54.11 | 876.0 | 36.59 | 101.5 |
| 260. | 17.890 | 1.034 | 4.266 | 119.69 | 29.94 | 54.12 | 861.3 | 35.58 | 99.4 |
| 265. | 17.556 | 1.034 | 4.537 | 120.72 | 29.96 | 54.11 | 847.5 | 34.63 | 97.5 |
| 270. | 17.227 | 1.034 | 4.807 | 121.73 | 30.00 | 54.08 | 834.5 | 33.74 | 95.8 |
| 275. | 16.903 | 1.035 | 5.077 | 122.72 | 30.05 | 54.04 | 822.3 | 32.92 | 94.1 |
| 280. | 16.584 | 1.036 | 5.348 | 123.69 | 30.10 | 53.99 | 810.9 | 32.15 | 92.6 |
| 285. | 16.271 | 1.037 | 5.617 | 124.65 | 30.17 | 53.92 | 800.2 | 31.44 | 91.2 |
| 290. | 15.965 | 1.039 | 5.887 | 125.59 | 30.25 | 53.83 | 790.3 | 30.78 | 89.9 |
| 295. | 15.665 | 1.041 | 6.156 | 126.51 | 30.34 | 53.74 | 781.1 | 30.16 | 88.7 |
| 300. | 15.371 | 1.043 | 6.424 | 127.41 | 30.43 | 53.63 | 772.6 | 29.59 | 87.6 |
| 310. | 14.806 | 1.048 | 6.959 | 129.16 | 30.66 | 53.39 | 757.5 | 28.56 | 85.8 |
| 320. | 14.269 | 1.054 | 7.492 | 130.85 | 30.92 | 53.14 | 744.8 | 27.69 | 84.2 |
| 330. | 13.761 | 1.059 | 8.022 | 132.49 | 31.22 | 52.88 | 734.3 | 26.94 | 83.0 |
| 340. | 13.282 | 1.065 | 8.549 | 134.06 | 31.54 | 52.62 | 725.6 | 26.30 | 82.1 |
| 350. | 12.831 | 1.071 | 9.074 | 135.58 | 31.90 | 52.39 | 718.5 | 25.75 | 81.4 |
| 360. | 12.407 | 1.077 | 9.597 | 137.06 | 32.28 | 52.19 | 713.0 | 25.30 | 81.0 |
| 370. | 12.009 | 1.083 | 10.118 | 138.48 | 32.69 | 52.03 | 708.7 | 24.91 | 80.8 |
| 380. | 11.635 | 1.088 | 10.638 | 139.87 | 33.12 | 51.90 | 705.4 | 24.59 | 80.7 |
| 390. | 11.284 | 1.093 | 11.157 | 141.22 | 33.57 | 51.82 | 703.2 | 24.33 | 80.8 |
| 400. | 10.953 | 1.098 | 11.675 | 142.53 | 34.04 | 51.79 | 701.7 | 24.11 | 81.1 |
| 410. | 10.643 | 1.103 | 12.193 | 143.81 | 34.52 | 51.79 | 700.9 | | 81.5 |
| 420. | 10.350 | 1.107 | 12.711 | 145.05 | 35.01 | 51.84 | 700.7 | | 82.0 |
| 430. | 10.074 | 1.111 | 13.229 | 146.28 | 35.52 | 51.92 | 701.0 | | 82.7 |
| 440. | 9.814 | 1.114 | 13.749 | 147.47 | 36.03 | 52.04 | 701.8 | | 83.4 |
| 450. | 9.568 | 1.117 | 14.270 | 148.64 | 36.54 | 52.18 | 702.9 | | 84.3 |
| 460. | 9.335 | 1.120 | 14.793 | 149.79 | 37.07 | 52.36 | 704.4 | | 85.2 |
| 470. | 9.114 | 1.123 | 15.317 | 150.92 | 37.59 | 52.56 | 706.1 | | 86.2 |
| 480. | 8.904 | 1.126 | 15.844 | 152.03 | 38.12 | 52.79 | 708.1 | | 87.3 |
| 490. | 8.705 | 1.128 | 16.373 | 153.12 | 38.65 | 53.03 | 710.4 | | 88.5 |
| 500. | 8.516 | 1.130 | 16.905 | 154.19 | 39.17 | 53.29 | 712.8 | | 89.7 |

METHANE ISOBAR AT P = 40.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 520. | 8.163 | 1.133 | 17.976 | 156.29 | 40.23 | 53.86 | 718.0 | | 92.2 |
| 540. | 7.841 | 1.136 | 19.060 | 158.34 | 41.27 | 54.47 | 723.8 | | 95.0 |
| 560. | 7.547 | 1.138 | 20.155 | 160.33 | 42.29 | 55.12 | 730.0 | | 97.9 |
| 580. | 7.276 | 1.140 | 21.265 | 162.28 | 43.29 | 55.79 | 736.4 | | 100.9 |
| 600. | 7.026 | 1.141 | 22.387 | 164.18 | 44.27 | 56.47 | 743.0 | | 104.0 |

METHANE ISOBAR AT P = 45.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 105. | 28.718 | 1.795 | -3.805 | 71.46 | 35.54 | 51.86 | 1693.8 | 228.89 | 232.8 |
| 110. | 28.399 | 1.733 | -3.545 | 73.88 | 35.25 | 51.91 | 1659.1 | 204.77 | 227.6 |
| 115. | 28.079 | 1.676 | -3.286 | 76.18 | 34.91 | 51.90 | 1625.2 | 183.84 | 222.2 |
| 120. | 27.760 | 1.625 | -3.027 | 78.39 | 34.55 | 51.86 | 1592.0 | 165.79 | 216.8 |
| 125. | 27.439 | 1.578 | -2.767 | 80.51 | 34.20 | 51.81 | 1559.4 | 150.26 | 211.3 |
| 130. | 27.118 | 1.535 | -2.508 | 82.54 | 33.86 | 51.77 | 1527.3 | 136.91 | 205.9 |
| 135. | 26.796 | 1.496 | -2.250 | 84.49 | 33.54 | 51.74 | 1495.8 | 125.42 | 200.4 |
| 140. | 26.473 | 1.460 | -1.991 | 86.37 | 33.24 | 51.73 | 1464.8 | 115.49 | 195.0 |
| 145. | 26.149 | 1.427 | -1.732 | 88.19 | 32.95 | 51.73 | 1434.4 | 106.87 | 189.7 |
| 150. | 25.824 | 1.397 | -1.474 | 89.94 | 32.69 | 51.74 | 1404.6 | 99.36 | 184.5 |
| 155. | 25.498 | 1.369 | -1.215 | 91.64 | 32.43 | 51.77 | 1375.4 | 92.76 | 179.4 |
| 160. | 25.171 | 1.344 | -0.956 | 93.28 | 32.20 | 51.81 | 1346.8 | 86.95 | 174.4 |
| 165. | 24.843 | 1.320 | -0.697 | 94.88 | 31.97 | 51.85 | 1318.8 | 81.78 | 169.6 |
| 170. | 24.513 | 1.299 | -0.437 | 96.43 | 31.76 | 51.90 | 1291.5 | 77.17 | 164.8 |
| 175. | 24.183 | 1.279 | -0.178 | 97.93 | 31.57 | 51.96 | 1264.8 | 73.04 | 160.2 |
| 180. | 23.852 | 1.261 | 0.082 | 99.40 | 31.38 | 52.03 | 1238.7 | 69.31 | 155.8 |
| 185. | 23.520 | 1.244 | 0.343 | 100.82 | 31.21 | 52.09 | 1213.4 | 65.93 | 151.5 |
| 190. | 23.188 | 1.228 | 0.603 | 102.21 | 31.05 | 52.17 | 1188.6 | 62.85 | 147.4 |
| 195. | 22.855 | 1.214 | 0.864 | 103.57 | 30.91 | 52.24 | 1164.6 | 60.04 | 143.4 |
| 200. | 22.522 | 1.202 | 1.126 | 104.89 | 30.77 | 52.31 | 1141.3 | 57.47 | 139.5 |
| 205. | 22.189 | 1.190 | 1.387 | 106.19 | 30.65 | 52.39 | 1118.6 | 55.10 | 135.8 |
| 210. | 21.855 | 1.179 | 1.649 | 107.45 | 30.54 | 52.46 | 1096.7 | 52.91 | 132.3 |
| 215. | 21.522 | 1.170 | 1.912 | 108.68 | 30.44 | 52.53 | 1075.5 | 50.89 | 128.9 |
| 220. | 21.190 | 1.161 | 2.175 | 109.89 | 30.35 | 52.60 | 1055.0 | 49.03 | 125.7 |
| 225. | 20.859 | 1.153 | 2.438 | 111.08 | 30.28 | 52.66 | 1035.3 | 47.29 | 122.6 |

METHANE ISOBAR AT P = 45.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 230. | 20.529 | 1.146 | 2.701 | 112.23 | 30.22 | 52.72 | 1016.3 | 45.68 | 119.7 |
| 235. | 20.200 | 1.140 | 2.965 | 113.37 | 30.17 | 52.77 | 998.1 | 44.18 | 116.9 |
| 240. | 19.873 | 1.135 | 3.229 | 114.48 | 30.13 | 52.81 | 980.6 | 42.78 | 114.2 |
| 245. | 19.549 | 1.130 | 3.493 | 115.57 | 30.10 | 52.85 | 963.8 | 41.48 | 111.7 |
| 250. | 19.227 | 1.126 | 3.757 | 116.64 | 30.09 | 52.88 | 947.8 | 40.26 | 109.4 |
| 255. | 18.908 | 1.123 | 4.022 | 117.68 | 30.09 | 52.90 | 932.6 | 39.13 | 107.2 |
| 260. | 18.592 | 1.120 | 4.286 | 118.71 | 30.10 | 52.91 | 918.1 | 38.07 | 105.1 |
| 265. | 18.280 | 1.117 | 4.551 | 119.72 | 30.12 | 52.92 | 904.3 | 37.08 | 103.2 |
| 270. | 17.972 | 1.115 | 4.816 | 120.71 | 30.15 | 52.91 | 891.2 | 36.15 | 101.3 |
| 275. | 17.668 | 1.114 | 5.080 | 121.68 | 30.19 | 52.90 | 878.9 | 35.29 | 99.6 |
| 280. | 17.368 | 1.113 | 5.345 | 122.63 | 30.25 | 52.87 | 867.2 | 34.48 | 98.1 |
| 285. | 17.073 | 1.112 | 5.609 | 123.57 | 30.31 | 52.84 | 856.2 | 33.73 | 96.6 |
| 290. | 16.784 | 1.112 | 5.873 | 124.49 | 30.39 | 52.80 | 845.9 | 33.02 | 95.2 |
| 295. | 16.499 | 1.112 | 6.137 | 125.39 | 30.48 | 52.75 | 836.2 | 32.37 | 94.0 |
| 300. | 16.221 | 1.112 | 6.400 | 126.28 | 30.57 | 52.70 | 827.1 | 31.75 | 92.8 |
| 310. | 15.680 | 1.113 | 6.927 | 128.00 | 30.80 | 52.58 | 810.7 | 30.65 | 90.8 |
| 320. | 15.163 | 1.115 | 7.452 | 129.67 | 31.05 | 52.44 | 796.6 | 29.69 | 89.2 |
| 330. | 14.670 | 1.118 | 7.976 | 131.28 | 31.35 | 52.31 | 784.4 | 28.86 | 87.8 |
| 340. | 14.202 | 1.121 | 8.498 | 132.84 | 31.67 | 52.18 | 774.0 | 28.14 | 86.7 |
| 350. | 13.757 | 1.124 | 9.019 | 134.35 | 32.03 | 52.06 | 765.3 | 27.52 | 85.9 |
| 360. | 13.336 | 1.127 | 9.539 | 135.82 | 32.41 | 51.96 | 758.0 | 26.99 | 85.4 |
| 370. | 12.937 | 1.131 | 10.059 | 137.24 | 32.81 | 51.89 | 752.0 | 26.53 | 85.0 |
| 380. | 12.560 | 1.134 | 10.577 | 138.62 | 33.24 | 51.85 | 747.2 | 26.14 | 84.8 |
| 390. | 12.203 | 1.137 | 11.096 | 139.97 | 33.69 | 51.84 | 743.3 | 25.81 | 84.8 |
| 400. | 11.865 | 1.140 | 11.614 | 141.28 | 34.15 | 51.86 | 740.4 | 25.54 | 85.0 |
| 410. | 11.546 | 1.143 | 12.133 | 142.56 | 34.63 | 51.91 | 738.2 | | 85.3 |
| 420. | 11.244 | 1.146 | 12.653 | 143.81 | 35.12 | 51.99 | 736.7 | | 85.7 |
| 430. | 10.958 | 1.149 | 13.173 | 145.04 | 35.61 | 52.11 | 735.8 | | 86.2 |
| 440. | 10.687 | 1.151 | 13.695 | 146.24 | 36.12 | 52.25 | 735.4 | | 86.9 |
| 450. | 10.430 | 1.153 | 14.218 | 147.41 | 36.64 | 52.42 | 735.5 | | 87.6 |
| 460. | 10.185 | 1.155 | 14.743 | 148.57 | 37.16 | 52.61 | 736.0 | | 88.5 |
| 470. | 9.953 | 1.157 | 15.270 | 149.70 | 37.68 | 52.82 | 736.8 | | 89.4 |
| 480. | 9.732 | 1.159 | 15.800 | 150.82 | 38.20 | 53.05 | 738.0 | | 90.4 |
| 490. | 9.521 | 1.160 | 16.331 | 151.91 | 38.73 | 53.31 | 739.4 | | 91.5 |
| 500. | 9.320 | 1.161 | 16.866 | 152.99 | 39.25 | 53.57 | 741.1 | | 92.6 |
| 520. | 8.945 | 1.164 | 17.943 | 155.10 | 40.30 | 54.14 | 745.0 | | 95.0 |
| 540. | 8.601 | 1.165 | 19.032 | 157.16 | 41.33 | 54.76 | 749.6 | | 97.6 |
| 560. | 8.286 | 1.166 | 20.133 | 159.16 | 42.35 | 55.40 | 754.7 | | 100.4 |
| 580. | 7.995 | 1.167 | 21.248 | 161.12 | 43.35 | 56.06 | 760.2 | | 103.3 |
| 600. | 7.726 | 1.168 | 22.376 | 163.03 | 44.33 | 56.74 | 766.0 | | 106.3 |

METHANE ISOBAR AT P = 50.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 105. | 28.873 | 1.984 | -3.671 | 71.08 | 35.72 | 51.68 | 1718.6 | 242.56 | 236.6 |
| 110. | 28.562 | 1.914 | -3.413 | 73.49 | 35.44 | 51.72 | 1684.7 | 217.19 | 231.5 |
| 115. | 28.251 | 1.851 | -3.154 | 75.79 | 35.10 | 51.68 | 1651.8 | 195.05 | 226.3 |
| 120. | 27.940 | 1.794 | -2.896 | 77.99 | 34.75 | 51.62 | 1619.5 | 175.88 | 221.0 |
| 125. | 27.629 | 1.741 | -2.638 | 80.09 | 34.40 | 51.55 | 1587.8 | 159.34 | 215.6 |
| 130. | 27.317 | 1.693 | -2.380 | 82.11 | 34.06 | 51.49 | 1556.8 | 145.09 | 210.3 |
| 135. | 27.005 | 1.650 | -2.123 | 84.05 | 33.74 | 51.44 | 1526.3 | 132.82 | 204.9 |
| 140. | 26.693 | 1.609 | -1.866 | 85.92 | 33.44 | 51.40 | 1496.4 | 122.21 | 199.6 |
| 145. | 26.380 | 1.572 | -1.609 | 87.73 | 33.16 | 51.37 | 1467.1 | 113.02 | 194.4 |
| 150. | 26.066 | 1.538 | -1.352 | 89.47 | 32.89 | 51.36 | 1438.4 | 105.00 | 189.3 |
| 155. | 25.752 | 1.507 | -1.095 | 91.15 | 32.64 | 51.35 | 1410.3 | 97.98 | 184.2 |
| 160. | 25.438 | 1.478 | -0.839 | 92.78 | 32.40 | 51.36 | 1382.8 | 91.80 | 179.3 |
| 165. | 25.123 | 1.451 | -0.582 | 94.36 | 32.18 | 51.37 | 1356.0 | 86.32 | 174.5 |
| 170. | 24.807 | 1.426 | -0.325 | 95.90 | 31.97 | 51.39 | 1329.7 | 81.43 | 169.9 |
| 175. | 24.492 | 1.403 | -0.068 | 97.39 | 31.77 | 51.42 | 1304.2 | 77.06 | 165.3 |
| 180. | 24.175 | 1.382 | 0.189 | 98.84 | 31.58 | 51.45 | 1279.2 | 73.13 | 160.9 |
| 185. | 23.859 | 1.362 | 0.447 | 100.25 | 31.41 | 51.48 | 1254.9 | 69.57 | 156.7 |
| 190. | 23.542 | 1.344 | 0.704 | 101.62 | 31.25 | 51.52 | 1231.3 | 66.33 | 152.6 |
| 195. | 23.226 | 1.328 | 0.962 | 102.96 | 31.10 | 51.56 | 1208.3 | 63.38 | 148.6 |
| 200. | 22.909 | 1.312 | 1.220 | 104.26 | 30.96 | 51.60 | 1185.9 | 60.68 | 144.8 |
| 205. | 22.593 | 1.298 | 1.478 | 105.54 | 30.83 | 51.64 | 1164.2 | 58.21 | 141.2 |
| 210. | 22.278 | 1.285 | 1.736 | 106.78 | 30.72 | 51.68 | 1143.2 | 55.92 | 137.7 |
| 215. | 21.963 | 1.274 | 1.995 | 108.00 | 30.62 | 51.73 | 1122.9 | 53.82 | 134.3 |
| 220. | 21.649 | 1.263 | 2.254 | 109.19 | 30.53 | 51.76 | 1103.2 | 51.87 | 131.1 |
| 225. | 21.336 | 1.253 | 2.512 | 110.35 | 30.45 | 51.80 | 1084.2 | 50.06 | 128.0 |
| 230. | 21.025 | 1.244 | 2.772 | 111.49 | 30.39 | 51.84 | 1065.9 | 48.38 | 125.1 |
| 235. | 20.715 | 1.235 | 3.031 | 112.61 | 30.33 | 51.87 | 1048.2 | 46.82 | 122.3 |
| 240. | 20.407 | 1.228 | 3.290 | 113.70 | 30.29 | 51.90 | 1031.2 | 45.36 | 119.7 |
| 245. | 20.101 | 1.221 | 3.550 | 114.77 | 30.26 | 51.92 | 1014.9 | 44.01 | 117.2 |
| 250. | 19.798 | 1.215 | 3.809 | 115.82 | 30.25 | 51.95 | 999.3 | 42.74 | 114.8 |
| 255. | 19.497 | 1.210 | 4.069 | 116.85 | 30.24 | 51.96 | 984.3 | 41.56 | 112.5 |
| 260. | 19.200 | 1.205 | 4.329 | 117.86 | 30.25 | 51.98 | 970.0 | 40.45 | 110.4 |
| 265. | 18.905 | 1.200 | 4.589 | 118.85 | 30.27 | 51.98 | 956.3 | 39.42 | 108.5 |
| 270. | 18.614 | 1.197 | 4.849 | 119.82 | 30.30 | 51.99 | 943.3 | 38.45 | 106.6 |
| 275. | 18.327 | 1.193 | 5.109 | 120.77 | 30.34 | 51.98 | 930.9 | 37.54 | 104.8 |
| 280. | 18.044 | 1.190 | 5.369 | 121.71 | 30.39 | 51.98 | 919.2 | 36.70 | 103.2 |
| 285. | 17.764 | 1.188 | 5.629 | 122.63 | 30.45 | 51.97 | 908.0 | 35.90 | 101.7 |
| 290. | 17.489 | 1.186 | 5.888 | 123.53 | 30.53 | 51.96 | 897.5 | 35.16 | 100.3 |
| 295. | 17.219 | 1.184 | 6.148 | 124.42 | 30.61 | 51.94 | 887.5 | 34.46 | 99.0 |
| 300. | 16.953 | 1.182 | 6.408 | 125.30 | 30.71 | 51.92 | 878.0 | 33.81 | 97.8 |

METHANE ISOBAR AT P = 50.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 310. | 16.435 | 1.180 | 6.927 | 127.00 | 30.93 | 51.87 | 860.8 | 32.63 | 95.6 |
| 320. | 15.938 | 1.179 | 7.445 | 128.64 | 31.18 | 51.82 | 845.5 | 31.60 | 93.8 |
| 330. | 15.461 | 1.179 | 7.963 | 130.24 | 31.47 | 51.77 | 832.2 | 30.70 | 92.3 |
| 340. | 15.005 | 1.179 | 8.481 | 131.78 | 31.79 | 51.73 | 820.5 | 29.91 | 91.1 |
| 350. | 14.569 | 1.179 | 8.998 | 133.28 | 32.14 | 51.69 | 810.5 | 29.22 | 90.2 |
| 360. | 14.154 | 1.180 | 9.515 | 134.74 | 32.52 | 51.68 | 801.8 | 28.62 | 89.5 |
| 370. | 13.759 | 1.181 | 10.031 | 136.15 | 32.92 | 51.68 | 794.5 | 28.10 | 89.0 |
| 380. | 13.382 | 1.183 | 10.548 | 137.53 | 33.35 | 51.70 | 788.3 | 27.65 | 88.7 |
| 390. | 13.025 | 1.184 | 11.066 | 138.87 | 33.79 | 51.75 | 783.2 | 27.26 | 88.6 |
| 400. | 12.685 | 1.185 | 11.583 | 140.19 | 34.25 | 51.82 | 778.9 | 26.93 | 88.7 |
| 410. | 12.361 | 1.187 | 12.102 | 141.47 | 34.72 | 51.92 | 775.5 | | 88.9 |
| 420. | 12.054 | 1.188 | 12.622 | 142.72 | 35.21 | 52.04 | 772.9 | | 89.2 |
| 430. | 11.762 | 1.189 | 13.143 | 143.95 | 35.71 | 52.19 | 770.9 | | 89.6 |
| 440. | 11.483 | 1.190 | 13.666 | 145.15 | 36.21 | 52.36 | 769.5 | | 90.2 |
| 450. | 11.219 | 1.191 | 14.190 | 146.33 | 36.72 | 52.55 | 768.6 | | 90.9 |
| 460. | 10.966 | 1.192 | 14.717 | 147.48 | 37.24 | 52.76 | 768.1 | | 91.6 |
| 470. | 10.725 | 1.193 | 15.246 | 148.62 | 37.76 | 52.99 | 768.1 | | 92.5 |
| 480. | 10.495 | 1.194 | 15.777 | 149.74 | 38.28 | 53.24 | 768.4 | | 93.4 |
| 490. | 10.276 | 1.194 | 16.311 | 150.84 | 38.80 | 53.50 | 769.0 | | 94.4 |
| 500. | 10.066 | 1.195 | 16.847 | 151.92 | 39.32 | 53.78 | 770.0 | | 95.4 |
| 520. | 9.673 | 1.196 | 17.928 | 154.04 | 40.36 | 54.36 | 772.6 | | 97.7 |
| 540. | 9.312 | 1.196 | 19.021 | 156.11 | 41.40 | 54.98 | 776.0 | | 100.2 |
| 560. | 8.979 | 1.196 | 20.127 | 158.12 | 42.41 | 55.62 | 780.1 | | 102.8 |
| 580. | 8.672 | 1.196 | 21.246 | 160.08 | 43.41 | 56.28 | 784.6 | | 105.6 |
| 600. | 8.386 | 1.195 | 22.379 | 162.00 | 44.38 | 56.96 | 789.6 | | 108.5 |

METHANE ISOBAR AT P = 55.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 105. | 29.023 | 2.171 | -3.537 | 70.72 | 35.89 | 51.52 | 1742.5 | 257.43 | 240.4 |
| 110. | 28.720 | 2.094 | -3.279 | 73.11 | 35.62 | 51.54 | 1709.4 | 230.72 | 235.4 |
| 115. | 28.416 | 2.024 | -3.022 | 75.40 | 35.29 | 51.50 | 1677.3 | 207.27 | 230.3 |
| 120. | 28.113 | 1.961 | -2.764 | 77.59 | 34.94 | 51.42 | 1645.8 | 186.85 | 225.1 |
| 125. | 27.810 | 1.903 | -2.507 | 79.69 | 34.59 | 51.33 | 1615.1 | 169.19 | 219.8 |

METHANE ISOBAR AT P = 55.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 130. | 27.507 | 1.850 | -2.251 | 81.70 | 34.26 | 51.25 | 1584.9 | 153.94 | 214.5 |
| 135. | 27.204 | 1.801 | -1.995 | 83.64 | 33.94 | 51.18 | 1555.4 | 140.79 | 209.3 |
| 140. | 26.901 | 1.756 | -1.739 | 85.50 | 33.64 | 51.11 | 1526.4 | 129.43 | 204.1 |
| 145. | 26.598 | 1.715 | -1.484 | 87.29 | 33.35 | 51.06 | 1498.1 | 119.58 | 198.9 |
| 150. | 26.295 | 1.677 | -1.229 | 89.02 | 33.09 | 51.03 | 1470.4 | 111.00 | 193.9 |
| 155. | 25.992 | 1.642 | -0.974 | 90.69 | 32.83 | 51.00 | 1443.3 | 103.50 | 188.9 |
| 160. | 25.688 | 1.609 | -0.719 | 92.31 | 32.59 | 50.98 | 1416.8 | 96.90 | 184.1 |
| 165. | 25.385 | 1.579 | -0.464 | 93.88 | 32.37 | 50.97 | 1391.0 | 91.06 | 179.3 |
| 170. | 25.081 | 1.551 | -0.209 | 95.40 | 32.16 | 50.96 | 1365.8 | 85.87 | 174.7 |
| 175. | 24.778 | 1.526 | 0.046 | 96.88 | 31.96 | 50.96 | 1341.2 | 81.23 | 170.2 |
| 180. | 24.474 | 1.502 | 0.301 | 98.31 | 31.77 | 50.97 | 1317.2 | 77.07 | 165.9 |
| 185. | 24.171 | 1.479 | 0.556 | 99.71 | 31.59 | 50.98 | 1293.9 | 73.30 | 161.7 |
| 190. | 23.868 | 1.459 | 0.810 | 101.07 | 31.43 | 50.99 | 1271.1 | 69.89 | 157.6 |
| 195. | 23.565 | 1.440 | 1.065 | 102.39 | 31.28 | 51.00 | 1249.0 | 66.78 | 153.7 |
| 200. | 23.263 | 1.422 | 1.320 | 103.69 | 31.14 | 51.02 | 1227.5 | 63.94 | 149.9 |
| 205. | 22.961 | 1.405 | 1.576 | 104.95 | 31.01 | 51.04 | 1206.7 | 61.34 | 146.3 |
| 210. | 22.661 | 1.390 | 1.831 | 106.18 | 30.89 | 51.05 | 1186.4 | 58.95 | 142.8 |
| 215. | 22.361 | 1.376 | 2.086 | 107.38 | 30.79 | 51.07 | 1166.8 | 56.74 | 139.4 |
| 220. | 22.062 | 1.363 | 2.342 | 108.55 | 30.69 | 51.09 | 1147.8 | 54.70 | 136.2 |
| 225. | 21.765 | 1.351 | 2.597 | 109.70 | 30.61 | 51.11 | 1129.5 | 52.81 | 133.2 |
| 230. | 21.469 | 1.340 | 2.853 | 110.82 | 30.55 | 51.13 | 1111.7 | 51.05 | 130.2 |
| 235. | 21.175 | 1.329 | 3.108 | 111.92 | 30.49 | 51.15 | 1094.6 | 49.42 | 127.5 |
| 240. | 20.882 | 1.320 | 3.364 | 113.00 | 30.45 | 51.16 | 1078.1 | 47.90 | 124.8 |
| 245. | 20.592 | 1.311 | 3.620 | 114.06 | 30.41 | 51.18 | 1062.2 | 46.49 | 122.3 |
| 250. | 20.304 | 1.303 | 3.876 | 115.09 | 30.40 | 51.20 | 1046.9 | 45.16 | 119.9 |
| 255. | 20.019 | 1.296 | 4.132 | 116.10 | 30.39 | 51.21 | 1032.2 | 43.93 | 117.6 |
| 260. | 19.736 | 1.289 | 4.388 | 117.10 | 30.39 | 51.22 | 1018.1 | 42.77 | 115.5 |
| 265. | 19.457 | 1.283 | 4.644 | 118.07 | 30.41 | 51.23 | 1004.6 | 41.69 | 113.5 |
| 270. | 19.180 | 1.277 | 4.900 | 119.03 | 30.44 | 51.24 | 991.7 | 40.68 | 111.6 |
| 275. | 18.907 | 1.272 | 5.157 | 119.97 | 30.47 | 51.25 | 979.3 | 39.73 | 109.8 |
| 280. | 18.637 | 1.268 | 5.413 | 120.89 | 30.53 | 51.25 | 967.5 | 38.84 | 108.1 |
| 285. | 18.371 | 1.263 | 5.669 | 121.80 | 30.59 | 51.26 | 956.3 | 38.00 | 106.5 |
| 290. | 18.108 | 1.260 | 5.925 | 122.69 | 30.66 | 51.26 | 945.6 | 37.22 | 105.1 |
| 295. | 17.850 | 1.256 | 6.182 | 123.57 | 30.74 | 51.26 | 935.4 | 36.48 | 103.7 |
| 300. | 17.595 | 1.253 | 6.438 | 124.43 | 30.83 | 51.26 | 925.8 | 35.80 | 102.4 |
| 310. | 17.099 | 1.248 | 6.951 | 126.11 | 31.05 | 51.27 | 907.9 | 34.54 | 100.2 |
| 320. | 16.620 | 1.244 | 7.463 | 127.74 | 31.30 | 51.27 | 891.9 | 33.44 | 98.3 |
| 330. | 16.158 | 1.241 | 7.976 | 129.32 | 31.59 | 51.28 | 877.7 | 32.47 | 96.7 |
| 340. | 15.715 | 1.238 | 8.489 | 130.85 | 31.91 | 51.30 | 865.1 | 31.61 | 95.4 |
| 350. | 15.289 | 1.236 | 9.002 | 132.34 | 32.25 | 51.33 | 854.0 | 30.86 | 94.3 |

METHANE ISOBAR AT P = 55.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 360. | 14.882 | 1.235 | 9.516 | 133.78 | 32.63 | 51.38 | 844.3 | 30.20 | 93.5 |
| 370. | 14.492 | 1.234 | 10.030 | 135.19 | 33.03 | 51.44 | 835.8 | 29.62 | 92.9 |
| 380. | 14.120 | 1.233 | 10.545 | 136.56 | 33.45 | 51.52 | 828.5 | 29.11 | 92.5 |
| 390. | 13.764 | 1.232 | 11.060 | 137.90 | 33.89 | 51.61 | 822.3 | 28.67 | 92.3 |
| 400. | 13.424 | 1.232 | 11.577 | 139.21 | 34.34 | 51.73 | 817.0 | 28.29 | 92.2 |
| 410. | 13.100 | 1.232 | 12.095 | 140.49 | 34.81 | 51.87 | 812.5 | | 92.3 |
| 420. | 12.790 | 1.231 | 12.614 | 141.74 | 35.30 | 52.03 | 808.8 | | 92.6 |
| 430. | 12.494 | 1.231 | 13.136 | 142.97 | 35.79 | 52.21 | 805.8 | | 92.9 |
| 440. | 12.212 | 1.231 | 13.659 | 144.17 | 36.29 | 52.41 | 803.5 | | 93.4 |
| 450. | 11.942 | 1.231 | 14.184 | 145.35 | 36.80 | 52.62 | 801.7 | | 94.0 |
| 460. | 11.684 | 1.231 | 14.711 | 146.51 | 37.31 | 52.85 | 800.4 | | 94.7 |
| 470. | 11.438 | 1.231 | 15.241 | 147.65 | 37.83 | 53.10 | 799.5 | | 95.4 |
| 480. | 11.202 | 1.230 | 15.773 | 148.77 | 38.35 | 53.36 | 799.0 | | 96.3 |
| 490. | 10.976 | 1.230 | 16.308 | 149.87 | 38.87 | 53.63 | 799.0 | | 97.2 |
| 500. | 10.759 | 1.230 | 16.846 | 150.96 | 39.39 | 53.92 | 799.2 | | 98.2 |
| 520. | 10.352 | 1.229 | 17.930 | 153.09 | 40.43 | 54.52 | 800.5 | | 100.3 |
| 540. | 9.977 | 1.228 | 19.027 | 155.16 | 41.45 | 55.15 | 802.8 | | 102.7 |
| 560. | 9.630 | 1.227 | 20.136 | 157.17 | 42.46 | 55.80 | 805.8 | | 105.2 |
| 580. | 9.309 | 1.225 | 21.259 | 159.14 | 43.46 | 56.46 | 809.5 | | 107.9 |
| 600. | 9.010 | 1.224 | 22.395 | 161.07 | 44.43 | 57.14 | 813.6 | | 110.8 |

METHANE ISOBAR AT P = 60.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 110. | 28.871 | 2.272 | -3.145 | 72.75 | 35.79 | 51.39 | 1733.2 | | 239.3 |
| 115. | 28.575 | 2.196 | -2.889 | 75.03 | 35.47 | 51.33 | 1701.8 | | 234.3 |
| 120. | 28.279 | 2.127 | -2.632 | 77.22 | 35.12 | 51.23 | 1671.2 | | 229.1 |
| 125. | 27.983 | 2.063 | -2.376 | 79.31 | 34.78 | 51.13 | 1641.2 | | 223.9 |
| 130. | 27.688 | 2.005 | -2.121 | 81.31 | 34.45 | 51.03 | 1611.9 | | 218.7 |
| 135. | 27.394 | 1.951 | -1.866 | 83.23 | 34.13 | 50.94 | 1583.2 | | 213.6 |
| 140. | 27.099 | 1.902 | -1.611 | 85.09 | 33.83 | 50.86 | 1555.2 | | 208.4 |
| 145. | 26.805 | 1.857 | -1.357 | 86.87 | 33.54 | 50.80 | 1527.7 | | 203.4 |
| 150. | 26.511 | 1.815 | -1.103 | 88.59 | 33.27 | 50.74 | 1500.9 | | 198.4 |
| 155. | 26.218 | 1.776 | -0.850 | 90.25 | 33.02 | 50.69 | 1474.7 | | 193.5 |

METHANE ISOBAR AT P = 60.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 160. | 25.924 | 1.740 | -0.597 | 91.86 | 32.78 | 50.65 | 1449.2 | | 188.7 |
| 165. | 25.631 | 1.706 | -0.343 | 93.42 | 32.55 | 50.62 | 1424.2 | | 184.0 |
| 170. | 25.338 | 1.675 | -0.090 | 94.93 | 32.34 | 50.59 | 1399.9 | | 179.4 |
| 175. | 25.045 | 1.646 | 0.163 | 96.40 | 32.13 | 50.57 | 1376.2 | | 175.0 |
| 180. | 24.753 | 1.620 | 0.415 | 97.82 | 31.94 | 50.56 | 1353.1 | | 170.7 |
| 185. | 24.461 | 1.595 | 0.668 | 99.21 | 31.77 | 50.55 | 1330.6 | | 166.5 |
| 190. | 24.170 | 1.571 | 0.921 | 100.55 | 31.60 | 50.54 | 1308.6 | | 162.5 |
| 195. | 23.879 | 1.550 | 1.174 | 101.87 | 31.45 | 50.53 | 1287.3 | | 158.6 |
| 200. | 23.589 | 1.530 | 1.426 | 103.15 | 31.30 | 50.53 | 1266.6 | | 154.8 |
| 205. | 23.300 | 1.511 | 1.679 | 104.39 | 31.17 | 50.53 | 1246.5 | | 151.2 |
| 210. | 23.011 | 1.493 | 1.931 | 105.61 | 31.05 | 50.53 | 1226.9 | | 147.7 |
| 215. | 22.724 | 1.477 | 2.184 | 106.80 | 30.95 | 50.53 | 1208.0 | | 144.4 |
| 220. | 22.439 | 1.462 | 2.437 | 107.96 | 30.85 | 50.54 | 1189.6 | | 141.2 |
| 225. | 22.154 | 1.448 | 2.689 | 109.10 | 30.77 | 50.54 | 1171.8 | | 138.1 |
| 230. | 21.872 | 1.435 | 2.942 | 110.21 | 30.70 | 50.55 | 1154.6 | | 135.2 |
| 235. | 21.591 | 1.422 | 3.195 | 111.30 | 30.64 | 50.55 | 1137.9 | | 132.4 |
| 240. | 21.312 | 1.411 | 3.448 | 112.36 | 30.59 | 50.56 | 1121.8 | | 129.7 |
| 245. | 21.035 | 1.400 | 3.701 | 113.40 | 30.56 | 50.57 | 1106.3 | | 127.2 |
| 250. | 20.760 | 1.390 | 3.953 | 114.43 | 30.54 | 50.58 | 1091.3 | | 124.8 |
| 255. | 20.487 | 1.381 | 4.206 | 115.43 | 30.53 | 50.59 | 1076.9 | | 122.5 |
| 260. | 20.217 | 1.373 | 4.459 | 116.41 | 30.53 | 50.60 | 1063.0 | | 120.3 |
| 265. | 19.950 | 1.365 | 4.712 | 117.37 | 30.54 | 50.61 | 1049.7 | | 118.3 |
| 270. | 19.686 | 1.358 | 4.965 | 118.32 | 30.57 | 50.62 | 1036.9 | | 116.3 |
| 275. | 19.425 | 1.351 | 5.219 | 119.25 | 30.61 | 50.64 | 1024.6 | | 114.5 |
| 280. | 19.166 | 1.345 | 5.472 | 120.16 | 30.65 | 50.65 | 1012.9 | | 112.8 |
| 285. | 18.911 | 1.339 | 5.725 | 121.06 | 30.71 | 50.66 | 1001.6 | | 111.2 |
| 290. | 18.660 | 1.334 | 5.978 | 121.94 | 30.78 | 50.68 | 990.8 | | 109.7 |
| 295. | 18.412 | 1.329 | 6.232 | 122.81 | 30.86 | 50.69 | 980.6 | | 108.2 |
| 300. | 18.167 | 1.324 | 6.485 | 123.66 | 30.95 | 50.71 | 970.7 | | 106.9 |
| 310. | 17.689 | 1.316 | 6.993 | 125.32 | 31.16 | 50.75 | 952.5 | | 104.6 |
| 320. | 17.227 | 1.309 | 7.500 | 126.93 | 31.41 | 50.79 | 936.0 | | 102.5 |
| 330. | 16.780 | 1.303 | 8.009 | 128.50 | 31.70 | 50.85 | 921.1 | | 100.8 |
| 340. | 16.349 | 1.298 | 8.517 | 130.02 | 32.01 | 50.91 | 907.7 | | 99.4 |
| 350. | 15.934 | 1.294 | 9.027 | 131.49 | 32.36 | 50.99 | 895.8 | | 98.2 |
| 360. | 15.536 | 1.290 | 9.537 | 132.93 | 32.73 | 51.08 | 885.2 | | 97.3 |
| 370. | 15.153 | 1.287 | 10.049 | 134.33 | 33.12 | 51.19 | 875.9 | | 96.6 |
| 380. | 14.785 | 1.284 | 10.561 | 135.70 | 33.54 | 51.31 | 867.7 | | 96.1 |
| 390. | 14.433 | 1.282 | 11.075 | 137.03 | 33.98 | 51.45 | 860.5 | | 95.8 |
| 400. | 14.095 | 1.280 | 11.590 | 138.34 | 34.43 | 51.61 | 854.2 | | 95.7 |
| 410. | 13.771 | 1.278 | 12.107 | 139.61 | 34.90 | 51.78 | 848.9 | | 95.7 |

METHANE ISOBAR AT P = 60.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 420. | 13.462 | 1.276 | 12.626 | 140.86 | 35.38 | 51.97 | 844.3 | | 95.8 |
| 430. | 13.165 | 1.275 | 13.147 | 142.09 | 35.87 | 52.18 | 840.4 | | 96.1 |
| 440. | 12.880 | 1.273 | 13.670 | 143.29 | 36.37 | 52.40 | 837.2 | | 96.5 |
| 450. | 12.608 | 1.272 | 14.195 | 144.47 | 36.87 | 52.64 | 834.6 | | 97.0 |
| 460. | 12.347 | 1.271 | 14.722 | 145.63 | 37.38 | 52.89 | 832.5 | | 97.6 |
| 470. | 12.096 | 1.269 | 15.253 | 146.77 | 37.90 | 53.16 | 830.9 | | 98.3 |
| 480. | 11.856 | 1.268 | 15.786 | 147.89 | 38.41 | 53.43 | 829.7 | | 99.1 |
| 490. | 11.625 | 1.267 | 16.321 | 149.00 | 38.93 | 53.72 | 828.9 | | 100.0 |
| 500. | 11.404 | 1.266 | 16.860 | 150.09 | 39.45 | 54.02 | 828.5 | | 100.9 |
| 520. | 10.986 | 1.263 | 17.946 | 152.22 | 40.48 | 54.63 | 828.6 | | 102.9 |
| 540. | 10.600 | 1.261 | 19.045 | 154.29 | 41.50 | 55.28 | 829.8 | | 105.2 |
| 560. | 10.242 | 1.258 | 20.158 | 156.31 | 42.51 | 55.93 | 831.8 | | 107.6 |
| 580. | 9.909 | 1.256 | 21.283 | 158.29 | 43.50 | 56.61 | 834.5 | | 110.2 |
| 600. | 9.598 | 1.253 | 22.422 | 160.22 | 44.47 | 57.28 | 837.9 | | 112.9 |

METHANE ISOBAR AT P = 65.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 110. | 29.018 | 2.449 | -3.011 | 72.40 | 35.96 | 51.25 | 1756.1 | | 243.0 |
| 115. | 28.728 | 2.366 | -2.755 | 74.68 | 35.64 | 51.18 | 1725.5 | | 238.1 |
| 120. | 28.439 | 2.291 | -2.499 | 76.85 | 35.30 | 51.07 | 1695.6 | | 233.1 |
| 125. | 28.150 | 2.222 | -2.244 | 78.94 | 34.96 | 50.96 | 1666.4 | | 228.0 |
| 130. | 27.863 | 2.158 | -1.990 | 80.93 | 34.63 | 50.84 | 1637.9 | | 222.9 |
| 135. | 27.575 | 2.100 | -1.736 | 82.85 | 34.31 | 50.74 | 1610.0 | | 217.8 |
| 140. | 27.289 | 2.046 | -1.482 | 84.69 | 34.01 | 50.64 | 1582.7 | | 212.7 |
| 145. | 27.003 | 1.997 | -1.229 | 86.47 | 33.72 | 50.56 | 1556.1 | | 207.7 |
| 150. | 26.717 | 1.951 | -0.977 | 88.18 | 33.45 | 50.49 | 1530.1 | | 202.8 |
| 155. | 26.432 | 1.908 | -0.725 | 89.84 | 33.19 | 50.42 | 1504.8 | | 197.9 |
| 160. | 26.147 | 1.869 | -0.473 | 91.44 | 32.95 | 50.36 | 1480.0 | | 193.2 |
| 165. | 25.863 | 1.832 | -0.221 | 92.99 | 32.72 | 50.32 | 1455.9 | | 188.5 |
| 170. | 25.580 | 1.798 | 0.031 | 94.49 | 32.51 | 50.27 | 1432.4 | | 184.0 |
| 175. | 25.296 | 1.766 | 0.282 | 95.94 | 32.30 | 50.24 | 1409.5 | | 179.6 |
| 180. | 25.014 | 1.736 | 0.533 | 97.36 | 32.11 | 50.20 | 1387.1 | | 175.3 |
| 185. | 24.732 | 1.709 | 0.784 | 98.73 | 31.93 | 50.18 | 1365.4 | | 171.2 |
| 190. | 24.451 | 1.683 | 1.035 | 100.07 | 31.76 | 50.15 | 1344.2 | | 167.2 |
| 195. | 24.171 | 1.659 | 1.285 | 101.37 | 31.61 | 50.13 | 1323.6 | | 163.3 |
| 200. | 23.891 | 1.636 | 1.536 | 102.64 | 31.46 | 50.11 | 1303.5 | | 159.6 |
| 205. | 23.613 | 1.615 | 1.787 | 103.88 | 31.33 | 50.10 | 1284.0 | | 155.9 |

METHANE ISOBAR AT P = 65.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 210. | 23.336 | 1.595 | 2.037 | 105.09 | 31.21 | 50.09 | 1265.1 | | 152.5 |
| 215. | 23.060 | 1.577 | 2.287 | 106.27 | 31.10 | 50.08 | 1246.7 | | 149.1 |
| 220. | 22.785 | 1.560 | 2.538 | 107.42 | 31.00 | 50.07 | 1228.9 | | 145.9 |
| 225. | 22.512 | 1.543 | 2.788 | 108.54 | 30.92 | 50.06 | 1211.6 | | 142.9 |
| 230. | 22.241 | 1.528 | 3.038 | 109.64 | 30.84 | 50.06 | 1194.9 | | 139.9 |
| 235. | 21.971 | 1.514 | 3.289 | 110.72 | 30.78 | 50.06 | 1178.6 | | 137.1 |
| 240. | 21.703 | 1.501 | 3.539 | 111.77 | 30.73 | 50.06 | 1162.9 | | 134.4 |
| 245. | 21.438 | 1.488 | 3.789 | 112.80 | 30.70 | 50.06 | 1147.8 | | 131.9 |
| 250. | 21.174 | 1.477 | 4.040 | 113.82 | 30.67 | 50.07 | 1133.1 | | 129.4 |
| 255. | 20.913 | 1.466 | 4.290 | 114.81 | 30.66 | 50.07 | 1119.0 | | 127.1 |
| 260. | 20.654 | 1.456 | 4.540 | 115.78 | 30.66 | 50.08 | 1105.3 | | 124.9 |
| 265. | 20.397 | 1.446 | 4.791 | 116.73 | 30.67 | 50.09 | 1092.2 | | 122.9 |
| 270. | 20.144 | 1.437 | 5.041 | 117.67 | 30.69 | 50.11 | 1079.5 | | 120.9 |
| 275. | 19.893 | 1.429 | 5.292 | 118.59 | 30.73 | 50.12 | 1067.3 | | 119.0 |
| 280. | 19.645 | 1.421 | 5.542 | 119.49 | 30.77 | 50.14 | 1055.6 | | 117.3 |
| 285. | 19.399 | 1.414 | 5.793 | 120.38 | 30.83 | 50.16 | 1044.4 | | 115.6 |
| 290. | 19.157 | 1.407 | 6.044 | 121.25 | 30.90 | 50.19 | 1033.6 | | 114.1 |
| 295. | 18.918 | 1.401 | 6.295 | 122.11 | 30.98 | 50.21 | 1023.2 | | 112.6 |
| 300. | 18.683 | 1.395 | 6.546 | 122.96 | 31.07 | 50.24 | 1013.3 | | 111.2 |
| 310. | 18.222 | 1.384 | 7.049 | 124.60 | 31.27 | 50.30 | 994.8 | | 108.8 |
| 320. | 17.774 | 1.374 | 7.552 | 126.20 | 31.52 | 50.38 | 977.9 | | 106.7 |
| 330. | 17.341 | 1.366 | 8.056 | 127.75 | 31.80 | 50.46 | 962.5 | | 104.8 |
| 340. | 16.922 | 1.359 | 8.562 | 129.26 | 32.11 | 50.56 | 948.6 | | 103.3 |
| 350. | 16.517 | 1.352 | 9.068 | 130.73 | 32.45 | 50.68 | 936.0 | | 102.1 |
| 360. | 16.127 | 1.347 | 9.575 | 132.16 | 32.82 | 50.81 | 924.7 | | 101.0 |
| 370. | 15.751 | 1.341 | 10.084 | 133.55 | 33.21 | 50.95 | 914.6 | | 100.2 |
| 380. | 15.390 | 1.337 | 10.594 | 134.91 | 33.63 | 51.11 | 905.6 | | 99.6 |
| 390. | 15.042 | 1.333 | 11.106 | 136.24 | 34.06 | 51.28 | 897.7 | | 99.2 |
| 400. | 14.707 | 1.329 | 11.620 | 137.54 | 34.51 | 51.47 | 890.6 | | 99.0 |
| 410. | 14.386 | 1.325 | 12.136 | 138.82 | 34.97 | 51.67 | 884.5 | | 98.9 |
| 420. | 14.077 | 1.322 | 12.653 | 140.06 | 35.45 | 51.89 | 879.1 | | 99.0 |
| 430. | 13.781 | 1.319 | 13.173 | 141.29 | 35.94 | 52.12 | 874.5 | | 99.2 |
| 440. | 13.496 | 1.317 | 13.696 | 142.49 | 36.44 | 52.37 | 870.5 | | 99.5 |
| 450. | 13.222 | 1.314 | 14.221 | 143.67 | 36.94 | 52.63 | 867.1 | | 100.0 |
| 460. | 12.959 | 1.311 | 14.748 | 144.83 | 37.45 | 52.90 | 864.3 | | 100.5 |
| 470. | 12.706 | 1.309 | 15.279 | 145.97 | 37.96 | 53.18 | 862.0 | | 101.1 |
| 480. | 12.463 | 1.307 | 15.812 | 147.09 | 38.47 | 53.47 | 860.2 | | 101.8 |
| 490. | 12.229 | 1.305 | 16.348 | 148.20 | 38.99 | 53.77 | 858.8 | | 102.6 |
| 500. | 12.004 | 1.302 | 16.887 | 149.29 | 39.50 | 54.08 | 857.7 | | 103.5 |
| 520. | 11.579 | 1.298 | 17.975 | 151.42 | 40.53 | 54.71 | 856.7 | | 105.4 |

METHANE ISOBAR AT P = 65.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 540. | 11.184 | 1.294 | 19.076 | 153.50 | 41.55 | 55.37 | 856.8 | | 107.6 |
| 560. | 10.817 | 1.291 | 20.190 | 155.52 | 42.56 | 56.04 | 857.9 | | 109.9 |
| 580. | 10.474 | 1.287 | 21.318 | 157.50 | 43.54 | 56.72 | 859.7 | | 112.4 |
| 600. | 10.154 | 1.283 | 22.459 | 159.44 | 44.51 | 57.40 | 862.3 | | 115.1 |

METHANE ISOBAR AT P = 70.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 110. | 29.159 | 2.625 | -2.877 | 72.06 | 36.13 | 51.13 | 1778.4 | | 246.7 |
| 115. | 28.876 | 2.535 | -2.621 | 74.33 | 35.81 | 51.05 | 1748.4 | | 241.9 |
| 120. | 28.593 | 2.454 | -2.366 | 76.50 | 35.47 | 50.93 | 1719.2 | | 237.0 |
| 125. | 28.311 | 2.379 | -2.112 | 78.58 | 35.13 | 50.80 | 1690.7 | | 231.9 |
| 130. | 28.030 | 2.310 | -1.858 | 80.57 | 34.80 | 50.68 | 1662.9 | | 226.9 |
| 135. | 27.750 | 2.247 | -1.605 | 82.48 | 34.48 | 50.56 | 1635.8 | | 221.9 |
| 140. | 27.470 | 2.189 | -1.353 | 84.32 | 34.18 | 50.45 | 1609.3 | | 216.9 |
| 145. | 27.192 | 2.135 | -1.101 | 86.09 | 33.89 | 50.35 | 1583.4 | | 211.9 |
| 150. | 26.914 | 2.085 | -0.849 | 87.79 | 33.62 | 50.26 | 1558.2 | | 207.0 |
| 155. | 26.636 | 2.039 | -0.598 | 89.44 | 33.36 | 50.18 | 1533.6 | | 202.2 |
| 160. | 26.360 | 1.996 | -0.347 | 91.03 | 33.12 | 50.11 | 1509.6 | | 197.5 |
| 165. | 26.084 | 1.956 | -0.097 | 92.57 | 32.89 | 50.05 | 1486.2 | | 192.9 |
| 170. | 25.808 | 1.919 | 0.153 | 94.06 | 32.67 | 49.99 | 1463.4 | | 188.5 |
| 175. | 25.534 | 1.884 | 0.403 | 95.51 | 32.46 | 49.94 | 1441.2 | | 184.1 |
| 180. | 25.260 | 1.852 | 0.653 | 96.92 | 32.27 | 49.90 | 1419.6 | | 179.8 |
| 185. | 24.987 | 1.821 | 0.902 | 98.29 | 32.09 | 49.86 | 1398.5 | | 175.7 |
| 190. | 24.715 | 1.793 | 1.151 | 99.61 | 31.92 | 49.82 | 1378.0 | | 171.7 |
| 195. | 24.444 | 1.766 | 1.400 | 100.91 | 31.76 | 49.79 | 1358.0 | | 167.9 |
| 200. | 24.174 | 1.741 | 1.649 | 102.17 | 31.61 | 49.76 | 1338.6 | | 164.1 |
| 205. | 23.905 | 1.718 | 1.898 | 103.40 | 31.48 | 49.73 | 1319.7 | | 160.5 |
| 210. | 23.638 | 1.696 | 2.146 | 104.59 | 31.35 | 49.71 | 1301.4 | | 157.1 |
| 215. | 23.372 | 1.675 | 2.395 | 105.76 | 31.24 | 49.69 | 1283.5 | | 153.7 |
| 220. | 23.107 | 1.656 | 2.643 | 106.91 | 31.14 | 49.67 | 1266.2 | | 150.5 |
| 225. | 22.843 | 1.638 | 2.892 | 108.02 | 31.05 | 49.65 | 1249.4 | | 147.5 |
| 230. | 22.582 | 1.621 | 3.140 | 109.11 | 30.98 | 49.64 | 1233.0 | | 144.5 |
| 235. | 22.322 | 1.605 | 3.388 | 110.18 | 30.91 | 49.64 | 1217.2 | | 141.7 |
| 240. | 22.064 | 1.590 | 3.636 | 111.23 | 30.86 | 49.63 | 1201.9 | | 139.0 |
| 245. | 21.808 | 1.576 | 3.884 | 112.25 | 30.82 | 49.63 | 1187.0 | | 136.4 |
| 250. | 21.554 | 1.562 | 4.132 | 113.25 | 30.80 | 49.63 | 1172.6 | | 134.0 |
| 255. | 21.303 | 1.550 | 4.381 | 114.23 | 30.78 | 49.64 | 1158.7 | | 131.6 |

METHANE ISOBAR AT P = 70.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 260. | 21.053 | 1.538 | 4.629 | 115.20 | 30.78 | 49.64 | 1145.3 | | 129.4 |
| 265. | 20.806 | 1.527 | 4.877 | 116.14 | 30.79 | 49.66 | 1132.3 | | 127.3 |
| 270. | 20.562 | 1.516 | 5.125 | 117.07 | 30.81 | 49.67 | 1119.8 | | 125.3 |
| 275. | 20.320 | 1.507 | 5.374 | 117.98 | 30.84 | 49.69 | 1107.7 | | 123.4 |
| 280. | 20.081 | 1.497 | 5.622 | 118.88 | 30.89 | 49.71 | 1096.1 | | 121.6 |
| 285. | 19.844 | 1.489 | 5.871 | 119.76 | 30.94 | 49.74 | 1084.9 | | 119.9 |
| 290. | 19.610 | 1.480 | 6.120 | 120.62 | 31.01 | 49.76 | 1074.1 | | 118.3 |
| 295. | 19.380 | 1.473 | 6.369 | 121.48 | 31.09 | 49.80 | 1063.8 | | 116.8 |
| 300. | 19.152 | 1.465 | 6.618 | 122.31 | 31.17 | 49.83 | 1053.8 | | 115.4 |
| 310. | 18.706 | 1.452 | 7.116 | 123.95 | 31.38 | 49.92 | 1035.1 | | 112.9 |
| 320. | 18.272 | 1.440 | 7.616 | 125.53 | 31.62 | 50.01 | 1017.9 | | 110.6 |
| 330. | 17.851 | 1.429 | 8.117 | 127.08 | 31.89 | 50.12 | 1002.1 | | 108.7 |
| 340. | 17.443 | 1.420 | 8.619 | 128.57 | 32.20 | 50.25 | 987.7 | | 107.1 |
| 350. | 17.048 | 1.411 | 9.122 | 130.03 | 32.54 | 50.39 | 974.7 | | 105.8 |
| 360. | 16.667 | 1.403 | 9.626 | 131.45 | 32.91 | 50.55 | 962.8 | | 104.6 |
| 370. | 16.298 | 1.396 | 10.133 | 132.84 | 33.29 | 50.72 | 952.1 | | 103.8 |
| 380. | 15.943 | 1.390 | 10.641 | 134.20 | 33.71 | 50.91 | 942.5 | | 103.1 |
| 390. | 15.600 | 1.384 | 11.151 | 135.52 | 34.14 | 51.11 | 933.8 | | 102.6 |
| 400. | 15.269 | 1.378 | 11.663 | 136.82 | 34.58 | 51.32 | 926.1 | | 102.3 |
| 410. | 14.951 | 1.373 | 12.177 | 138.09 | 35.05 | 51.55 | 919.2 | | 102.1 |
| 420. | 14.644 | 1.369 | 12.694 | 139.33 | 35.52 | 51.79 | 913.2 | | 102.1 |
| 430. | 14.349 | 1.364 | 13.213 | 140.55 | 36.01 | 52.05 | 907.9 | | 102.2 |
| 440. | 14.065 | 1.360 | 13.735 | 141.75 | 36.50 | 52.32 | 903.2 | | 102.5 |
| 450. | 13.791 | 1.357 | 14.260 | 142.93 | 37.00 | 52.59 | 899.2 | | 102.8 |
| 460. | 13.527 | 1.353 | 14.787 | 144.09 | 37.51 | 52.88 | 895.7 | | 103.3 |
| 470. | 13.273 | 1.350 | 15.317 | 145.23 | 38.02 | 53.18 | 892.8 | | 103.9 |
| 480. | 13.028 | 1.346 | 15.851 | 146.36 | 38.53 | 53.48 | 890.4 | | 104.5 |
| 490. | 12.792 | 1.343 | 16.387 | 147.46 | 39.04 | 53.80 | 888.4 | | 105.3 |
| 500. | 12.565 | 1.340 | 16.927 | 148.55 | 39.56 | 54.12 | 886.8 | | 106.1 |
| 520. | 12.134 | 1.334 | 18.015 | 150.69 | 40.58 | 54.77 | 884.6 | | 107.9 |
| 540. | 11.733 | 1.329 | 19.117 | 152.77 | 41.60 | 55.44 | 883.8 | | 109.9 |
| 560. | 11.358 | 1.324 | 20.233 | 154.79 | 42.60 | 56.12 | 883.9 | | 112.2 |
| 580. | 11.008 | 1.319 | 21.362 | 156.78 | 43.58 | 56.81 | 885.0 | | 114.6 |
| 600. | 10.680 | 1.314 | 22.506 | 158.71 | 44.54 | 57.50 | 886.7 | | 117.2 |

METHANE ISOBAR AT P = 75.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 110. | 29.297 | 2.799 | -2.742 | 71.73 | 36.29 | 51.02 | 1799.9 | | 250.4 |
| 115. | 29.019 | 2.703 | -2.487 | 74.00 | 35.98 | 50.93 | 1770.6 | | 245.6 |
| 120. | 28.742 | 2.615 | -2.233 | 76.16 | 35.64 | 50.80 | 1742.0 | | 240.8 |
| 125. | 28.466 | 2.535 | -1.979 | 78.23 | 35.30 | 50.66 | 1714.2 | | 235.8 |
| 130. | 28.191 | 2.461 | -1.726 | 80.22 | 34.97 | 50.53 | 1687.1 | | 230.9 |
| 135. | 27.917 | 2.393 | -1.474 | 82.12 | 34.65 | 50.40 | 1660.7 | | 225.9 |
| 140. | 27.644 | 2.331 | -1.222 | 83.95 | 34.35 | 50.27 | 1634.9 | | 220.9 |
| 145. | 27.372 | 2.273 | -0.971 | 85.72 | 34.06 | 50.17 | 1609.7 | | 216.1 |
| 150. | 27.101 | 2.219 | -0.720 | 87.41 | 33.78 | 50.07 | 1585.2 | | 211.2 |
| 155. | 26.831 | 2.169 | -0.470 | 89.05 | 33.52 | 49.97 | 1561.3 | | 206.5 |
| 160. | 26.562 | 2.123 | -0.221 | 90.64 | 33.28 | 49.89 | 1538.0 | | 201.8 |
| 165. | 26.293 | 2.079 | 0.029 | 92.17 | 33.05 | 49.82 | 1515.3 | | 197.3 |
| 170. | 26.025 | 2.039 | 0.278 | 93.66 | 32.82 | 49.75 | 1493.2 | | 192.8 |
| 175. | 25.759 | 2.001 | 0.526 | 95.10 | 32.62 | 49.69 | 1471.7 | | 188.5 |
| 180. | 25.493 | 1.966 | 0.774 | 96.50 | 32.42 | 49.63 | 1450.7 | | 184.2 |
| 185. | 25.228 | 1.933 | 1.022 | 97.86 | 32.24 | 49.58 | 1430.3 | | 180.1 |
| 190. | 24.964 | 1.902 | 1.270 | 99.18 | 32.06 | 49.53 | 1410.3 | | 176.2 |
| 195. | 24.701 | 1.873 | 1.518 | 100.47 | 31.90 | 49.49 | 1391.0 | | 172.3 |
| 200. | 24.440 | 1.845 | 1.765 | 101.72 | 31.75 | 49.45 | 1372.1 | | 168.6 |
| 205. | 24.179 | 1.820 | 2.012 | 102.94 | 31.61 | 49.41 | 1353.8 | | 165.0 |
| 210. | 23.920 | 1.796 | 2.259 | 104.13 | 31.49 | 49.38 | 1335.9 | | 161.5 |
| 215. | 23.663 | 1.773 | 2.506 | 105.29 | 31.37 | 49.35 | 1318.5 | | 158.2 |
| 220. | 23.407 | 1.752 | 2.753 | 106.43 | 31.27 | 49.32 | 1301.7 | | 155.0 |
| 225. | 23.152 | 1.732 | 2.999 | 107.53 | 31.18 | 49.30 | 1285.3 | | 151.9 |
| 230. | 22.899 | 1.713 | 3.246 | 108.62 | 31.11 | 49.29 | 1269.3 | | 149.0 |
| 235. | 22.648 | 1.695 | 3.492 | 109.68 | 31.04 | 49.27 | 1253.9 | | 146.1 |
| 240. | 22.399 | 1.678 | 3.738 | 110.71 | 30.99 | 49.26 | 1238.9 | | 143.4 |
| 245. | 22.151 | 1.662 | 3.985 | 111.73 | 30.95 | 49.26 | 1224.3 | | 140.8 |
| 250. | 21.906 | 1.647 | 4.231 | 112.73 | 30.92 | 49.26 | 1210.2 | | 138.3 |
| 255. | 21.663 | 1.633 | 4.477 | 113.70 | 30.90 | 49.26 | 1196.6 | | 136.0 |
| 260. | 21.422 | 1.620 | 4.724 | 114.66 | 30.90 | 49.27 | 1183.4 | | 133.7 |
| 265. | 21.183 | 1.607 | 4.970 | 115.60 | 30.90 | 49.28 | 1170.6 | | 131.6 |
| 270. | 20.947 | 1.595 | 5.216 | 116.52 | 30.92 | 49.29 | 1158.2 | | 129.6 |
| 275. | 20.713 | 1.584 | 5.463 | 117.42 | 30.95 | 49.32 | 1146.2 | | 127.6 |
| 280. | 20.481 | 1.573 | 5.710 | 118.31 | 31.00 | 49.34 | 1134.7 | | 125.8 |
| 285. | 20.253 | 1.563 | 5.956 | 119.18 | 31.05 | 49.37 | 1123.5 | | 124.1 |
| 290. | 20.027 | 1.553 | 6.203 | 120.04 | 31.11 | 49.40 | 1112.8 | | 122.4 |
| 295. | 19.803 | 1.544 | 6.450 | 120.89 | 31.19 | 49.44 | 1102.4 | | 120.9 |
| 300. | 19.582 | 1.535 | 6.698 | 121.72 | 31.27 | 49.48 | 1092.4 | | 119.5 |
| 310. | 19.149 | 1.520 | 7.193 | 123.34 | 31.47 | 49.58 | 1073.6 | | 116.8 |

METHANE ISOBAR AT P = 75.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 320. | 18.728 | 1.505 | 7.689 | 124.92 | 31.71 | 49.69 | 1056.2 | | 114.5 |
| 330. | 18.319 | 1.492 | 8.187 | 126.45 | 31.98 | 49.82 | 1040.1 | | 112.5 |
| 340. | 17.921 | 1.480 | 8.686 | 127.94 | 32.29 | 49.97 | 1025.4 | | 110.8 |
| 350. | 17.536 | 1.470 | 9.186 | 129.39 | 32.62 | 50.13 | 1011.9 | | 109.4 |
| 360. | 17.162 | 1.460 | 9.688 | 130.81 | 32.99 | 50.31 | 999.6 | | 108.2 |
| 370. | 16.801 | 1.451 | 10.193 | 132.19 | 33.37 | 50.51 | 988.3 | | 107.2 |
| 380. | 16.452 | 1.443 | 10.699 | 133.54 | 33.78 | 50.72 | 978.1 | | 106.4 |
| 390. | 16.114 | 1.435 | 11.207 | 134.86 | 34.21 | 50.94 | 968.9 | | 105.8 |
| 400. | 15.788 | 1.428 | 11.718 | 136.15 | 34.65 | 51.18 | 960.6 | | 105.4 |
| 410. | 15.473 | 1.422 | 12.231 | 137.42 | 35.11 | 51.43 | 953.2 | | 105.2 |
| 420. | 15.169 | 1.416 | 12.746 | 138.66 | 35.59 | 51.69 | 946.5 | | 105.1 |
| 430. | 14.876 | 1.410 | 13.264 | 139.88 | 36.07 | 51.97 | 940.6 | | 105.2 |
| 440. | 14.593 | 1.405 | 13.786 | 141.08 | 36.56 | 52.25 | 935.3 | | 105.3 |
| 450. | 14.319 | 1.400 | 14.309 | 142.25 | 37.06 | 52.54 | 930.7 | | 105.6 |
| 460. | 14.056 | 1.395 | 14.836 | 143.41 | 37.56 | 52.85 | 926.7 | | 106.1 |
| 470. | 13.801 | 1.391 | 15.366 | 144.55 | 38.07 | 53.16 | 923.2 | | 106.6 |
| 480. | 13.556 | 1.386 | 15.900 | 145.67 | 38.58 | 53.48 | 920.2 | | 107.2 |
| 490. | 13.319 | 1.382 | 16.436 | 146.78 | 39.09 | 53.80 | 917.6 | | 107.8 |
| 500. | 13.090 | 1.378 | 16.976 | 147.87 | 39.60 | 54.13 | 915.5 | | 108.6 |
| 520. | 12.655 | 1.371 | 18.065 | 150.01 | 40.62 | 54.81 | 912.4 | | 110.3 |
| 540. | 12.249 | 1.364 | 19.168 | 152.09 | 41.64 | 55.49 | 910.6 | | 112.3 |
| 560. | 11.869 | 1.357 | 20.285 | 154.12 | 42.64 | 56.19 | 909.9 | | 114.4 |
| 580. | 11.513 | 1.351 | 21.415 | 156.10 | 43.62 | 56.88 | 910.1 | | 116.8 |
| 600. | 11.178 | 1.345 | 22.560 | 158.04 | 44.58 | 57.58 | 911.1 | | 119.2 |

METHANE ISOBAR AT P = 80.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 110. | 29.430 | 2.972 | -2.607 | 71.41 | 36.45 | 50.92 | 1820.8 | | 254.0 |
| 115. | 29.157 | 2.870 | -2.352 | 73.67 | 36.14 | 50.82 | 1792.1 | | 249.3 |
| 120. | 28.886 | 2.776 | -2.099 | 75.83 | 35.80 | 50.68 | 1764.2 | | 244.5 |
| 125. | 28.615 | 2.690 | -1.846 | 77.90 | 35.46 | 50.54 | 1737.0 | | 239.7 |
| 130. | 28.346 | 2.611 | -1.593 | 79.88 | 35.13 | 50.39 | 1710.5 | | 234.8 |
| 135. | 28.079 | 2.538 | -1.342 | 81.78 | 34.81 | 50.25 | 1684.8 | | 229.8 |
| 140. | 27.812 | 2.471 | -1.091 | 83.60 | 34.51 | 50.12 | 1659.6 | | 225.0 |
| 145. | 27.546 | 2.409 | -0.840 | 85.36 | 34.22 | 50.00 | 1635.2 | | 220.1 |
| 150. | 27.281 | 2.351 | -0.591 | 87.05 | 33.94 | 49.89 | 1611.3 | | 215.3 |
| 155. | 27.018 | 2.298 | -0.342 | 88.69 | 33.68 | 49.79 | 1588.1 | | 210.6 |

METHANE ISOBAR AT P = 80.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 160. | 26.755 | 2.248 | -0.093 | 90.27 | 33.43 | 49.70 | 1565.4 | | 206.0 |
| 165. | 26.493 | 2.201 | 0.155 | 91.79 | 33.20 | 49.61 | 1543.4 | | 201.5 |
| 170. | 26.232 | 2.158 | 0.403 | 93.27 | 32.97 | 49.53 | 1521.9 | | 197.1 |
| 175. | 25.973 | 2.117 | 0.651 | 94.71 | 32.76 | 49.46 | 1501.0 | | 192.7 |
| 180. | 25.714 | 2.079 | 0.898 | 96.10 | 32.56 | 49.39 | 1480.6 | | 188.5 |
| 185. | 25.456 | 2.043 | 1.145 | 97.45 | 32.38 | 49.33 | 1460.7 | | 184.5 |
| 190. | 25.200 | 2.010 | 1.391 | 98.77 | 32.20 | 49.27 | 1441.4 | | 180.5 |
| 195. | 24.944 | 1.978 | 1.637 | 100.05 | 32.04 | 49.22 | 1422.5 | | 176.7 |
| 200. | 24.690 | 1.948 | 1.883 | 101.29 | 31.89 | 49.17 | 1404.2 | | 173.0 |
| 205. | 24.438 | 1.921 | 2.129 | 102.51 | 31.75 | 49.13 | 1386.3 | | 169.4 |
| 210. | 24.186 | 1.894 | 2.375 | 103.69 | 31.62 | 49.09 | 1369.0 | | 165.9 |
| 215. | 23.936 | 1.870 | 2.620 | 104.85 | 31.50 | 49.05 | 1352.0 | | 162.6 |
| 220. | 23.688 | 1.846 | 2.865 | 105.97 | 31.40 | 49.02 | 1335.6 | | 159.3 |
| 225. | 23.441 | 1.824 | 3.110 | 107.07 | 31.31 | 49.00 | 1319.6 | | 156.3 |
| 230. | 23.196 | 1.803 | 3.355 | 108.15 | 31.23 | 48.97 | 1304.0 | | 153.3 |
| 235. | 22.952 | 1.784 | 3.600 | 109.20 | 31.16 | 48.96 | 1288.9 | | 150.4 |
| 240. | 22.711 | 1.765 | 3.845 | 110.23 | 31.10 | 48.94 | 1274.2 | | 147.7 |
| 245. | 22.471 | 1.748 | 4.090 | 111.24 | 31.06 | 48.94 | 1260.0 | | 145.1 |
| 250. | 22.234 | 1.731 | 4.334 | 112.23 | 31.03 | 48.93 | 1246.1 | | 142.6 |
| 255. | 21.998 | 1.715 | 4.579 | 113.20 | 31.01 | 48.93 | 1232.7 | | 140.2 |
| 260. | 21.764 | 1.700 | 4.824 | 114.15 | 31.00 | 48.94 | 1219.7 | | 137.9 |
| 265. | 21.533 | 1.686 | 5.068 | 115.08 | 31.01 | 48.95 | 1207.1 | | 135.8 |
| 270. | 21.304 | 1.673 | 5.313 | 116.00 | 31.03 | 48.97 | 1194.8 | | 133.7 |
| 275. | 21.077 | 1.660 | 5.558 | 116.90 | 31.06 | 48.99 | 1183.0 | | 131.7 |
| 280. | 20.853 | 1.648 | 5.803 | 117.78 | 31.10 | 49.02 | 1171.6 | | 129.9 |
| 285. | 20.631 | 1.636 | 6.048 | 118.65 | 31.15 | 49.05 | 1160.5 | | 128.1 |
| 290. | 20.411 | 1.625 | 6.293 | 119.50 | 31.21 | 49.09 | 1149.8 | | 126.4 |
| 295. | 20.194 | 1.615 | 6.539 | 120.34 | 31.28 | 49.13 | 1139.4 | | 124.9 |
| 300. | 19.980 | 1.605 | 6.785 | 121.17 | 31.37 | 49.17 | 1129.4 | | 123.4 |
| 310. | 19.559 | 1.587 | 7.277 | 122.78 | 31.56 | 49.28 | 1110.5 | | 120.7 |
| 320. | 19.149 | 1.570 | 7.770 | 124.35 | 31.80 | 49.41 | 1093.0 | | 118.3 |
| 330. | 18.750 | 1.555 | 8.265 | 125.87 | 32.07 | 49.55 | 1076.7 | | 116.2 |
| 340. | 18.363 | 1.541 | 8.762 | 127.35 | 32.37 | 49.72 | 1061.6 | | 114.4 |
| 350. | 17.986 | 1.528 | 9.260 | 128.80 | 32.70 | 49.90 | 1047.8 | | 112.9 |
| 360. | 17.620 | 1.517 | 9.760 | 130.20 | 33.06 | 50.10 | 1035.1 | | 111.6 |
| 370. | 17.266 | 1.506 | 10.262 | 131.58 | 33.45 | 50.31 | 1023.4 | | 110.5 |
| 380. | 16.923 | 1.496 | 10.766 | 132.92 | 33.85 | 50.54 | 1012.8 | | 109.7 |
| 390. | 16.590 | 1.487 | 11.272 | 134.24 | 34.28 | 50.78 | 1003.0 | | 109.0 |
| 400. | 16.269 | 1.479 | 11.782 | 135.53 | 34.72 | 51.04 | 994.2 | | 108.5 |
| 410. | 15.958 | 1.471 | 12.293 | 136.79 | 35.18 | 51.31 | 986.3 | | 108.2 |

METHANE ISOBAR AT P = 80.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 420. | 15.657 | 1.463 | 12.808 | 138.03 | 35.65 | 51.59 | 979.1 | | 108.1 |
| 430. | 15.366 | 1.456 | 13.325 | 139.25 | 36.13 | 51.88 | 972.6 | | 108.1 |
| 440. | 15.084 | 1.450 | 13.845 | 140.45 | 36.62 | 52.18 | 966.8 | | 108.2 |
| 450. | 14.812 | 1.443 | 14.369 | 141.62 | 37.11 | 52.49 | 961.7 | | 108.4 |
| 460. | 14.550 | 1.438 | 14.895 | 142.78 | 37.61 | 52.80 | 957.1 | | 108.7 |
| 470. | 14.296 | 1.432 | 15.425 | 143.92 | 38.12 | 53.13 | 953.1 | | 109.2 |
| 480. | 14.050 | 1.427 | 15.958 | 145.04 | 38.63 | 53.46 | 949.6 | | 109.7 |
| 490. | 13.812 | 1.422 | 16.494 | 146.15 | 39.14 | 53.79 | 946.5 | | 110.3 |
| 500. | 13.583 | 1.417 | 17.034 | 147.24 | 39.65 | 54.13 | 943.9 | | 111.0 |
| 520. | 13.145 | 1.408 | 18.123 | 149.37 | 40.67 | 54.83 | 939.9 | | 112.7 |
| 540. | 12.735 | 1.399 | 19.227 | 151.45 | 41.67 | 55.53 | 937.2 | | 114.5 |
| 560. | 12.351 | 1.391 | 20.344 | 153.49 | 42.67 | 56.23 | 935.7 | | 116.6 |
| 580. | 11.990 | 1.384 | 21.476 | 155.47 | 43.65 | 56.94 | 935.2 | | 118.9 |
| 600. | 11.651 | 1.376 | 22.622 | 157.41 | 44.61 | 57.64 | 935.5 | | 121.3 |

METHANE ISOBAR AT P = 85.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 115. | 29.292 | 3.035 | -2.218 | 73.36 | 36.29 | 50.72 | 1813.0 | | 252.9 |
| 120. | 29.025 | 2.935 | -1.964 | 75.51 | 35.96 | 50.58 | 1785.7 | | 248.2 |
| 125. | 28.760 | 2.844 | -1.712 | 77.58 | 35.62 | 50.42 | 1759.1 | | 243.4 |
| 130. | 28.497 | 2.760 | -1.460 | 79.55 | 35.29 | 50.27 | 1733.3 | | 238.6 |
| 135. | 28.234 | 2.682 | -1.209 | 81.44 | 34.97 | 50.12 | 1708.1 | | 233.7 |
| 140. | 27.973 | 2.610 | -0.959 | 83.26 | 34.66 | 49.98 | 1683.6 | | 228.9 |
| 145. | 27.713 | 2.544 | -0.709 | 85.02 | 34.37 | 49.85 | 1659.8 | | 224.1 |
| 150. | 27.454 | 2.482 | -0.460 | 86.70 | 34.09 | 49.73 | 1636.5 | | 219.4 |
| 155. | 27.197 | 2.425 | -0.212 | 88.33 | 33.83 | 49.62 | 1613.9 | | 214.7 |
| 160. | 26.940 | 2.372 | 0.036 | 89.91 | 33.58 | 49.52 | 1591.9 | | 210.1 |
| 165. | 26.685 | 2.322 | 0.283 | 91.43 | 33.34 | 49.42 | 1570.4 | | 205.6 |
| 170. | 26.430 | 2.275 | 0.530 | 92.90 | 33.11 | 49.34 | 1549.5 | | 201.2 |
| 175. | 26.177 | 2.232 | 0.777 | 94.33 | 32.90 | 49.26 | 1529.2 | | 196.9 |
| 180. | 25.924 | 2.191 | 1.023 | 95.72 | 32.70 | 49.18 | 1509.3 | | 192.8 |
| 185. | 25.673 | 2.152 | 1.268 | 97.07 | 32.51 | 49.11 | 1490.0 | | 188.7 |
| 190. | 25.424 | 2.116 | 1.514 | 98.37 | 32.33 | 49.05 | 1471.2 | | 184.7 |
| 195. | 25.175 | 2.082 | 1.759 | 99.65 | 32.17 | 48.99 | 1452.9 | | 180.9 |
| 200. | 24.928 | 2.051 | 2.004 | 100.89 | 32.01 | 48.93 | 1435.0 | | 177.2 |
| 205. | 24.682 | 2.020 | 2.248 | 102.09 | 31.87 | 48.88 | 1417.6 | | 173.6 |
| 210. | 24.437 | 1.992 | 2.493 | 103.27 | 31.74 | 48.84 | 1400.7 | | 170.1 |

METHANE ISOBAR AT P = 85.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | μPa·s | mW/(m·K) |
| 215. | 24.194 | 1.965 | 2.737 | 104.42 | 31.62 | 48.80 | 1384.2 | | 166.8 |
| 220. | 23.953 | 1.940 | 2.981 | 105.54 | 31.52 | 48.76 | 1368.1 | | 163.6 |
| 225. | 23.713 | 1.916 | 3.224 | 106.64 | 31.42 | 48.73 | 1352.5 | | 160.5 |
| 230. | 23.475 | 1.893 | 3.468 | 107.71 | 31.34 | 48.70 | 1337.3 | | 157.5 |
| 235. | 23.238 | 1.872 | 3.711 | 108.76 | 31.27 | 48.68 | 1322.5 | | 154.6 |
| 240. | 23.004 | 1.852 | 3.955 | 109.78 | 31.21 | 48.67 | 1308.1 | | 151.9 |
| 245. | 22.771 | 1.832 | 4.198 | 110.78 | 31.17 | 48.65 | 1294.1 | | 149.3 |
| 250. | 22.540 | 1.814 | 4.441 | 111.77 | 31.14 | 48.65 | 1280.5 | | 146.7 |
| 255. | 22.311 | 1.797 | 4.684 | 112.73 | 31.12 | 48.65 | 1267.3 | | 144.3 |
| 260. | 22.084 | 1.780 | 4.928 | 113.67 | 31.11 | 48.66 | 1254.5 | | 142.0 |
| 265. | 21.860 | 1.765 | 5.171 | 114.60 | 31.11 | 48.67 | 1242.1 | | 139.8 |
| 270. | 21.637 | 1.750 | 5.414 | 115.51 | 31.13 | 48.68 | 1230.0 | | 137.7 |
| 275. | 21.417 | 1.736 | 5.658 | 116.40 | 31.15 | 48.71 | 1218.3 | | 135.7 |
| 280. | 21.199 | 1.722 | 5.901 | 117.28 | 31.19 | 48.73 | 1206.9 | | 133.8 |
| 285. | 20.983 | 1.710 | 6.145 | 118.15 | 31.24 | 48.77 | 1195.9 | | 132.1 |
| 290. | 20.769 | 1.697 | 6.389 | 118.99 | 31.30 | 48.81 | 1185.3 | | 130.4 |
| 295. | 20.558 | 1.686 | 6.633 | 119.83 | 31.37 | 48.85 | 1175.0 | | 128.7 |
| 300. | 20.350 | 1.675 | 6.878 | 120.65 | 31.45 | 48.90 | 1165.0 | | 127.2 |
| 310. | 19.940 | 1.654 | 7.367 | 122.26 | 31.65 | 49.02 | 1146.0 | | 124.4 |
| 320. | 19.540 | 1.635 | 7.858 | 123.81 | 31.88 | 49.16 | 1128.3 | | 122.0 |
| 330. | 19.151 | 1.618 | 8.350 | 125.33 | 32.15 | 49.32 | 1111.9 | | 119.8 |
| 340. | 18.772 | 1.602 | 8.844 | 126.80 | 32.45 | 49.49 | 1096.6 | | 117.9 |
| 350. | 18.404 | 1.587 | 9.340 | 128.24 | 32.78 | 49.69 | 1082.5 | | 116.3 |
| 360. | 18.046 | 1.574 | 9.838 | 129.64 | 33.13 | 49.90 | 1069.4 | | 114.9 |
| 370. | 17.698 | 1.561 | 10.338 | 131.01 | 33.51 | 50.13 | 1057.4 | | 113.8 |
| 380. | 17.361 | 1.550 | 10.841 | 132.35 | 33.92 | 50.37 | 1046.4 | | 112.9 |
| 390. | 17.033 | 1.539 | 11.346 | 133.67 | 34.34 | 50.63 | 1036.2 | | 112.1 |
| 400. | 16.716 | 1.529 | 11.854 | 134.95 | 34.78 | 50.91 | 1027.0 | | 111.6 |
| 410. | 16.409 | 1.520 | 12.364 | 136.21 | 35.24 | 51.19 | 1018.5 | | 111.2 |
| 420. | 16.111 | 1.511 | 12.877 | 137.45 | 35.70 | 51.48 | 1010.9 | | 111.0 |
| 430. | 15.823 | 1.503 | 13.394 | 138.66 | 36.18 | 51.79 | 1003.9 | | 110.9 |
| 440. | 15.544 | 1.495 | 13.913 | 139.86 | 36.67 | 52.10 | 997.7 | | 110.9 |
| 450. | 15.274 | 1.487 | 14.436 | 141.03 | 37.16 | 52.43 | 992.0 | | 111.1 |
| 460. | 15.012 | 1.480 | 14.962 | 142.19 | 37.66 | 52.75 | 987.0 | | 111.4 |
| 470. | 14.759 | 1.474 | 15.491 | 143.33 | 38.17 | 53.09 | 982.5 | | 111.8 |
| 480. | 14.514 | 1.467 | 16.024 | 144.45 | 38.67 | 53.43 | 978.5 | | 112.2 |
| 490. | 14.276 | 1.461 | 16.560 | 145.55 | 39.18 | 53.78 | 975.0 | | 112.8 |
| 500. | 14.046 | 1.456 | 17.099 | 146.64 | 39.69 | 54.13 | 972.0 | | 113.5 |
| 520. | 13.607 | 1.445 | 18.189 | 148.78 | 40.70 | 54.83 | 967.1 | | 115.0 |
| 540. | 13.195 | 1.435 | 19.293 | 150.86 | 41.71 | 55.55 | 963.6 | | 116.8 |

METHANE ISOBAR AT P = 85.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 560. | 12.808 | 1.425 | 20.411 | 152.90 | 42.70 | 56.26 | 961.3 | | 118.8 |
| 580. | 12.443 | 1.417 | 21.543 | 154.88 | 43.68 | 56.98 | 960.0 | | 120.9 |
| 600. | 12.099 | 1.408 | 22.690 | 156.83 | 44.63 | 57.69 | 959.7 | | 123.3 |

METHANE ISOBAR AT P = 90.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 115. | 29.422 | 3.199 | -2.083 | 73.05 | 36.45 | 50.64 | 1833.4 | | 256.5 |
| 120. | 29.161 | 3.093 | -1.830 | 75.20 | 36.11 | 50.49 | 1806.6 | | 251.9 |
| 125. | 28.901 | 2.996 | -1.578 | 77.26 | 35.77 | 50.32 | 1780.6 | | 247.1 |
| 130. | 28.642 | 2.907 | -1.327 | 79.23 | 35.44 | 50.16 | 1755.4 | | 242.4 |
| 135. | 28.385 | 2.825 | -1.076 | 81.12 | 35.12 | 50.00 | 1730.8 | | 237.6 |
| 140. | 28.129 | 2.749 | -0.827 | 82.94 | 34.81 | 49.85 | 1706.9 | | 232.8 |
| 145. | 27.874 | 2.678 | -0.578 | 84.68 | 34.51 | 49.72 | 1683.6 | | 228.0 |
| 150. | 27.621 | 2.613 | -0.329 | 86.37 | 34.23 | 49.59 | 1661.0 | | 223.3 |
| 155. | 27.369 | 2.552 | -0.082 | 87.99 | 33.97 | 49.47 | 1639.0 | | 218.7 |
| 160. | 27.118 | 2.495 | 0.165 | 89.56 | 33.71 | 49.36 | 1617.5 | | 214.2 |
| 165. | 26.868 | 2.442 | 0.412 | 91.08 | 33.47 | 49.26 | 1596.6 | | 209.7 |
| 170. | 26.619 | 2.392 | 0.658 | 92.55 | 33.25 | 49.16 | 1576.3 | | 205.3 |
| 175. | 26.372 | 2.345 | 0.904 | 93.97 | 33.03 | 49.08 | 1556.4 | | 201.0 |
| 180. | 26.126 | 2.302 | 1.149 | 95.35 | 32.83 | 48.99 | 1537.1 | | 196.9 |
| 185. | 25.881 | 2.261 | 1.394 | 96.69 | 32.64 | 48.92 | 1518.3 | | 192.8 |
| 190. | 25.637 | 2.222 | 1.638 | 98.00 | 32.46 | 48.85 | 1500.0 | | 188.9 |
| 195. | 25.395 | 2.186 | 1.882 | 99.26 | 32.29 | 48.78 | 1482.1 | | 185.1 |
| 200. | 25.153 | 2.152 | 2.126 | 100.50 | 32.13 | 48.72 | 1464.7 | | 181.4 |
| 205. | 24.914 | 2.119 | 2.369 | 101.70 | 31.99 | 48.66 | 1447.8 | | 177.8 |
| 210. | 24.676 | 2.089 | 2.612 | 102.87 | 31.86 | 48.61 | 1431.2 | | 174.3 |
| 215. | 24.439 | 2.060 | 2.855 | 104.02 | 31.74 | 48.57 | 1415.1 | | 171.0 |
| 220. | 24.204 | 2.033 | 3.098 | 105.13 | 31.63 | 48.53 | 1399.5 | | 167.7 |
| 225. | 23.970 | 2.007 | 3.341 | 106.22 | 31.53 | 48.49 | 1384.2 | | 164.6 |
| 230. | 23.738 | 1.983 | 3.583 | 107.29 | 31.45 | 48.46 | 1369.3 | | 161.6 |
| 235. | 23.508 | 1.959 | 3.825 | 108.33 | 31.38 | 48.44 | 1354.8 | | 158.7 |
| 240. | 23.280 | 1.937 | 4.067 | 109.35 | 31.32 | 48.42 | 1340.7 | | 156.0 |
| 245. | 23.053 | 1.917 | 4.309 | 110.35 | 31.27 | 48.41 | 1327.0 | | 153.3 |
| 250. | 22.828 | 1.897 | 4.551 | 111.33 | 31.24 | 48.40 | 1313.6 | | 150.8 |
| 255. | 22.605 | 1.878 | 4.793 | 112.28 | 31.21 | 48.40 | 1300.6 | | 148.3 |
| 260. | 22.385 | 1.860 | 5.035 | 113.22 | 31.20 | 48.40 | 1288.0 | | 146.0 |

METHANE ISOBAR AT P = 90.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm⁻³ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s⁻¹ | μPa·s | mW/(m·K) |
| 265. | 22.166 | 1.843 | 5.277 | 114.15 | 31.21 | 48.41 | 1275.7 | | 143.8 |
| 270. | 21.949 | 1.827 | 5.520 | 115.05 | 31.22 | 48.43 | 1263.8 | | 141.7 |
| 275. | 21.735 | 1.811 | 5.762 | 115.94 | 31.24 | 48.46 | 1252.2 | | 139.7 |
| 280. | 21.522 | 1.796 | 6.004 | 116.81 | 31.28 | 48.48 | 1240.9 | | 137.7 |
| 285. | 21.312 | 1.782 | 6.247 | 117.67 | 31.33 | 48.52 | 1230.0 | | 135.9 |
| 290. | 21.104 | 1.769 | 6.489 | 118.52 | 31.39 | 48.56 | 1219.4 | | 134.2 |
| 295. | 20.899 | 1.756 | 6.732 | 119.35 | 31.46 | 48.61 | 1209.2 | | 132.5 |
| 300. | 20.695 | 1.743 | 6.975 | 120.16 | 31.54 | 48.66 | 1199.2 | | 131.0 |
| 310. | 20.296 | 1.720 | 7.463 | 121.76 | 31.73 | 48.79 | 1180.2 | | 128.1 |
| 320. | 19.906 | 1.699 | 7.951 | 123.31 | 31.96 | 48.93 | 1162.5 | | 125.6 |
| 330. | 19.525 | 1.680 | 8.441 | 124.82 | 32.22 | 49.10 | 1145.9 | | 123.3 |
| 340. | 19.154 | 1.662 | 8.933 | 126.29 | 32.52 | 49.29 | 1130.5 | | 121.4 |
| 350. | 18.794 | 1.646 | 9.427 | 127.72 | 32.85 | 49.50 | 1116.1 | | 119.7 |
| 360. | 18.442 | 1.630 | 9.923 | 129.12 | 33.20 | 49.72 | 1102.8 | | 118.2 |
| 370. | 18.101 | 1.616 | 10.422 | 130.48 | 33.58 | 49.96 | 1090.4 | | 117.0 |
| 380. | 17.770 | 1.603 | 10.923 | 131.82 | 33.98 | 50.22 | 1079.0 | | 116.0 |
| 390. | 17.448 | 1.591 | 11.426 | 133.13 | 34.40 | 50.49 | 1068.5 | | 115.2 |
| 400. | 17.135 | 1.579 | 11.933 | 134.41 | 34.84 | 50.78 | 1058.9 | | 114.6 |
| 410. | 16.832 | 1.569 | 12.442 | 135.67 | 35.29 | 51.08 | 1050.0 | | 114.1 |
| 420. | 16.537 | 1.558 | 12.954 | 136.90 | 35.76 | 51.38 | 1041.9 | | 113.8 |
| 430. | 16.252 | 1.549 | 13.470 | 138.12 | 36.23 | 51.70 | 1034.6 | | 113.7 |
| 440. | 15.975 | 1.540 | 13.988 | 139.31 | 36.72 | 52.03 | 1027.9 | | 113.6 |
| 450. | 15.707 | 1.531 | 14.510 | 140.48 | 37.21 | 52.36 | 1021.8 | | 113.8 |
| 460. | 15.447 | 1.523 | 15.035 | 141.64 | 37.71 | 52.70 | 1016.3 | | 114.0 |
| 470. | 15.195 | 1.516 | 15.564 | 142.77 | 38.21 | 53.05 | 1011.4 | | 114.3 |
| 480. | 14.950 | 1.508 | 16.096 | 143.89 | 38.71 | 53.40 | 1007.0 | | 114.7 |
| 490. | 14.713 | 1.501 | 16.632 | 145.00 | 39.22 | 53.75 | 1003.1 | | 115.2 |
| 500. | 14.483 | 1.495 | 17.172 | 146.09 | 39.73 | 54.11 | 999.6 | | 115.8 |
| 520. | 14.044 | 1.482 | 18.261 | 148.22 | 40.74 | 54.83 | 993.9 | | 117.3 |
| 540. | 13.630 | 1.471 | 19.365 | 150.31 | 41.74 | 55.56 | 989.6 | | 119.0 |
| 560. | 13.241 | 1.460 | 20.483 | 152.34 | 42.73 | 56.29 | 986.6 | | 120.9 |
| 580. | 12.873 | 1.450 | 21.616 | 154.33 | 43.71 | 57.01 | 984.7 | | 123.0 |
| 600. | 12.526 | 1.440 | 22.764 | 156.27 | 44.66 | 57.73 | 983.7 | | 125.2 |

METHANE ISOBAR AT P = 95.0 MPa

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 115. | 29.549 | 3.362 | -1.947 | 72.75 | 36.59 | 50.56 | 1853.2 | | 260.1 |
| 120. | 29.292 | 3.251 | -1.695 | 74.90 | 36.26 | 50.40 | 1827.0 | | 255.5 |
| 125. | 29.037 | 3.148 | -1.443 | 76.95 | 35.92 | 50.23 | 1801.6 | | 250.8 |
| 130. | 28.783 | 3.054 | -1.193 | 78.92 | 35.59 | 50.06 | 1776.9 | | 246.1 |
| 135. | 28.531 | 2.966 | -0.943 | 80.81 | 35.26 | 49.90 | 1752.9 | | 241.4 |
| 140. | 28.280 | 2.886 | -0.694 | 82.62 | 34.95 | 49.74 | 1729.5 | | 236.6 |
| 145. | 28.030 | 2.811 | -0.445 | 84.36 | 34.65 | 49.60 | 1706.8 | | 231.9 |
| 150. | 27.782 | 2.742 | -0.198 | 86.04 | 34.37 | 49.46 | 1684.7 | | 227.2 |
| 155. | 27.535 | 2.677 | 0.049 | 87.66 | 34.10 | 49.33 | 1663.2 | | 222.6 |
| 160. | 27.289 | 2.617 | 0.296 | 89.23 | 33.85 | 49.22 | 1642.3 | | 218.1 |
| 165. | 27.045 | 2.560 | 0.541 | 90.74 | 33.60 | 49.11 | 1622.0 | | 213.7 |
| 170. | 26.801 | 2.508 | 0.787 | 92.20 | 33.37 | 49.01 | 1602.1 | | 209.3 |
| 175. | 26.559 | 2.458 | 1.032 | 93.62 | 33.16 | 48.91 | 1582.8 | | 205.1 |
| 180. | 26.318 | 2.412 | 1.276 | 95.00 | 32.95 | 48.82 | 1564.0 | | 200.9 |
| 185. | 26.079 | 2.368 | 1.520 | 96.34 | 32.76 | 48.74 | 1545.7 | | 196.9 |
| 190. | 25.841 | 2.327 | 1.763 | 97.63 | 32.57 | 48.66 | 1527.8 | | 193.0 |
| 195. | 25.604 | 2.288 | 2.006 | 98.90 | 32.40 | 48.59 | 1510.4 | | 189.1 |
| 200. | 25.369 | 2.252 | 2.249 | 100.13 | 32.25 | 48.53 | 1493.4 | | 185.4 |
| 205. | 25.135 | 2.217 | 2.492 | 101.32 | 32.10 | 48.47 | 1476.9 | | 181.8 |
| 210. | 24.902 | 2.185 | 2.734 | 102.49 | 31.97 | 48.41 | 1460.7 | | 178.4 |
| 215. | 24.671 | 2.154 | 2.976 | 103.63 | 31.84 | 48.36 | 1445.0 | | 175.0 |
| 220. | 24.442 | 2.125 | 3.218 | 104.74 | 31.73 | 48.32 | 1429.7 | | 171.8 |
| 225. | 24.214 | 2.097 | 3.459 | 105.83 | 31.64 | 48.28 | 1414.7 | | 168.7 |
| 230. | 23.988 | 2.071 | 3.700 | 106.89 | 31.55 | 48.25 | 1400.2 | | 165.6 |
| 235. | 23.763 | 2.046 | 3.941 | 107.92 | 31.48 | 48.22 | 1386.0 | | 162.7 |
| 240. | 23.540 | 2.022 | 4.183 | 108.94 | 31.42 | 48.20 | 1372.1 | | 160.0 |
| 245. | 23.320 | 2.000 | 4.424 | 109.93 | 31.37 | 48.19 | 1358.6 | | 157.3 |
| 250. | 23.100 | 1.978 | 4.664 | 110.91 | 31.33 | 48.18 | 1345.5 | | 154.7 |
| 255. | 22.883 | 1.958 | 4.905 | 111.86 | 31.31 | 48.18 | 1332.7 | | 152.3 |
| 260. | 22.668 | 1.939 | 5.146 | 112.80 | 31.29 | 48.18 | 1320.3 | | 149.9 |
| 265. | 22.455 | 1.920 | 5.387 | 113.71 | 31.30 | 48.19 | 1308.1 | | 147.7 |
| 270. | 22.243 | 1.902 | 5.628 | 114.62 | 31.31 | 48.21 | 1296.4 | | 145.5 |
| 275. | 22.034 | 1.886 | 5.869 | 115.50 | 31.33 | 48.23 | 1284.9 | | 143.5 |
| 280. | 21.827 | 1.870 | 6.110 | 116.37 | 31.37 | 48.26 | 1273.7 | | 141.5 |
| 285. | 21.622 | 1.854 | 6.352 | 117.22 | 31.41 | 48.30 | 1262.9 | | 139.7 |
| 290. | 21.419 | 1.839 | 6.593 | 118.06 | 31.47 | 48.34 | 1252.4 | | 137.9 |
| 295. | 21.218 | 1.825 | 6.835 | 118.89 | 31.54 | 48.39 | 1242.2 | | 136.2 |
| 300. | 21.020 | 1.812 | 7.077 | 119.71 | 31.62 | 48.45 | 1232.3 | | 134.6 |
| 310. | 20.629 | 1.787 | 7.563 | 121.30 | 31.80 | 48.58 | 1213.3 | | 131.7 |
| 320. | 20.248 | 1.763 | 8.049 | 122.84 | 32.03 | 48.73 | 1195.5 | | 129.1 |

METHANE ISOBAR AT P = 95.0 MPa (continued)

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 330. | 19.876 | 1.742 | 8.537 | 124.34 | 32.29 | 48.91 | 1178.8 | | 126.8 |
| 340. | 19.513 | 1.722 | 9.027 | 125.81 | 32.59 | 49.11 | 1163.2 | | 124.7 |
| 350. | 19.159 | 1.704 | 9.519 | 127.23 | 32.91 | 49.32 | 1148.7 | | 123.0 |
| 360. | 18.814 | 1.687 | 10.014 | 128.62 | 33.26 | 49.56 | 1135.1 | | 121.4 |
| 370. | 18.479 | 1.671 | 10.511 | 129.99 | 33.64 | 49.81 | 1122.5 | | 120.2 |
| 380. | 18.153 | 1.656 | 11.010 | 131.32 | 34.04 | 50.08 | 1110.8 | | 119.1 |
| 390. | 17.836 | 1.643 | 11.512 | 132.62 | 34.46 | 50.36 | 1099.9 | | 118.2 |
| 400. | 17.528 | 1.630 | 12.017 | 133.90 | 34.89 | 50.66 | 1089.9 | | 117.5 |
| 410. | 17.228 | 1.618 | 12.526 | 135.16 | 35.34 | 50.97 | 1080.7 | | 117.0 |
| 420. | 16.938 | 1.606 | 13.037 | 136.39 | 35.81 | 51.29 | 1072.3 | | 116.6 |
| 430. | 16.655 | 1.595 | 13.551 | 137.60 | 36.28 | 51.62 | 1064.5 | | 116.4 |
| 440. | 16.381 | 1.585 | 14.069 | 138.79 | 36.76 | 51.95 | 1057.5 | | 116.3 |
| 450. | 16.115 | 1.576 | 14.590 | 139.96 | 37.25 | 52.30 | 1051.0 | | 116.4 |
| 460. | 15.857 | 1.566 | 15.115 | 141.11 | 37.75 | 52.65 | 1045.1 | | 116.5 |
| 470. | 15.606 | 1.558 | 15.643 | 142.25 | 38.25 | 53.00 | 1039.8 | | 116.8 |
| 480. | 15.362 | 1.549 | 16.175 | 143.37 | 38.75 | 53.36 | 1035.0 | | 117.2 |
| 490. | 15.126 | 1.542 | 16.711 | 144.47 | 39.26 | 53.72 | 1030.7 | | 117.6 |
| 500. | 14.896 | 1.534 | 17.250 | 145.56 | 39.76 | 54.09 | 1026.9 | | 118.2 |
| 520. | 14.457 | 1.520 | 18.339 | 147.70 | 40.77 | 54.83 | 1020.4 | | 119.5 |
| 540. | 14.043 | 1.507 | 19.443 | 149.78 | 41.77 | 55.57 | 1015.4 | | 121.1 |
| 560. | 13.652 | 1.495 | 20.561 | 151.82 | 42.76 | 56.30 | 1011.7 | | 123.0 |
| 580. | 13.282 | 1.483 | 21.695 | 153.80 | 43.73 | 57.04 | 1009.2 | | 125.0 |
| 600. | 12.932 | 1.473 | 22.843 | 155.75 | 44.68 | 57.76 | 1007.6 | | 127.2 |

METHANE ISOBAR AT P = 100.0 MPa

| T | ρ | Z | H | S | $C_v$ | $C_p$ | W | η | λ |
|---|---|---|---|---|---|---|---|---|---|
| K | mol·dm$^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | m·s$^{-1}$ | μPa·s | mW/(m·K) |
| 115. | 29.673 | 3.525 | -1.812 | 72.46 | 36.74 | 50.49 | 1872.6 | | 263.6 |
| 120. | 29.420 | 3.407 | -1.560 | 74.61 | 36.40 | 50.32 | 1846.9 | | 259.0 |
| 125. | 29.169 | 3.299 | -1.309 | 76.66 | 36.06 | 50.15 | 1822.0 | | 254.4 |
| 130. | 28.920 | 3.199 | -1.059 | 78.62 | 35.73 | 49.97 | 1797.8 | | 249.8 |
| 135. | 28.672 | 3.107 | -0.809 | 80.50 | 35.40 | 49.80 | 1774.4 | | 245.1 |
| 140. | 28.426 | 3.022 | -0.561 | 82.31 | 35.09 | 49.64 | 1751.6 | | 240.4 |
| 145. | 28.181 | 2.943 | -0.313 | 84.05 | 34.79 | 49.49 | 1729.4 | | 235.7 |
| 150. | 27.937 | 2.870 | -0.066 | 85.73 | 34.50 | 49.34 | 1707.8 | | 231.1 |
| 155. | 27.695 | 2.802 | 0.181 | 87.34 | 34.23 | 49.21 | 1686.9 | | 226.5 |
| 160. | 27.454 | 2.738 | 0.426 | 88.90 | 33.97 | 49.09 | 1666.5 | | 222.0 |

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol\cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m\cdot s^{-1}$ | $\mu Pa\cdot s$ | mW/(m·K) |
| 165. | 27.215 | 2.678 | 0.672 | 90.41 | 33.73 | 48.97 | 1646.6 | | 217.6 |
| 170. | 26.976 | 2.623 | 0.916 | 91.87 | 33.50 | 48.87 | 1627.3 | | 213.3 |
| 175. | 26.739 | 2.570 | 1.160 | 93.29 | 33.28 | 48.77 | 1608.4 | | 209.0 |
| 180. | 26.504 | 2.521 | 1.404 | 94.66 | 33.07 | 48.67 | 1590.1 | | 204.9 |
| 185. | 26.269 | 2.475 | 1.647 | 95.99 | 32.87 | 48.58 | 1572.2 | | 200.9 |
| 190. | 26.036 | 2.431 | 1.890 | 97.29 | 32.69 | 48.50 | 1554.8 | | 196.9 |
| 195. | 25.805 | 2.390 | 2.132 | 98.54 | 32.51 | 48.43 | 1537.8 | | 193.1 |
| 200. | 25.574 | 2.351 | 2.374 | 99.77 | 32.35 | 48.36 | 1521.2 | | 189.4 |
| 205. | 25.346 | 2.315 | 2.616 | 100.96 | 32.21 | 48.29 | 1505.0 | | 185.8 |
| 210. | 25.118 | 2.280 | 2.857 | 102.13 | 32.07 | 48.23 | 1489.3 | | 182.4 |
| 215. | 24.893 | 2.247 | 3.098 | 103.26 | 31.95 | 48.18 | 1473.9 | | 179.0 |
| 220. | 24.668 | 2.216 | 3.339 | 104.37 | 31.83 | 48.13 | 1458.9 | | 175.8 |
| 225. | 24.446 | 2.187 | 3.579 | 105.45 | 31.73 | 48.09 | 1444.3 | | 172.6 |
| 230. | 24.225 | 2.159 | 3.820 | 106.50 | 31.65 | 48.06 | 1430.0 | | 169.6 |
| 235. | 24.006 | 2.132 | 4.060 | 107.54 | 31.57 | 48.03 | 1416.0 | | 166.7 |
| 240. | 23.788 | 2.107 | 4.300 | 108.55 | 31.51 | 48.00 | 1402.5 | | 163.9 |
| 245. | 23.572 | 2.083 | 4.540 | 109.54 | 31.46 | 47.99 | 1389.2 | | 161.2 |
| 250. | 23.358 | 2.060 | 4.780 | 110.51 | 31.42 | 47.98 | 1376.3 | | 158.6 |
| 255. | 23.146 | 2.038 | 5.020 | 111.46 | 31.39 | 47.98 | 1363.7 | | 156.1 |
| 260. | 22.936 | 2.017 | 5.260 | 112.39 | 31.38 | 47.98 | 1351.4 | | 153.7 |
| 265. | 22.727 | 1.997 | 5.499 | 113.30 | 31.38 | 47.99 | 1339.5 | | 151.5 |
| 270. | 22.521 | 1.978 | 5.739 | 114.20 | 31.39 | 48.01 | 1327.8 | | 149.3 |
| 275. | 22.317 | 1.960 | 5.980 | 115.08 | 31.41 | 48.03 | 1316.5 | | 147.2 |
| 280. | 22.114 | 1.942 | 6.220 | 115.95 | 31.45 | 48.07 | 1305.5 | | 145.2 |
| 285. | 21.914 | 1.926 | 6.460 | 116.80 | 31.49 | 48.10 | 1294.7 | | 143.4 |
| 290. | 21.715 | 1.910 | 6.701 | 117.64 | 31.55 | 48.15 | 1284.3 | | 141.6 |
| 295. | 21.519 | 1.895 | 6.942 | 118.46 | 31.61 | 48.20 | 1274.1 | | 139.8 |
| 300. | 21.325 | 1.880 | 7.183 | 119.27 | 31.69 | 48.26 | 1264.2 | | 138.2 |
| 310. | 20.943 | 1.853 | 7.666 | 120.85 | 31.88 | 48.39 | 1245.3 | | 135.2 |
| 320. | 20.570 | 1.827 | 8.151 | 122.39 | 32.10 | 48.55 | 1227.5 | | 132.5 |
| 330. | 20.205 | 1.804 | 8.637 | 123.89 | 32.36 | 48.74 | 1210.7 | | 130.2 |
| 340. | 19.849 | 1.782 | 9.126 | 125.35 | 32.65 | 48.94 | 1195.0 | | 128.0 |
| 350. | 19.502 | 1.762 | 9.616 | 126.77 | 32.97 | 49.17 | 1180.3 | | 126.2 |
| 360. | 19.164 | 1.743 | 10.109 | 128.16 | 33.32 | 49.41 | 1166.5 | | 124.6 |
| 370. | 18.835 | 1.726 | 10.604 | 129.52 | 33.70 | 49.67 | 1153.6 | | 123.2 |
| 380. | 18.514 | 1.710 | 11.102 | 130.84 | 34.09 | 49.95 | 1141.7 | | 122.1 |
| 390. | 18.201 | 1.694 | 11.603 | 132.14 | 34.51 | 50.24 | 1130.6 | | 121.2 |
| 400. | 17.898 | 1.680 | 12.107 | 133.42 | 34.94 | 50.55 | 1120.3 | | 120.4 |
| 410. | 17.602 | 1.667 | 12.614 | 134.67 | 35.39 | 50.87 | 1110.8 | | 119.8 |
| 420. | 17.315 | 1.654 | 13.125 | 135.90 | 35.85 | 51.20 | 1102.0 | | 119.4 |

METHANE ISOBAR AT P = 100.0 MPa (continued)

| T | $\rho$ | Z | H | S | $C_v$ | $C_p$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|---|---|
| K | $mol \cdot dm^{-3}$ | | kJ/mol | J/(mol·K) | J/(mol·K) | J/(mol·K) | $m \cdot s^{-1}$ | $\mu Pa \cdot s$ | mW/(m·K) |
| 430. | 17.035 | 1.642 | 13.638 | 137.11 | 36.33 | 51.53 | 1093.9 | | 119.1 |
| 440. | 16.764 | 1.631 | 14.156 | 138.30 | 36.81 | 51.88 | 1086.4 | | 119.0 |
| 450. | 16.500 | 1.620 | 14.676 | 139.47 | 37.30 | 52.23 | 1079.6 | | 118.9 |
| 460. | 16.244 | 1.610 | 15.200 | 140.62 | 37.79 | 52.59 | 1073.4 | | 119.1 |
| 470. | 15.994 | 1.600 | 15.728 | 141.76 | 38.29 | 52.95 | 1067.7 | | 119.3 |
| 480. | 15.752 | 1.591 | 16.259 | 142.88 | 38.79 | 53.32 | 1062.6 | | 119.6 |
| 490. | 15.517 | 1.582 | 16.794 | 143.98 | 39.29 | 53.69 | 1057.9 | | 120.0 |
| 500. | 15.288 | 1.573 | 17.333 | 145.07 | 39.80 | 54.06 | 1053.7 | | 120.5 |
| 520. | 14.850 | 1.558 | 18.422 | 147.20 | 40.81 | 54.81 | 1046.5 | | 121.7 |
| 540. | 14.435 | 1.543 | 19.526 | 149.28 | 41.80 | 55.56 | 1040.9 | | 123.3 |
| 560. | 14.043 | 1.529 | 20.645 | 151.32 | 42.79 | 56.31 | 1036.6 | | 125.0 |
| 580. | 13.672 | 1.517 | 21.778 | 153.31 | 43.76 | 57.06 | 1033.4 | | 127.0 |
| 600. | 13.320 | 1.505 | 22.927 | 155.25 | 44.71 | 57.79 | 1031.2 | | 129.1 |

TABLE B4

PROPERTIES IN THE SINGLE-PHASE REGION ALONG ISOTHERMS

Notes for Table B4. Values of the pressure, isothermal density derivative of the pressure, isochoric temperature derivative of the pressure, isochoric specific heat capacity, speed of sound, viscosity, and thermal conductivity in the single-phase region of the methane fluid. The independent variables were chosen to be temperature and density. The quantities P, $dP/d\rho|_T$, $dP/dT|_\rho$, $C_v$, and W were evaluated directly from the expressions in Table 7. The viscosity and thermal conductivity are from eqs (7) and (8) [with the terms evaluated from eqs (10-23)].

METHANE ISOTHERM AT T = 95. K
Second Virial Coefficient is -446.4 $cm^3/mol$

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 27.8 | 0.3399 | 22.8777 | 1.91608 | 34.00 | 1501.16 | 180.25 | 206.4 |
| 27.9 | 2.6635 | 23.5946 | 1.93770 | 34.08 | 1519.51 | 184.81 | 208.5 |
| 28.0 | 5.0591 | 24.3186 | 1.95897 | 34.16 | 1537.64 | 189.59 | 210.6 |
| 28.1 | 7.5274 | 25.0497 | 1.97990 | 34.25 | 1555.56 | 194.60 | 212.8 |
| 28.2 | 10.0693 | 25.7882 | 2.00053 | 34.34 | 1573.28 | 199.86 | 215.0 |
| 28.3 | 12.6853 | 26.5343 | 2.02085 | 34.44 | 1590.83 | 205.38 | 217.3 |
| 28.4 | 15.3764 | 27.2882 | 2.04090 | 34.54 | 1608.21 | 211.19 | 219.5 |

METHANE ISOTHERM AT T = 100. K
Second Virial Coefficient is -403.3 $cm^3/mol$

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 27.4 | 0.8262 | 21.1787 | 1.80290 | 34.11 | 1453.06 | 158.77 | 200.5 |
| 27.5 | 2.9777 | 21.8514 | 1.82354 | 34.18 | 1471.06 | 162.65 | 202.6 |
| 27.6 | 5.1968 | 22.5312 | 1.84390 | 34.25 | 1488.85 | 166.70 | 204.7 |
| 27.7 | 7.4842 | 23.2183 | 1.86400 | 34.33 | 1506.45 | 170.94 | 206.8 |
| 27.8 | 9.8407 | 23.9130 | 1.88384 | 34.42 | 1523.88 | 175.38 | 209.0 |
| 27.9 | 12.2670 | 24.6152 | 1.90343 | 34.51 | 1541.15 | 180.05 | 211.1 |
| 28.0 | 14.7640 | 25.3253 | 1.92281 | 34.60 | 1558.27 | 184.95 | 213.3 |
| 28.1 | 17.3324 | 26.0434 | 1.94196 | 34.69 | 1575.26 | 190.11 | 215.6 |
| 28.2 | 19.9729 | 26.7696 | 1.96092 | 34.79 | 1592.13 | 195.56 | 217.8 |
| 28.3 | 22.6865 | 27.5040 | 1.97968 | 34.89 | 1608.90 | 201.30 | 220.1 |

METHANE ISOTHERM AT T = 100. K (continued)

| ρ | P | dP/dρ\|T | dP/dT\|ρ | $C_v$ | W | η | λ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 28.4 | 25.4740 | 28.2468 | 1.99826 | 35.00 | 1625.56 | 207.39 | 222.4 |
| 28.5 | 28.3362 | 28.9982 | 2.01667 | 35.10 | 1642.14 | 213.84 | 224.8 |
| 28.6 | 31.2739 | 29.7583 | 2.03493 | 35.21 | 1658.64 | 220.69 | 227.1 |
| 28.7 | 34.2881 | 30.5272 | 2.05303 | 35.32 | 1675.06 | 227.98 | 229.5 |
| 28.8 | 37.3797 | 31.3050 | 2.07098 | 35.43 | 1691.43 | 235.77 | 231.9 |

METHANE ISOTHERM AT T = 105. K

Second Virial Coefficient is -365.9 cm³/mol

| ρ | P | dP/dρ\|T | dP/dT\|ρ | $C_v$ | W | η | λ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 27.0 | 1.4235 | 19.5999 | 1.69794 | 33.90 | 1408.97 | 140.83 | 194.5 |
| 27.1 | 3.4150 | 20.2310 | 1.71757 | 33.97 | 1426.53 | 144.12 | 196.5 |
| 27.2 | 5.4699 | 20.8692 | 1.73698 | 34.04 | 1443.91 | 147.55 | 198.6 |
| 27.3 | 7.5891 | 21.5149 | 1.75617 | 34.12 | 1461.13 | 151.13 | 200.6 |
| 27.4 | 9.7731 | 22.1680 | 1.77515 | 34.20 | 1478.19 | 154.89 | 202.7 |
| 27.5 | 12.0229 | 22.8289 | 1.79394 | 34.28 | 1495.11 | 158.82 | 204.9 |
| 27.6 | 14.3392 | 23.4975 | 1.81255 | 34.37 | 1511.90 | 162.94 | 207.0 |
| 27.7 | 16.7227 | 24.1740 | 1.83098 | 34.47 | 1528.58 | 167.28 | 209.2 |
| 27.8 | 19.1743 | 24.8587 | 1.84925 | 34.56 | 1545.14 | 171.84 | 211.4 |
| 27.9 | 21.6947 | 25.5515 | 1.86737 | 34.66 | 1561.61 | 176.65 | 213.6 |
| 28.0 | 24.2848 | 26.2527 | 1.88533 | 34.76 | 1578.00 | 181.73 | 215.8 |
| 28.1 | 26.9455 | 26.9623 | 1.90317 | 34.86 | 1594.31 | 187.11 | 218.1 |
| 28.2 | 29.6776 | 27.6806 | 1.92087 | 34.97 | 1610.54 | 192.81 | 220.4 |
| 28.3 | 32.4819 | 28.4076 | 1.93846 | 35.07 | 1626.72 | 198.86 | 222.8 |
| 28.4 | 35.3594 | 29.1434 | 1.95593 | 35.18 | 1642.84 | 205.30 | 225.1 |
| 28.5 | 38.3109 | 29.8882 | 1.97329 | 35.29 | 1658.91 | 212.18 | 227.5 |
| 28.6 | 41.3373 | 30.6420 | 1.99055 | 35.41 | 1674.95 | 219.53 | 229.9 |
| 28.7 | 44.4396 | 31.4050 | 2.00773 | 35.52 | 1690.94 | 227.42 | 232.3 |
| 28.8 | 47.6186 | 32.1773 | 2.02481 | 35.63 | 1706.91 | 235.91 | 234.8 |
| 28.9 | 50.8754 | 32.9589 | 2.04181 | 35.75 | 1722.86 | 245.07 | 237.3 |
| 29.0 | 54.2107 | 33.7500 | 2.05873 | 35.87 | 1738.78 | 254.99 | 239.8 |
| 29.1 | 57.6257 | 34.5506 | 2.07558 | 35.98 | 1754.69 | 265.78 | 242.4 |

METHANE ISOTHERM AT T = 110. K
Second Virial Coefficient is -333.6 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 26.5 | 0.3377 | 17.5472 | 1.58053 | 33.50 | 1349.77 | 123.15 | 186.5 |
| 26.6 | 2.1216 | 18.1320 | 1.59939 | 33.56 | 1367.06 | 125.84 | 188.5 |
| 26.7 | 3.9643 | 18.7238 | 1.61806 | 33.63 | 1384.18 | 128.63 | 190.4 |
| 26.8 | 5.8666 | 19.3228 | 1.63655 | 33.70 | 1401.14 | 131.54 | 192.4 |
| 26.9 | 7.8291 | 19.9292 | 1.65486 | 33.77 | 1417.95 | 134.58 | 194.4 |
| 27.0 | 9.8526 | 20.5431 | 1.67300 | 33.85 | 1434.63 | 137.75 | 196.5 |
| 27.1 | 11.9380 | 21.1646 | 1.69098 | 33.93 | 1451.18 | 141.07 | 198.5 |
| 27.2 | 14.0858 | 21.7938 | 1.70882 | 34.02 | 1467.62 | 144.55 | 200.6 |
| 27.3 | 16.2970 | 22.4309 | 1.72652 | 34.11 | 1483.95 | 148.19 | 202.7 |
| 27.4 | 18.5722 | 23.0759 | 1.74409 | 34.20 | 1500.20 | 152.02 | 204.8 |
| 27.5 | 20.9124 | 23.7291 | 1.76153 | 34.30 | 1516.35 | 156.04 | 207.0 |
| 27.6 | 23.3184 | 24.3906 | 1.77885 | 34.40 | 1532.43 | 160.28 | 209.2 |
| 27.7 | 25.7908 | 25.0604 | 1.79607 | 34.50 | 1548.45 | 164.76 | 211.4 |
| 27.8 | 28.3307 | 25.7387 | 1.81319 | 34.60 | 1564.40 | 169.49 | 213.6 |
| 27.9 | 30.9388 | 26.4256 | 1.83021 | 34.70 | 1580.30 | 174.50 | 215.9 |
| 28.0 | 33.6161 | 27.1212 | 1.84714 | 34.81 | 1596.16 | 179.81 | 218.2 |
| 28.1 | 36.3634 | 27.8256 | 1.86399 | 34.92 | 1611.97 | 185.47 | 220.5 |
| 28.2 | 39.1815 | 28.5390 | 1.88077 | 35.03 | 1627.75 | 191.50 | 222.8 |
| 28.3 | 42.0715 | 29.2614 | 1.89747 | 35.14 | 1643.51 | 197.94 | 225.2 |
| 28.4 | 45.0341 | 29.9929 | 1.91410 | 35.25 | 1659.24 | 204.85 | 227.6 |
| 28.5 | 48.0704 | 30.7337 | 1.93068 | 35.36 | 1674.95 | 212.27 | 230.0 |
| 28.6 | 51.1812 | 31.4838 | 1.94720 | 35.48 | 1690.65 | 220.28 | 232.5 |
| 28.7 | 54.3674 | 32.2434 | 1.96366 | 35.59 | 1706.33 | 228.94 | 235.0 |
| 28.8 | 57.6301 | 33.0124 | 1.98008 | 35.71 | 1722.02 | 238.34 | 237.5 |
| 28.9 | 60.9702 | 33.7910 | 1.99645 | 35.83 | 1737.70 | 248.59 | 240.0 |
| 29.0 | 64.3887 | 34.5792 | 2.01278 | 35.94 | 1753.37 | 259.81 | 242.6 |
| 29.1 | 67.8864 | 35.3771 | 2.02907 | 36.06 | 1769.06 | 272.16 | 245.2 |
| 29.2 | 71.4644 | 36.1848 | 2.04532 | 36.18 | 1784.74 | 285.81 | 247.8 |
| 29.3 | 75.1237 | 37.0022 | 2.06155 | 36.30 | 1800.44 | 300.99 | 250.5 |
| 29.4 | 78.8652 | 37.8296 | 2.07774 | 36.42 | 1816.14 | 317.99 | 253.2 |

METHANE ISOTHERM AT T = 115. K
Second Virial Coefficient is -305.4 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.1 | 0.0927 | 0.8977 | 0.00086 | 26.03 | 276.21 | 4.54 | 11.8 |
| 26.1 | 1.2578 | 16.2212 | 1.48854 | 33.11 | 1309.70 | 110.98 | 180.6 |
| 26.2 | 2.9072 | 16.7688 | 1.50646 | 33.17 | 1326.53 | 113.28 | 182.5 |
| 26.3 | 4.6118 | 17.3235 | 1.52423 | 33.24 | 1343.22 | 115.67 | 184.4 |
| 26.4 | 6.3721 | 17.8854 | 1.54184 | 33.31 | 1359.76 | 118.15 | 186.3 |
| 26.5 | 8.1891 | 18.4545 | 1.55932 | 33.38 | 1376.17 | 120.74 | 188.2 |
| 26.6 | 10.0633 | 19.0311 | 1.57666 | 33.46 | 1392.47 | 123.43 | 190.2 |
| 26.7 | 11.9956 | 19.6152 | 1.59388 | 33.54 | 1408.65 | 126.24 | 192.2 |
| 26.8 | 13.9866 | 20.2070 | 1.61098 | 33.62 | 1424.74 | 129.18 | 194.2 |
| 26.9 | 16.0372 | 20.8065 | 1.62797 | 33.71 | 1440.74 | 132.25 | 196.3 |
| 27.0 | 18.1482 | 21.4139 | 1.64485 | 33.80 | 1456.65 | 135.47 | 198.3 |
| 27.1 | 20.3202 | 22.0292 | 1.66163 | 33.89 | 1472.49 | 138.85 | 200.4 |
| 27.2 | 22.5543 | 22.6527 | 1.67833 | 33.99 | 1488.26 | 142.40 | 202.5 |
| 27.3 | 24.8511 | 23.2844 | 1.69493 | 34.09 | 1503.98 | 146.13 | 204.7 |
| 27.4 | 27.2114 | 23.9245 | 1.71146 | 34.19 | 1519.65 | 150.06 | 206.8 |
| 27.5 | 29.6362 | 24.5730 | 1.72792 | 34.29 | 1535.27 | 154.22 | 209.0 |
| 27.6 | 32.1263 | 25.2300 | 1.74430 | 34.39 | 1550.85 | 158.61 | 211.2 |
| 27.7 | 34.6825 | 25.8958 | 1.76062 | 34.50 | 1566.40 | 163.27 | 213.5 |
| 27.8 | 37.3058 | 26.5703 | 1.77689 | 34.60 | 1581.92 | 168.21 | 215.7 |
| 27.9 | 39.9969 | 27.2537 | 1.79310 | 34.71 | 1597.42 | 173.48 | 218.0 |
| 28.0 | 42.7568 | 27.9460 | 1.80927 | 34.82 | 1612.91 | 179.10 | 220.4 |
| 28.1 | 45.5864 | 28.6475 | 1.82539 | 34.93 | 1628.38 | 185.11 | 222.7 |
| 28.2 | 48.4866 | 29.3581 | 1.84147 | 35.04 | 1643.84 | 191.56 | 225.1 |
| 28.3 | 51.4583 | 30.0780 | 1.85751 | 35.15 | 1659.30 | 198.50 | 227.5 |
| 28.4 | 54.5025 | 30.8072 | 1.87353 | 35.27 | 1674.76 | 206.00 | 229.9 |
| 28.5 | 57.6201 | 31.5459 | 1.88951 | 35.38 | 1690.23 | 214.12 | 232.4 |
| 28.6 | 60.8120 | 32.2941 | 1.90547 | 35.50 | 1705.70 | 222.95 | 234.9 |
| 28.7 | 64.0792 | 33.0519 | 1.92141 | 35.61 | 1721.17 | 232.60 | 237.4 |
| 28.8 | 67.4227 | 33.8193 | 1.93733 | 35.73 | 1736.66 | 243.19 | 240.0 |
| 28.9 | 70.8434 | 34.5965 | 1.95323 | 35.84 | 1752.16 | 254.86 | 242.5 |
| 29.0 | 74.3423 | 35.3834 | 1.96911 | 35.96 | 1767.68 | 267.79 | 245.2 |
| 29.1 | 77.9204 | 36.1801 | 1.98499 | 36.07 | 1783.21 | 282.23 | 247.8 |
| 29.2 | 81.5787 | 36.9867 | 2.00085 | 36.19 | 1798.76 | 298.44 | 250.5 |
| 29.3 | 85.3181 | 37.8033 | 2.01671 | 36.30 | 1814.33 | 316.80 | 253.2 |
| 29.4 | 89.1397 | 38.6297 | 2.03256 | 36.42 | 1829.92 | 337.76 | 255.9 |
| 29.5 | 93.0444 | 39.4662 | 2.04841 | 36.54 | 1845.53 | 361.94 | 258.7 |
| 29.6 | 97.0332 | 40.3126 | 2.06425 | 36.65 | 1861.16 | 390.15 | 261.5 |

METHANE ISOTHERM AT T = 120. K

Second Virial Coefficient is -280.9 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.1 | 0.0970 | 0.9418 | 0.00085 | 25.66 | 282.86 | 4.73 | 12.4 |
| 0.2 | 0.1884 | 0.8864 | 0.00176 | 26.61 | 277.46 | 4.76 | 12.7 |
| 25.6 | 0.7676 | 14.4874 | 1.38452 | 32.66 | 1254.12 | 98.83 | 172.9 |
| 25.7 | 2.2416 | 14.9930 | 1.40170 | 32.72 | 1270.66 | 100.74 | 174.7 |
| 25.8 | 3.7665 | 15.5056 | 1.41875 | 32.78 | 1287.05 | 102.72 | 176.5 |
| 25.9 | 5.3430 | 16.0251 | 1.43567 | 32.84 | 1303.31 | 104.78 | 178.4 |
| 26.0 | 6.9717 | 16.5517 | 1.45248 | 32.91 | 1319.45 | 106.91 | 180.2 |
| 26.1 | 8.6535 | 17.0856 | 1.46917 | 32.99 | 1335.48 | 109.12 | 182.1 |
| 26.2 | 10.3891 | 17.6267 | 1.48576 | 33.06 | 1351.40 | 111.42 | 184.0 |
| 26.3 | 12.1791 | 18.1753 | 1.50225 | 33.14 | 1367.23 | 113.82 | 185.9 |
| 26.4 | 14.0244 | 18.7313 | 1.51865 | 33.22 | 1382.97 | 116.31 | 187.9 |
| 26.5 | 15.9256 | 19.2950 | 1.53496 | 33.31 | 1398.63 | 118.92 | 189.9 |
| 26.6 | 17.8837 | 19.8664 | 1.55119 | 33.39 | 1414.22 | 121.64 | 191.8 |
| 26.7 | 19.8992 | 20.4457 | 1.56734 | 33.48 | 1429.75 | 124.49 | 193.9 |
| 26.8 | 21.9731 | 21.0329 | 1.58342 | 33.58 | 1445.22 | 127.47 | 195.9 |
| 26.9 | 24.1061 | 21.6282 | 1.59943 | 33.67 | 1460.64 | 130.60 | 198.0 |
| 27.0 | 26.2990 | 22.2317 | 1.61539 | 33.77 | 1476.02 | 133.89 | 200.1 |
| 27.1 | 28.5527 | 22.8434 | 1.63129 | 33.87 | 1491.36 | 137.35 | 202.2 |
| 27.2 | 30.8679 | 23.4635 | 1.64713 | 33.97 | 1506.68 | 141.00 | 204.3 |
| 27.3 | 33.2457 | 24.0921 | 1.66294 | 34.07 | 1521.96 | 144.85 | 206.5 |
| 27.4 | 35.6867 | 24.7293 | 1.67870 | 34.17 | 1537.22 | 148.92 | 208.7 |
| 27.5 | 38.1918 | 25.3752 | 1.69442 | 34.28 | 1552.47 | 153.24 | 210.9 |
| 27.6 | 40.7620 | 26.0299 | 1.71011 | 34.38 | 1567.71 | 157.83 | 213.2 |
| 27.7 | 43.3981 | 26.6935 | 1.72577 | 34.49 | 1582.94 | 162.72 | 215.4 |
| 27.8 | 46.1010 | 27.3660 | 1.74140 | 34.60 | 1598.17 | 167.94 | 217.7 |
| 27.9 | 48.8716 | 28.0477 | 1.75702 | 34.70 | 1613.40 | 173.53 | 220.1 |
| 28.0 | 51.7108 | 28.7386 | 1.77261 | 34.81 | 1628.63 | 179.53 | 222.4 |
| 28.1 | 54.6196 | 29.4387 | 1.78819 | 34.92 | 1643.87 | 185.98 | 224.8 |
| 28.2 | 57.5989 | 30.1481 | 1.80376 | 35.03 | 1659.12 | 192.96 | 227.2 |
| 28.3 | 60.6495 | 30.8670 | 1.81931 | 35.15 | 1674.39 | 200.52 | 229.6 |
| 28.4 | 63.7726 | 31.5954 | 1.83487 | 35.26 | 1689.67 | 208.76 | 232.1 |
| 28.5 | 66.9689 | 32.3334 | 1.85042 | 35.37 | 1704.97 | 217.76 | 234.6 |
| 28.6 | 70.2396 | 33.0810 | 1.86596 | 35.48 | 1720.29 | 227.64 | 237.1 |
| 28.7 | 73.5855 | 33.8383 | 1.88151 | 35.59 | 1735.63 | 238.55 | 239.7 |
| 28.8 | 77.0076 | 34.6054 | 1.89706 | 35.71 | 1750.99 | 250.67 | 242.3 |

METHANE ISOTHERM AT T = 120. K (continued)

| ρ | P | dP/dρ\|T | dP/dT\|ρ | $C_v$ | W | η | λ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 28.9 | 80.5069 | 35.3824 | 1.91262 | 35.82 | 1766.38 | 264.20 | 244.9 |
| 29.0 | 84.0844 | 36.1692 | 1.92818 | 35.93 | 1781.80 | 279.43 | 247.6 |
| 29.1 | 87.7410 | 36.9659 | 1.94376 | 36.04 | 1797.24 | 296.71 | 250.2 |
| 29.2 | 91.4779 | 37.7726 | 1.95934 | 36.16 | 1812.71 | 316.49 | 253.0 |
| 29.3 | 95.2959 | 38.5893 | 1.97494 | 36.27 | 1828.21 | 339.36 | 255.7 |
| 29.4 | 99.1961 | 39.4160 | 1.99055 | 36.38 | 1843.74 | 366.14 | 258.5 |

METHANE ISOTHERM AT T = 130. K

Second Virial Coefficient is -240.4 cm³/mol

| ρ | P | dP/dρ\|T | dP/dT\|ρ | $C_v$ | W | η | λ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.1 | 0.1055 | 1.0291 | 0.00085 | 25.42 | 295.28 | 5.12 | 13.6 |
| 0.2 | 0.2058 | 0.9780 | 0.00174 | 25.84 | 290.85 | 5.14 | 13.8 |
| 0.3 | 0.3011 | 0.9271 | 0.00266 | 26.30 | 286.38 | 5.17 | 14.1 |
| 24.6 | 0.7020 | 11.5089 | 1.19572 | 31.87 | 1148.06 | 80.46 | 158.4 |
| 24.7 | 1.8742 | 11.9369 | 1.21142 | 31.92 | 1163.96 | 81.83 | 160.0 |
| 24.8 | 3.0896 | 12.3714 | 1.22704 | 31.96 | 1179.73 | 83.24 | 161.7 |
| 24.9 | 4.3487 | 12.8126 | 1.24258 | 32.02 | 1195.39 | 84.69 | 163.3 |
| 25.0 | 5.6523 | 13.2604 | 1.25805 | 32.07 | 1210.94 | 86.19 | 165.0 |
| 25.1 | 7.0010 | 13.7151 | 1.27344 | 32.13 | 1226.39 | 87.74 | 166.7 |
| 25.2 | 8.3956 | 14.1765 | 1.28877 | 32.19 | 1241.76 | 89.34 | 168.5 |
| 25.3 | 9.8366 | 14.6450 | 1.30403 | 32.26 | 1257.04 | 91.00 | 170.2 |
| 25.4 | 11.3248 | 15.1204 | 1.31924 | 32.33 | 1272.24 | 92.72 | 172.0 |
| 25.5 | 12.8609 | 15.6030 | 1.33438 | 32.40 | 1287.38 | 94.49 | 173.8 |
| 25.6 | 14.4456 | 16.0927 | 1.34948 | 32.48 | 1302.45 | 96.34 | 175.6 |
| 25.7 | 16.0797 | 16.5898 | 1.36452 | 32.56 | 1317.46 | 98.25 | 177.4 |
| 25.8 | 17.7638 | 17.0943 | 1.37952 | 32.64 | 1332.42 | 100.24 | 179.2 |
| 25.9 | 19.4988 | 17.6062 | 1.39448 | 32.72 | 1347.34 | 102.31 | 181.1 |
| 26.0 | 21.2853 | 18.1257 | 1.40940 | 32.81 | 1362.22 | 104.47 | 183.0 |
| 26.1 | 23.1242 | 18.6529 | 1.42429 | 32.89 | 1377.06 | 106.72 | 184.9 |
| 26.2 | 25.0162 | 19.1879 | 1.43915 | 32.98 | 1391.88 | 109.07 | 186.9 |
| 26.3 | 26.9620 | 19.7307 | 1.45398 | 33.07 | 1406.67 | 111.52 | 188.8 |
| 26.4 | 28.9626 | 20.2815 | 1.46879 | 33.16 | 1421.44 | 114.09 | 190.8 |
| 26.5 | 31.0186 | 20.8404 | 1.48358 | 33.26 | 1436.20 | 116.79 | 192.9 |
| 26.6 | 33.1309 | 21.4075 | 1.49835 | 33.35 | 1450.95 | 119.61 | 194.9 |
| 26.7 | 35.3004 | 21.9828 | 1.51311 | 33.45 | 1465.69 | 122.59 | 197.0 |

METHANE ISOTHERM AT T = 130. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 26.8 | 37.5278 | 22.5665 | 1.52786 | 33.55 | 1480.44 | 125.72 | 199.0 |
| 26.9 | 39.8140 | 23.1587 | 1.54260 | 33.65 | 1495.18 | 129.03 | 201.2 |
| 27.0 | 42.1598 | 23.7594 | 1.55734 | 33.74 | 1509.93 | 132.53 | 203.3 |
| 27.1 | 44.5661 | 24.3688 | 1.57209 | 33.84 | 1524.69 | 136.23 | 205.5 |
| 27.2 | 47.0338 | 24.9869 | 1.58683 | 33.95 | 1539.46 | 140.17 | 207.7 |
| 27.3 | 49.5638 | 25.6139 | 1.60158 | 34.05 | 1554.25 | 144.36 | 209.9 |
| 27.4 | 52.1569 | 26.2498 | 1.61633 | 34.15 | 1569.06 | 148.82 | 212.1 |
| 27.5 | 54.8141 | 26.8947 | 1.63110 | 34.25 | 1583.89 | 153.60 | 214.4 |
| 27.6 | 57.5362 | 27.5488 | 1.64588 | 34.35 | 1598.74 | 158.73 | 216.7 |
| 27.7 | 60.3241 | 28.2120 | 1.66068 | 34.46 | 1613.62 | 164.24 | 219.0 |
| 27.8 | 63.1789 | 28.8845 | 1.67550 | 34.56 | 1628.52 | 170.20 | 221.4 |
| 27.9 | 66.1013 | 29.5664 | 1.69033 | 34.67 | 1643.46 | 176.65 | 223.8 |
| 28.0 | 69.0925 | 30.2578 | 1.70519 | 34.77 | 1658.42 | 183.67 | 226.2 |
| 28.1 | 72.1532 | 30.9586 | 1.72007 | 34.87 | 1673.42 | 191.34 | 228.6 |
| 28.2 | 75.2845 | 31.6691 | 1.73498 | 34.98 | 1688.46 | 199.76 | 231.1 |
| 28.3 | 78.4873 | 32.3892 | 1.74992 | 35.08 | 1703.53 | 209.04 | 233.6 |
| 28.4 | 81.7627 | 33.1190 | 1.76489 | 35.19 | 1718.64 | 219.34 | 236.1 |
| 28.5 | 85.1115 | 33.8586 | 1.77988 | 35.29 | 1733.79 | 230.83 | 238.7 |
| 28.6 | 88.5347 | 34.6080 | 1.79492 | 35.40 | 1748.97 | 243.76 | 241.3 |
| 28.7 | 92.0334 | 35.3674 | 1.80998 | 35.50 | 1764.20 | 258.40 | 243.9 |
| 28.8 | 95.6085 | 36.1367 | 1.82509 | 35.60 | 1779.46 | 275.15 | 246.5 |
| 28.9 | 99.2611 | 36.9159 | 1.84023 | 35.71 | 1794.77 | 294.50 | 249.2 |

METHANE ISOTHERM AT T = 140. K

Second Virial Coefficient is -208.5 cm³/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.1 | 0.1140 | 1.1157 | 0.00085 | 25.32 | 307.06 | 5.50 | 14.7 |
| 0.2 | 0.2232 | 1.0678 | 0.00173 | 25.66 | 303.13 | 5.53 | 14.9 |
| 0.3 | 0.3276 | 1.0204 | 0.00263 | 25.96 | 299.21 | 5.56 | 15.2 |
| 0.4 | 0.4272 | 0.9734 | 0.00357 | 26.27 | 295.30 | 5.59 | 15.5 |
| 0.5 | 0.5222 | 0.9263 | 0.00455 | 26.66 | 291.35 | 5.62 | 15.8 |
| 0.6 | 0.6125 | 0.8786 | 0.00559 | 27.22 | 287.31 | 5.65 | 16.1 |
| 23.5 | 0.6559 | 8.7615 | 1.01661 | 31.22 | 1034.01 | 66.46 | 143.6 |
| 23.6 | 1.5496 | 9.1140 | 1.03088 | 31.25 | 1049.26 | 67.46 | 145.1 |
| 23.7 | 2.4789 | 9.4726 | 1.04512 | 31.28 | 1064.42 | 68.48 | 146.6 |
| 23.8 | 3.4443 | 9.8374 | 1.05931 | 31.31 | 1079.49 | 69.53 | 148.0 |

METHANE ISOTHERM AT T = 140. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 23.9 | 4.4466 | 10.2084 | 1.07346 | 31.35 | 1094.46 | 70.61 | 149.5 |
| 24.0 | 5.4862 | 10.5856 | 1.08758 | 31.39 | 1109.35 | 71.72 | 151.1 |
| 24.1 | 6.5639 | 10.9692 | 1.10166 | 31.44 | 1124.16 | 72.86 | 152.6 |
| 24.2 | 7.6803 | 11.3591 | 1.11571 | 31.49 | 1138.91 | 74.03 | 154.1 |
| 24.3 | 8.8359 | 11.7556 | 1.12972 | 31.54 | 1153.58 | 75.24 | 155.7 |
| 24.4 | 10.0316 | 12.1585 | 1.14371 | 31.60 | 1168.19 | 76.48 | 157.3 |
| 24.5 | 11.2679 | 12.5680 | 1.15767 | 31.66 | 1182.74 | 77.76 | 158.9 |
| 24.6 | 12.5454 | 12.9843 | 1.17160 | 31.72 | 1197.24 | 79.08 | 160.6 |
| 24.7 | 13.8649 | 13.4072 | 1.18551 | 31.78 | 1211.69 | 80.44 | 162.2 |
| 24.8 | 15.2271 | 13.8370 | 1.19940 | 31.85 | 1226.10 | 81.84 | 163.9 |
| 24.9 | 16.6326 | 14.2737 | 1.21327 | 31.92 | 1240.47 | 83.30 | 165.6 |
| 25.0 | 18.0821 | 14.7174 | 1.22712 | 31.99 | 1254.81 | 84.80 | 167.3 |
| 25.1 | 19.5763 | 15.1682 | 1.24096 | 32.07 | 1269.12 | 86.36 | 169.0 |
| 25.2 | 21.1159 | 15.6261 | 1.25479 | 32.14 | 1283.41 | 87.97 | 170.8 |
| 25.3 | 22.7017 | 16.0913 | 1.26861 | 32.22 | 1297.68 | 89.64 | 172.5 |
| 25.4 | 24.3344 | 16.5638 | 1.28242 | 32.30 | 1311.93 | 91.38 | 174.3 |
| 25.5 | 26.0148 | 17.0437 | 1.29623 | 32.38 | 1326.17 | 93.18 | 176.1 |
| 25.6 | 27.7434 | 17.5312 | 1.31003 | 32.47 | 1340.40 | 95.06 | 178.0 |
| 25.7 | 29.5212 | 18.0262 | 1.32384 | 32.55 | 1354.62 | 97.01 | 179.9 |
| 25.8 | 31.3489 | 18.5290 | 1.33766 | 32.64 | 1368.85 | 99.05 | 181.7 |
| 25.9 | 33.2273 | 19.0395 | 1.35147 | 32.72 | 1383.08 | 101.18 | 183.6 |
| 26.0 | 35.1571 | 19.5579 | 1.36530 | 32.81 | 1397.32 | 103.40 | 185.6 |
| 26.1 | 37.1392 | 20.0843 | 1.37914 | 32.90 | 1411.57 | 105.73 | 187.5 |
| 26.2 | 39.1742 | 20.6188 | 1.39299 | 32.99 | 1425.83 | 108.18 | 189.5 |
| 26.3 | 41.2632 | 21.1614 | 1.40686 | 33.08 | 1440.11 | 110.74 | 191.5 |
| 26.4 | 43.4068 | 21.7123 | 1.42075 | 33.17 | 1454.40 | 113.44 | 193.5 |
| 26.5 | 45.6059 | 22.2716 | 1.43465 | 33.26 | 1468.72 | 116.28 | 195.6 |
| 26.6 | 47.8614 | 22.8393 | 1.44858 | 33.36 | 1483.07 | 119.28 | 197.7 |
| 26.7 | 50.1741 | 23.4155 | 1.46254 | 33.45 | 1497.44 | 122.46 | 199.8 |
| 26.8 | 52.5448 | 24.0003 | 1.47652 | 33.54 | 1511.84 | 125.82 | 201.9 |
| 26.9 | 54.9744 | 24.5939 | 1.49053 | 33.64 | 1526.27 | 129.39 | 204.1 |
| 27.0 | 57.4639 | 25.1963 | 1.50457 | 33.73 | 1540.74 | 133.19 | 206.2 |
| 27.1 | 60.0140 | 25.8076 | 1.51865 | 33.83 | 1555.24 | 137.25 | 208.4 |
| 27.2 | 62.6257 | 26.4279 | 1.53276 | 33.92 | 1569.78 | 141.60 | 210.7 |
| 27.3 | 65.2999 | 27.0572 | 1.54691 | 34.02 | 1584.35 | 146.26 | 212.9 |
| 27.4 | 68.0374 | 27.6957 | 1.56110 | 34.11 | 1598.97 | 151.28 | 215.2 |
| 27.5 | 70.8393 | 28.3434 | 1.57533 | 34.21 | 1613.63 | 156.71 | 217.6 |
| 27.6 | 73.7064 | 29.0005 | 1.58960 | 34.30 | 1628.34 | 162.59 | 219.9 |
| 27.7 | 76.6397 | 29.6669 | 1.60391 | 34.40 | 1643.09 | 169.00 | 222.3 |
| 27.8 | 79.6401 | 30.3429 | 1.61828 | 34.50 | 1657.88 | 176.00 | 224.7 |

METHANE ISOTHERM AT T = 140. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 27.9 | 82.7086 | 31.0283 | 1.63269 | 34.59 | 1672.72 | 183.70 | 227.1 |
| 28.0 | 85.8461 | 31.7234 | 1.64715 | 34.69 | 1687.61 | 192.20 | 229.6 |
| 28.1 | 89.0536 | 32.4282 | 1.66166 | 34.78 | 1702.55 | 201.64 | 232.1 |
| 28.2 | 92.3321 | 33.1428 | 1.67622 | 34.88 | 1717.53 | 212.20 | 234.6 |
| 28.3 | 95.6825 | 33.8671 | 1.69084 | 34.97 | 1732.57 | 224.10 | 237.1 |
| 28.4 | 99.1058 | 34.6013 | 1.70551 | 35.06 | 1747.66 | 237.61 | 239.7 |

METHANE ISOTHERM AT T = 150. K

Second Virial Coefficient is -182.8 cm$^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.2 | 0.2404 | 1.1568 | 0.00172 | 25.54 | 314.82 | 5.92 | 16.1 |
| 0.4 | 0.4628 | 1.0681 | 0.00354 | 26.06 | 307.80 | 5.98 | 16.6 |
| 0.6 | 0.6677 | 0.9810 | 0.00548 | 26.58 | 300.82 | 6.04 | 17.1 |
| 0.8 | 0.8553 | 0.8945 | 0.00755 | 27.26 | 293.81 | 6.10 | 17.7 |
| 1.0 | 1.0254 | 0.8069 | 0.00983 | 28.38 | 286.57 | 6.17 | 18.4 |
| 22.4 | 1.6116 | 6.6435 | 0.86253 | 30.77 | 929.89 | 56.32 | 130.4 |
| 22.6 | 2.9977 | 7.2213 | 0.88808 | 30.79 | 958.69 | 57.87 | 133.0 |
| 22.8 | 4.5016 | 7.8218 | 0.91361 | 30.82 | 987.23 | 59.48 | 135.7 |
| 23.0 | 6.1279 | 8.4452 | 0.93913 | 30.87 | 1015.53 | 61.17 | 138.4 |
| 23.2 | 7.8813 | 9.0921 | 0.96463 | 30.94 | 1043.61 | 62.94 | 141.2 |
| 23.4 | 9.7664 | 9.7628 | 0.99011 | 31.02 | 1071.51 | 64.80 | 144.0 |
| 23.6 | 11.7880 | 10.4578 | 1.01559 | 31.12 | 1099.25 | 66.76 | 146.9 |
| 23.8 | 13.9511 | 11.1776 | 1.04108 | 31.22 | 1126.85 | 68.82 | 149.9 |
| 24.0 | 16.2607 | 11.9228 | 1.06657 | 31.33 | 1154.34 | 71.00 | 152.9 |
| 24.2 | 18.7220 | 12.6939 | 1.09208 | 31.46 | 1181.76 | 73.31 | 156.1 |
| 24.4 | 21.3401 | 13.4916 | 1.11763 | 31.59 | 1209.12 | 75.76 | 159.3 |
| 24.6 | 24.1204 | 14.3163 | 1.14322 | 31.73 | 1236.46 | 78.38 | 162.6 |
| 24.8 | 27.0685 | 15.1689 | 1.16886 | 31.87 | 1263.80 | 81.17 | 165.9 |
| 25.0 | 30.1899 | 16.0499 | 1.19458 | 32.02 | 1291.16 | 84.17 | 169.4 |
| 25.2 | 33.4904 | 16.9600 | 1.22038 | 32.18 | 1318.57 | 87.41 | 172.9 |
| 25.4 | 36.9759 | 17.9000 | 1.24628 | 32.34 | 1346.05 | 90.90 | 176.5 |
| 25.6 | 40.6524 | 18.8705 | 1.27230 | 32.50 | 1373.62 | 94.69 | 180.3 |
| 25.8 | 44.5261 | 19.8723 | 1.29844 | 32.67 | 1401.31 | 98.84 | 184.1 |
| 26.0 | 48.6034 | 20.9060 | 1.32473 | 32.83 | 1429.11 | 103.39 | 188.0 |
| 26.2 | 52.8907 | 21.9726 | 1.35117 | 33.00 | 1457.07 | 108.42 | 192.0 |

METHANE ISOTHERM AT T = 150. K (continued)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 26.4 | 57.3947 | 23.0726 | 1.37778 | 33.18 | 1485.18 | 114.02 | 196.0 |
| 26.6 | 62.1220 | 24.2067 | 1.40458 | 33.35 | 1513.47 | 120.31 | 200.2 |
| 26.8 | 67.0797 | 25.3758 | 1.43158 | 33.52 | 1541.94 | 127.42 | 204.5 |
| 27.0 | 72.2747 | 26.5805 | 1.45879 | 33.70 | 1570.61 | 135.56 | 208.9 |
| 27.2 | 77.7143 | 27.8215 | 1.48623 | 33.87 | 1599.49 | 144.98 | 213.5 |
| 27.4 | 83.4058 | 29.0994 | 1.51390 | 34.04 | 1628.58 | 156.04 | 218.1 |
| 27.6 | 89.3566 | 30.4149 | 1.54181 | 34.22 | 1657.89 | 169.25 | 222.8 |
| 27.8 | 95.5743 | 31.7686 | 1.56999 | 34.39 | 1687.42 | 185.32 | 227.7 |

METHANE ISOTHERM AT T = 160. K
Second Virial Coefficient is -161.7 $cm^3/mol$

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| $mol/dm^3$ | MPa | $MPa\cdot dm^3/mol$ | MPa/K | J/(mol·k) | m/s | $\mu Pa\cdot s$ | mW/(m·K) |
| 0.2 | 0.2575 | 1.2451 | 0.00171 | 25.46 | 326.03 | 6.30 | 17.3 |
| 0.4 | 0.4981 | 1.1615 | 0.00352 | 25.90 | 319.70 | 6.36 | 17.7 |
| 0.6 | 0.7222 | 1.0796 | 0.00542 | 26.34 | 313.44 | 6.43 | 18.2 |
| 0.8 | 0.9301 | 0.9993 | 0.00743 | 26.78 | 307.23 | 6.50 | 18.7 |
| 1.0 | 1.1220 | 0.9203 | 0.00954 | 27.29 | 301.07 | 6.57 | 19.2 |
| 1.2 | 1.2983 | 0.8421 | 0.01179 | 27.93 | 294.88 | 6.65 | 19.9 |
| 1.4 | 1.4589 | 0.7643 | 0.01421 | 28.81 | 288.61 | 6.73 | 20.6 |
| 21.0 | 1.7596 | 4.3943 | 0.69792 | 30.53 | 796.71 | 46.92 | 115.4 |
| 21.2 | 2.6814 | 4.8266 | 0.72026 | 30.49 | 823.69 | 48.08 | 117.6 |
| 21.4 | 3.6916 | 5.2790 | 0.74273 | 30.46 | 850.53 | 49.28 | 119.9 |
| 21.6 | 4.7944 | 5.7517 | 0.76530 | 30.46 | 877.25 | 50.53 | 122.2 |
| 21.8 | 5.9937 | 6.2450 | 0.78797 | 30.47 | 903.84 | 51.82 | 124.6 |
| 22.0 | 7.2938 | 6.7594 | 0.81074 | 30.49 | 930.32 | 53.17 | 127.0 |
| 22.2 | 8.6989 | 7.2951 | 0.83360 | 30.53 | 956.70 | 54.58 | 129.5 |
| 22.4 | 10.2133 | 7.8527 | 0.85655 | 30.59 | 982.99 | 56.04 | 132.0 |
| 22.6 | 11.8414 | 8.4324 | 0.87958 | 30.65 | 1009.20 | 57.58 | 134.6 |
| 22.8 | 13.5877 | 9.0347 | 0.90270 | 30.73 | 1035.34 | 59.18 | 137.3 |
| 23.0 | 15.4568 | 9.6601 | 0.92590 | 30.81 | 1061.45 | 60.86 | 140.0 |
| 23.2 | 17.4533 | 10.3091 | 0.94920 | 30.91 | 1087.53 | 62.62 | 142.8 |
| 23.4 | 19.5821 | 10.9822 | 0.97259 | 31.01 | 1113.59 | 64.48 | 145.7 |
| 23.6 | 21.8479 | 11.6800 | 0.99608 | 31.13 | 1139.67 | 66.44 | 148.6 |
| 23.8 | 24.2557 | 12.4029 | 1.01968 | 31.24 | 1165.77 | 68.51 | 151.6 |
| 24.0 | 26.8108 | 13.1517 | 1.04339 | 31.37 | 1191.92 | 70.71 | 154.7 |
| 24.2 | 29.5182 | 13.9268 | 1.06723 | 31.50 | 1218.13 | 73.04 | 157.9 |
| 24.4 | 32.3833 | 14.7290 | 1.09120 | 31.64 | 1244.42 | 75.53 | 161.1 |

METHANE ISOTHERM AT T = 160. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 24.6 | 35.4116 | 15.5590 | 1.11532 | 31.78 | 1270.81 | 78.19 | 164.5 |
| 24.8 | 38.6088 | 16.4172 | 1.13959 | 31.92 | 1297.31 | 81.04 | 167.9 |
| 25.0 | 41.9805 | 17.3046 | 1.16402 | 32.07 | 1323.95 | 84.12 | 171.4 |
| 25.2 | 45.5326 | 18.2217 | 1.18863 | 32.22 | 1350.74 | 87.45 | 174.9 |
| 25.4 | 49.2712 | 19.1693 | 1.21343 | 32.37 | 1377.68 | 91.07 | 178.6 |
| 25.6 | 53.2024 | 20.1481 | 1.23842 | 32.52 | 1404.80 | 95.03 | 182.4 |
| 25.8 | 57.3326 | 21.1588 | 1.26363 | 32.68 | 1432.11 | 99.38 | 186.2 |
| 26.0 | 61.6681 | 22.2022 | 1.28906 | 32.84 | 1459.62 | 104.20 | 190.2 |
| 26.2 | 66.2157 | 23.2789 | 1.31473 | 32.99 | 1487.34 | 109.57 | 194.2 |
| 26.4 | 70.9820 | 24.3897 | 1.34063 | 33.15 | 1515.28 | 115.60 | 198.4 |
| 26.6 | 75.9739 | 25.5354 | 1.36680 | 33.31 | 1543.45 | 122.44 | 202.6 |
| 26.8 | 81.1985 | 26.7165 | 1.39323 | 33.47 | 1571.85 | 130.29 | 207.0 |
| 27.0 | 86.6629 | 27.9338 | 1.41994 | 33.62 | 1600.49 | 139.39 | 211.5 |
| 27.2 | 92.3745 | 29.1880 | 1.44695 | 33.78 | 1629.38 | 150.11 | 216.0 |
| 27.4 | 98.3406 | 30.4796 | 1.47425 | 33.93 | 1658.53 | 162.95 | 220.7 |

METHANE ISOTHERM AT T = 170. K
Second Virial Coefficient is -144.1 cm³/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.2 | 0.2746 | 1.3328 | 0.00171 | 25.40 | 336.81 | 6.68 | 18.5 |
| 0.4 | 0.5332 | 1.2538 | 0.00350 | 25.78 | 331.10 | 6.74 | 18.9 |
| 0.6 | 0.7762 | 1.1765 | 0.00538 | 26.15 | 325.45 | 6.81 | 19.3 |
| 0.8 | 1.0040 | 1.1009 | 0.00735 | 26.52 | 319.89 | 6.88 | 19.8 |
| 1.0 | 1.2167 | 1.0270 | 0.00940 | 26.90 | 314.40 | 6.96 | 20.3 |
| 1.2 | 1.4149 | 0.9546 | 0.01155 | 27.30 | 308.99 | 7.04 | 20.8 |
| 1.4 | 1.5987 | 0.8838 | 0.01380 | 27.75 | 303.64 | 7.12 | 21.4 |
| 1.6 | 1.7685 | 0.8143 | 0.01616 | 28.26 | 298.33 | 7.21 | 22.0 |
| 1.8 | 1.9245 | 0.7460 | 0.01864 | 28.87 | 293.04 | 7.30 | 22.7 |
| 2.0 | 2.0670 | 0.6789 | 0.02127 | 29.62 | 287.73 | 7.39 | 23.5 |
| 2.2 | 2.1961 | 0.6127 | 0.02407 | 30.54 | 282.37 | 7.49 | 24.3 |
| 2.4 | 2.3121 | 0.5473 | 0.02707 | 31.67 | 276.92 | 7.59 | 25.2 |
| 19.4 | 2.4699 | 2.5986 | 0.54533 | 30.64 | 659.74 | 38.99 | 101.0 |
| 19.6 | 3.0189 | 2.8938 | 0.56393 | 30.53 | 683.91 | 39.87 | 102.8 |
| 19.8 | 3.6286 | 3.2060 | 0.58278 | 30.43 | 708.15 | 40.78 | 104.7 |

METHANE ISOTHERM AT T = 170. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 20.0 | 4.3024 | 3.5353 | 0.60186 | 30.36 | 732.43 | 41.72 | 106.6 |
| 20.2 | 5.0439 | 3.8823 | 0.62116 | 30.30 | 756.76 | 42.69 | 108.5 |
| 20.4 | 5.8566 | 4.2472 | 0.64068 | 30.26 | 781.12 | 43.69 | 110.5 |
| 20.6 | 6.7440 | 4.6302 | 0.66040 | 30.23 | 805.51 | 44.72 | 112.6 |
| 20.8 | 7.7099 | 5.0318 | 0.68031 | 30.22 | 829.92 | 45.79 | 114.7 |
| 21.0 | 8.7580 | 5.4524 | 0.70040 | 30.22 | 854.34 | 46.90 | 116.8 |
| 21.2 | 9.8921 | 5.8921 | 0.72066 | 30.24 | 878.77 | 48.05 | 119.1 |
| 21.4 | 11.1161 | 6.3515 | 0.74109 | 30.26 | 903.22 | 49.24 | 121.3 |
| 21.6 | 12.4340 | 6.8308 | 0.76168 | 30.30 | 927.69 | 50.48 | 123.6 |
| 21.8 | 13.8498 | 7.3306 | 0.78242 | 30.35 | 952.18 | 51.77 | 126.0 |
| 22.0 | 15.3677 | 7.8512 | 0.80332 | 30.41 | 976.69 | 53.11 | 128.5 |
| 22.2 | 16.9917 | 8.3930 | 0.82437 | 30.48 | 1001.25 | 54.51 | 131.0 |
| 22.4 | 18.7263 | 8.9566 | 0.84557 | 30.56 | 1025.85 | 55.97 | 133.5 |
| 22.6 | 20.5758 | 9.5423 | 0.86693 | 30.65 | 1050.50 | 57.50 | 136.2 |
| 22.8 | 22.5448 | 10.1508 | 0.88843 | 30.74 | 1075.22 | 59.11 | 138.8 |
| 23.0 | 24.6377 | 10.7825 | 0.91010 | 30.84 | 1100.02 | 60.79 | 141.6 |
| 23.2 | 26.8594 | 11.4381 | 0.93192 | 30.95 | 1124.91 | 62.56 | 144.4 |
| 23.4 | 29.2146 | 12.1179 | 0.95392 | 31.06 | 1149.90 | 64.43 | 147.3 |
| 23.6 | 31.7082 | 12.8228 | 0.97608 | 31.18 | 1175.00 | 66.41 | 150.3 |
| 23.8 | 34.3454 | 13.5532 | 0.99842 | 31.30 | 1200.24 | 68.51 | 153.3 |
| 24.0 | 37.1312 | 14.3098 | 1.02095 | 31.43 | 1225.61 | 70.74 | 156.5 |
| 24.2 | 40.0711 | 15.0932 | 1.04367 | 31.56 | 1251.14 | 73.11 | 159.7 |
| 24.4 | 43.1703 | 15.9041 | 1.06659 | 31.69 | 1276.84 | 75.65 | 162.9 |
| 24.6 | 46.4346 | 16.7432 | 1.08973 | 31.82 | 1302.71 | 78.38 | 166.3 |
| 24.8 | 49.8695 | 17.6112 | 1.11308 | 31.96 | 1328.78 | 81.32 | 169.7 |
| 25.0 | 53.4810 | 18.5088 | 1.13667 | 32.10 | 1355.04 | 84.50 | 173.3 |
| 25.2 | 57.2751 | 19.4366 | 1.16049 | 32.24 | 1381.52 | 87.97 | 176.9 |
| 25.4 | 61.2578 | 20.3955 | 1.18456 | 32.38 | 1408.21 | 91.75 | 180.6 |
| 25.6 | 65.4354 | 21.3861 | 1.20889 | 32.52 | 1435.14 | 95.91 | 184.4 |
| 25.8 | 69.8144 | 22.4092 | 1.23349 | 32.66 | 1462.31 | 100.52 | 188.3 |
| 26.0 | 74.4013 | 23.4654 | 1.25837 | 32.81 | 1489.72 | 105.66 | 192.3 |
| 26.2 | 79.2028 | 24.5555 | 1.28353 | 32.95 | 1517.38 | 111.43 | 196.4 |
| 26.4 | 84.2258 | 25.6803 | 1.30900 | 33.09 | 1545.31 | 117.98 | 200.6 |
| 26.6 | 89.4773 | 26.8404 | 1.33478 | 33.23 | 1573.50 | 125.50 | 204.9 |
| 26.8 | 94.9644 | 28.0365 | 1.36087 | 33.37 | 1601.96 | 134.23 | 209.3 |

METHANE ISOTHERM AT T = 180. K

Second Virial Coefficient is -129.2 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 0.7008 | 1.3085 | 0.00440 | 25.85 | 339.48 | 7.16 | 20.3 |
| 1.0 | 1.3102 | 1.1309 | 0.00930 | 26.63 | 327.03 | 7.35 | 21.4 |
| 1.5 | 1.8335 | 0.9640 | 0.01470 | 27.46 | 315.15 | 7.56 | 22.7 |
| 2.0 | 2.2760 | 0.8075 | 0.02062 | 28.40 | 303.84 | 7.79 | 24.2 |
| 2.5 | 2.6428 | 0.6612 | 0.02712 | 29.57 | 293.01 | 8.04 | 26.1 |
| 3.0 | 2.9388 | 0.5246 | 0.03429 | 31.12 | 282.50 | 8.32 | 28.3 |
| 3.5 | 3.1690 | 0.3978 | 0.04225 | 33.21 | 272.09 | 8.63 | 31.1 |
| 17.5 | 3.6359 | 1.3001 | 0.40692 | 31.24 | 524.61 | 31.97 | 87.4 |
| 18.0 | 4.3957 | 1.7522 | 0.44286 | 30.80 | 574.20 | 33.68 | 91.0 |
| 18.5 | 5.4019 | 2.2872 | 0.48087 | 30.48 | 625.55 | 35.51 | 94.8 |
| 19.0 | 6.6978 | 2.9121 | 0.52085 | 30.24 | 678.47 | 37.47 | 98.9 |
| 19.5 | 8.3299 | 3.6327 | 0.56263 | 30.10 | 732.65 | 39.58 | 103.2 |
| 20.0 | 10.3473 | 4.4543 | 0.60602 | 30.03 | 787.82 | 41.85 | 107.9 |
| 20.5 | 12.8020 | 5.3824 | 0.65086 | 30.04 | 843.79 | 44.31 | 112.9 |
| 21.0 | 15.7485 | 6.4228 | 0.69704 | 30.11 | 900.46 | 46.99 | 118.2 |
| 21.5 | 19.2445 | 7.5818 | 0.74447 | 30.25 | 957.79 | 49.93 | 123.9 |
| 22.0 | 23.3512 | 8.8662 | 0.79312 | 30.43 | 1015.84 | 53.18 | 129.9 |
| 22.5 | 28.1329 | 10.2836 | 0.84299 | 30.65 | 1074.67 | 56.81 | 136.3 |
| 23.0 | 33.6583 | 11.8422 | 0.89410 | 30.90 | 1134.42 | 60.90 | 143.1 |
| 23.5 | 40.0002 | 13.5511 | 0.94654 | 31.18 | 1195.21 | 65.58 | 150.4 |
| 24.0 | 47.2361 | 15.4199 | 1.00037 | 31.47 | 1257.19 | 71.00 | 158.1 |
| 24.5 | 55.4485 | 17.4590 | 1.05572 | 31.78 | 1320.50 | 77.43 | 166.3 |
| 25.0 | 64.7252 | 19.6791 | 1.11272 | 32.10 | 1385.29 | 85.21 | 175.1 |
| 25.5 | 75.1596 | 22.0914 | 1.17149 | 32.42 | 1451.66 | 94.95 | 184.4 |
| 26.0 | 86.8505 | 24.7074 | 1.23219 | 32.75 | 1519.74 | 107.63 | 194.3 |
| 26.5 | 99.9028 | 27.5383 | 1.29496 | 33.07 | 1589.59 | 125.03 | 204.8 |

METHANE ISOTHERM AT T = 190. K

Second Virial Coefficient is -116.4 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 0.7448 | 1.4011 | 0.00439 | 25.78 | 350.25 | 7.54 | 21.5 |
| 1.0 | 1.4029 | 1.2330 | 0.00922 | 26.44 | 339.06 | 7.73 | 22.6 |
| 1.5 | 1.9795 | 1.0755 | 0.01451 | 27.12 | 328.48 | 7.94 | 23.9 |
| 2.0 | 2.4802 | 0.9288 | 0.02024 | 27.84 | 318.57 | 8.18 | 25.4 |
| 2.5 | 2.9102 | 0.7929 | 0.02643 | 28.61 | 309.34 | 8.44 | 27.2 |

METHANE ISOTHERM AT T = 190. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 3.0 | 3.2748 | 0.6676 | 0.03307 | 29.46 | 300.77 | 8.72 | 29.3 |
| 3.5 | 3.5795 | 0.5530 | 0.04017 | 30.42 | 292.81 | 9.03 | 31.8 |
| 4.0 | 3.8296 | 0.4491 | 0.04772 | 31.53 | 285.40 | 9.36 | 34.8 |
| 4.5 | 4.0304 | 0.3562 | 0.05571 | 32.80 | 278.47 | 9.72 | 38.5 |
| 5.0 | 4.1876 | 0.2743 | 0.06412 | 34.26 | 271.92 | 10.11 | 43.1 |
| 5.5 | 4.3066 | 0.2036 | 0.07286 | 35.89 | 265.70 | 10.52 | 48.8 |
| 6.0 | 4.3930 | 0.1441 | 0.08183 | 37.66 | 259.75 | 10.96 | 56.0 |
| 6.5 | 4.4525 | 0.0958 | 0.09088 | 39.53 | 254.04 | 11.43 | 65.3 |
| 7.0 | 4.4907 | 0.0584 | 0.09982 | 41.41 | 248.59 | 11.93 | 78.1 |
| 7.5 | 4.5127 | 0.0311 | 0.10844 | 43.20 | 243.41 | 12.46 | 97.1 |
| 12.5 | 4.5192 | 0.0270 | 0.18683 | 38.80 | 264.32 | 19.75 | 100.3 |
| 13.0 | 4.5413 | 0.0646 | 0.20194 | 37.08 | 284.79 | 20.72 | 85.1 |
| 13.5 | 4.5875 | 0.1242 | 0.21921 | 35.58 | 309.04 | 21.74 | 80.0 |
| 14.0 | 4.6699 | 0.2103 | 0.23833 | 34.34 | 336.24 | 22.81 | 78.0 |
| 14.5 | 4.8029 | 0.3272 | 0.25905 | 33.35 | 365.72 | 23.94 | 77.6 |
| 15.0 | 5.0030 | 0.4793 | 0.28125 | 32.56 | 397.16 | 25.13 | 78.2 |
| 15.5 | 5.2889 | 0.6715 | 0.30499 | 31.94 | 430.62 | 26.39 | 79.5 |
| 16.0 | 5.6822 | 0.9098 | 0.33045 | 31.43 | 466.31 | 27.73 | 81.3 |
| 16.5 | 6.2076 | 1.2012 | 0.35783 | 31.01 | 504.49 | 29.14 | 83.6 |
| 17.0 | 6.8935 | 1.5530 | 0.38728 | 30.66 | 545.26 | 30.64 | 86.3 |
| 17.5 | 7.7719 | 1.9725 | 0.41885 | 30.37 | 588.52 | 32.23 | 89.4 |
| 18.0 | 8.8784 | 2.4665 | 0.45250 | 30.15 | 634.03 | 33.93 | 92.7 |
| 18.5 | 10.2518 | 3.0412 | 0.48810 | 29.99 | 681.50 | 35.74 | 96.4 |
| 19.0 | 11.9340 | 3.7025 | 0.52552 | 29.90 | 730.62 | 37.68 | 100.4 |
| 19.5 | 13.9697 | 4.4563 | 0.56461 | 29.87 | 781.14 | 39.77 | 104.8 |
| 20.0 | 16.4066 | 5.3083 | 0.60526 | 29.90 | 832.87 | 42.03 | 109.4 |
| 20.5 | 19.2954 | 6.2646 | 0.64739 | 29.98 | 885.71 | 44.48 | 114.4 |
| 21.0 | 22.6897 | 7.3318 | 0.69092 | 30.10 | 939.61 | 47.15 | 119.7 |
| 21.5 | 26.6469 | 8.5169 | 0.73583 | 30.27 | 994.55 | 50.10 | 125.3 |
| 22.0 | 31.2276 | 9.8274 | 0.78212 | 30.47 | 1050.60 | 53.36 | 131.4 |
| 22.5 | 36.4965 | 11.2714 | 0.82982 | 30.70 | 1107.82 | 57.01 | 137.8 |
| 23.0 | 42.5227 | 12.8579 | 0.87897 | 30.95 | 1166.30 | 61.15 | 144.7 |
| 23.5 | 49.3797 | 14.5963 | 0.92966 | 31.22 | 1226.15 | 65.90 | 152.0 |
| 24.0 | 57.1460 | 16.4966 | 0.98198 | 31.50 | 1287.49 | 71.45 | 159.7 |
| 24.5 | 65.9051 | 18.5695 | 1.03604 | 31.79 | 1350.42 | 78.07 | 168.0 |
| 25.0 | 75.7461 | 20.8261 | 1.09197 | 32.08 | 1415.05 | 86.18 | 176.8 |
| 25.5 | 86.7637 | 23.2777 | 1.14988 | 32.38 | 1481.48 | 96.44 | 186.2 |
| 26.0 | 99.0582 | 25.9357 | 1.20993 | 32.67 | 1549.76 | 110.01 | 196.2 |

METHANE ISOTHERM AT T = 200. K

Second Virial Coefficient is -105.2 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 0.7886 | 1.4930 | 0.00437 | 25.75 | 360.61 | 7.91 | 22.6 |
| 1.0 | 1.4948 | 1.3336 | 0.00916 | 26.31 | 350.54 | 8.10 | 23.6 |
| 1.5 | 2.1239 | 1.1847 | 0.01436 | 26.89 | 341.12 | 8.32 | 24.7 |
| 2.0 | 2.6812 | 1.0465 | 0.01997 | 27.47 | 332.40 | 8.56 | 25.9 |
| 2.5 | 3.1721 | 0.9189 | 0.02598 | 28.07 | 324.41 | 8.83 | 27.3 |
| 3.0 | 3.6018 | 0.8018 | 0.03238 | 28.69 | 317.17 | 9.12 | 28.9 |
| 3.5 | 3.9757 | 0.6952 | 0.03915 | 29.33 | 310.66 | 9.43 | 30.7 |
| 4.0 | 4.2988 | 0.5990 | 0.04627 | 29.99 | 304.89 | 9.77 | 32.8 |
| 4.5 | 4.5764 | 0.5131 | 0.05372 | 30.68 | 299.84 | 10.13 | 35.1 |
| 5.0 | 4.8136 | 0.4374 | 0.06146 | 31.37 | 295.47 | 10.52 | 37.7 |
| 5.5 | 5.0154 | 0.3716 | 0.06945 | 32.08 | 291.76 | 10.93 | 40.6 |
| 6.0 | 5.1868 | 0.3154 | 0.07764 | 32.78 | 288.68 | 11.37 | 43.7 |
| 6.5 | 5.3323 | 0.2684 | 0.08598 | 33.46 | 286.22 | 11.85 | 47.1 |
| 7.0 | 5.4566 | 0.2300 | 0.09442 | 34.09 | 284.39 | 12.35 | 50.5 |
| 7.5 | 5.5637 | 0.1997 | 0.10292 | 34.64 | 283.21 | 12.88 | 54.0 |
| 12.5 | 6.4856 | 0.3070 | 0.20302 | 33.19 | 343.82 | 20.14 | 69.2 |
| 13.0 | 6.6563 | 0.3789 | 0.21779 | 32.68 | 361.51 | 21.10 | 70.0 |
| 13.5 | 6.8680 | 0.4716 | 0.23401 | 32.21 | 381.70 | 22.10 | 71.1 |
| 14.0 | 7.1322 | 0.5898 | 0.25173 | 31.79 | 404.44 | 23.17 | 72.5 |
| 14.5 | 7.4629 | 0.7386 | 0.27105 | 31.41 | 429.82 | 24.29 | 74.1 |
| 15.0 | 7.8768 | 0.9237 | 0.29204 | 31.06 | 457.92 | 25.47 | 76.0 |
| 15.5 | 8.3937 | 1.1514 | 0.31480 | 30.76 | 488.82 | 26.72 | 78.3 |
| 16.0 | 9.0363 | 1.4278 | 0.33942 | 30.49 | 522.50 | 28.04 | 80.7 |
| 16.5 | 9.8306 | 1.7591 | 0.36594 | 30.25 | 558.87 | 29.44 | 83.5 |
| 17.0 | 10.8056 | 2.1514 | 0.39437 | 30.06 | 597.75 | 30.93 | 86.5 |
| 17.5 | 11.9932 | 2.6105 | 0.42469 | 29.91 | 638.91 | 32.51 | 89.8 |
| 18.0 | 13.4282 | 3.1424 | 0.45682 | 29.80 | 682.12 | 34.19 | 93.4 |
| 18.5 | 15.1486 | 3.7528 | 0.49069 | 29.75 | 727.13 | 35.99 | 97.3 |
| 19.0 | 17.1951 | 4.4476 | 0.52621 | 29.74 | 773.77 | 37.92 | 101.4 |
| 19.5 | 19.6114 | 5.2330 | 0.56332 | 29.78 | 821.88 | 40.00 | 105.8 |
| 20.0 | 22.4442 | 6.1151 | 0.60195 | 29.87 | 871.37 | 42.25 | 110.5 |
| 20.5 | 25.7437 | 7.1006 | 0.64207 | 29.99 | 922.18 | 44.70 | 115.6 |
| 21.0 | 29.5632 | 8.1964 | 0.68366 | 30.14 | 974.29 | 47.37 | 120.9 |
| 21.5 | 33.9597 | 9.4101 | 0.72672 | 30.33 | 1027.73 | 50.32 | 126.6 |
| 22.0 | 38.9942 | 10.7497 | 0.77129 | 30.53 | 1082.54 | 53.61 | 132.7 |

METHANE ISOTHERM AT T = 200. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 22.5 | 44.7318 | 12.2239 | 0.81740 | 30.76 | 1138.78 | 57.29 | 139.2 |
| 23.0 | 51.2421 | 13.8419 | 0.86512 | 31.00 | 1196.53 | 61.49 | 146.1 |
| 23.5 | 58.5993 | 15.6135 | 0.91454 | 31.26 | 1255.89 | 66.33 | 153.5 |
| 24.0 | 66.8830 | 17.5493 | 0.96576 | 31.52 | 1316.95 | 72.02 | 161.3 |
| 24.5 | 76.1777 | 19.6600 | 1.01889 | 31.78 | 1379.78 | 78.87 | 169.6 |
| 25.0 | 86.5740 | 21.9569 | 1.07405 | 32.05 | 1444.49 | 87.33 | 178.5 |
| 25.5 | 98.1676 | 24.4515 | 1.13137 | 32.32 | 1511.13 | 98.16 | 188.0 |

METHANE ISOTHERM AT T = 210. K
Second Virial Coefficient is -95.5 cm³/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 0.8322 | 1.5844 | 0.00436 | 25.77 | 370.59 | 8.28 | 23.7 |
| 1.0 | 1.5861 | 1.4330 | 0.00911 | 26.25 | 361.53 | 8.48 | 24.7 |
| 1.5 | 2.2669 | 1.2920 | 0.01425 | 26.73 | 353.14 | 8.70 | 25.7 |
| 2.0 | 2.8799 | 1.1615 | 0.01976 | 27.22 | 345.48 | 8.94 | 26.9 |
| 2.5 | 3.4302 | 1.0415 | 0.02565 | 27.72 | 338.56 | 9.21 | 28.2 |
| 3.0 | 3.9231 | 0.9317 | 0.03189 | 28.21 | 332.41 | 9.50 | 29.6 |
| 3.5 | 4.3636 | 0.8321 | 0.03847 | 28.71 | 327.04 | 9.82 | 31.2 |
| 4.0 | 4.7568 | 0.7424 | 0.04538 | 29.20 | 322.45 | 10.16 | 33.0 |
| 4.5 | 5.1076 | 0.6625 | 0.05260 | 29.69 | 318.63 | 10.52 | 34.9 |
| 5.0 | 5.4208 | 0.5920 | 0.06009 | 30.16 | 315.59 | 10.92 | 37.0 |
| 5.5 | 5.7012 | 0.5308 | 0.06784 | 30.60 | 313.30 | 11.33 | 39.3 |
| 6.0 | 5.9532 | 0.4786 | 0.07582 | 31.02 | 311.78 | 11.78 | 41.7 |
| 6.5 | 6.1812 | 0.4349 | 0.08401 | 31.40 | 311.03 | 12.25 | 44.1 |
| 7.0 | 6.3895 | 0.3995 | 0.09240 | 31.74 | 311.06 | 12.75 | 46.6 |
| 7.5 | 6.5820 | 0.3718 | 0.10099 | 32.02 | 311.92 | 13.28 | 49.1 |
| 12.5 | 8.5466 | 0.5920 | 0.20845 | 31.51 | 390.43 | 20.52 | 66.7 |
| 13.0 | 8.8662 | 0.6897 | 0.22348 | 31.26 | 408.35 | 21.47 | 68.2 |
| 13.5 | 9.2402 | 0.8106 | 0.23981 | 31.01 | 428.63 | 22.47 | 69.9 |
| 14.0 | 9.6814 | 0.9590 | 0.25755 | 30.77 | 451.38 | 23.52 | 71.8 |
| 14.5 | 10.2047 | 1.1400 | 0.27680 | 30.54 | 476.70 | 24.64 | 73.9 |
| 15.0 | 10.8277 | 1.3590 | 0.29766 | 30.33 | 504.65 | 25.81 | 76.1 |
| 15.5 | 11.5709 | 1.6218 | 0.32019 | 30.14 | 535.20 | 27.05 | 78.6 |
| 16.0 | 12.4578 | 1.9341 | 0.34441 | 29.97 | 568.27 | 28.36 | 81.3 |
| 16.5 | 13.5143 | 2.3016 | 0.37033 | 29.83 | 603.72 | 29.75 | 84.2 |
| 17.0 | 14.7694 | 2.7295 | 0.39794 | 29.73 | 641.39 | 31.23 | 87.4 |

METHANE ISOTHERM AT T = 210. K (continued)

| ρ | P | dP/dρ\|T | dP/dT\|ρ | $C_v$ | W | η | λ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 17.5 | 16.2548 | 3.2235 | 0.42722 | 29.67 | 681.10 | 32.79 | 90.8 |
| 18.0 | 18.0049 | 3.7892 | 0.45813 | 29.64 | 722.69 | 34.47 | 94.4 |
| 18.5 | 20.0569 | 4.4322 | 0.49063 | 29.65 | 766.02 | 36.26 | 98.3 |
| 19.0 | 22.4510 | 5.1586 | 0.52469 | 29.70 | 810.98 | 38.18 | 102.5 |
| 19.5 | 25.2304 | 5.9746 | 0.56028 | 29.78 | 857.49 | 40.26 | 107.0 |
| 20.0 | 28.4416 | 6.8868 | 0.59738 | 29.89 | 905.50 | 42.50 | 111.7 |
| 20.5 | 32.1343 | 7.9021 | 0.63599 | 30.04 | 954.99 | 44.95 | 116.8 |
| 21.0 | 36.3621 | 9.0279 | 0.67612 | 30.20 | 1005.97 | 47.63 | 122.2 |
| 21.5 | 41.1820 | 10.2722 | 0.71780 | 30.39 | 1058.46 | 50.60 | 128.0 |
| 22.0 | 46.6554 | 11.6432 | 0.76107 | 30.60 | 1112.52 | 53.91 | 134.1 |
| 22.5 | 52.8479 | 13.1501 | 0.80599 | 30.82 | 1168.21 | 57.64 | 140.6 |
| 23.0 | 59.8297 | 14.8025 | 0.85264 | 31.05 | 1225.59 | 61.91 | 147.6 |
| 23.5 | 67.6762 | 16.6104 | 0.90112 | 31.29 | 1284.74 | 66.85 | 155.0 |
| 24.0 | 76.4678 | 18.5845 | 0.95152 | 31.53 | 1345.75 | 72.70 | 162.8 |
| 24.5 | 86.2903 | 20.7360 | 1.00397 | 31.77 | 1408.68 | 79.78 | 171.2 |
| 25.0 | 97.2352 | 23.0763 | 1.05859 | 32.01 | 1473.62 | 88.62 | 180.2 |

METHANE ISOTHERM AT T = 220. K
Second Virial Coefficient is -86.8 cm³/mol

| ρ | P | dP/dρ\|T | dP/dT\|ρ | $C_v$ | W | η | λ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 0.8757 | 1.6753 | 0.00435 | 25.83 | 380.20 | 8.64 | 24.9 |
| 1.0 | 1.6770 | 1.5315 | 0.00907 | 26.24 | 372.06 | 8.84 | 25.9 |
| 1.5 | 2.4089 | 1.3979 | 0.01415 | 26.65 | 364.61 | 9.07 | 26.9 |
| 2.0 | 3.0766 | 1.2747 | 0.01959 | 27.07 | 357.89 | 9.32 | 28.0 |
| 2.5 | 3.6853 | 1.1617 | 0.02538 | 27.48 | 351.93 | 9.59 | 29.2 |
| 3.0 | 4.2400 | 1.0587 | 0.03151 | 27.89 | 346.74 | 9.88 | 30.6 |
| 3.5 | 4.7457 | 0.9657 | 0.03796 | 28.30 | 342.35 | 10.20 | 32.0 |
| 4.0 | 5.2072 | 0.8822 | 0.04473 | 28.70 | 338.75 | 10.55 | 33.6 |
| 4.5 | 5.6294 | 0.8081 | 0.05180 | 29.08 | 335.94 | 10.91 | 35.4 |
| 5.0 | 6.0168 | 0.7431 | 0.05916 | 29.45 | 333.93 | 11.31 | 37.3 |
| 5.5 | 6.3740 | 0.6870 | 0.06678 | 29.79 | 332.72 | 11.73 | 39.2 |
| 6.0 | 6.7053 | 0.6396 | 0.07467 | 30.10 | 332.31 | 12.17 | 41.3 |
| 6.5 | 7.0150 | 0.6005 | 0.08282 | 30.38 | 332.73 | 12.65 | 43.5 |
| 7.0 | 7.3072 | 0.5697 | 0.09122 | 30.62 | 334.00 | 13.15 | 45.6 |
| 7.5 | 7.5860 | 0.5469 | 0.09988 | 30.82 | 336.16 | 13.68 | 47.8 |

METHANE ISOTHERM AT T = 220. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 12.5 | 10.6465 | 0.8844 | 0.21129 | 30.66 | 427.69 | 20.89 | 66.2 |
| 13.0 | 11.1181 | 1.0058 | 0.22665 | 30.50 | 446.50 | 21.83 | 68.0 |
| 13.5 | 11.6566 | 1.1528 | 0.24321 | 30.34 | 467.52 | 22.83 | 70.0 |
| 14.0 | 12.2759 | 1.3296 | 0.26109 | 30.18 | 490.84 | 23.87 | 72.1 |
| 14.5 | 12.9919 | 1.5406 | 0.28037 | 30.02 | 516.51 | 24.98 | 74.3 |
| 15.0 | 13.8230 | 1.7909 | 0.30111 | 29.89 | 544.54 | 26.15 | 76.7 |
| 15.5 | 14.7902 | 2.0858 | 0.32337 | 29.77 | 574.90 | 27.38 | 79.3 |
| 16.0 | 15.9171 | 2.4304 | 0.34715 | 29.67 | 607.49 | 28.68 | 82.1 |
| 16.5 | 17.2298 | 2.8301 | 0.37248 | 29.61 | 642.22 | 30.06 | 85.1 |
| 17.0 | 18.7572 | 3.2901 | 0.39934 | 29.57 | 678.97 | 31.53 | 88.3 |
| 17.5 | 20.5308 | 3.8157 | 0.42773 | 29.56 | 717.62 | 33.09 | 91.8 |
| 18.0 | 22.5848 | 4.4125 | 0.45763 | 29.58 | 758.06 | 34.76 | 95.5 |
| 18.5 | 24.9562 | 5.0862 | 0.48904 | 29.64 | 800.23 | 36.54 | 99.5 |
| 19.0 | 27.6849 | 5.8430 | 0.52195 | 29.72 | 844.06 | 38.46 | 103.7 |
| 19.5 | 30.8141 | 6.6892 | 0.55636 | 29.83 | 889.51 | 40.53 | 108.2 |
| 20.0 | 34.3901 | 7.6316 | 0.59229 | 29.96 | 936.56 | 42.78 | 113.0 |
| 20.5 | 38.4629 | 8.6775 | 0.62974 | 30.11 | 985.21 | 45.23 | 118.1 |
| 21.0 | 43.0861 | 9.8345 | 0.66875 | 30.28 | 1035.49 | 47.93 | 123.5 |
| 21.5 | 48.3173 | 11.1107 | 0.70936 | 30.47 | 1087.42 | 50.91 | 129.3 |
| 22.0 | 54.2182 | 12.5150 | 0.75164 | 30.67 | 1141.06 | 54.26 | 135.4 |
| 22.5 | 60.8552 | 14.0566 | 0.79566 | 30.88 | 1196.47 | 58.04 | 142.0 |
| 23.0 | 68.2994 | 15.7454 | 0.84150 | 31.09 | 1253.72 | 62.37 | 149.0 |
| 23.5 | 76.6269 | 17.5919 | 0.88926 | 31.31 | 1312.87 | 67.43 | 156.4 |
| 24.0 | 85.9193 | 19.6068 | 0.93906 | 31.54 | 1373.99 | 73.45 | 164.3 |
| 24.5 | 96.2637 | 21.8015 | 0.99100 | 31.76 | 1437.15 | 80.79 | 172.8 |

METHANE ISOTHERM AT T = 240. K

Second Virial Coefficient is -72.3 cm$^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 0.9625 | 1.8560 | 0.00433 | 26.07 | 398.45 | 9.35 | 27.3 |
| 1.0 | 1.8577 | 1.7263 | 0.00900 | 26.38 | 391.90 | 9.56 | 28.2 |
| 1.5 | 2.6904 | 1.6065 | 0.01401 | 26.69 | 386.06 | 9.80 | 29.2 |
| 2.0 | 3.4659 | 1.4968 | 0.01935 | 27.00 | 380.97 | 10.05 | 30.3 |
| 2.5 | 4.1889 | 1.3969 | 0.02500 | 27.30 | 376.64 | 10.33 | 31.4 |

METHANE ISOTHERM AT T = 240. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 3.0 | 4.8644 | 1.3068 | 0.03097 | 27.60 | 373.11 | 10.63 | 32.7 |
| 3.5 | 5.4972 | 1.2262 | 0.03724 | 27.89 | 370.37 | 10.95 | 34.0 |
| 4.0 | 6.0921 | 1.1549 | 0.04382 | 28.16 | 368.44 | 11.30 | 35.5 |
| 4.5 | 6.6537 | 1.0927 | 0.05071 | 28.43 | 367.32 | 11.67 | 37.0 |
| 5.0 | 7.1863 | 1.0393 | 0.05789 | 28.68 | 367.02 | 12.07 | 38.7 |
| 5.5 | 7.6944 | 0.9946 | 0.06537 | 28.91 | 367.55 | 12.49 | 40.4 |
| 6.0 | 8.1823 | 0.9585 | 0.07315 | 29.12 | 368.93 | 12.94 | 42.2 |
| 6.5 | 8.6543 | 0.9310 | 0.08124 | 29.31 | 371.19 | 13.41 | 44.1 |
| 7.0 | 9.1147 | 0.9122 | 0.08966 | 29.47 | 374.35 | 13.92 | 46.0 |
| 7.5 | 9.5679 | 0.9022 | 0.09842 | 29.61 | 378.47 | 14.45 | 47.9 |
| 12.5 | 14.9054 | 1.4863 | 0.21412 | 29.76 | 490.03 | 21.61 | 67.0 |
| 13.0 | 15.6885 | 1.6508 | 0.22984 | 29.70 | 510.24 | 22.54 | 69.0 |
| 13.5 | 16.5610 | 1.8448 | 0.24663 | 29.64 | 532.38 | 23.53 | 71.2 |
| 14.0 | 17.5387 | 2.0717 | 0.26454 | 29.59 | 556.49 | 24.56 | 73.5 |
| 14.5 | 18.6389 | 2.3356 | 0.28365 | 29.54 | 582.57 | 25.66 | 75.9 |
| 15.0 | 19.8812 | 2.6408 | 0.30400 | 29.51 | 610.62 | 26.81 | 78.5 |
| 15.5 | 21.2873 | 2.9917 | 0.32563 | 29.49 | 640.62 | 28.03 | 81.2 |
| 16.0 | 22.8813 | 3.3931 | 0.34858 | 29.49 | 672.53 | 29.32 | 84.1 |
| 16.5 | 24.6897 | 3.8500 | 0.37286 | 29.51 | 706.31 | 30.69 | 87.2 |
| 17.0 | 26.7415 | 4.3675 | 0.39849 | 29.55 | 741.92 | 32.14 | 90.5 |
| 17.5 | 29.0682 | 4.9509 | 0.42550 | 29.60 | 779.32 | 33.69 | 94.1 |
| 18.0 | 31.7042 | 5.6057 | 0.45391 | 29.68 | 818.48 | 35.35 | 97.8 |
| 18.5 | 34.6868 | 6.3379 | 0.48373 | 29.78 | 859.37 | 37.13 | 101.8 |
| 19.0 | 38.0560 | 7.1537 | 0.51499 | 29.89 | 901.98 | 39.04 | 106.1 |
| 19.5 | 41.8555 | 8.0598 | 0.54773 | 30.02 | 946.32 | 41.11 | 110.7 |
| 20.0 | 46.1321 | 9.0634 | 0.58198 | 30.17 | 992.41 | 43.37 | 115.5 |
| 20.5 | 50.9364 | 10.1720 | 0.61781 | 30.32 | 1040.27 | 45.84 | 120.6 |
| 21.0 | 56.3229 | 11.3937 | 0.65525 | 30.49 | 1089.93 | 48.57 | 126.1 |
| 21.5 | 62.3504 | 12.7373 | 0.69439 | 30.66 | 1141.45 | 51.61 | 132.0 |
| 22.0 | 69.0821 | 14.2120 | 0.73529 | 30.84 | 1194.88 | 55.02 | 138.2 |
| 22.5 | 76.5859 | 15.8275 | 0.77806 | 31.02 | 1250.27 | 58.92 | 144.8 |
| 23.0 | 84.9348 | 17.5942 | 0.82279 | 31.21 | 1307.69 | 63.42 | 151.8 |
| 23.5 | 94.2071 | 19.5229 | 0.86958 | 31.40 | 1367.21 | 68.71 | 159.3 |

METHANE ISOTHERM AT T = 260. K
Second Virial Coefficient is -60.4 $cm^3/mol$

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 1.0490 | 2.0357 | 0.00432 | 26.45 | 415.48 | 10.05 | 29.8 |
| 1.0 | 2.0373 | 1.9190 | 0.00896 | 26.71 | 410.29 | 10.26 | 30.7 |
| 1.5 | 2.9696 | 1.8120 | 0.01391 | 26.96 | 405.80 | 10.50 | 31.7 |
| 2.0 | 3.8510 | 1.7148 | 0.01917 | 27.20 | 402.06 | 10.76 | 32.7 |
| 2.5 | 4.6861 | 1.6273 | 0.02474 | 27.43 | 399.10 | 11.04 | 33.8 |
| 3.0 | 5.4798 | 1.5494 | 0.03060 | 27.66 | 396.92 | 11.35 | 35.0 |
| 3.5 | 6.2370 | 1.4809 | 0.03676 | 27.87 | 395.55 | 11.67 | 36.3 |
| 4.0 | 6.9623 | 1.4217 | 0.04323 | 28.08 | 394.99 | 12.02 | 37.7 |
| 4.5 | 7.6602 | 1.3715 | 0.04999 | 28.27 | 395.26 | 12.40 | 39.1 |
| 5.0 | 8.3353 | 1.3303 | 0.05706 | 28.46 | 396.36 | 12.80 | 40.7 |
| 5.5 | 8.9920 | 1.2981 | 0.06445 | 28.63 | 398.32 | 13.22 | 42.3 |
| 6.0 | 9.6348 | 1.2748 | 0.07217 | 28.78 | 401.14 | 13.67 | 44.0 |
| 6.5 | 10.2683 | 1.2606 | 0.08022 | 28.92 | 404.88 | 14.15 | 45.7 |
| 7.0 | 10.8970 | 1.2559 | 0.08863 | 29.04 | 409.55 | 14.65 | 47.5 |
| 7.5 | 11.5258 | 1.2610 | 0.09742 | 29.15 | 415.21 | 15.18 | 49.3 |
| 12.5 | 19.1971 | 2.0979 | 0.21481 | 29.50 | 541.30 | 22.30 | 68.6 |
| 13.0 | 20.2956 | 2.3013 | 0.23059 | 29.50 | 562.39 | 23.23 | 70.8 |
| 13.5 | 21.5037 | 2.5367 | 0.24732 | 29.50 | 585.22 | 24.20 | 73.1 |
| 14.0 | 22.8382 | 2.8075 | 0.26507 | 29.51 | 609.80 | 25.23 | 75.4 |
| 14.5 | 24.3177 | 3.1173 | 0.28389 | 29.53 | 636.15 | 26.31 | 77.9 |
| 15.0 | 25.9627 | 3.4701 | 0.30381 | 29.55 | 664.27 | 27.46 | 80.6 |
| 15.5 | 27.7957 | 3.8702 | 0.32488 | 29.59 | 694.16 | 28.67 | 83.4 |
| 16.0 | 29.8415 | 4.3221 | 0.34715 | 29.64 | 725.81 | 29.95 | 86.4 |
| 16.5 | 32.1272 | 4.8306 | 0.37064 | 29.70 | 759.23 | 31.31 | 89.5 |
| 17.0 | 34.6824 | 5.4007 | 0.39539 | 29.78 | 794.40 | 32.75 | 92.9 |
| 17.5 | 37.5391 | 6.0379 | 0.42144 | 29.86 | 831.32 | 34.30 | 96.5 |
| 18.0 | 40.7324 | 6.7477 | 0.44882 | 29.96 | 869.99 | 35.95 | 100.3 |
| 18.5 | 44.3000 | 7.5363 | 0.47758 | 30.07 | 910.42 | 37.72 | 104.3 |
| 19.0 | 48.2829 | 8.4102 | 0.50775 | 30.20 | 952.64 | 39.64 | 108.6 |
| 19.5 | 52.7255 | 9.3761 | 0.53939 | 30.33 | 996.66 | 41.72 | 113.2 |
| 20.0 | 57.6756 | 10.4417 | 0.57257 | 30.47 | 1042.51 | 43.99 | 118.1 |
| 20.5 | 63.1851 | 11.6148 | 0.60734 | 30.61 | 1090.25 | 46.49 | 123.3 |
| 21.0 | 69.3098 | 12.9040 | 0.64378 | 30.76 | 1139.92 | 49.26 | 128.8 |
| 21.5 | 76.1099 | 14.3182 | 0.68197 | 30.92 | 1191.56 | 52.35 | 134.7 |
| 22.0 | 83.6504 | 15.8671 | 0.72201 | 31.08 | 1245.25 | 55.85 | 140.9 |
| 22.5 | 92.0011 | 17.5608 | 0.76399 | 31.24 | 1301.04 | 59.86 | 147.6 |

METHANE ISOTHERM AT T = 280. K
Second Virial Coefficient is -50.6 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 1.1353 | 2.2146 | 0.00431 | 26.98 | 431.42 | 10.72 | 32.4 |
| 1.0 | 2.2161 | 2.1103 | 0.00893 | 27.20 | 427.39 | 10.94 | 33.3 |
| 1.5 | 3.2471 | 2.0154 | 0.01384 | 27.40 | 424.07 | 11.19 | 34.2 |
| 2.0 | 4.2331 | 1.9301 | 0.01905 | 27.60 | 421.49 | 11.45 | 35.3 |
| 2.5 | 5.1788 | 1.8544 | 0.02455 | 27.79 | 419.68 | 11.73 | 36.3 |
| 3.0 | 6.0891 | 1.7883 | 0.03034 | 27.97 | 418.65 | 12.04 | 37.5 |
| 3.5 | 6.9687 | 1.7317 | 0.03642 | 28.15 | 418.44 | 12.37 | 38.7 |
| 4.0 | 7.8223 | 1.6845 | 0.04280 | 28.31 | 419.04 | 12.73 | 40.1 |
| 4.5 | 8.6547 | 1.6466 | 0.04949 | 28.46 | 420.47 | 13.10 | 41.5 |
| 5.0 | 9.4705 | 1.6180 | 0.05648 | 28.61 | 422.74 | 13.50 | 43.0 |
| 5.5 | 10.2742 | 1.5987 | 0.06381 | 28.74 | 425.88 | 13.93 | 44.5 |
| 6.0 | 11.0708 | 1.5890 | 0.07146 | 28.87 | 429.91 | 14.38 | 46.1 |
| 6.5 | 11.8649 | 1.5892 | 0.07948 | 28.98 | 434.86 | 14.86 | 47.8 |
| 7.0 | 12.6617 | 1.5996 | 0.08787 | 29.08 | 440.77 | 15.36 | 49.5 |
| 7.5 | 13.4663 | 1.6209 | 0.09666 | 29.17 | 447.69 | 15.89 | 51.3 |
| 12.5 | 23.4903 | 2.7098 | 0.21439 | 29.65 | 584.85 | 22.97 | 70.7 |
| 13.0 | 24.9037 | 2.9490 | 0.23008 | 29.69 | 606.61 | 23.89 | 72.9 |
| 13.5 | 26.4450 | 3.2224 | 0.24666 | 29.72 | 629.98 | 24.86 | 75.3 |
| 14.0 | 28.1323 | 3.5331 | 0.26418 | 29.77 | 654.99 | 25.88 | 77.7 |
| 14.5 | 29.9850 | 3.8848 | 0.28269 | 29.82 | 681.65 | 26.95 | 80.2 |
| 15.0 | 32.0246 | 4.2813 | 0.30224 | 29.87 | 709.98 | 28.09 | 82.9 |
| 15.5 | 34.2744 | 4.7266 | 0.32286 | 29.94 | 739.98 | 29.29 | 85.8 |
| 16.0 | 36.7601 | 5.2254 | 0.34460 | 30.01 | 771.69 | 30.56 | 88.8 |
| 16.5 | 39.5094 | 5.7823 | 0.36750 | 30.09 | 805.10 | 31.92 | 92.0 |
| 17.0 | 42.5529 | 6.4024 | 0.39161 | 30.18 | 840.23 | 33.36 | 95.4 |
| 17.5 | 45.9233 | 7.0913 | 0.41697 | 30.28 | 877.10 | 34.90 | 99.0 |
| 18.0 | 49.6565 | 7.8546 | 0.44363 | 30.38 | 915.73 | 36.55 | 102.9 |
| 18.5 | 53.7914 | 8.6987 | 0.47165 | 30.49 | 956.15 | 38.32 | 106.9 |
| 19.0 | 58.3698 | 9.6302 | 0.50107 | 30.61 | 998.40 | 40.25 | 111.3 |
| 19.5 | 63.4374 | 10.6564 | 0.53196 | 30.74 | 1042.50 | 42.34 | 115.9 |
| 20.0 | 69.0432 | 11.7848 | 0.56440 | 30.87 | 1088.52 | 44.63 | 120.8 |
| 20.5 | 75.2406 | 13.0238 | 0.59847 | 31.00 | 1136.50 | 47.15 | 126.0 |
| 21.0 | 82.0869 | 14.3822 | 0.63423 | 31.14 | 1186.49 | 49.96 | 131.5 |
| 21.5 | 89.6442 | 15.8693 | 0.67180 | 31.28 | 1238.56 | 53.12 | 137.5 |
| 22.0 | 97.9794 | 17.4952 | 0.71126 | 31.41 | 1292.76 | 56.70 | 143.7 |

METHANE ISOTHERM AT T = 300. K

Second Virial Coefficient is -42.4 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/$dm^3$ | MPa | MPa·$dm^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 1.2214 | 2.3929 | 0.00430 | 27.65 | 446.40 | 11.38 | 35.1 |
| 1.0 | 2.3944 | 2.3003 | 0.00890 | 27.83 | 443.39 | 11.61 | 36.0 |
| 1.5 | 3.5233 | 2.2170 | 0.01378 | 28.01 | 441.08 | 11.85 | 36.9 |
| 2.0 | 4.6130 | 2.1433 | 0.01895 | 28.18 | 439.50 | 12.12 | 37.9 |
| 2.5 | 5.6682 | 2.0791 | 0.02440 | 28.34 | 438.69 | 12.41 | 39.0 |
| 3.0 | 6.6937 | 2.0246 | 0.03013 | 28.49 | 438.66 | 12.72 | 40.2 |
| 3.5 | 7.6944 | 1.9797 | 0.03616 | 28.64 | 439.43 | 13.05 | 41.4 |
| 4.0 | 8.6750 | 1.9445 | 0.04248 | 28.77 | 441.03 | 13.41 | 42.7 |
| 4.5 | 9.6405 | 1.9189 | 0.04911 | 28.90 | 443.45 | 13.79 | 44.0 |
| 5.0 | 10.5956 | 1.9031 | 0.05605 | 29.02 | 446.73 | 14.19 | 45.5 |
| 5.5 | 11.5452 | 1.8972 | 0.06331 | 29.14 | 450.89 | 14.62 | 47.0 |
| 6.0 | 12.4945 | 1.9015 | 0.07092 | 29.24 | 455.94 | 15.07 | 48.6 |
| 6.5 | 13.4485 | 1.9164 | 0.07890 | 29.34 | 461.92 | 15.55 | 50.2 |
| 7.0 | 14.4128 | 1.9426 | 0.08726 | 29.43 | 468.87 | 16.05 | 51.9 |
| 7.5 | 15.3931 | 1.9807 | 0.09603 | 29.51 | 476.82 | 16.58 | 53.6 |
| 12.5 | 27.7692 | 3.3176 | 0.21345 | 30.07 | 622.98 | 23.62 | 73.1 |
| 13.0 | 29.4950 | 3.5909 | 0.22900 | 30.13 | 645.31 | 24.54 | 75.3 |
| 13.5 | 31.3662 | 3.9001 | 0.24540 | 30.18 | 669.18 | 25.50 | 77.7 |
| 14.0 | 33.4016 | 4.2485 | 0.26269 | 30.24 | 694.63 | 26.51 | 80.2 |
| 14.5 | 35.6218 | 4.6396 | 0.28093 | 30.31 | 721.66 | 27.58 | 82.8 |
| 15.0 | 38.0489 | 5.0772 | 0.30015 | 30.38 | 750.30 | 28.71 | 85.5 |
| 15.5 | 40.7074 | 5.5655 | 0.32041 | 30.45 | 780.57 | 29.90 | 88.4 |
| 16.0 | 43.6236 | 6.1090 | 0.34174 | 30.54 | 812.50 | 31.17 | 91.4 |
| 16.5 | 46.8264 | 6.7125 | 0.36420 | 30.62 | 846.11 | 32.52 | 94.7 |
| 17.0 | 50.3470 | 7.3811 | 0.38783 | 30.72 | 881.44 | 33.95 | 98.1 |
| 17.5 | 54.2193 | 8.1205 | 0.41268 | 30.81 | 918.50 | 35.49 | 101.7 |
| 18.0 | 58.4802 | 8.9366 | 0.43882 | 30.92 | 957.34 | 37.14 | 105.6 |
| 18.5 | 63.1697 | 9.8357 | 0.46629 | 31.03 | 998.00 | 38.92 | 109.7 |
| 19.0 | 68.3310 | 10.8249 | 0.49518 | 31.14 | 1040.51 | 40.85 | 114.0 |
| 19.5 | 74.0108 | 11.9115 | 0.52555 | 31.25 | 1084.94 | 42.95 | 118.7 |
| 20.0 | 80.2600 | 13.1036 | 0.55747 | 31.37 | 1131.33 | 45.26 | 123.6 |
| 20.5 | 87.1334 | 14.4096 | 0.59104 | 31.49 | 1179.74 | 47.82 | 128.8 |
| 21.0 | 94.6902 | 15.8387 | 0.62634 | 31.61 | 1230.24 | 50.67 | 134.4 |

METHANE ISOTHERM AT T = 320. K
Second Virial Coefficient is -35.4 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 1.3075 | 2.5707 | 0.00430 | 28.43 | 460.53 | 12.03 | 38.0 |
| 1.0 | 2.5721 | 2.4895 | 0.00888 | 28.60 | 458.41 | 12.25 | 38.9 |
| 1.5 | 3.7985 | 2.4174 | 0.01373 | 28.75 | 457.00 | 12.50 | 39.8 |
| 2.0 | 4.9911 | 2.3549 | 0.01887 | 28.90 | 456.31 | 12.77 | 40.8 |
| 2.5 | 6.1549 | 2.3020 | 0.02428 | 29.04 | 456.37 | 13.06 | 41.8 |
| 3.0 | 7.2947 | 2.2589 | 0.02997 | 29.17 | 457.22 | 13.37 | 43.0 |
| 3.5 | 8.4154 | 2.2256 | 0.03595 | 29.30 | 458.87 | 13.71 | 44.2 |
| 4.0 | 9.5220 | 2.2023 | 0.04222 | 29.42 | 461.33 | 14.07 | 45.4 |
| 4.5 | 10.6194 | 2.1891 | 0.04880 | 29.53 | 464.63 | 14.45 | 46.8 |
| 5.0 | 11.7128 | 2.1862 | 0.05569 | 29.64 | 468.79 | 14.85 | 48.2 |
| 5.5 | 12.8074 | 2.1938 | 0.06291 | 29.74 | 473.82 | 15.28 | 49.7 |
| 6.0 | 13.9084 | 2.2123 | 0.07048 | 29.83 | 479.76 | 15.73 | 51.2 |
| 6.5 | 15.0216 | 2.2423 | 0.07842 | 29.92 | 486.63 | 16.21 | 52.8 |
| 7.0 | 16.1527 | 2.2844 | 0.08674 | 30.00 | 494.46 | 16.71 | 54.5 |
| 7.5 | 17.3081 | 2.3395 | 0.09548 | 30.08 | 503.31 | 17.24 | 56.2 |
| 12.5 | 32.0270 | 3.9202 | 0.21231 | 30.69 | 657.16 | 24.25 | 75.7 |
| 13.0 | 34.0621 | 4.2262 | 0.22770 | 30.75 | 680.03 | 25.16 | 77.9 |
| 13.5 | 36.2595 | 4.5698 | 0.24392 | 30.81 | 704.39 | 26.12 | 80.3 |
| 14.0 | 38.6387 | 4.9543 | 0.26101 | 30.88 | 730.28 | 27.12 | 82.8 |
| 14.5 | 41.2212 | 5.3833 | 0.27901 | 30.95 | 757.72 | 28.19 | 85.5 |
| 15.0 | 44.0301 | 5.8606 | 0.29796 | 31.03 | 786.74 | 29.31 | 88.2 |
| 15.5 | 47.0906 | 6.3905 | 0.31792 | 31.11 | 817.37 | 30.50 | 91.1 |
| 16.0 | 50.4301 | 6.9774 | 0.33893 | 31.19 | 849.63 | 31.76 | 94.2 |
| 16.5 | 54.0783 | 7.6264 | 0.36104 | 31.28 | 883.57 | 33.10 | 97.5 |
| 17.0 | 58.0677 | 8.3426 | 0.38430 | 31.37 | 919.21 | 34.54 | 100.9 |
| 17.5 | 62.4331 | 9.1318 | 0.40877 | 31.46 | 956.61 | 36.07 | 104.6 |
| 18.0 | 67.2127 | 10.0002 | 0.43452 | 31.56 | 995.80 | 37.72 | 108.4 |
| 18.5 | 72.4476 | 10.9543 | 0.46160 | 31.66 | 1036.83 | 39.51 | 112.6 |
| 19.0 | 78.1825 | 12.0013 | 0.49010 | 31.77 | 1079.75 | 41.45 | 116.9 |
| 19.5 | 84.4656 | 13.1488 | 0.52008 | 31.87 | 1124.63 | 43.56 | 121.6 |
| 20.0 | 91.3494 | 14.4052 | 0.55164 | 31.98 | 1171.51 | 45.89 | 126.5 |
| 20.5 | 98.8904 | 15.7792 | 0.58485 | 32.08 | 1220.48 | 48.47 | 131.8 |

METHANE ISOTHERM AT T = 340. K

Second Virial Coefficient is -29.4 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 1.3934 | 2.7480 | 0.00429 | 29.32 | 473.92 | 12.65 | 41.0 |
| 1.0 | 2.7495 | 2.6778 | 0.00886 | 29.47 | 472.61 | 12.88 | 41.8 |
| 1.5 | 4.0727 | 2.6168 | 0.01369 | 29.61 | 471.99 | 13.13 | 42.8 |
| 2.0 | 5.3678 | 2.5652 | 0.01880 | 29.74 | 472.10 | 13.41 | 43.7 |
| 2.5 | 6.6395 | 2.5233 | 0.02418 | 29.87 | 472.95 | 13.70 | 44.8 |
| 3.0 | 7.8928 | 2.4915 | 0.02984 | 29.99 | 474.58 | 14.01 | 45.9 |
| 3.5 | 9.1327 | 2.4698 | 0.03578 | 30.10 | 477.00 | 14.35 | 47.1 |
| 4.0 | 10.3643 | 2.4584 | 0.04201 | 30.21 | 480.24 | 14.71 | 48.3 |
| 4.5 | 11.5928 | 2.4575 | 0.04855 | 30.31 | 484.32 | 15.09 | 49.7 |
| 5.0 | 12.8236 | 2.4675 | 0.05540 | 30.40 | 489.25 | 15.50 | 51.1 |
| 5.5 | 14.0622 | 2.4886 | 0.06258 | 30.49 | 495.07 | 15.92 | 52.5 |
| 6.0 | 15.3142 | 2.5215 | 0.07011 | 30.58 | 501.79 | 16.38 | 54.0 |
| 6.5 | 16.5857 | 2.5666 | 0.07800 | 30.66 | 509.44 | 16.85 | 55.6 |
| 7.0 | 17.8830 | 2.6248 | 0.08629 | 30.74 | 518.06 | 17.36 | 57.2 |
| 7.5 | 19.2128 | 2.6969 | 0.09499 | 30.81 | 527.69 | 17.89 | 58.9 |
| 12.5 | 36.2612 | 4.5172 | 0.21111 | 31.44 | 688.36 | 24.86 | 78.4 |
| 13.0 | 38.6027 | 4.8551 | 0.22636 | 31.51 | 711.75 | 25.77 | 80.8 |
| 13.5 | 41.1228 | 5.2322 | 0.24242 | 31.57 | 736.60 | 26.72 | 83.2 |
| 14.0 | 43.8420 | 5.6518 | 0.25932 | 31.64 | 762.95 | 27.72 | 85.7 |
| 14.5 | 46.7823 | 6.1177 | 0.27712 | 31.72 | 790.82 | 28.78 | 88.3 |
| 15.0 | 49.9680 | 6.6337 | 0.29585 | 31.79 | 820.25 | 29.89 | 91.1 |
| 15.5 | 53.4251 | 7.2042 | 0.31557 | 31.87 | 851.28 | 31.08 | 94.0 |
| 16.0 | 57.1821 | 7.8339 | 0.33631 | 31.95 | 883.94 | 32.34 | 97.1 |
| 16.5 | 61.2697 | 8.5276 | 0.35815 | 32.04 | 918.28 | 33.68 | 100.4 |
| 17.0 | 65.7213 | 9.2909 | 0.38113 | 32.12 | 954.32 | 35.11 | 103.9 |
| 17.5 | 70.5732 | 10.1297 | 0.40531 | 32.21 | 992.13 | 36.64 | 107.5 |
| 18.0 | 75.8646 | 11.0501 | 0.43076 | 32.30 | 1031.75 | 38.30 | 111.4 |
| 18.5 | 81.6381 | 12.0592 | 0.45755 | 32.40 | 1073.24 | 40.08 | 115.6 |
| 19.0 | 87.9398 | 13.1643 | 0.48575 | 32.49 | 1116.65 | 42.03 | 120.0 |
| 19.5 | 94.8197 | 14.3732 | 0.51545 | 32.58 | 1162.06 | 44.16 | 124.6 |

METHANE ISOTHERM AT T = 360. K
Second Virial Coefficient is -24.2 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 1.4792 | 2.9251 | 0.00429 | 30.29 | 486.67 | 13.26 | 44.1 |
| 1.0 | 2.9265 | 2.8655 | 0.00884 | 30.42 | 486.10 | 13.50 | 45.0 |
| 1.5 | 4.3463 | 2.8152 | 0.01366 | 30.55 | 486.21 | 13.75 | 45.9 |
| 2.0 | 5.7433 | 2.7744 | 0.01875 | 30.67 | 487.03 | 14.02 | 46.9 |
| 2.5 | 7.1223 | 2.7435 | 0.02410 | 30.79 | 488.59 | 14.32 | 47.9 |
| 3.0 | 8.4884 | 2.7227 | 0.02972 | 30.90 | 490.93 | 14.64 | 49.0 |
| 3.5 | 9.8468 | 2.7125 | 0.03563 | 31.00 | 494.06 | 14.97 | 50.2 |
| 4.0 | 11.2027 | 2.7129 | 0.04183 | 31.10 | 498.00 | 15.33 | 51.4 |
| 4.5 | 12.5615 | 2.7244 | 0.04833 | 31.19 | 502.78 | 15.72 | 52.7 |
| 5.0 | 13.9289 | 2.7472 | 0.05514 | 31.28 | 508.41 | 16.12 | 54.1 |
| 5.5 | 15.3107 | 2.7820 | 0.06228 | 31.37 | 514.93 | 16.55 | 55.5 |
| 6.0 | 16.7130 | 2.8291 | 0.06978 | 31.45 | 522.35 | 17.00 | 57.0 |
| 6.5 | 18.1420 | 2.8893 | 0.07764 | 31.52 | 530.71 | 17.48 | 58.6 |
| 7.0 | 19.6047 | 2.9636 | 0.08588 | 31.59 | 540.04 | 17.98 | 60.2 |
| 7.5 | 21.1081 | 3.0527 | 0.09454 | 31.66 | 550.36 | 18.51 | 61.9 |
| 12.5 | 40.4717 | 5.1090 | 0.20995 | 32.30 | 717.26 | 25.46 | 81.4 |
| 13.0 | 43.1168 | 5.4781 | 0.22507 | 32.36 | 741.14 | 26.36 | 83.7 |
| 13.5 | 45.9566 | 5.8880 | 0.24098 | 32.43 | 766.48 | 27.30 | 86.2 |
| 14.0 | 49.0122 | 6.3421 | 0.25772 | 32.50 | 793.29 | 28.30 | 88.7 |
| 14.5 | 52.3067 | 6.8443 | 0.27535 | 32.57 | 821.61 | 29.35 | 91.4 |
| 15.0 | 55.8652 | 7.3984 | 0.29389 | 32.65 | 851.49 | 30.47 | 94.2 |
| 15.5 | 59.7145 | 8.0090 | 0.31341 | 32.72 | 882.95 | 31.65 | 97.1 |
| 16.0 | 63.8843 | 8.6808 | 0.33395 | 32.80 | 916.05 | 32.90 | 100.2 |
| 16.5 | 68.4064 | 9.4189 | 0.35557 | 32.88 | 950.82 | 34.24 | 103.5 |
| 17.0 | 73.3152 | 10.2290 | 0.37832 | 32.96 | 987.31 | 35.67 | 107.0 |
| 17.5 | 78.6484 | 11.1171 | 0.40228 | 33.04 | 1025.58 | 37.20 | 110.7 |
| 18.0 | 84.4464 | 12.0897 | 0.42750 | 33.13 | 1065.69 | 38.86 | 114.6 |
| 18.5 | 90.7533 | 13.1539 | 0.45406 | 33.21 | 1107.68 | 40.65 | 118.7 |
| 19.0 | 97.6168 | 14.3172 | 0.48205 | 33.29 | 1151.63 | 42.60 | 123.1 |

METHANE ISOTHERM AT T = 380. K
Second Virial Coeffiicent is -19.6 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 1.5650 | 3.1018 | 0.00429 | 31.33 | 498.90 | 13.86 | 47.4 |
| 1.0 | 3.1032 | 3.0527 | 0.00883 | 31.45 | 499.00 | 14.10 | 48.2 |
| 1.5 | 4.6192 | 3.0128 | 0.01363 | 31.57 | 499.77 | 14.35 | 49.1 |
| 2.0 | 6.1177 | 2.9826 | 0.01870 | 31.68 | 501.24 | 14.63 | 50.1 |
| 2.5 | 7.6035 | 2.9625 | 0.02402 | 31.79 | 503.46 | 14.92 | 51.1 |
| 3.0 | 9.0819 | 2.9528 | 0.02962 | 31.89 | 506.44 | 15.24 | 52.2 |
| 3.5 | 10.5581 | 2.9539 | 0.03550 | 31.99 | 510.21 | 15.58 | 53.4 |
| 4.0 | 12.0376 | 2.9661 | 0.04167 | 32.08 | 514.80 | 15.94 | 54.6 |
| 4.5 | 13.5261 | 2.9899 | 0.04814 | 32.16 | 520.22 | 16.33 | 55.9 |
| 5.0 | 15.0295 | 3.0256 | 0.05492 | 32.25 | 526.50 | 16.73 | 57.3 |
| 5.5 | 16.5538 | 3.0738 | 0.06203 | 32.33 | 533.66 | 17.16 | 58.7 |
| 6.0 | 18.1055 | 3.1353 | 0.06948 | 32.40 | 541.72 | 17.61 | 60.2 |
| 6.5 | 19.6914 | 3.2106 | 0.07730 | 32.47 | 550.72 | 18.09 | 61.7 |
| 7.0 | 21.3186 | 3.3008 | 0.08552 | 32.54 | 560.69 | 18.59 | 63.3 |
| 7.5 | 22.9948 | 3.4069 | 0.09414 | 32.61 | 571.66 | 19.12 | 65.0 |
| 12.5 | 44.6595 | 5.6962 | 0.20885 | 33.23 | 744.33 | 26.04 | 84.5 |
| 13.0 | 47.6059 | 6.0960 | 0.22385 | 33.30 | 768.70 | 26.93 | 86.9 |
| 13.5 | 50.7626 | 6.5382 | 0.23964 | 33.36 | 794.51 | 27.87 | 89.3 |
| 14.0 | 54.1517 | 7.0263 | 0.25625 | 33.43 | 821.79 | 28.87 | 91.9 |
| 14.5 | 57.7972 | 7.5642 | 0.27373 | 33.50 | 850.57 | 29.92 | 94.5 |
| 15.0 | 61.7250 | 8.1561 | 0.29212 | 33.57 | 880.90 | 31.02 | 97.4 |
| 15.5 | 65.9630 | 8.8064 | 0.31147 | 33.64 | 912.82 | 32.20 | 100.3 |
| 16.0 | 70.5419 | 9.5200 | 0.33185 | 33.71 | 946.37 | 33.45 | 103.4 |
| 16.5 | 75.4945 | 10.3023 | 0.35329 | 33.79 | 981.61 | 34.79 | 106.7 |
| 17.0 | 80.8566 | 11.1591 | 0.37587 | 33.86 | 1018.58 | 36.22 | 110.2 |
| 17.5 | 86.6670 | 12.0965 | 0.39965 | 33.94 | 1057.34 | 37.75 | 113.9 |
| 18.0 | 92.9676 | 13.1212 | 0.42469 | 34.02 | 1097.96 | 39.41 | 117.8 |
| 18.5 | 99.8040 | 14.2407 | 0.45108 | 34.09 | 1140.49 | 41.20 | 122.0 |

METHANE ISOTHERM AT T = 400. K
Second Virial Coefficient is -15.5 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm³ | MPa | MPa·dm³/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 1.6507 | 3.2783 | 0.00428 | 32.42 | 510.66 | 14.44 | 50.8 |
| 1.0 | 3.2797 | 3.2394 | 0.00882 | 32.53 | 511.38 | 14.68 | 51.6 |
| 1.5 | 4.8916 | 3.2098 | 0.01361 | 32.64 | 512.76 | 14.94 | 52.5 |
| 2.0 | 6.4912 | 3.1900 | 0.01865 | 32.75 | 514.85 | 15.22 | 53.5 |
| 2.5 | 8.0834 | 3.1805 | 0.02396 | 32.85 | 517.67 | 15.51 | 54.5 |
| 3.0 | 9.6735 | 3.1818 | 0.02954 | 32.94 | 521.24 | 15.83 | 55.6 |
| 3.5 | 11.2670 | 3.1941 | 0.03539 | 33.03 | 525.61 | 16.17 | 56.7 |
| 4.0 | 12.8696 | 3.2181 | 0.04153 | 33.12 | 530.79 | 16.54 | 58.0 |
| 4.5 | 14.4871 | 3.2541 | 0.04797 | 33.20 | 536.81 | 16.92 | 59.3 |
| 5.0 | 16.1257 | 3.3027 | 0.05472 | 33.28 | 543.68 | 17.33 | 60.6 |
| 5.5 | 17.7919 | 3.3644 | 0.06179 | 33.35 | 551.43 | 17.76 | 62.0 |
| 6.0 | 19.4925 | 3.4400 | 0.06922 | 33.42 | 560.10 | 18.21 | 63.5 |
| 6.5 | 21.2344 | 3.5304 | 0.07701 | 33.49 | 569.69 | 18.68 | 65.0 |
| 7.0 | 23.0255 | 3.6365 | 0.08518 | 33.56 | 580.25 | 19.18 | 66.6 |
| 7.5 | 24.8738 | 3.7594 | 0.09376 | 33.62 | 591.81 | 19.71 | 68.3 |
| 12.5 | 48.8263 | 6.2791 | 0.20784 | 34.23 | 769.92 | 26.60 | 87.8 |
| 13.0 | 52.0716 | 6.7094 | 0.22274 | 34.29 | 794.78 | 27.49 | 90.2 |
| 13.5 | 55.5430 | 7.1836 | 0.23842 | 34.35 | 821.06 | 28.43 | 92.6 |
| 14.0 | 59.2631 | 7.7054 | 0.25491 | 34.42 | 848.80 | 29.42 | 95.2 |
| 14.5 | 63.2569 | 8.2787 | 0.27227 | 34.48 | 878.05 | 30.46 | 97.9 |
| 15.0 | 67.5512 | 8.9080 | 0.29053 | 34.55 | 908.84 | 31.57 | 100.7 |
| 15.5 | 72.1750 | 9.5977 | 0.30975 | 34.62 | 941.23 | 32.74 | 103.6 |
| 16.0 | 77.1598 | 10.3531 | 0.32999 | 34.68 | 975.25 | 33.99 | 106.8 |
| 16.5 | 82.5399 | 11.1794 | 0.35129 | 34.75 | 1010.97 | 35.32 | 110.1 |
| 17.0 | 88.3521 | 12.0828 | 0.37373 | 34.82 | 1048.44 | 36.75 | 113.6 |
| 17.5 | 94.6366 | 13.0695 | 0.39737 | 34.89 | 1087.71 | 38.29 | 117.3 |

METHANE ISOTHERM AT T = 420. K
Second Virial Coefficient is -11.9 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | µPa·s | mW/(m·K) |
| 0.5 | 1.7363 | 3.4545 | 0.00428 | 33.54 | 522.04 | | 54.3 |
| 1.0 | 3.4560 | 3.4257 | 0.00881 | 33.65 | 523.33 | | 55.1 |
| 1.5 | 5.1635 | 3.4062 | 0.01358 | 33.75 | 525.29 | | 56.0 |
| 2.0 | 6.8638 | 3.3967 | 0.01861 | 33.85 | 527.94 | | 57.0 |
| 2.5 | 8.5620 | 3.3978 | 0.02390 | 33.94 | 531.32 | | 58.0 |
| 3.0 | 10.2634 | 3.4098 | 0.02946 | 34.03 | 535.46 | | 59.1 |
| 3.5 | 11.9737 | 3.4334 | 0.03529 | 34.12 | 540.38 | | 60.2 |
| 4.0 | 13.6988 | 3.4690 | 0.04140 | 34.20 | 546.12 | | 61.4 |
| 4.5 | 15.4448 | 3.5172 | 0.04781 | 34.28 | 552.69 | | 62.7 |
| 5.0 | 17.2182 | 3.5785 | 0.05453 | 34.35 | 560.11 | | 64.1 |
| 5.5 | 19.0257 | 3.6537 | 0.06158 | 34.42 | 568.42 | | 65.5 |
| 6.0 | 20.8744 | 3.7435 | 0.06898 | 34.49 | 577.64 | | 66.9 |
| 6.5 | 22.7718 | 3.8489 | 0.07673 | 34.55 | 587.79 | | 68.4 |
| 7.0 | 24.7260 | 3.9708 | 0.08487 | 34.62 | 598.91 | | 70.0 |
| 7.5 | 26.7456 | 4.1105 | 0.09342 | 34.68 | 611.02 | | 71.7 |
| 12.5 | 52.9736 | 6.8585 | 0.20691 | 35.26 | 794.32 | | 91.2 |
| 13.0 | 56.5161 | 7.3188 | 0.22173 | 35.32 | 819.64 | | 93.6 |
| 13.5 | 60.3001 | 7.8248 | 0.23731 | 35.38 | 846.39 | | 96.0 |
| 14.0 | 64.3491 | 8.3800 | 0.25371 | 35.44 | 874.60 | | 98.6 |
| 14.5 | 68.6890 | 8.9887 | 0.27096 | 35.50 | 904.32 | | 101.3 |
| 15.0 | 73.3474 | 9.6551 | 0.28912 | 35.57 | 935.58 | | 104.1 |
| 15.5 | 78.3545 | 10.3842 | 0.30823 | 35.63 | 968.43 | | 107.1 |
| 16.0 | 83.7429 | 11.1812 | 0.32836 | 35.69 | 1002.94 | | 110.2 |
| 16.5 | 89.5479 | 12.0515 | 0.34955 | 35.75 | 1039.15 | | 113.6 |
| 17.0 | 95.8078 | 13.0015 | 0.37188 | 35.81 | 1077.13 | | 117.1 |

METHANE ISOTHERM AT T = 450. K
Second Virial Coefficient is -7.3 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | µPa·s | mW/(m·K) |
| 0.5 | 1.8646 | 3.7185 | 0.00428 | 35.26 | 538.49 | | 59.7 |
| 1.0 | 3.7200 | 3.7043 | 0.00879 | 35.36 | 540.59 | | 60.5 |
| 1.5 | 5.5706 | 3.6998 | 0.01355 | 35.46 | 543.33 | | 61.4 |
| 2.0 | 7.4215 | 3.7055 | 0.01856 | 35.55 | 546.77 | | 62.4 |
| 2.5 | 9.2779 | 3.7222 | 0.02383 | 35.63 | 550.93 | | 63.4 |

METHANE ISOTHERM AT T = 450. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 3.0 | 11.1456 | 3.7503 | 0.02935 | 35.71 | 555.85 | | 64.5 |
| 3.5 | 13.0303 | 3.7906 | 0.03515 | 35.79 | 561.55 | | 65.6 |
| 4.0 | 14.9383 | 3.8436 | 0.04123 | 35.87 | 568.05 | | 66.8 |
| 4.5 | 16.8761 | 3.9099 | 0.04761 | 35.94 | 575.40 | | 68.1 |
| 5.0 | 18.8506 | 3.9903 | 0.05429 | 36.01 | 583.60 | | 69.4 |
| 5.5 | 20.8689 | 4.0856 | 0.06130 | 36.07 | 592.68 | | 70.8 |
| 6.0 | 22.9388 | 4.1965 | 0.06866 | 36.14 | 602.68 | | 72.3 |
| 6.5 | 25.0682 | 4.3242 | 0.07637 | 36.20 | 613.61 | | 73.8 |
| 7.0 | 27.2660 | 4.4697 | 0.08446 | 36.26 | 625.50 | | 75.3 |
| 7.5 | 29.5411 | 4.6343 | 0.09296 | 36.31 | 638.39 | | 77.0 |
| 12.5 | 59.1623 | 7.7217 | 0.20569 | 36.86 | 829.08 | | 96.5 |
| 13.0 | 63.1475 | 8.2269 | 0.22040 | 36.91 | 855.11 | | 98.9 |
| 13.5 | 67.3972 | 8.7801 | 0.23587 | 36.97 | 882.55 | | 101.4 |
| 14.0 | 71.9363 | 9.3852 | 0.25215 | 37.02 | 911.46 | | 103.9 |
| 14.5 | 76.7918 | 10.0466 | 0.26928 | 37.08 | 941.87 | | 106.6 |
| 15.0 | 81.9930 | 10.7687 | 0.28731 | 37.13 | 973.84 | | 109.5 |
| 15.5 | 87.5715 | 11.5567 | 0.30629 | 37.19 | 1007.42 | | 112.5 |
| 16.0 | 93.5616 | 12.4160 | 0.32629 | 37.24 | 1042.66 | | 115.6 |

METHANE ISOTHERM AT T = 500. K
Second Virial Coefficient is -1.0 cm$^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 2.0783 | 4.1576 | 0.00427 | 38.14 | 564.61 | | 69.1 |
| 1.0 | 4.1592 | 4.1672 | 0.00877 | 38.23 | 567.91 | | 69.9 |
| 1.5 | 6.2472 | 4.1869 | 0.01351 | 38.31 | 571.84 | | 70.8 |
| 2.0 | 8.3479 | 4.2175 | 0.01849 | 38.39 | 576.46 | | 71.7 |
| 2.5 | 10.4666 | 4.2597 | 0.02372 | 38.47 | 581.79 | | 72.8 |
| 3.0 | 12.6096 | 4.3143 | 0.02921 | 38.54 | 587.88 | | 73.8 |
| 3.5 | 14.7831 | 4.3821 | 0.03497 | 38.61 | 594.75 | | 75.0 |
| 4.0 | 16.9940 | 4.4637 | 0.04100 | 38.67 | 602.42 | | 76.1 |
| 4.5 | 19.2493 | 4.5601 | 0.04733 | 38.74 | 610.93 | | 77.4 |
| 5.0 | 21.5567 | 4.6720 | 0.05396 | 38.80 | 620.31 | | 78.7 |

METHANE ISOTHERM AT T = 500. K (continued)

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 5.5 | 23.9241 | 4.8004 | 0.06092 | 38.86 | 630.57 | | 80.1 |
| 6.0 | 26.3600 | 4.9464 | 0.06821 | 38.91 | 641.74 | | 81.5 |
| 6.5 | 28.8736 | 5.1110 | 0.07586 | 38.97 | 653.85 | | 83.0 |
| 7.0 | 31.4743 | 5.2954 | 0.08389 | 39.02 | 666.93 | | 84.6 |
| 7.5 | 34.1726 | 5.5012 | 0.09232 | 39.07 | 681.00 | | 86.2 |
| 12.5 | 69.4038 | 9.1484 | 0.20404 | 39.55 | 883.30 | | 105.8 |
| 13.0 | 74.1207 | 9.7278 | 0.21862 | 39.59 | 910.47 | | 108.1 |
| 13.5 | 79.1403 | 10.3593 | 0.23395 | 39.64 | 939.06 | | 110.6 |
| 14.0 | 84.4895 | 11.0473 | 0.25009 | 39.69 | 969.13 | | 113.2 |
| 14.5 | 90.1977 | 11.7961 | 0.26708 | 39.73 | 1000.71 | | 115.9 |
| 15.0 | 96.2966 | 12.6110 | 0.28497 | 39.77 | 1033.87 | | 118.8 |

METHANE ISOTHERM AT T = 550. K

Second Virial Coefficient is 4.0 cm$^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | $\mu$Pa·s | mW/(m·K) |
| 0.5 | 2.2918 | 4.5959 | 0.00427 | 40.93 | 589.48 | | 78.8 |
| 1.0 | 4.5975 | 4.6285 | 0.00876 | 41.01 | 593.84 | | 79.6 |
| 1.5 | 6.9221 | 4.6717 | 0.01348 | 41.08 | 598.83 | | 80.5 |
| 2.0 | 9.2711 | 4.7266 | 0.01844 | 41.15 | 604.50 | | 81.4 |
| 2.5 | 11.6507 | 4.7939 | 0.02364 | 41.22 | 610.89 | | 82.4 |
| 3.0 | 14.0673 | 4.8746 | 0.02910 | 41.29 | 618.03 | | 83.5 |
| 3.5 | 16.5277 | 4.9695 | 0.03482 | 41.35 | 625.95 | | 84.6 |
| 4.0 | 19.0393 | 5.0795 | 0.04082 | 41.41 | 634.69 | | 85.8 |
| 4.5 | 21.6099 | 5.2057 | 0.04710 | 41.46 | 644.26 | | 87.1 |
| 5.0 | 24.2478 | 5.3489 | 0.05369 | 41.52 | 654.70 | | 88.4 |
| 5.5 | 26.9618 | 5.5102 | 0.06060 | 41.57 | 666.03 | | 89.7 |
| 6.0 | 29.7612 | 5.6908 | 0.06785 | 41.62 | 678.27 | | 91.2 |
| 6.5 | 32.6560 | 5.8920 | 0.07545 | 41.67 | 691.46 | | 92.6 |
| 7.0 | 35.6569 | 6.1151 | 0.08343 | 41.72 | 705.63 | | 94.2 |
| 7.5 | 38.7751 | 6.3617 | 0.09180 | 41.76 | 720.78 | | 95.8 |
| 12.5 | 79.5735 | 10.5644 | 0.20280 | 42.17 | 934.07 | | 115.4 |
| 13.0 | 85.0167 | 11.2177 | 0.21729 | 42.21 | 962.36 | | 117.7 |
| 13.5 | 90.8006 | 11.9274 | 0.23254 | 42.25 | 992.09 | | 120.2 |
| 14.0 | 96.9543 | 12.6981 | 0.24859 | 42.28 | 1023.30 | | 122.8 |

METHANE ISOTHERM AT T = 600. K
Second Virial Coefficient is 8.0 $cm^3$/mol

| $\rho$ | P | $dP/d\rho\|_T$ | $dP/dT\|_\rho$ | $C_v$ | W | $\eta$ | $\lambda$ |
|---|---|---|---|---|---|---|---|
| mol/dm$^3$ | MPa | MPa·dm$^3$/mol | MPa/K | J/(mol·k) | m/s | μPa·s | mW/(m·K) |
| 0.5 | 2.5051 | 5.0334 | 0.00426 | 43.57 | 613.34 | | 88.6 |
| 1.0 | 5.0351 | 5.0884 | 0.00875 | 43.64 | 618.66 | | 89.4 |
| 1.5 | 7.5954 | 5.1547 | 0.01345 | 43.71 | 624.62 | | 90.3 |
| 2.0 | 10.1919 | 5.2334 | 0.01839 | 43.77 | 631.26 | | 91.3 |
| 2.5 | 12.8311 | 5.3254 | 0.02357 | 43.83 | 638.61 | | 92.3 |
| 3.0 | 15.5198 | 5.4318 | 0.02900 | 43.89 | 646.71 | | 93.3 |
| 3.5 | 18.2655 | 5.5536 | 0.03470 | 43.94 | 655.60 | | 94.4 |
| 4.0 | 21.0761 | 5.6918 | 0.04066 | 44.00 | 665.31 | | 95.6 |
| 4.5 | 23.9602 | 5.8475 | 0.04692 | 44.05 | 675.86 | | 96.9 |
| 5.0 | 26.9267 | 6.0218 | 0.05347 | 44.10 | 687.28 | | 98.2 |
| 5.5 | 29.9853 | 6.2158 | 0.06035 | 44.14 | 699.61 | | 99.5 |
| 6.0 | 33.1460 | 6.4310 | 0.06756 | 44.19 | 712.85 | | 100.9 |
| 6.5 | 36.4200 | 6.6686 | 0.07512 | 44.23 | 727.05 | | 102.4 |
| 7.0 | 39.8186 | 6.9301 | 0.08305 | 44.27 | 742.22 | | 104.0 |
| 7.5 | 43.3543 | 7.2172 | 0.09138 | 44.31 | 758.40 | | 105.6 |
| 12.5 | 89.6893 | 11.9735 | 0.20188 | 44.66 | 982.23 | | 125.1 |
| 13.0 | 95.8555 | 12.7008 | 0.21631 | 44.69 | 1011.62 | | 127.5 |

# APPENDIX C

## LISTING OF A FORTRAN 77 PROGRAM TO CALCULATE THE THERMOPHYSICAL PROPERTIES OF METHANE

In this Appendix, we give the complete listing for a FORTRAN 77 (FORTRAN V) program to calculate the thermophysical properties of methane. Several aspects of this code must be mentioned. The program was written for a mainframe computer with very high precision; implementations for many personal computers will need to convert constants, functions, etc. to double precision. The program reflects the correlations as written in the body of the text; no systematic attempt to optimize the code was undertaken. The comments interspersed throughout the code are meant to assist a programmer; however these are not complete. The program should be used in conjunction with this manuscript and Ref. [1], to assist in judging the uncertainties of the resulting properties and the applicable ranges of the correlations.

```
      PROGRAM C1PROPS
       DIMENSION IERRS(6)
      COMMON /REFDAT/ R, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *             , CMW
       DATA IERRS/6* -0/
C
       IERRS(4)=0
       CALL SYSTEMC(115,IERRS)
C
       WRITE(*,5)
 5     FORMAT(
     C ' ********THIS PROGRAM ALLOWS INTERACTIVE CALCULATION*********'/
     C ' *********OF MANY METHANE THERMOPHYSICAL PROPERTIES**********'/
     C ' ************************************************************'/
     C ' *IT IS BASED ON THE CORRELATIONS OF FRIEND, ELY, AND INGHAM*'/
     C ' *******AS SUBMITTED TO J. PHYS. CHEM. REF. DATA 1988********'/
     C ' *******************UNDER THE TITLE:*************************'/
     C ' ***********THERMOPHYSICAL PROPERTIES OF METHANE*************'/
     C ' ************************************************************'/
     C ' ********* AND APPEARING IN THIS NBS TECHNICAL NOTE********'/)
       WRITE(*,6)
 6     FORMAT(
     C ' **THIS IMPLEMENTATION WAS WRITTEN FOR A MAIN FRAME COMPUTER*'/
     C ' ***************WITH 60 BIT WORD SIZE***********************'/
     C ' ************************************************************'/
     C ' ******THE UNITS FOR INPUT AND OUTPUT ARE:******************'/
     C ' ***PRESSURE-MEGAPASCALS, DENSITY-MOLES PER CUBIC DECIMETER,*'/
     C ' ***********TEMPERAURE-KELVINS, ENERGY-JOULES,**************'/
     C ' *************VISCOSITY-MICROPASCAL SECONDS,****************'/
     C' *****AND THERMAL CONDUCTIVITY-MILLIWATTS PER METER KELVIN****'/
     C' *****ALL NOMINALLY EXTENSIVE QUANTITIES ARE EXPRESSED *******'/
     C' **************ON A PER MOLE BASIS************************'//)
       PAUSE '*****PRESS ANY KEY TO CONTINUE*****'
       WRITE(*,7)
 7     FORMAT(
     C ' *****PLEASE CONSULT THE PAPER AND TEXT OF THIS TECH NOTE*****'/
     C ' ********FOR FURTHER DETAILS CONCERNING THE CORRELATIONS******'/
     C ' **********************************************************'////)
 10    WRITE(*,15)
 15    FORMAT('   PLEASE ENTER CODE FOR THE FOLLOWING CATEGORIES'/
     C '   OF THERMOPHYSICAL PROPERTIES:'/
     C '     1  ALONG THE SATURATION BOUNDARY'/
     C '     2  IN THE SINGLE PHASE GIVEN TEMPERATURE AND DENSITY'/
     C '     3  IN THE SINGLE PHASE GIVEN TEMPERATURE AND PRESSURE'/
     C '     4  OTHER STATE FUNCTIONS IN THE SINGLE PHASE'/
     C '     5  TRANSPORT PROPERTIES IN THE SINGLE PHASE'/
     C '     6  DILUTE AND IDEAL GAS PROPERTIES'/
     C '     7  TERMINATE THIS PROGRAM'/'    ')
       READ(*,*) ICAT
       IF(ICAT.EQ.1)THEN
         WRITE(*,20)
 20      FORMAT('     ENTER FUNCTION NUMBER AND STATE POINT'/
     C   '     1  SATURATION BOUNDARY (PRESSURE AND DENSITIES)'/
```

```
C   '        FROM ANCILLARY EQUATIONS--GIVE T'/
C   '     2  SATURATION BOUNDARY (PRESSURE AND DENSITIES)'/
C   '        FROM MAXWELL CONSTRUCTION--GIVE T'/
C   '     3  SATURATION TEMPERATURE FROM PRESSURE--GIVE P'/
C   '     4  LIQUID HEAT CAPACITY ALONG SATURATION--GIVE T'/
C   '     5  LIQUID SOUND SPEED   ALONG SATURATION--GIVE T'//'    ')
      READ(*,*)IFUNC,PROP1
      IF(IFUNC.EQ.1)THEN
        ANS=PSATF(PROP1)/10.
        ANS1=DSATL(PROP1)
        ANS2=DSATV(PROP1)
      END IF
      IF(IFUNC.EQ.2)CALL SATF(PROP1,ANS,ANS1,ANS2)
      IF(IFUNC.EQ.2)ANS=ANS/10.
      IF(IFUNC.EQ.3)ANS=TSAT(PROP1*10.)
      IF(IFUNC.EQ.4)ANS=CSAT(PROP1)
      IF(IFUNC.EQ.5)THEN
        CALL SATF(PROP1,PPP,PROP2,PPPP)
        ANS=WSF(PROP2,PROP1)
      END IF
      IF(IFUNC.LE.2)WRITE(*,80)PROP1,ANS,ANS1,ANS2
      IF(IFUNC.GT.2)WRITE(*,81)PROP1,ANS
    END IF
    IF(ICAT.EQ.2)THEN
      WRITE(*,25)
25    FORMAT('     ENTER FUNCTION NUMBER AND STATE POINT'/
C   '     1  PRESSURE--GIVE T AND RHO'/
C   '     2  ISOCHORIC HEAT CAPACITY--GIVE T AND RHO'/
C   '     3  ISOBARIC HEAT CAPACITY--GIVE T AND RHO'/
C   '     4  SOUND SPEED--GIVE T AND RHO'/
C   '     5  ISOTHERMAL DP/DRHO--GIVE T AND RHO'/
C   '     6  ISOCHORIC DP/DT--GIVE T AND RHO'/)
      READ(*,*)IFUNC,PROP1,PROP2
      IF(IFUNC.EQ.1)CALL PRESS(ANS,PROP2,PROP1,1)
      IF(IFUNC.EQ.1)ANS=ANS/10.
      IF(IFUNC.EQ.2)ANS= CVF(PROP2,PROP1)
      IF(IFUNC.EQ.3)ANS=CPEE(PROP2,PROP1)
      IF(IFUNC.EQ.4)ANS=WSF(PROP2,PROP1)
      IF(IFUNC.EQ.5)CALL DPDD(ANS,PROP2,PROP1,1)
      IF(IFUNC.EQ.5)ANS=ANS/10.
      IF(IFUNC.EQ.6)CALL DPDT(ANS,PROP2,PROP1,1)
      IF(IFUNC.EQ.6)ANS=ANS/10.
      WRITE(*,82)PROP1,PROP2,ANS
    END IF
    IF(ICAT.EQ.3)THEN
      WRITE(*,30)
30    FORMAT('     ENTER FUNCTION NUMBER AND STATE POINT'/
C   '     1  DENSITY--GIVE T AND P'/
C   '     2  ISOCHORIC HEAT CAPACITY--GIVE T AND P'/
C   '     3  ISOBARIC HEAT CAPACITY--GIVE T AND P'/
C   '     4  SOUND SPEED--GIVE T AND P'/
C   '     5  ISOTHERMAL DP/DRHO--GIVE T AND P'/
C   '     6  ISOCHORIC DP/DT--GIVE T AND P'/)
```

```
          READ(*,*)IFUNC,PROP1,PROP2
          RHO = RHOF(PROP2*10.,PROP1,0.0)
          IF(IFUNC.EQ.1)ANS=RHO
          IF(IFUNC.EQ.2)ANS= CVF(RHO,PROP1)
          IF(IFUNC.EQ.3)ANS=CPEE(RHO,PROP1)
          IF(IFUNC.EQ.4)ANS=WSF(RHO,PROP1)
          IF(IFUNC.EQ.5)CALL DPDD(ANS,RHO,PROP1,1)
          IF(IFUNC.EQ.6)CALL DPDT(ANS,RHO,PROP1,1)
          IF(IFUNC.GE.5)ANS=ANS/10.
          WRITE(*,82)PROP1,PROP2,ANS
        END IF
        IF(ICAT.EQ.4)THEN
          WRITE(*,35)
35        FORMAT('      ENTER FUNCTION NUMBER AND STATE POINT'/
     C    '      1  ENTROPY--GIVE T AND RHO'/
     C    '      2  HELMHOLTZ ENERGY--GIVE T AND RHO'/
     C    '      3  INTERNAL ENERGY--GIVE T AND RHO'/
     C    '      4  GIBBS ENERGY--GIVE T AND RHO'/
     C    '      5  ENTHALPY--GIVE T AND RHO'/)
          READ(*,*)IFUNC,PROP1,PROP2
          IF(IFUNC.EQ.1)ANS=ENTROPY(PROP2,PROP1)
          IF(IFUNC.EQ.2)ANS=HELM(PROP2,PROP1)
          IF(IFUNC.EQ.3)ANS=UNTERN(PROP2,PROP1)
          IF(IFUNC.GE.4)CALL PRESS(PPP,PROP2,PROP1,1)
          IF(IFUNC.EQ.4)ANS=GIBBS(PROP2,PROP1,PPP)
          IF(IFUNC.EQ.5)ANS=ENTHALP(PROP2,PROP1,PPP)
          WRITE(*,82)PROP1,PROP2,ANS
        END IF
        IF(ICAT.EQ.5)THEN
          WRITE(*,40)
40        FORMAT('      ENTER FUNCTION NUMBER AND STATE POINT'/
     C    '      1  VISCOSITY--GIVE T AND RHO'/
     C    '      2  THERMAL CONDUCTIVITY--GIVE T AND RHO'/
     C    '      3  VISCOSITY--GIVE T AND P'/
     C    '      4  THERMAL CONDUCTIVITY--GIVE T AND P'/)
          READ(*,*)IFUNC,PROP1,PROP2
          IF(IFUNC.EQ.1)ANS=VSCTY(PROP2,PROP1)
          IF(IFUNC.EQ.2)ANS=XLAMF(PROP2,PROP1)
          IF(IFUNC.GE.3) PROO=RHOF(PROP2*10.,PROP1,0.0)
          IF(IFUNC.EQ.3)ANS=VSCTY(PROO,PROP1)
          IF(IFUNC.EQ.4)ANS=XLAMF(PROO,PROP1)
          WRITE(*,82)PROP1,PROP2,ANS
        END IF
        IF(ICAT.EQ.6)THEN
          WRITE(*,45)


45        FORMAT('      ENTER FUNCTION NUMBER AND STATE POINT'/
     C    '      1  SECOND VIRIAL COEFFICIENT--GIVE T AND 0'/
     C    '      2  IDEAL GAS ISCHORIC HEAT CAPACITY--GIVE T AND 0'/
     C    '      3  IDEAL GAS ISOBARIC HEAT CAPACITY--GIVE T AND 0'/
     C    '      4  IDEAL GAS ENTHALPY--GIVE T AND 0'/
     C    '      5  IDEAL GAS INTERNAL ENERGY--GIVE T AND 0'/
```

```
      C    '     6  IDEAL GAS ENTROPY--GIVE T AND RHO'/
      C    '     7  IDEAL GAS HELMHOLTZ ENGERGY--GIVE T AND RHO'/
      C    '     8  IDEAL GAS ENTROPY--GIVE T AND P'/
      C    '     9  IDEAL GAS HELMHOLTZ ENERGY--GIVE T AND P'/
      C    '    10  DILUTE GAS VISCOSTIY--GIVE T AND 0'/
      C    '    11  DILUTE GAS THERMAL CONDUCTIVITY--GIVE T AND 0'/)
          READ(*,*)IFUNC,PROP1,PROP2
          IF (PROP2.EQ.0.)PROP2=0.000001
          IF(IFUNC.EQ.1)ANS=BVIR(PROP1)
          IF((IFUNC.EQ.8).OR.(IFUNC.EQ.9))PROP2=10.*PROP2/(R*PROP1)
          IF((IFUNC.GT.1).AND.(IFUNC.LT.10))CALL IDEAL1(
      C    PROP1,PROP2,EID,HID,HEL,SID,CVID,CPID,3)
          IF(IFUNC.EQ.2)ANS=CVID
          IF(IFUNC.EQ.3)ANS=CPID
          IF(IFUNC.GE.4)ANS=HID
          IF(IFUNC.EQ.5)ANS=EID
          IF(IFUNC.EQ.6)ANS=SID
          IF(IFUNC.EQ.7)ANS=HEL
          IF(IFUNC.EQ.8)ANS=SID
          IF(IFUNC.EQ.9)ANS=HEL
          IF(IFUNC.EQ.10)ANS=ETA0(PROP1)
          IF(IFUNC.EQ.11)ANS=TCOND0(PROP1)
          IF(IFUNC.LE.5)WRITE(*,81)PROP1,ANS
          IF((IFUNC.GT.5).AND.(IFUNC.LT.10))WRITE(*,82)PROP1,PROP2,ANS
          IF(IFUNC.GE.10)WRITE(*,81)PROP1,ANS
        END IF
        IF(ICAT.EQ.7)STOP 'FINISH C1PROPS'
        GO TO 10
   80   FORMAT(1X,4F14.5)
   81   FORMAT(1X,2F14.5)
   82   FORMAT(1X,3F14.5)
        END
```

```
C
       FUNCTION CSAT(T)
C
C*********THIS FUNCTION CALCULATES THE HEAT CAPACITY OF THE LIQUID
C*********ALONG THE SATURATION BOUNDARY
C
       COMMON /DERIV/ DPSDT, DDSDT
       RHO=DSATL(T)
       CALL DPDT(DPD,RHO,T,1)
       CSAT=CVF(RHO,T)-100.*T/RHO**2*DPD*DDSDT
       RETURN
       END
```

```
C
      FUNCTION BVIR(T)
C
C*********THIS FUNCION CALCULATES THE SECOND VIRIAL COEFFICIENT
C*********USING THE SCHMIDT-WAGNER EQUATION OF STATE
C
      COMMON /REFDAT/ R, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *               , CMW
C
      TA = TC / T
      T15 = TA ** 1.5
      T25 = TA ** 2.5
      T5 = TA ** 5
      T6 = TA ** 6
      B = G(1) + G(2)*T15 + G(3)*T25 + G(14)*T5+ G(15)*T6
      BVIR = B / DC
      RETURN
      END
```

```
C
       SUBROUTINE SATF(TS,PS,DSL,DSV)
C      PURPOSE --- THIS ROUTINE CALCULATES THE SATURATION
C                  PRESSURE AND COEXISTING DENSITIES FROM
C                  AN EQUATION OF STATE.
C
C      VERSION 2.0  5/20/82
C
C      CODED BY -- J. F. ELY
C                  THERMOPHYSICAL PROPERTIES DIVISION
C                   NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
C                   (FORMERLY, NATIONAL BUREAU OF STANDARDS)
C                  BOULDER, COLORADO  80303
C
C * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  **
      COMMON /REFDAT/ R, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *              , CMW
      LOGICAL ENTER
      DATA TOL, FTOL, ENTER / 1.0E-4, 1.0E-6, .FALSE. /
C
      IF(TS.LT.TC) GO TO 005
      PS = PC
      DSL = DC
      DSV = DC
      RETURN
C
  005 IF (ENTER) GO TO 010
      ENTER = .TRUE.
      BV = ALOG(PTRP/PC) / (1.0/TTRP - 1.0/TC)
      AV = ALOG(PC) - BV / TC
C                          INITIAL GUESS AT THE VAPOR PRESSURE
  010 PS = EXP(AV+BV/TS)
C
C                          INITAL GUESS AT THE VAPOR DENSITY
      DV = PS / (R*TS)
C                          INITIAL GUESS AT LIQUID DENSITY
C
      TR = TS /TC
      EPS = (1.0-TR)**(2.0/7.0)
      DL = DC / ZC**EPS
      IF (DL.GT.DTRP) DL = DTRP
C
C                          IMPROVE VAPOR GUESS NEAR CRITICAL
C
      IF (TR.LT.0.85) GO TO 015
      DV = DL - 3.75 * DC * (1.0-TR)**0.333
C                          NEWTON-RAPHSON ITERATION FOR DENSITIES
  015 DO 100 J = 1, 25
  020 CALL PVTF(PL,DL,TS,DPDL,D2PDD2,GL)
  030 IF (DPDL.GT.0.0.AND.PL.GT.0.0) GO TO 040
      DL = 1.02 * DL
      GO TO 020
```

```
040 CALL PVTF(PV,DV,TS,DPDV,D2PDD2,GV)
    IF (DPDV.GT.0.0) GO TO 060
    DV = 0.98 * DV
    GO TO 040
060 F1 = GL -GV
    F2 = PL - PV
    F2L = DPDL
    F2V = - DPDV
    F1L = F2L / DL
    F1V = F2V / DV
    DENOM = F1L * F2V - F2L * F1V
    IF (ABS(DENOM).LE.1.0E-10) GO TO 120
    DDL = -(F1*F2V-F2*F1V) / DENOM
    DDV = -(F1+DDL*F1L) / F1V
    DL = DL + DDL
    IF(DL.LT.DC) DL = DC
    DVS = DV
    DV = DV + DDV
    IF(DV.GT.DC) DV = DC
    IF(DV.LE.0.0) DV=DVS/2.0
    IF (ABS(DDL/DL).LT.TOL .AND. ABS(DDV/DV).LE.TOL) GO TO 110
    FNORM = F1*F1 + F2*F2
    IF(TR.LT.0.99 .AND. FNORM.LE.FTOL) GO TO 110
100 CONTINUE
110 PS = PV
    DSL = DL
    DSV = DV
    RETURN
120 WRITE(6,340) DENOM
    GO TO 110
300 FORMAT(I3,8G10.4)
310 FORMAT(I3,2F12.8,G13.6)
330 FORMAT(F8.2,G13.6,2F10.6,2G13.6)
340 FORMAT('DENOM IS TOO SMALL IN SATF',G13.6)
    END
```

```
C
      FUNCTION RHOF(P1,P2,P3)
C
C * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  **  *
C
C     PURPOSE -- THIS ROUTINE CALCULATES THE DENSITY OF A FLUID AT
C                T AND P GIVEN AN INITIAL GUESS IN FOP.  ON EXIT,
C                IT RETURNS THE FUGACITY COEFFICIENT IN FOP.  IT
C                REQUIRES A ROUTINE 'PVTF' WHICH CALCULATES P,
C                DPDD, AND GR = G(T,P)-G*(T,1)
C
C       CODED BY--J. F. ELY
C                THERMOPHYSICAL PROPERTIES DIVISION
C                NATIONAL ENGINEERING LABORATORY
C                 NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
C                 (FORMERLY, NATIONAL BUREAU OF STANDARDS)
C                BOULDER, COLORADO 80303
C
C       VERSION 2.0 -- 5/23/82
C
C * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  * * * *  **  *

C
C       REVISED 3/12/85 TO CHANGE BOUNDS AND AVOID CRITICAL REGION IN N-R.
C
      COMMON /REFDAT/ R, PC, DC, TC, ZC, A(32), PTRP, DTRP, TTRP
     *               , CMW
      DATA TOLERD, TOLERP / 1.0E-8, 1.0E-8/
C
C                          ESTABLISH BOUNDS AND START NEWTON-RAPHSON
      P = P1
      T = P2
      D = P / (R*T)
      IF (T.GT.TC) GO TO 019
      CALL SATF(T,PS,DSL,DSV)
      D = DSV
      IF (P.GE.PS) D = DSL
      IF ((P.GE.1.5*PS).AND.((TC-T).LE.7.)) D = 2.0 * DSL
      GO TO 020
  019 IF (P.GT.2.*PC) D = 1.5 * MAX(D,DC)
C
C                          ESTABLISH BOUNDS AND START NEWTON RAPHSON
  020 DLO=0.0
      DHI = 1.50 * DTRP
      DMAX = 1.2 * DHI
      DO 100 LAP=1,20
      CALL PVTF(PX,D,T,DPDD,D2PDD2,GR)
C
C                          IF DPDD IS ZERO OR NEGATIVE, TRY BISECTION
C
      IF(DPDD.LE.1.0E-3) GO TO 120
      DP=P-PX
      DD=DP/DPDD
```

```
C                             SAVE DENSITY FOR POSSIBLE BISECTION
C
      IF (DP) 040,300,060
  040 DHI=D
      GO TO 080
  060 DLO=D
  080 DN=D+DD
C                             KEEP D WITHIN BOUNDS OR GO TO BISECTION
C
      IF (DN.LT.0.0 .OR. DN.GT.DMAX) GO TO 120
      D=DN
      IF(LAP.EQ.1) GO TO 100
      IF(ABS(DP/P).LE.TOLERP) GO TO 300
      IF(ABS(DD/D).LE.TOLERD) GO TO 300
  100 CONTINUE
C                             NEWTON-RAPHSON FAILURE.  TRY BISECTION
  120 IF(T.GT.TC) GO TO 160
C
C                             SUB-CRITICAL.  MAKE SURE THAT WE HAVE THE
C                             PROPER BOUNDS ON THE DENSITY.
C
      IF(P.LT.PS) GO TO 140
      DLO = DSL
      IF(DHI.LE.DSL) DHI=DMAX
      GO TO 160
C
  140 IF(DLO.GE.DSV) DLO=0.0
      DHI = DSV
C
C                             START THE BISECTION
  160 D=0.50*(DLO+DHI)
      CALL PVTF(PX,D,T,DPDD,D2PDD2,GR)
      DP=PX-P
      IF(DP) 200,300,220
  200 DLO=D
      GO TO 240
  220 DHI=D
  240 IF(ABS(DP/P) .LE. TOLERP) GO TO 300
      IF(ABS(DLO/DHI-1.0).GT.TOLERD) GO TO 160
C
C                             BISECTION FAILED.  GIVE UP
  260 WRITE(6,400) T, P,D,DPDD,DLO,DHI,LAP,PX
C                             CONVERGENCE ! ! !
  300 RHOF=D
      RETURN
  400 FORMAT('RHOF FAILED AT T =',F9.3,' P =',G14.7,4G12.6,I4,G12.6)
      END
```

```
C
      SUBROUTINE PVTF(P0,D0,T0,DPDD,D2PD2,G0)
C
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C
C     PURPOSE --- THIS ROUTINE CALCULATES THE  PRESSURE, ITS FIRST
C                 TWO DENSITY DERIVATIVES AND THE GIBBS ENERGY
C                 RELATIVE TO THE IDEAL GAS AT 1 BAR
C                 THIS ROUTINE IS FOR THE WAGNER EQUATION OF STATE
C
C      VERSION 1.0 - 2/18/85
C
C      CODED BY -- J. F. ELY
C                  CHEMICAL ENGINEERING SCIENCE DIVISION
C                 NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
C                 (FORMERLY, NATIONAL BUREAU OF STANDARDS)
C                  BOULDER, COLORADO  80303
C
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C
      DIMENSION S(4), P(10,3), Q(3), DQDD(3), D2QDD2(3), D3QDD3(3)
C
      COMMON /REFDAT/ RG, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *               , CMW
C
      DATA P / 30*0. /, TLAST / -1.0 /
C
C
      T = TC / T0
      D = D0 / DC
      IF(T.EQ.TLAST) GO TO 040
      TLAST=T
      RT = RG * T0
      TS = SQRT(T)
      TTS = T * TS
      T2 = T * T
      T3 = T * T2
      T4 = T * T3
      T5 = T * T4
      T6 = T * T5
      T7 = T * T6
      T8 = T2 * T6
      T11 = T8 * T3
      T17 = T6 * T11
      T18 = T * T17
C
      P(1,1) = G(1) + (G(2) + G(3)*T) * TTS
      P(2,1) = G(4)/TS + G(5)*TTS + G(6)*T2
      P(3,1) = G(7) + (G(8) + G(9)*TTS) * T
      P(6,1) = G(10)
      P(7,1) = G(11)*T2 + G(12)*T5
      P(8,1) = G(13)*T2
```

```
C
      P(1,2) = G(14)*T5 + G(15)*T6
      P(2,2) = (G(16) + G(17)*T2) * T2 * TTS
      P(3,2) = G(18)*T3 + G(19)*T7
      P(5,2) = G(20) * T6
      P(6,2) = G(21) * T8 * TS
      P(7,2) = G(22) * T4
      P(8,2) = G(23) * T6 * TS
      P(10,2)= G(24) * T5 * TS
C
      P(2,3) = G(25) * T11 * T11
      P(3,3) = G(26) * T11 + G(27) * T18
      P(4,3) = (G(28) + G(29)*T11*T) * T11
      P(5,3) = (G(30) + T * (G(31) + G(32)*T5)) * T17
C
  040 DO 070 J = 1, 3
      DO 050 K = 1, 4
  050 S(K) = 0.
      DO 060 I = 1, 10
      S(1) = S(1) * D + P(11-I,J)
      S(2) = S(2) * D + S(1)
      IF (I.EQ.10) GO TO 060
      S(3) = S(3) * D + S(2)
      IF (I.EQ.9) GO TO 060
      S(4) = S(4) * D + S(3)
  060 CONTINUE
      Q(J) = S(1) * D
      DQDD(J) = S(2)
      D2QDD2(J) = S(3) * 2.0
  070 D3QDD3(J) = S(4) * 6.0
C
      D2 = D * D
      D3 = D * D2
      F2 = EXP(-D2)
      F3 = EXP(-D*D3)
      TWOD = 2.0 * D
      FORD = 4.0 * D3
      DRT = DO * RT
C
      PHI = Q(1) + Q(2) * F2 + Q(3) * F3
C
      TRM2 = DQDD(2) - TWOD * Q(2)
      TRM3 = DQDD(3) - FORD * Q(3)
      DPHDD = DQDD(1) + TRM2 * F2 + TRM3 * F3
      PO = DRT * (1.0 + D * DPHDD)
C
      TRM2P = D2QDD2(2) - 2.0 * Q(2) - TWOD * DQDD(2)
      TRM3P = D2QDD2(3) - 12.0 * D2 * Q(3) - FORD * DQDD(3)
      TRM22 = TRM2P - TWOD * TRM2
      TRM33 = TRM3P - FORD * TRM3
      D2PHD2 = D2QDD2(1) + TRM22 * F2 + TRM33 * F3
      DPDD = RT * (1.0 + TWOD * DPHDD + D2 * D2PHD2)
```

```
C
      TRM22P = D3QDD3(2) - 4.0 * DQDD(2) - TWOD * D2QDD2(2)
     *                   - 2.0 * TRM2    - TWOD * TRM2P
      TRM33P = D3QDD3(3) - 24.0 * D * (Q(3) + D * DQDD(3))
     *       - FORD * (D2QDD2(3) + TRM3P) - 12.0 * D2 * TRM3
      D3PHD3 = D3QDD3(1) + (TRM22P - TWOD * TRM22) * F2
     *                   + (TRM33P - FORD * TRM33) * F3
      D2PD2 = RT * (2.0*DPHDD + 4.0*D*D2PHD2 + D2*D3PHD3) / DC
C
      Z0 = P0 / DRT
      G0 = RT * (PHI + Z0 - 1.0 + ALOG(DRT))
      RETURN
      END
```

```
C
      FUNCTION CVF(D,T)
C
C************THIS FUNCTION CALCULATES THE ISOCHORIC HEAT CAPACITY
C
      CALL CVR(CVD,D,T,1)
      CALL IDEAL(T,CVI,SI)
      CVF = CVI + 100.0 * CVD
      RETURN
      END
```

```
C
      FUNCTION WSF(D,T)
C
C                         THIS ROUTINE CALCULATES THE SOUND VELOCITY
C                         GIVEN THE DENSITY AND TEMPERATURE
C
      COMMON /REFDAT/ R, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *               , CMW
C
      COMMON /DPDCAL/ CP, CV, DPD, DPT
C
      CV = CVF(D,T)
      CALL DPDT(DPT,D,T,1)
      CALL DPDD(DPD,D,T,1)
      DPT = DPT / D
      CP = CV + 100.0 * T * DPT * DPT / DPD
      WSS =  CP * DPD / (CMW * CV)
       IF(WSS.LT.0.)WSS=0.0
      WSF = SQRT(1.0E5 * WSS)
      RETURN
      END
```

```
C
      FUNCTION DSATL(T)
C
C            THIS ROUTINE CALCULATES THE SATURATED LIQUID
C            DENSITY OF METHANE
C
C           REVISED 2/27/85 TO REJECT CALLS IF T .GT. TC
C
C***************************************************************************
C
C        REVISED COEFFICIENTS FROM 6/03/86
      COMMON/SATBDY/TC,PC,DC,ZC,R,EPP,BETA
      COMMON /DERIV/ DPSDT, DDSDT
      DIMENSION G(4)
      DATA G/ .1838981951E+01,
     C -.7727452180E+00,
     C.5592446346E+00,
     C-.3807792546E+00/
C*****************************************************************************
      X = 1.0 - T / TC
       IF (X) 1,2,3
 1     PRINT 4
 4     FORMAT(10X,'DSATL = 0, T EXCEEDS TCRT. ' / )
       STOP
 2     DSATL = DC
       DDSDT = -1.0E+10
       RETURN
 3    DENOM = 1.0 + G(4) * X**(1.0-BETA)
      Y = (G(1) * X**BETA + G(2) * X*X + G(3) * X*X*X) / DENOM
      DYDX = BETA*G(1)*X**(BETA-1.0) + 2.0*G(2)*X + 3.0*G(3)*X*X
      DYDX = (DYDX - Y * G(4) * (1.0-BETA) / X**BETA) / DENOM
      DSATL = DC * (Y + 1.0)
      DDSDT = - DC * DYDX / TC
      RETURN
      END
```

```
C
      FUNCTION DSATV(T)
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C
C       PURPOSE --- THIS ROUTINE CALCULATES THE SATURATED VAPOR DENSITY,
C                   AND ITS DERIVATIVE WITH RESPECT TO T, GIVEN T.  IT
C                   REQUIRES THE USE OF "PSATF" WHICH CALCULATES  THE
C                   SATURATIION PRESSURE AND ITS DERIVATIVE WRT T.
C
C
C          CODED BY--B. C. COOKE
C                    CHEMICAL ENGINEERING SCIENCE DIVISION 773.20
C                   NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
C                   (FORMERLY, NATIONAL BUREAU OF STANDARDS)
C                     BOULDER, COLORADO 80303
C
C
C
C          VERSION 1.0 -- 6/3/83
C
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C
C            REVISED 2/27/85 TO REJECT CALLS IF T .GT. TC
C
C*************************************************************************
C
C
C       REVISED 6/03/86. USES BETA =0.355 AND SCALING AMPLITUDE
C       IS SAME IN VAPOR AND LIQUID TO LOWEST ORDER
C***************************************************************************
      COMMON /DERIV/ DPSDT, DDSDT
      COMMON/SATBDY/TC,PC,DC,ZC,R,EPP,BETA
      DIMENSION G(4)
C********COEFFICIENTS FROM 4/13/87 USING 1986 VALUE OF GAS CONSTANT*******
      DATA G/-.1241532211E+01,
     C -.1649971667E+01,
     C .2281948881E+01,
     C .1439569505E+01/
C    THIS COEFFICIENT IS DIRECTLY FROM SAT LIQUID FIT
      DATA G00/.1838981951E+01/
      G0 = G00/(1.-1./ZC)
      X = T / TC
      TAU = 1.0 - X
       IF (TAU) 1,2,3
 1     PRINT 4
 4     FORMAT(10X,'T EXCEEDS TC IN DSATV. ' / )
       STOP
 2     DSATV=DC
       DDSDT=1.0E+100
       RETURN
```

```
3      F = G0*TAU**BETA + G(1)*TAU**(2.*BETA)
       F = F + G(2)*(TAU + TAU**4) + G(3)*TAU**2
      Y = 1.0 + G(4)*TAU
      PS = PSATF(T)
      PRX = (ZC-1.0) * PS / (PC*X**8)
      FOY = F / Y
      Z = 1.0 + PRX * (1.0 + FOY)
      RTZ = 1.0 / (R * T * Z)
      DSATV = PS * RTZ
      DFDX=- BETA*G0*TAU**(BETA-1.0)-G(1)*2.*BETA*TAU**(2.*BETA-1.)
       DFDX=DFDX-G(2)*(1.+4.*TAU**3)-2.*G(3)*TAU
      DYDX = -G(4)
      DPDX = (ZC-1.0)*DPSDT*TC/(PC*X**8)- 8.0*PRX/X
      DZDX = DPDX*(1.0+FOY) + PRX*(DFDX/Y - FOY*DYDX/Y)
      DDSDT = DPSDT*RTZ - DSATV/T - DZDX*DSATV/(Z*TC)
      RETURN
      END



      FUNCTION PSATF(T)
C
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C
C        PURPOSE --- THIS ROUTINE CALCULATES THE SATURATION PRESSURE AND
C                    ITS DERIVATIVE WITH RESPECT TO T, GIVEN T.
C
C
C           CODED BY--J. F. ELY
C                     CHEMICAL ENGINEERING SCIENCE DIVISION 773.20
C                   NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
C                   (FORMERLY, NATIONAL BUREAU OF STANDARDS)
C                     BOULDER, COLORADO   80303
C
C
C           VERSION 1.0 -- 6/3/83
C
C
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C
C      REVISED 2/27/85 TO REJECT CALLS IF T .GT. TC
C
C**********************************************************************
C
C          NEW COEFFICIENTS
C              1/31/86
C      CHANGED 6/03/86 TO EPP=1.9 AND USES TSTAR AS VARIABLE
C      AND IS FORCED TO PC AT T = TC
C***********************************************************************
      DIMENSION G(5)
      COMMON/SATBDY/TC,PC,DC,ZC,R,EPP,BETA
      COMMON /DERIV/ DPSDT, DDSDT
```

```
      DATA G/ -.6589879027E+01,
     C.1131028214E+02,
     C.6355175255E+00,
     C-.1038720254E+02,
     C.3393074680E+01/
      X = 1. - T / TC
       IF(X) 1,2,2
 1     PRINT 4
 4     FORMAT(10X, 'T ABOVE TCRT IN PSATF(T). ' / )
       STOP
 2    PCAL = G(1)*X/(1.-X)+G(2)*X**EPP+G(3)*X+G(4)*X*X+G(5)*X*X*X
      PSATF= PC*EXP(PCAL)
      DPSDT=-PSATF/TC*(G(1)/(1.-X)**2+EPP*G(2)*X**(EPP-1.0)+G(3)
     * + 2.*G(4)*X+3.*G(5)*X**2)
      RETURN
C
      END
```

```
       SUBROUTINE IDEAL(T,CVID,SID)
C********IDEAL GAS PROPERTIES FOR METHANE AT  0.101325 MPA (1 ATM)
C**************NEW IDEAL SUBROUTINE FOR 1986 VALUE OF GAS CONSTANT**********
C******FORM OF HELMHOLTZ FREE ENERGY FOLLOWS GOODWIN WITH WAGNER VARIABLES**
C******COEFFICIENTS FROM GOODWINS FIT OF MCDOWELL-KRUSE*******************
C******ASSUMES HELMHOLTZ ENERGY EQUALITY (IN LN RHO FORM) AT 298.15 K********
C******NEW R FORCES SLIGHT DEVIATIONS IN OTHER PROPERTIES, SINCE NOT**********
C*******ALL EQS ARE DIRECTLY PROPORTIONAL TO R******************************
C**************DATE OF CHANGE 4/14/87**************************************
C******************EVALUATED AT 1 ATM (PROBLEM FOR ARGUMENT SID ONLY*********
      COMMON /REFDAT/ R1,PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *              , CMW
       DIMENSION QS(7)
       DATA QS/-15.479844,2.5998324,-3.3854083,
     C 1.6900979,-0.3911541,4.7206715,-10.543907/
       DATA P1,P2/-.33333333,-.66666667/
       R = R1*100.
       TAU=TC/T
       TAU3=TAU**P1
       TAU23=TAU**P2
       EXTAU=EXP(QS(7)*TAU )
       PHID=QS(1)+(QS(2)+1.)*LOG(TAU)+QS(3)*TAU3+QS(4)*TAU23
     1 +QS(5)/TAU+QS(6)*LOG(1.-EXTAU)
       PHIDD1=QS(2)-QS(3)/3.*TAU3-2.*QS(4)/3.*TAU23-QS(5)/TAU
     1 -QS(6)*QS(7)*TAU/(1./EXTAU-1.)
       PHIDD2=-QS(2)+4.*QS(3)/9.*TAU3+10.*QS(4)/9.*TAU23
     1 +2.*QS(5)/TAU-QS(6)*QS(7)**2*TAU**2*EXTAU/(EXTAU-1.)**2
       CVID=-R*PHIDD2
       SID=-R*(PHID-PHIDD1)
       RETURN
       END
```

```
C
      SUBROUTINE PROPSS(PP,DD,TT,IDD)
C************THIS SUBROUTINE CALCULATES MANY OF THE THERMODYNAMIC
C************PROPERTIES FROM THE SCHMIDT-WAGNER EQUATION OF STATE
C
      DIMENSION X(33)
      COMMON /FITCOM/ B(33)
      COMMON /REFDAT/ R, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *                , CMW
      EQUIVALENCE (B,X)
    1 CONTINUE
      D = DD/DC
      DEN = DD
      T = TC/TT
      TEMP = TT
      RT = R * TEMP
      DRT = DEN * RT
      DDRT = D * DRT
      RTD = RT / DC
      RD = DEN * R
      RTT = RD / TC
      D2 = D * D
      D3 = D2 * D
      D4 = D3 * D
      D5 = D4 * D
      D6 = D5 * D
      D7 = D6 * D
      D8 = D7 * D
      D9 = D8 * D
      D10 = D9 * D
      D11 = D10 * D
      D12 = D11 * D
      D13 = D12 * D
      D14 = D13 * D
      D15 = D14 * D
      D16 = D15 * D
      TS = SQRT (T)
      TMS = 1.0 / TS
      T15 = T * TS
      T2 = T * T
      T25 = T2 * TS
      T3 = T2 * T
      T35 = T3 * TS
      T4 = T3 * T
      T45 = T4 * TS
      T5 = T4 * T
      T55 = T5 * TS
      T6 = T5 * T
      T65 = T6 * TS
      T7 = T6 * T
      T75 = T7 * TS
      T8 = T7 * T
      T85 = T8 * TS
```

```
      T9 = T8 * T
      T95 = T9 * TS
      T11 = T8 * T3
      T12 = T11 * T
      T17 = T12*T5
      T18 = T17 * T
      T19 = T18 * T
      T22 = T18 * T4
      T23 = T22 * T
      T24 = T23 * T
      F1 = EXP ( -D2)
      F2 = EXP ( -D4)
      GO TO (100,200,300,400,500,600,700,800),K
C
      ENTRY PRESS(PP,DD,TT,IDD)
C********ENTRY TO CALCULATE PRESSURE
C
      K = 1
      GO TO 1
  100 CONTINUE
      B( 1) = DDRT *  1.0
      B( 2) = DDRT *  T15
      B( 3) = DDRT *  T25
      B( 4) = DDRT *  2.*D*TMS
      B( 5) = DDRT *  2.*D*T15
      B( 6) = DDRT *  2.*D*T2
      B( 7) = DDRT *  3.*D2
      B( 8) = DDRT *  3.*D2*T
      B( 9) = DDRT *  3.*D2*T25
      B(10) = DDRT *  6.*D5
      B(11) = DDRT *  7.*D6*T2
      B(12) = DDRT *  7.*D6*T5
      B(13) = DDRT *  8.*D7*T2
      B(14) = DDRT *  (1.-2.*D2)*T5*F1
      B(15) = DDRT *  (1.-2.*D2)*T6*F1
      B(16) = DDRT *  (2.*D-2.*D3)*T35*F1
      B(17) = DDRT *  (2.*D-2.*D3)*T55*F1
      B(18) = DDRT *  (3.*D2-2.*D4)*T3*F1
      B(19) = DDRT *  (3.*D2-2.*D4)*T7*F1
      B(20) = DDRT *  (5.*D4-2.*D6)*T6*F1
      B(21) = DDRT *  (6.*D5-2.*D7)*T85*F1
      B(22) = DDRT *  (7.*D6-2.*D8)*T4*F1
      B(23) = DDRT *  (8.*D7-2.*D9)*T65*F1
      B(24) = DDRT *  (10.*D9-2.*D11)*T55*F1
      B(25) = DDRT *  (2.*D-4.*D5)*T22*F2
      B(26) = DDRT *  (3.*D2-4.*D6)*T11*F2
      B(27) = DDRT *  (3.*D2-4.*D6)*T18*F2
      B(28) = DDRT *  (4.*D3-4.*D7)*T11*F2
      B(29) = DDRT *  (4.*D3-4.*D7)*T23*F2
      B(30) = DDRT *  (5.*D4-4.*D8)*T17*F2
      B(31) = DDRT *  (5.*D4-4.*D8)*T18*F2
      B(32) = DDRT *  (5.*D4-4.*D8)*T23*F2
      IF(IDD.GT.0)GO TO 102
```

```
      B(33) = PP-DRT
      RETURN
  102 P = 0
      M = 32
      DO 101 I = 1,M
      P = P+B(I) * G(I)
  101 CONTINUE
      P =  P + DRT
      PP = P
      RETURN
C
      ENTRY DPDD(PP,DD,TT,IDD)
C**********ENTRY TO CALCULATE ISOTHERMAL DENSITY DERIVATIVE OF PRESSURE
C
      K = 2
      GO TO 1
  200 CONTINUE
      B( 1) = RT *   2.00 * D
      B( 2) = RT *   2.00 * D * T15
      B( 3) = RT *   2.00 * D * T25
      B( 4) = RT *   6.00 * D2 *TMS
      B( 5) = RT *   6.00 * D2 * T15
      B( 6) = RT *   6.00 * D2 * T2
      B( 7) = RT *  12.00 * D3
      B( 8) = RT *  12.00 * D3 * T
      B( 9) = RT *  12.00 * D3 * T25
      B(10) = RT *  42.00 * D6
      B(11) = RT *  56.00 * D7 * T2
      B(12) = RT *  56.00 * D7 * T5
      B(13) = RT *  72.00 * D8 * T2
      B(14) = RT * F1 *  (2.00 * D  - 10.*D3 + 4.*D5) * T5
      B(15) = RT * F1 *  (2.00 * D  - 10.*D3 + 4.*D5) * T6
      B(16) = RT * F1 *  (6.00 * D2 - 14.*D4 + 4.*D6) * T35
      B(17) = RT * F1 *  (6.00 * D2 - 14.*D4 + 4.*D6) * T55
      B(18) = RT * F1 *  (12.0 * D3 - 18.*D5 + 4.*D7) * T3
      B(19) = RT * F1 *  (12.0 * D3 - 18.*D5 + 4.*D7) * T7
      B(20) = RT * F1 *  (30.00 *D5 - 26.*D7 + 4.*D9) * T6
      B(21) = RT * F1 *  (42.00 *D6 - 30.*D8 + 4.*D10) * T85
      B(22) = RT * F1 *  (56.00 *D7 - 34.*D9 + 4.*D11) * T4
      B(23) = RT * F1 *  (72.00 *D8 - 38.*D10 + 4.*D12) * T65
      B(24) = RT * F1 * (110.00 *D10 -46.*D12 + 4.*D14) * T55
      B(25) = RT * F2 *  (6.00 * D2 - 36.0 * D6 + 16.0 * D10) * T22
      B(26) = RT * F2 *  (12.0 * D3 - 44.0 * D7 + 16.0 * D11) * T11
      B(27) = RT * F2 *  (12.0 * D3 - 44.0 * D7 + 16.0 * D11) * T18
      B(28) = RT * F2 *  (20.0 * D4 - 52.0 * D8 + 16.0 * D12) * T11
      B(29) = RT * F2 *  (20.0 * D4 - 52.0 * D8 + 16.0 * D12) * T23
      B(30) = RT * F2 *  (30.0 * D5 - 60.0 * D9 + 16.0 * D13) * T17
      B(31) = RT * F2 *  (30.0 * D5 - 60.0 * D9 + 16.0 * D13) * T18
      B(32) = RT * F2 * (30.0 * D5 - 60.0 * D9 + 16.0 * D13) * T23
      M = 32
      IF(IDD.GT.0)GO TO 202
      B(33) = PP-RT
      RETURN
```

```
  202 P = 0
      DO 201 I = 1,M
      P = P+B(I) * G(I)
  201 CONTINUE
      P = P+RT
      PP = P
      RETURN
C
      ENTRY DPDT(PP,DD,TT,IDD)
C********ENTRY TO CALCULATE ISOCHORIC TEMPERATURE DERIVATIVE OF PRESSURE
C
      K = 3
      GO TO 1
  300 CONTINUE
      B( 1) = RD *  D
      B( 2) = -RD *  .5*D*T15
      B( 3) = -RD *  1.5*D*T25
      B( 4) = RD *  3.*D2*TMS
      B( 5) = -RD *  D2*T15
      B( 6) = -RD *  2.*D2*T2
      B( 7) = RD *  3.*D3
      B( 8) = 0.0
      B( 9) = -RD *  4.5*D3*T25
      B(10) = RD *  6.*D6
      B(11) = -RD *  7.*D7*T2
      B(12) = -RD *  28.*D7*T5
      B(13) = -RD *  8.*D8*T2
      B(14) = -RD * (4.0*D-8.*D3)*T5*F1
      B(15) = -RD * (5.0*D-10.*D3)*T6* F1
      B(16) = -RD *  5.0*(D2-D4)*T35*F1
      B(17) = -RD *  9.0*(D2-D4)*T55*F1
      B(18) = -RD * (6.*D3-4.*D5)*T3*F1
      B(19) = -RD * (18.*D3-12.*D5)*T7*F1
      B(20) = -RD * (25.*D5-10.*D7)*T6*F1
      B(21) = -RD * (45.0*D6-15.*D8)*T85*F1
      B(22) = -RD * (21.*D7-6.*D9)*T4*F1
      B(23) = -RD * (44.*D8-11.*D10)*T65*F1
      B(24) = -RD * (45.*D10-9.*D12)*T55*F1
      B(25) = -RD * (42.*D2-84.*D6)*T22*F2
      B(26) = -RD * (30.*D3-40.*D7)*T11*F2
      B(27) = -RD * (51.*D3-68.*D7)*T18*F2
      B(28) = -RD *  40.*(D4-D8)*T11*F2
      B(29) = -RD *  88.*(D4-D8)*T23*F2
      B(30) = -RD * (80.*D5-64.*D9)*T17*F2
      B(31) = -RD * (85.*D5-68.*D9)*T18*F2
      B(32) = -RD * (110.*D5-88.*D9)*T23*F2
      IF(IDD.GT.0)GO TO 302
      B(33) = PP-RD
      RETURN
  302 P = 0
      DO 301 I = 1,32
      P = P+G(I) * B(I)
```

```
  301 CONTINUE
      PP = P+RD
      RETURN
C
      ENTRY SR(PP,DD,TT,IDD)
C**********ENTRY TO CALCULATE RESIDUAL ENTROPY
C
      K = 4
      GO TO 1
  400 CONTINUE
      X( 1) = -R * D
      X( 2) = R * 0.50 * D * T15
      X( 3) = R * 1.50 * D * T25
      X( 4) = -R * 1.50 * D2 * TMS
      X( 5) = R * 0.50 * D2 * T15
      X( 6) = R  * D2 * T2
      X( 7) = -R * D3
      X( 8) = 0.0
      X( 9) = R * 1.5 * D3 * T25
      X(10) = -R * D6
      X(11) = R * D7 * T2
      X(12) = R * 4.00 * D7 * T5
      X(13) = R * D8 * T2
      X(14) = R * 4.00 * D * T5 * F1
      X(15) = R * 5.00 * D * T6 * F1
      X(16) = R * 2.5 * D2 *T35 * F1
      X(17) = R * 4.5 * D2 * T55 * F1
      X(18) = R * 2.00 * D3 * T3 * F1
      X(19) = R * 6.00 * D3 * T7 * F1
      X(20) = R * 5.00 * D5 * T6 * F1
      X(21) = R * 7.5 * D6 *T85 * F1
      X(22) = R * 3.0 * D7 * T4 * F1
      X(23) = R * 5.5 * D8 * T65 * F1
      X(24) = R * 4.5 * D10 * T55 * F1
      X(25) = R * 21.0 * D2 * T22 * F2
      X(26) = R * 10.0 * D3 * T11 * F2
      X(27) = R * 17.0 * D3 * T18 * F2
      X(28) = R * 10.0 * D4 * T11 * F2
      X(29) = R * 22.0 * D4 * T23 * F2
      X(30) = R * 16.0 * D5 * T17 * F2
      X(31) = R * 17.0 * D5 * T18 * F2
      X(32) = R * 22.0 * D5 * T23 * F2
      IF(IDD.GT.0)GO TO 402
      RETURN
  402 P = 0
      DO 401 I = 1,32
      P = P+G(I) * X(I)
  401 CONTINUE
      PP = P
      RETURN
C
      ENTRY AR(PP,DD,TT,IDD)
C************ENTRY TO CALCULATE RESUDUAL HELMHOLTZ FREE ENERGY
```

```
C
      K = 5
      GO TO 1
  500 CONTINUE
      B( 1) = RT * D
      B( 2) = RT * D * T15
      B( 3) = RT * D * T25
      B( 4) = RT * D2 *TMS
      B( 5) = RT * D2 * T15
      B( 6) = RT * D2 * T2
      B( 7) = RT * D3
      B( 8) = RT * D3 * T
      B( 9) = RT * D3 * T25
      B(10) = RT * D6
      B(11) = RT * D7 * T2
      B(12) = RT * D7 * T5
      B(13) = RT * D8 * T2
      B(14) = RT * D * T5 * F1
      B(15) = RT * D * T6 *F1
      B(16) = RT * D2 * T35 * F1
      B(17) = RT * D2 *T55 * F1
      B(18) = RT * D3 * T3 * F1
      B(19) = RT * D3 * T7 * F1
      B(20) = RT * D5 * T6 * F1
      B(21) = RT * D6 * T85 * F1
      B(22) = RT * D7 * T4 * F1
      B(23) = RT * D8 * T65 * F1
      B(24) = RT * D10 * T55 * F1
      B(25) = RT * D2 * T22 * F2
      B(26) = RT * D3 * T11 * F2
      B(27) = RT * D3 * T18 * F2
      B(28) = RT * D4 * T11  * F2
      B(29) = RT * D4 * T23 * F2
      B(30) = RT * D5 *T17 * F2
      B(31) = RT * D5 * T18 * F2
      B(32) = RT * D5 * T23 * F2
      IF(IDD.GT.0)GO TO 502
      RETURN
  502 P = 0
      DO 501 I = 1,32
      P = P+G(I) * B(I)
  501 CONTINUE
      PP = P
      RETURN
C
      ENTRY CVR(PP,DD,TT,IDD)
C***********ENTRY TO CALCULATE RESIDUAL ISOCHORIC HEAT CAPACITY
C
      K = 6
      GO TO 1
  600 CONTINUE
      X( 1) = 0.0
      X( 2) = -R * 0.75 * D * T15
```

```
      X( 3) = -R * 3.75 * D * T25
      X( 4) = -R * 0.75 * D2 * TMS
      X( 5) = -R * 0.75 * D2 * T15
      X( 6) = -R * 2.00 * D2 * T2
      X( 7) = 0.0
      X( 8) =  0.0
      X( 9) = -R * 3.75 * D3 * T25
      X(10) =  0.0
      X(11) = -R * 2.00 * D7 * T2
      X(12) = -R * 20.00 * D7 * T5
      X(13) = -R * 2.00 * D8 * T2
      X(14) = -R * 20.00 * D * T5 * F1
      X(15) = -R * 30.00 * D * T6 * F1
      X(16) = -R * 8.75 * D2 *T35 * F1
      X(17) = -R * 24.75 * D2 * T55 * F1
      X(18) = -R * 6.00 * D3 * T3 * F1
      X(19) = -R * 42.00 * D3 * T7 * F1
      X(20) = -R * 30.00 * D5 * T6 * F1
      X(21) = -R * 63.75 * D6 *T85 * F1
      X(22) = -R * 12.0 * D7 * T4 * F1
      X(23) = -R * 35.75 * D8 * T65 * F1
      X(24) = -R * 24.75 * D10 * T55 * F1
      X(25) = -R * 462.0 * D2 * T22 * F2
      X(26) = -R * 110.0 * D3 * T11 * F2
      X(27) = -R * 306.0 * D3 * T18 * F2
      X(28) = -R * 110.0 * D4 * T11 * F2
      X(29) = -R * 506.0 * D4 * T23 * F2
      X(30) = -R * 272.0 * D5 * T17 * F2
      X(31) = -R * 306.0 * D5 * T18 * F2
      X(32) = -R * 506.0 * D5 * T23 * F2
      IF(IDD.GT.0)GO TO 602
      RETURN
  602 P = 0
      DO 601 I = 1,32
      P = P+G(I) * X(I)
  601 CONTINUE
      PP = P
      RETURN
C
      ENTRY DP2D2(PP,DD,TT,IDD)
C*********ENTRY TO CALCULATE SECOND ISOTHERMAL DENSITY DERIVATIVE
C*********OF PRESSURE
C
      K = 7
      GO TO 1
  700 CONTINUE
      B( 1) = RTD * 2.0
      B( 2) =RTD * 2.0 * T15
      B( 3) =RTD * 2.0 * T25
      B( 4) =RTD * 12.0 * D * TMS
      B( 5) =RTD * 12.0 * D * T15
      B( 6) =RTD * 12.0 * D * T2
      B( 7) =RTD * 36.0 * D2
```

```
      B( 8) =RTD * 36.0 * D2 * T
      B( 9) =RTD * 36.0 * D2 * T25
      B(10) =RTD * 252. * D5
      B(11) =RTD * 392. * D6 * T2
      B(12) =RTD * 392. * D6 * T5
      B(13) =RTD * 576. * D7 * T2
      B(14) =RTD *(  2.0 -  34.0 * D2 +  40.0 * D4 - 8.0 * D6)*T5*F1
      B(15) =RTD *(  2.0 -  34.0 * D2 +  40.0 * D4 - 8.0 * D6)*T6*F1
      B(16) =RTD *(12.0*D - 68.0 * D3 + 52.0 * D5 - 8.0 * D7)*T35*F1
      B(17) =RTD *(12.0*D - 68.0 * D3 + 52.0 * D5 - 8.0 * D7)*T55*F1
      B(18) =RTD*(36.0*D2 -114.0 * D4 +  64.0 * D6 - 8.0 * D8)*T3*F1
      B(19) =RTD*(36.0*D2 -114.0 * D4 +  64.0 * D6 - 8.0 * D8)*T7*F1
      B(20) =RTD*(150.0*D4 -242.0*D6 +  88.0 * D8 - 8.0 * D10)*T6*F1
      B(21) =RTD*(252.0*D5 -324.0*D7 +100.0 * D9 - 8.0 * D11)*T85*F1
      B(22) =RTD*(392.0*D6-418.0 *D8 + 112.0 * D10- 8.0 * D12)*T4*F1
      B(23) =RTD*(576.0*D7-524.0*D9 + 124.0 * D11- 8.0 * D13)*T65*F1
      B(24) =RTD*(1100.0*D9-772.0*D11 +148.0 *D13- 8.0 * D15)*T55*F1
      B(25) =RTD*(12.0*D- 240.0 * D5 +304.0 * D9- 64.0 * D13)*T22*F2
      B(26) =RTD*(36.0*D2 -356.0*D6 +352.0 * D10- 64.0 * D14)*T11*F2
      B(27) =RTD*(36.0*D2 -356.0*D6 +352.0 * D10- 64.0 * D14)*T18*F2
      B(28) =RTD*(80.0*D3 -496.0*D7 +400.0 * D11- 64.0 * D15)*T11*F2
      B(29) =RTD*(80.0*D3 -496.0*D7 +400.0 * D11- 64.0 * D15)*T23*F2
      B(30) =RTD*(150.0*D4 -660.0*D8 +448.0 * D12-64.0 * D16)*T17*F2
      B(31) =RTD*(150.0*D4 -660.0*D8 +448.0* D12- 64.0 * D16)*T18*F2
      B(32) =RTD*(150.0*D4-660.0*D8 +448.0 * D12- 64.0 * D16)*T23*F2
      M = 32
      IF(IDD.GT.0)GO TO 702
      B(33) = PP
      RETURN
  702 PP = 0
      DO 701 I = 1,M
      PP = PP + B(I)*G(I)
  701 CONTINUE
      PP = PP
      RETURN
C
      ENTRY DP2DT2(PP,DD,TT,IDD)
C*********ENTRY TO CALCULATE SECOND ISOCHORIC TEMPERATURE DERIVATIVE
C*********OF PRESSURE
C
      K = 8
      GO TO 1
  800 CONTINUE
      B( 1) = 0.0
      B( 2) = RTT *  D * 0.75 * T25
      B( 3) = RTT *  D * 3.75 * T35
      B( 4) = RTT *  1.5 * D2 * TS
      B( 5) = RTT *  1.5 * D2 * T25
      B( 6) = RTT *  4.0*D2*T3
      B( 7) = 0.0
      B( 8) = 0.0
      B( 9) = RTT *  11.25*D3*T35
      B(10) = 0.0
```

```
      B(11) = RTT * 14.*D7 *T3
      B(12) = RTT *  140.*D7* T6
      B(13) = RTT * 16.*D8 *T3
      B(14) = RTT * (20.*D-40.*D3)*T6 * F1
      B(15) = RTT * (30.*D-60.0*D3) *T7*F1
      B(16) = RTT *  (D2-D4)*17.5*T45*F1
      B(17) = RTT *  (D2-D4)*49.50*T65*F1
      B(18) = RTT *  (18.0*D3-12.0*D5)* T4*F1
      B(19) = RTT *  (126.0*D3-84.0*D5)* T8*F1
      B(20) = RTT *  (150.0*D5-60.*D7) * T7*F1
      B(21) = RTT *  (382.5*D6-127.5*D8) * T95*F1
      B(22) = RTT *  (84.0*D7-24.0*D9) * T5*F1
      B(23) = RTT *  (286.0*D8-71.5*D10) * T75*F1
      B(24) = RTT *  (247.5*D10-49.5*D12) * T65*F1
      B(25) = RTT *  (924.0*D2-1848.0*D6) * T23*F2
      B(26) = RTT *  (330.0*D3-440.0*D7) * T12*F2
      B(27) = RTT *  (918.0*D3-1224.0*D7) * T19*F2
      B(28) = RTT *  (D4-D8)*440.0*T12*F2
      B(29) = RTT *  (D4-D8)* 2024.0*T24*F2
      B(30) = RTT *  (1360.0*D5-1088.0*D9) * T18*F2
      B(31) = RTT *  (1530.0*D5-1224.0*D9) * T19*F2
      B(32) = RTT *  (2530.0*D5-2024.0*D9) * T24*F2
      IF (IDD.GT.0) GO TO 801
      B(33) = PP
      RETURN
  801 PP = 0.0
      DO 802 I = 1,32
      PP = PP + G(I) * B(I)
  802 CONTINUE
      PP=PP
      RETURN
      END



C
       FUNCTION ENTROPY(DENS,TEMP)
C********FUNCTION TO CALCULATE ENTROPY FROM DENSITY AND TEMPERATURE
C
       CALL SR(EN,DENS,TEMP,1)
       CALL IDEAL1(TEMP,DENS,EID,HID,HEL,SID,CVID,CPID,1)
       ENTROPY=100.*EN+SID
       RETURN
       END
```

```
C
      SUBROUTINE IDEAL1(T,D,EID,HID,HEL,SID,CVID,CPID,IATM)
C***********HAS EXPLICIT DENSITY DEPENDENCE; GOOD FOR ALL PROPERTIES
C*******AT ANY PRESSURE (OR DENSITY RELATED TO P VIA IDEAL GAS EOS)*****
C******THIS IS FOR METHANE AT ANY DENSITY AND TEMPERATURE
C
     COMMON /REFDAT/ R1,PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *               , CMW
      DIMENSION QS(7)
      DATA QS/-15.479844,2.5998324,-3.3854083,
     C 1.6900979,-0.3911541,4.7206715,-10.543907/
      DATA Q0/-10.413865/
      CALL IDEAL2(T,EID,HID,HEL,SID,CVID,CPID)
      IF(IATM.NE.0)THEN
      R = R1*100.
      TAU=TC/T
      DEL=D/DC
      ADD=R*(Q0-QS(1) + LOG(DEL/TAU))
      HEL=HEL+T*ADD
      SID=SID-ADD
      END IF
      RETURN
      END
```

```
C
      SUBROUTINE IDEAL2(T,EID,HID,HEL,SID,CVID,CPID)
C*************NEW IDEAL SUBROUTINE FOR 1986 VALUE OF GAS CONSTANT**********
C******FORM OF HELMHOLTZ FREE ENERGY FOLLOWS GOODWIN WITH WAGNER VARIABLES**
C******COEFFICIENTS FROM GOODWINS FIT OF MCDOWELL-KRUSE*******************
C******ASSUMES HELMHOLTZ ENERGY EQUALITY (IN LN RHO FORM) AT 298.15 K********
C******NEW R FORCES SLIGHT DEVIATIONS IN OTHER PROPERTIES, SINCE NOT**********
C*******ALL EQS ARE DIRECTLY PROPORTIONAL TO R*****************************
C*************DATE OF CHANGE 4/14/87***************************************
C**********GOOD ONLY AT 1 ATM; PROBLEM FOR HEL AND SID--SEE IDEAL1********
C
     COMMON /REFDAT/ R1,PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *               , CMW
      DIMENSION QS(7)
      DATA QS/-15.479844,2.5998324,-3.3854083,
     C 1.6900979,-0.3911541,4.7206715,-10.543907/
      DATA P1,P2/-.33333333,-.66666667/
      R = R1*100.
      TAU=TC/T
      TAU3=TAU**P1
      TAU23=TAU**P2
      EXTAU=EXP(QS(7)*TAU )
      PHID=QS(1)+(QS(2)+1.)*LOG(TAU)+QS(3)*TAU3+QS(4)*TAU23
```

```
     1 +QS(5)/TAU+QS(6)*LOG(1.-EXTAU)
       PHIDD1=QS(2)-QS(3)/3.*TAU3-2.*QS(4)/3.*TAU23-QS(5)/TAU
     1 -QS(6)*QS(7)*TAU/(1./EXTAU-1.)
       PHIDD2=-QS(2)+4.*QS(3)/9.*TAU3+10.*QS(4)/9.*TAU23
     1 +2.*QS(5)/TAU-QS(6)*QS(7)**2*TAU**2*EXTAU/(EXTAU-1.)**2
        HEL=R*T*PHID
        CPID=R*(1.-PHIDD2)
        EID=R*T*PHIDD1
       HID=R*T+EID
       CVID=-R*PHIDD2
       SID=-R*(PHID-PHIDD1)
       RETURN
       END





C
       FUNCTION HELM(DENS,TEMP)
C*********THIS FUNCTION IS FOR HELMHOLTZ FREE ENERGY
C
       CALL AR(HE,DENS,TEMP,1)
       HE=100.*HE
       CALL IDEAL1(TEMP,DENS,EID,HID,HEL,SID,CVID,CPID,1)
       HELM=HE+HEL
       RETURN
       END



C
       FUNCTION GIBBS(DENS,TEMP,PRES)
C**********THIS FUNCTION IS FOR GIBBS ENERGY
C
       HEL=HELM(DENS,TEMP)
       GIBBS=HEL+PRES*1.E05/(DENS*1000.)
       RETURN
       END




C
       FUNCTION UNTERN(DENS,TEMP)
C*********THIS FUNCTION IS FOR INTERNAL ENERGY
C
       HEL=HELM(DENS,TEMP)
       SS=ENTROPY(DENS,TEMP)
       UNTERN=HEL+SS*TEMP
       RETURN
       END
```

```
C
       FUNCTION ENTHALP(DENS,TEMP,PRES)
C*********THIS FUNCTION IS FOR ENTHALPY
C
       HEL=HELM(DENS,TEMP)
       UNT=UNTERN(DENS,TEMP)
       GIB=GIBBS(DENS,TEMP,PRES)
       ENTHALP=GIB+UNT-HEL
       RETURN
       END
```

```
C
       FUNCTION CPEE(RHO,TEE)
C*********THIS FUNCTION IS FOR ISOBARIC HEAT CAPACITY
C
      D = RHO
      CVCAL = CVF(D,TEE)
      CALL DPDT(P1,D,TEE,1)
      CALL DPDD(P2,D,TEE,1)
      CPCAL = CVCAL + 100.0 * TEE * P1 * P1 / (D * D * P2)
      CPEE=CPCAL
      RETURN
      END
```

```
C
      FUNCTION XLAMF(D,T)
C
C*******THIS FUNCTION IS FOR THE THERMAL CONDUCTIVITY OF METHANE
C
      COMMON /REFDAT/ R, PC, DC, TC, ZC, A(32), PTRP, DTRP, TTRP
     *              , CMW
C
C
       DIMENSION G(7),F(7)
C
      DATA G,ES /.241492073721E+01, .551663305903E+00,
     1  -.528377342545E+00, .738095527532E-01, .244655067073E+00,
     2  -.476136258746E-01, .155546119921E+01,6.29638/
C
C
  020 DELTA = D / DC
      TAU = TC / T
      TCO = TCONDO(T)
      TCCRIT = TCRIT1(D,T)
C
```

```
      DS = DC
      IF(D.LE.DC.AND.T.LE.TC) THEN
      CALL SATF(T,PS,DSL,DSV)
         DS = DSV
      ENDIF
C
      F(1) =DELTA
      F(2) = DELTA**3
      F(3)= DELTA**4
      F(4) = DELTA**4 * TAU
      F(5)= DELTA**5
      F(6) = DELTA**5 * TAU
      F(7)= D/DS*DELTA
C
         TCX = 0.
         DO 040 J = 1, 7
  040    TCX = TCX + F(J)*G(J)
  060    TCX = TC0  + ES  * TCX  + TCCRIT
      XLAMF=TCX
      RETURN
      END
```

```
C
      FUNCTION OM22S(TS)
C**********THIS FUNCTION IS FOR THE 11-6-8 GAMMMA EQUALS 3
C**********OMEGA 22 COLLISION INTEGRAL
C
      DIMENSION CO(9)
C
      DATA CO/-3.0328138281E+00, 1.6918880086E+01,-3.7189364917E+01,
     *         4.1288861858E+01,-2.4615921140E+01, 8.9488430959E+00,
     *        -1.8739245042E+00, 2.0966101390E-01,-9.6570437074E-03/
      TI = 1.0 / TS
      T1=TS**(1.0/3.0)
      ETA =0.0
      DO 020 J=1,9
      ETA =ETA +CO(J)*TI
  020 TI=TI*T1
      OM22S = 1.0 / ETA
      RETURN
      END
```

```
C
      FUNCTION VSCTY(D,T)
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C     PURPOSE - - THIS ROUTINE CALCULATES THE VISCOSITY OF METHANE
C
C     VERSION 4.0  5/17/85 - - CODED BY J. F. ELY
C           WITH SUBSEQUENT REVISIONS
C * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
C
      COMMON /REFDAT/ R, PC, DC, TC, ZC, A(32), PTRP, DTRP, TTRP
     *              , CMW
C
      DIMENSION GV(11), F(11)
C
C     COEF FROM VP3, FILE ETAWT
C   UNITS ARE IN MICRO PA SEC MUST BE *10.
      DATA GV,ETAS/.412501370594E+00, -.143909116635E+00,
     1 .103669933465E+00, .402874641440E+00, -.249035243650E+00,
     2 -.129531310621E+00, .657577550033E-01, .256662763171E-01,
     3 -.371652573606E-01, -.387983411200E+00, .353381454207E-01,
     4 12.149/
C
  020 DELTA = D / DC
      TAU = TC / T
      F(1) = DELTA
      F(2) = TAU*DELTA
C
C
      F(3) = DELTA**2
      F(4) =  TAU*DELTA**2
      F(5) = DELTA**2 * TAU * SQRT(TAU)
C
      F(6) = DELTA**3
      F(7) = DELTA**3 * TAU**2
C
      F(8) = DELTA**4
      F(9) = DELTA**4 * TAU
C
      F(10)= DELTA
      F(11)= DELTA  * TAU
C
         ETA = 0.
         DO 040 J = 1, 9
  040    ETA = ETA + F(J)*GV(J)
         DENOM = 1.0 + F(10)*GV(10) + F(11)*GV(11)
      ETAG = ETA0(T)
  060    ETA = ETAG + ETAS * ETA / DENOM
      VSCTY = ETA
      RETURN
      END
```

```
C
      FUNCTION ETA0(T)
C******THIS FUNCTION EVALUATES THE ZERO DENSITY VISCOSITY
C******OF METHANE
C
      COMMON /REFDAT/ R, PC, DC, TC, ZC, A(32), PTRP, DTRP, TTRP
     *               , CMW
      DATA  EOK/174.0/
C   SIGMA AS 11/7/86
      TS = T / EOK
      ETA0 = 10.50*SQRT(TS)/OM22S(TS)
      RETURN
      END
```

```
C
      FUNCTION TCOND0(T)
C**********THIS FUNCTION EVALUATES THE ZERO DENSITY
C**********THERMAL CONDUCTIVITY OF METHANE
C
      COMMON /REFDAT/ RT, PC, DC, TC, ZC, A9(32), PTRP, DTRP, TTRP
     *               , CMW
      DATA CON,EOK/0.51826,174.0/
C  CORRECTED VERSION OF LAMZERO GIVES THE FOLLOWING 12/29/87
      DATA G1,G2/ 1.4588497685, -0.43771624308/
      CALL IDEAL2(T,X1,X2,X3,X4,CV,X5)
      CVDIM=-CV/(100.*RT)
      TS=T/EOK
      TCC=-(G1+G2/(TS))*(CVDIM+1.5)
      ETAO=ETA0(T)
      TCOND0=CON*ETAO*(3.75+TCC)
      RETURN
      END
```

```
C
      FUNCTION TCRIT1(D,T)
      COMMON /REFDAT/ R, PC, DC, TC, ZC, A(32), PTRP, DTRP, TTRP
     *               , CMW
C
      DIMENSION G1(4)
C     CRIT. ENHANC. AS IN SENGERS ET AL 1981 U MARYL. REPORT
C     DERIVATIVES FROM BWR, ... 26 JAN 82
C     UNITS, IN MOL/L,K, INTERNAL ALSO BAR, OUT W/M-K, ETA PA-S,BK J/K
C
```

```
C
       DATA GAM,BETA,AEX,BEX,ECON/1.19,0.355,3.352,0.732,0.287/
       DATA RCON,QCON,SCON,WCON/0.535,0.1133,-6.098,-1.401/
       DATA CAPGAM/0.0801/
C                         COEFS FOR DFACT AS OF 1/04/88
       DATA G1/ .264609797168E+01, .267792744757E+01,
     C  -.637034076544E+00, .223519888946E+01/
       DELTA = D / DC
       TAU=TC/T
      DELD = ABS(DELTA - 1.0)
      DELT = ABS(T-TC)/TC
      DELA = (D/DC-1.0)
      DFACT = EXP(-(G1(1)*DELT**(1./2.)+G1(2)*DELD**2.0 )+
     C    G1(3)*DELA )
C
      ETA = VSCTY(D,T)
      CALL DPDT(DPT,D,T,1)
      DPTDIM=DPT/(D*R)
      CALL DPDD(DPD,D,T,1)
      DPDDIM=DPD/(T*R)
      IF(DELD.EQ.0..AND.DELT.LT..03) GO TO 3
      IF(DELD.LE.0.25.AND.DELT.LT.0.03) GO TO 8
       CHISTAR=0.28631*DELTA*TAU/DPDDIM
      GO TO 12
    8 XX = (TC-T)/TC/DELD**(1.0/BETA)
      Y = 1.+SCON*XX
      IF(Y.LT.0.) THEN
      PRINT*,' T ',T,' D ',' Y ',Y  ,'IN TCRIT1'
      Y = 0.
      ENDIF
       THETA=1.+ECON*Y**(2.*BETA)
       OMEGA=WCON*XX
       TOP=QCON*DELD**(-AEX)*THETA**(BEX)
       DIV=THETA+OMEGA*(THETA+RCON)
       CHISTAR=TOP/DIV
   12 CHI = CHISTAR**0.4681
       SENG=91.855*DPTDIM**2*CHI*DFACT/(ETA*TAU**2)
      TCRIT1 = SENG
      RETURN
 3    CHISTAR=CAPGAM*DELT**(-GAM)
      GO TO 12
      END
```

```
C
       FUNCTION TSAT(PRESS)
C********THIS FUNCTION CALCULATES THE SATURATION TEMPERATURE
C********GIVEN A PRESSURE BELOW ITS CRITICAL VALUE
C
       COMMON /DERIV/DF,JUNK
      COMMON /REFDAT/ R, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *               , CMW
       IF(PRESS.GT.PC)THEN
       PAUSE 'PRESSURE GREATER THAN CRITICAL IN TSAT'
       RETURN
       END IF
       IF(PRESS.LT.PTRP)THEN
       PAUSE 'PRESSURE LESS THAN TRIPLE POINT IN TSAT'
       RETURN
       END IF
       XL=TTRP
       XH=TC
       TSAT=.5*(XL+XH)
       DXOLD=ABS(XH-XL)
       DX=DXOLD
       F=PSATF(TSAT)-PRESS
       DO 11 J=1,100
         IF(((TSAT-XH)*DF-F)*((TSAT-XL)*DF-F).GE.0.
     C     .OR. ABS(2.*F).GT.ABS(DXOLD*DF))THEN
         DXOLD=DX
         DX=0.5*(XH-XL)
         TSAT=XL+DX
         IF(XL.EQ.TSAT)RETURN
         ELSE
          DXOLD=DX
          DX=F/DF
          TEMP=TSAT
          TSAT=TSAT-DX
          IF(TEMP.EQ.TSAT)RETURN
            ENDIF
       IF(ABS(DX).LT..00005)RETURN
       F=PSATF(TSAT)-PRESS
       IF(F.LT.0.)THEN
       XL=TSAT
       ELSE
       XH=TSAT
       ENDIF
11     CONTINUE
       PAUSE 'IN TSAT: EXCEEDES MAXIMUM ITERATIONS'
       RETURN
       END
```

```
C
      BLOCK DATA C1INIT
C*******THIS BLOCK DATA SUBROUTINE SUPPLIES THE FUNDAMENTAL CONSTANTS
C*******AND PARAMETERS NECESSARY FOR THE METHANE FLUID IN
C*******ACCORDANCE WITH THE CORRELATIONS OF
C*******FRIEND, ELY, AND INGHAM, 'THERMOPHYSICAL PROPERTIES OF METHANE'
      COMMON /REFDAT/ R, PC, DC, TC, ZC, G(32), PTRP, DTRP, TTRP
     *               , CMW
C
      COMMON/SATBDY/TCC,PCC,DCC,ZCC,RC,EPP,BETA
C
      DATA TC, PC, DC, PTRP, DTRP, TTRP, CMW
     C/190.551, 45.9920, 10.139, 0.11696, 28.145, 90.6854, 16.043/
      DATA TCC, PCC, DCC
     C/190.551, 45.9920, 10.139/
      DATA G/        .384436099659E+00, -.179692598800E+01,
     1     .329444947369E+00, .226312728442E-01, .759236768798E-01,
     2     .693758447259E-01, .241163263947E-01, .107009920854E-01,
     3     -.380933275164E-01, .471537561143E-03, .556607678805E-03,
     4     .548759346533E-06, -.999632699967E-04, -.128087979280E+00,
     5     .380198873377E-01, .139226650551E+00, -.874996348859E-01,
     6     -.334894165760E-02, -.517576297122E-01, .252835179116E-01,
     7     .518703205947E-03, -.166770594525E-02, -.607401927389E-03,
     8     -.972915359991E-04, -.298844010462E-04, -.130940111242E-01,
     9     .198175833798E-01, .208465762327E-01, -.358025052631E-01,
     A     -.203486851741E+00, .215964755088E+00, -.429340628249E-02/
C
       DATA R,EPP,BETA,ZC/0.08314510, 1.9, 0.355,0.28631182/
       DATA RC,ZCC/0.08314510,0.28631182/
C
      END
```

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**4. TITLE AND SUBTITLE**

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Daniel G. Friend, James F. Ely, and Hepburn Ingham

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The thermophysical properties of methane are tabulated for a large range of fluid states based on recently formulated correlations. For the thermodynamic properties, temperatures from 91 to 600 K at pressures less than 100 MPa are included. For the viscosity, the corresponding range is 91 - 400 K with pressures to 55MPa, while for the thermal conductivity the range is 91 - 600 K with pressures to 100 MPa. In addition to the tables of properties, algebraic expressions and associated tables of coefficients are given to allow additional property calculations. Tables of comparisons between experimental property determinations and the correlations are also given both for primary data used in the formulation of the correlations and for additional data. A listing of a FORTRAN program for the evaluation of methane thermophysical properties using the Schmidt-Wagner equation of state is included.

**12. KEY WORDS** *(Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)*

correlation; density; equation of state; heat capacity; methane; phase boundary; pressure; speed of sound; thermal conductivity; thermophysical properties; transport properties; virial coefficients; viscosity.

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