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Bibliography of Research on Deuterium and Tritium Compounds 1945 to 1952

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Bibliography of Research on Deuterium and Tritium Compounds 1945 to 1952

Lawrence M. Brown, Abraham S. Friedman
and Charles W. Beckett

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Preface

Late in 1951, the Thermodynamics Section of the National Bureau of Standards became actively engaged in an Isotope Exchange Data Program, sponsored by the Atomic Energy Commission Division of Research, which involved, in part, the preparation of bibliographies of research on the hydrogen isotopes for the years subsequent to 1945. As a result of this phase of the Program, annual bibliographies of deuterium and tritium research covering the years 1946 to 1952 and bibliographies of Government technical reports covering the period 1947 to November 1952 were prepared and distributed to chemists and physicists engaged in research on deuterium and tritium. The importance of the hydrogen isotopes as research tools and the utility of these bibliographies as an aid to scientific research relating to them has prompted the compilation of this Circular, which is a cumulative bibliography of published research on deuterium and tritium from about 1945 to 1952.

A. V. Astin, *Director.*

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Bibliography of Research on Deuterium and Tritium Compounds

Lawrence M. Brown, Abraham S. Friedman, and Charles M. Beckett

A bibliography of 2,482 references to published research on the properties of deuterium and tritium compounds is given. The subject matter of each entry in the bibliography is indicated by letter codes related to a list of broad subject headings shown in the Introduction. An index of deuterium and tritium compounds and a subject index are included.

1. Introduction

The Circular is a bibliography of research on deuterium and tritium compounds for the years 1945 to 1952. It is divided into three sections: the first contains a bibliography and author index, and the second and third contain the subject and compound indexes, respectively.

The bibliography contains 2,482 references. Approximately 95 percent of the references were obtained from Chemical Abstracts for the years 1946 to 1952, inclusive; the remaining 5 percent were found in British Abstracts and Physics Abstracts (Science Abstracts, Section A) for the same years.

The references in the bibliography are arranged alphabetically according to the last name of the leading author. The names of coauthors are also included and are cross-referenced.

Each entry in the bibliography is numbered by a letter-number symbol that corresponds to the first letter of the leading author's last name and the numerical listing of the reference under that letter. This numbering system is used in the indexing of the entries in the bibliography.

The subject matter of the references is indicated at the end of each entry by means of one or more of the letter codes related to the subject categories shown in the list of Principal Topics. The main headings are designated by two letters of the heading title, and the subheadings are represented by these two letters and one or two additional, appropriate letters. For example, the code symbol for Chemical Kinetics is Ki and that for the kinetics of photochemical reactions is KiP. The subject content was determined generally from the abstracts of the references; the original articles were consulted when the abstracts were not sufficiently informative. Review articles and abstracts are so described.

In preparing the compound index the nomenclature used in Lange's Handbook of Chemistry has been followed. Common synonyms of many of the compounds have been entered and cross-indexed to the compound name used by Lange. Compounds containing tritium have been named in accordance with the modified Boughton system,[1] in which the name of the hydrogen compound is followed by "-t". No subscript has been appended to the "-t" to indicate the extent of tritium substitution. The chemical formula for each compound containing deuterium or tritium is given.

No listing has been made in the compound index under Water or Water-t for exchange reactions with water or for the use of water as a solvent. A lower case "s" has been used to indicate other substances used as solvents (see, for example, under Benzene). In addition, no listing has been made under Hydrogen, Tritium, Water, or Water-t where the subjects involved are: Analytical Methods, General and Review, Nuclear Properties, Separation, and Atomic Spectra. References to such research may be found under these headings in the subject index.

The arrangement and the methods of coding and indexing used in the *Bibliography of Research on Heavy Hydrogen Compounds* by Kimball, Urey, and Kirshenbaum have been followed in the preparation of this Circular.

For convenience, the colloquial abbreviation C.A. for Chemical Abstracts has been used throughout the bibliography.

[1] Crane, Ind. Eng. Chem. News Ed. **13**, 200–01 (1935).

This Circular was prepared as part of a broad Isotope Exchange Program sponsored by the Atomic Energy Commission Division of Research. The help and interest of a large number of scientists in carrying out this program is gratefully acknowledged, in particular: Doctors F. G. Brickwedde (National Bureau of Standards), H. C. Urey (University of Chicago), J. Bigeleisen (Brookhaven National Laboratory), R. E. Connick (University of California), and G. Kavanagh (Atomic Energy Commission Division of Research). Messrs. J. Hilsenrath, J. Park, J. Goldstein, K. Nelson, and S. Prusch, and the staffs of the Thermodynamics Section and the Applied Mathematics Division of the National Bureau of Standards have been very helpful in the preparation of this Circular.

2. Principal Topics and Subject Code

Ab **Abundance.**
- **AbG** Geological.
- **AbO** Organic.

Ad **Adsorption and Sorption.**
- **AdC** Chromatography.
- **AdG** Gases on solids.
- **AdL** Liquids on solids.

An **Analytical Methods.**
- **AnC** Counters, cloud chambers, electrometers, ionization chambers, and photographic emulsions.
- **AnCl** Colorimetric methods.
- **AnDn** Density methods.
- **AnEl** Optical rotation.
- **AnMg** Magnetic and Magnetoöptic methods.
- **AnMs** Mass spectrograph and mass spectrometer.
- **AnRf** Refractive index.
- **AnSp** Absorption spectra.
- **AnTh** Thermal conduction.

Bi **Biological Effects of Deuterium and Tritium Compounds and of Deuterons and Tritons.**
- **BiB** Botanical.
- **BiC** Biochemical.
- **BiZ** Zoological.

Ec **Electrochemical Properties.**
- **EcC** Conductivities and mobilities.
- **EcO** Overvoltage.
- **EcP** Electrode potentials.

El **Electromagnetic and Optical Properties (Except Spectra).**
- **ElCl** Color Effects.
- **ElD** Dielectric constants and dipole moments.
- **ElGd** Gas discharges.
- **ElMg** Magnetic susceptibilities and Curie constants.
- **ElMm** Magnetic moments.
- **ElMr** Magnetic rotatory power.
- **ElP** Polarization.
- **ElRf** Refractive index and molar refraction.
- **ElRo** Optical rotatory power.
- **ElSc** Light scattering.
- **ElT** Relaxation times.

Eq **Chemical Equilibria.**
- **EqG** Gaseous.
- **EqH** Heterogeneous.
- **EqI** Ionic.
- **EqL** Liquid and solution.

Ge **General and Review.**

In **Indicator and Tracer Techniques.**
- **InBi** Biological.
- **InKi** Reaction kinetics.
- **InSo** Solubility determinations.
- **InSp** Spectra
- **InSt** Structure determinations.

Is **Isotope Effects.**
- **IsCr** Crystal structure.
- **IsEl** Electromagnetic properties.
- **IsEq** Chemical equilibra.
- **IsKi** Reaction kinetics.
- **IsMs** Mass spectra.
- **IsSp** Spectra.
- **IsTh** Thermodynamic properties.

Ki **Chemical Kinetics.**
- **KiB** Biochemical.
- **KiG** Gaseous.
- **KiH** Heterogeneous.
- **KiI** Ionic.
- **KiL** Liquid and solution.
- **KiP** Photochemical.
- **KiR** Radiochemical.
- **KiS** Solid state.

Me **Mechanical Properties.**
- **MeAc** Acoustic properties.
- **MeD** Density and molar volume.
- **MeDf** Diffusion.
- **MeSt** Surface tension.
- **MeV** Viscosity.

No **Nomenclature.**

Nu **Nuclear Properties.**
- **NuB** Beta ray spectra.
- **NuH** Hyperfine structure.
- **NuIn** Interactions (absorption of radiation, ranges, and scattering).
- **NuM** Masses and binding energies.
- **NuMg** Magnetic moments.
- **NuP** Piles, reactors, and accelerators.
- **NuQ** Quadrupole moments.
- **NuR** Reactions.
- **NuRe** Magnetic resonances.
- **NuS** Spins, states, and wave functions.
- **NuSt** Statistics.

Sd **Solid State.**
- **SdCr** Crystal structure (including electron, neutron, and X-ray diffraction).
- **SdEc** Elastic constants.
- **SdNu** Nuclear properties.
- **SdSp** Spectra.
- **SdTr** Transitions (including phase transitions).

Se **Isotope Separation.**
- **SeAc** Acoustics.
- **SeAd** Adsorption (including chromatography and ion exchange).
- **SeCf** Centrifuging.
- **SeCh** Chemical reaction.
- **SeCr** Crystallization.
- **SeDf** Diffusion (including thermal diffusion).
- **SeDs** Distillation.
- **SeEl** Electrolysis.
- **SeEm** Electromagnetic methods.
- **SeMs** Mass spectrometer and mass spectrograph.
- **SeSo** Solubility.

So **Solubility.**
- **SoG** Gases in solids.
- **SoH** In H_2O, HDO, and D_2O.
- **SoI** In inorganic solvents.
- **SoO** In organic solvents.

Sp **Spectra and Spectroscopic Constants.**
- **SpA** Atomic (line).
- **SpEl** Molecular electronic.
- **SpFl** Fluorescence.
- **SpM** Microwave.
- **SpVi** Vibrational (including Raman).
- **SpX** X-ray.

Sr **Mass Spectrometry.**

St **Molecular Structure.**
- **StA** Molecular association.
- **StD** Molecular constants (interatomic distances, bond angles, moments of inertia, and force constants).
- **StDi** Electron, neutron, and X-ray diffraction.

Sy **Synthesis and Preparation of Compounds.**

Th **Thermodynamic and Related Properties.**
- **ThD** Diffusion and heat conduction.
- **ThF** Thermodynamic functions for pure substances and reactions between them (E, H, S, C_v, C_p, F, K, ΔH, ΔS, ΔE, ΔC_p, ΔF, data of state, and thermal expansion).
- **ThP** Phase equilibria (melting points, triple points, boiling points, heats of transition, critical constants, and vapor pressures).
- **ThS** Statistical mechanics and statistical thermodynamics.
- **ThSo** Properties of solutions (activities, fugacities, pH, vapor pressures, heats of solution and dilution, and colligative properties).

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4. Subject Index

This index is divided into a number of principal and subsidiary subject headings to which are assigned appropriate letter-code symbols. The letter-number symbols following each heading refer to references in the bibliography.

Ab **Abundance:** F57, H38, R52.
AbG (geological): A99, C43, E11, E13, F7, G21, G22, G123, H46, H49, K56, L100, M12, O1, O2, O3, O4, O5, O6, O7, O8, R22, S25, S200, T27, T28, T43.

AbO (organic): R22.

Ad **Adsorption and sorption.**
AdG (gases on solids): B16, B17, B100, B219, D65, E28, H29, H48, H111, I22, K17, K21, K23, K108, K109, L84, L106, M7, N43, P23, R64, R91, S8, T23, V20, W136.

AdL (liquids on solids): V19.

An **Analytical methods:** A89, B58, B59, B79, B100, B180, B223, B227, C22, E52, F74, H193, K55, K56, M45, M47, M141, M145, R25, R74, S57, S146, T64, V19.

An—Continued:

AnC (counters, cloud chambers, electrometers, ionization chambers, and photographic emulsions): A53, B98, B111, B120, B147, B156, B157, B168, B169, B187, B281, C46, C158, D9, E6, E9, E10, E11, E12, E15, F7, F8, F78, G4, G57, G58, G67, G106, H93, J35, J42, K18, K89, K99, M24, M98, M120, N60, P2, P49, P59, R61, R86, S133, T65, V40, W3, W43, W74, W83, W109, W138, Y2.

AnCl (colorimetric methods): F31, K85.

AnDn (density methods): A96, B243, F75, F77, K85, L25, M60, O1, O2, O3, O8, R52, S27, S48, S49, S79, V21.

AnMs (Mass spectrograph and mass spectrometer): A23, A26, B51, B218, C104, D46, E13, F29, F69, G55, G96, G123, H42, H147, K16, M75, M133, M169, N10, N45, N57, O13, Q2, R26, R29, R71, R104, S49, S140, S174, S175, T44, T58, T61, T62, T98, T99, T101, U4, W30, W115, W136.

AnSp (absorption spectra): B29, B34, B100, B215, B233, B242, C133, D46, D61, J38, J51, K107, L39, S73, S159, T57, T59, T79, T80, T103, W51, W52.

An—Continued:

AnTh (thermal conduction): K21, M82, M161, M162, M165, R52, W70.

Bi **Biological effects of deuterium and tritium compounds and of deuterons and tritons:** C28, L1.

BiB (botanical): E48.

BiC (biochemical): A83, B110, B143, B144, C2, D15, E48, G57, G86, G87, H126, H192, H196, J2, K9, K77, K97, M23, M137, O8, P66, P72, P73, P74, P87, S49, S76, S93, V33.

BiZ (zoological): B21, B249, C1, C11, C14, C115, E14, F12, L66, P94, R73, S55, S56, T68.

Ec **Electrochemical properties.**

EcC (conductivities and mobilities): D59, F79, G39, H102, S218, T2.

EcO (overvoltage): B254, C39, P92.

EcP (electrode potentials): C101, D65, H45, H152, N53, R91.

El **Electromagnetic and optical properties (except spectra):** O22.

ElD (dielectric constants and dipole moments): A69, C114, C133, C155, D12, D73, G54, H118, H200, I31, J25, K51, L92, P54, P95, P96, R48, S101, S188, S189.

ElGd (gas discharges): A91, B51, D66, G20, G51, H155, H165, K107, M171, O26, R6, R28.

ElMg (magnetic susceptibilities and Curie constants): M43, P67, R10, T83.

ElMm (magnetic moments): J14, T83.

ElMr (magnetic rotatory power): G114.

ElP (polarization): H50, I21, O22, P51, P67.

ElRf (refractive index and molar refraction): C117, E1, E24, I2, I21, M43, M79, P51, S53, V13.

ElRo (optical rotatory power): A21, A24, E24, F87, I34, K68, M59, M60, P26, S148.

ElSc (light scattering): I21.

ElT (relaxation times): B148, D59, F28, I27, R70.

Eq **Chemical equilibria:** H5, H164, K56, K122, L63, M1, M113, M158, O11, P111, S34, U10, W72.

EqG (gaseous): B18, B95, B107, B109, B215, B225, B230, D41, D46, F29, F65, G97, J39, J40, M75, M82, M163, N24, P44, P110, S44, S73, S159, S197, T17, T87, V34, W50, W86.

EqH (heterogeneous): A36, A68, B19, B57, B63, B150, B213, C76, E47, F29, F76, F77, F86, G85, H30, H119, H135, H136, K16, K30, K31, K32, K80, K81, K107, K109, L3, L73, M7, P13, R28, R90, S118, T23, T25, T26, T50, T101, V16, V17, V32, W6, W35, W52, W113, W132, W136.

EqI (ionic): A36, B214, B232, S198, S218.

EqL (liquid and solution): A21, A22, B100, B226, B229, B231, B232, B243, B262, B272, C97, D63, F43, G55, G82, G83, G84, G86, G122, H44, H112, H127, J15, K42, K123, L39, L107, M116, M141, N25, O25, P43, P65, P66, S73, S80, S81, S82, S83, S91, S94, S148, S180, S197, T27, T93, V17, Y10, Y11, Y12, Y13.

Ge **General and review:** A6, A7, A13, A61, A74, A78, A89, A94, B10, B16, B17, B21, B34, B41, B42, B43, B54, B55, B96, B105, B146, B148, B167, B196, B206, B212, B214, B237, B276, C30, C31, C41, C49, C59, C91, C92, C93, C97, C105, C106, C107, C108, D8, D16, D24, D47, D49, D75, D76, D80, E13, E27, E41, E42, E49, E52, F35, F49, F91, F92, G73, H4, H5, H12, H13, H 38, H47, H84, H85, H96, H104, H124, H156, H164, I8, J1, J31, J37, J47, K3, K24, K47, K56, K59, K60, K61, K66, K67, K86, K89, L12, L24, L30, L34, L87, L91, L100, L109, M24, M45, M47, M48, M54, M56, M67, M72, M113, M114, M135, M142, M158, N35, N55, O12, P5, P6, P11, P12, P24, P111, Q2, R19, R22, R23, R24, R25, R29, R49, R50, R52, R68, R69, R75, R76, R83, R104, S4, S19, S34, S54, S63, S67, S86, S87, S103, S125, S126, S127, S155, S164, S172, S177, S178, S183, S202, T41, T42, T43, T97, U3, U7, U8, U10, V14, V15, V22, V23, V25, W14, W19, W41, W45, W49, W83, W115, W117, W119, W123, W124, W127, W144, Y2, Y14.

In **Indicator and tracer techniques:** A61, D75, G85, H40, L4, L24, L109, M72, M140, R104, T79, V14.

InBi (biological): A27, A80, A81, B21, B22, B61, B74, B86, B87, B88, B89, B90, B91, B143, B145, B167, B196, B276, C2, C82, C111, C140, D15, D24, E2, E8, F13, F30, F40, F55, F74, G18, G75, G86, G87, G88, G89, G135, H28, H77, H96, H104, H193, J1, J26, J47, K3, K9, K25, K57, K72, K73, K74, K75, K76, K77, K86, L30, L58, L87, L88, L107, M61, M78, M137, M141, N35, O12, O23, P2, P66, P86, P87, P97, R24, R49, R50, R68, R69, S26, S49, S63, S112, S140, S153, S155, S162, S168, S169, S170, S171, S202, S228, T35, U11, U12, V25, V26, V27, V33, W54, Y14.

InKi (reaction kinetics): A22, A68, A94, B42, B105, B150, B225, B227, B231, B272, C60, C91, C131, D3, D63, D64, E47, F42, F43, F44, G20, G77, G83, G84, H29, H187, H188, K41, L25, M99, M100, M101, M102, M114, M164, N10, P13, P65, R23, R30, R31, S77, S80, S120, T64, T74, T87, T98, T103, W1, W6, Y10, Y11, Y13.

InSo (solubility determinations): B124, J44.

InSp (Spectra): M136.

InSt (structure determinations): B94, G97, G98, H83, H84, H127, M59, M117, N24, N25, P72, S70, T99, U6, V19, V39, W22.

Is **Isotope effects:** S34.

IsCr (Crystal structure): D54, N54, U1.

IsEl (electromagnetic properties): P67, P96.

IsEq (chemical equilibria): B214, H40.

IsKi (reaction kinetics): B105, B106, B108, B174, B175, B215, D77, F68, G52, H40, H41, I22, J41, M29, M101, N41, N42, P68, R53, R67, R72, S154, W65.

IsMs (mass spectra): D42, D43, E51, H145, S31, S32, S173, S175, T99.

IsSp (spectra): B2, B109, B160, B203, B204, C78, C134, C136, D27, D28, D29, E3, E4, E5, F84, F85, G14, G134, H12, H13, H84, I33, J38, K50, L94, L95, M159, M170, O27, P52, P89, R44, R60, R90, R98, S30, S87, S95, S221, V1, W89.

IsTh (thermodynamic properties): C89, C133, D40, E45, F66, F67, K102, S30, S35, W143.

Ki **Chemical kinetics:** B34, B105, C61, H5, H164, N55, S34.

KiB (biochemical): A80, A81, B88, B110, B143, B145, C82, C111, E8, E48, F10, F55, G75, G135, H96, K25, K57, K73, K74, K75, K76, K77, K85, L88, M61, O23, O24, R50, S93, S112, S152, S153, S168, S169, S170, T35, T53, T54, U11, U12, V25, V26, W54, Y14.

KiG (gaseous): B18, B106, B215, B228, B230, B263, C91, D3, D23, D41, D46, F72, F73, H42, H155, J46, J50, M29, M44, M82, M85, M117, N41, P44, P110, S44, S73, S77, S183, T63, T87, T88, T89, V34, W19, W20, W21, W86, W87, Z2.

KiH (heterogeneous): A68, B16, B17, B19, B57, C76, C101, D33, D65, E23, E28, F10, F77, H29, H30, H110, H111, H119, H135, H136, I22, K16, K17, K30, K31, K32, K39, L3, L73, L106, M7, N43, P13, P23, R91, S8, S118, S146, T98, T101, T103, V16, V17, W34, W51, W52, W113, W136.

KiI (ionic): B232, D77, H152, M171.

KiL (liquid and solution): B67, B100, B272, C37, D32, D33, G52, G77, H44, J15, L25, M79, M100, M101, M102, M115, M116, P65, S24, S73, S80, S81, S83, S91, S93, S120, S144, S180, W1, W65, Y10, Y11, Y12, Y13.

KiP (photochemical): B78, B123, C96, D23, J41, M29, N42, T88, T89, W38, Z2, Z3.

KiR (radiochemical): A36, B197, B198, B271, G15, G80, H6, H141, H142, H143, H148, J41, M161, M162, M163, M164, M165, M166, M167, M168, P72, S86, S196, T12.

Me **Mechanical properties:** B63, C117, K56, S183, W144.

MeAc (acoustic properties): H94, H103, I27, I28, K104, M14, S179.

MeD (density and molar volume): A21, A96, B216, C38, E1, F75, G116, H17, H36, H37, H103, I29, I30, K36, L47, M43, M79, N47, P51, R94, S52, S53, S146, V13, V21, W22, W23, W117.

MeDf (diffusion): B17, B159, C98, D25, G100, I25, I26, K48, K55, M168, W17.

MeSt (surface tension): H35, P51.

MeV (viscosity): A96, B24, B155, B216, D59, H36, H37, I24, I25, I26, I29, I30, L47, P51, R94, T90, T91, U2, V18, W71, W132.

Nu **Nuclear properties:** A43, A78, A97, A105, A110, B68, B104, B130, B133, B142, B146, B162, B178, B189, B207, B250, C20, C41, C63, D2, D7, D58, F11, F56, G2, G68, G70, G91, G105, G120, G130, H8, H15, H38, H47, H116, H117, H125, H159, H178, J12, J31, K12, K45, K49, L15, L57, L64, L102, M13, M58, M67, M104, M119, M143, M144, M156, P5, P28, R8, R10, R40, R76, R82, R83, S63, S102, S110, S117, S137, T52, T97, V14, V31, W44, W45, Y1, Y2, Y6.

NuB (beta ray spectra): B179, B281, B282, C129, C158, C159, C160, D14, D17, D60, G67, G104, G125, G128, H24, I13, I35, J9, J16, J17, K70, K87, N60, P105, S90, S121, V3, V35, V36, W43, W138.

NuH (hyperfine structure): A4, A5, A15, A18, B160, H10, L7, L102, L103, N2, N3, N6, N13, P104, S21.

NuIn (interactions — absorption of radiation, ranges, and scattering): A1, A9, A10, A11, A51, A52, A54, A55, A62, A72, A76, A98, A100, A103, B20, B44, B80, B84, B113, B125, B126, B128, B129, B131, B156, B158, B183, B193, B202, B221, B256, C10, C13, C19, C52, C53, C54, C55, C73, C75, C88, C122, C125, C126, C127, C128, C146, D4, D9, D10, F20, F21, F22, F23, F24, F41, F53, F58, F60, F64, G3, G60, G78, G79, G107, G109, G113, G129, G136, G137, H9, H11, H19, H20, H21, H22, H23, H54, H55, H75, H76, H81, H95, H108, H115, H130, H138, H171, H186, H189, H190, H191, H197, J5, J10, J20, J35, K5, K11, K27, K54, K79, L4, L19, L20, L53, L54, M46, M57, M66, M67, M68, M70, M84, M103, M105, M145, M160, N12, N62, O10, O19, P29, P70, R2, R3, R4, R34, R65, R79, R80, R81, R84, R86, R100, S4, S14, S22, S28, S36, S37, S51, S60, S61, S72, S92, S104, S151, S167, T10, T15, T20, T21, T22, T46, T55, T81, T82, V3, V7, V8, V30, V40, W27, W28, W29, W48, W62, W88, W103, W112, W116, W125, W135, W141.

NuM (masses and binding energies): A84, B11, B30, B65, B66, B117, B131, B245, C29, C77, C104, E53, E54, F26, F57, F81, F82, H34, H121, H166, H167, H168, H179, I11, I17, J19, L93, M69, M83, M108, M109, M131, M148, M151, P3, P29, P37, P108, R12, R13, R56, R92, S74, S131, S142, S143, S164, S213, S220, S222, T67, T70, T71, V28, W24, W25, W30, W31, W32, W118.

NuMg (magnetic moments): A5, A75, A77, A84, A92, A93, A101, A107, A108, B121, B138, B139, B140, B141, B160, B199, B200, B201, B205, C5, C6, F25, H168, H169, L56, L70, L71, L72, L104, M11, M69, M128, M129, M135, M149, N13, O20, P102, P108, R9, R51, S1, S2, S3, S4, S6, S7, S107, S108, S122, S123, S141, T1, T19, T36, V29, V30, V32, W111, Y7, Z7.

NuP (piles, reactors, and accelerators): A37, D2, D38, K92, L61, R103.

NuQ (quadrupole moments): A84, A92, A93, B245, B246, B251, B252, F80, H18, H117, H168, I20, K82, K83, K84, L93, M11, M135, M151, N33, N34, P3, R10, S222.

NuR (reactions): A2, A3, A8, A12, A14, A16, A17, A19, A20, A21, A25, A28, A29, A30, A31, A32, A33, A34, A35, A38, A39, A40, A41, A42, A44, A45, A46, A48, A49, A50, A52, A53, A54, A56, A60, A63, A64, A65, A66, A70, A71, A73, A85, A86, A87, A88, A95, A102, A104, A106, A109, B1, B2, B3, B4, B23, B27, B28, B32, B33, B35, B36, B37, B38, B39, B40, B45, B46, B47, B48, B60, B62, B65, B66, B71, B72, B75, B76, B77, B81, B83, B85, B97, B101, B102, B103, B114, B115, B116, B117, B118, B119, B120, B126, B127, B134, B137, B149, B151, B152, B153, B157, B161, B163, B164, B165, B166, B170, B171, B172, B173, B176, B177, B180, B182, B184, B186, B187, B188, B194, B195, B208, B209, B210, B211, B217, B220, B222, B223, B224, B234, B235, B236, B238, B239, B240, B241, B244, B247, B248, B255, B257, B258, B259, B260, B264, B266, B267, B268, B269, B270, B273, B274, B275, B277, B278, B279, B280, B283, B284, B285, C3, C4,

Nu NuR (reactions)—Continued:
C7, C8, C9, C12, C15, C16, C17, C18, C20, C23, C24, C25, C26, C27, C42, C45, C46, C47, C50, C51, C56, C57, C58, C64, C65, C66, C67, C68, C69, C72, C74, C80, C81, C83, C84, C85, C86, C87, C102, C103, C109, C110, C112, C113, C116, C119, C120, C121, C123, C124, C128, C130, C143, C144, C145, C147, C148, C149, C150, C151, C152, C153, C156, C157, C161, C162, D5, D6, D10, D13, D18, D19, D20, D21, D22, D36, D37, D39, D57, D74, D78, D79, D81, D82, D83, E6, E7, E13, E17, E18, E19, E20, E21, E22, E25, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E40, E43, E44, E50, F1, F2, F3, F4, F5, F6, F8, F9, F15, F16, F32, F33, F34, F37, F38, F50, F51, F52, F54, F59, F61, F62, F63, F83, F88, F89, F90, G1, G5, G16, G17, G23, G24, G25, G26, G27, G28, G29, G30, G31, G32, G33, G34, G35, G36, G37, G38, G41, G42, G43, G44, G45, G46, G47, G48, G49, G50, G56, G59, G62, G63, G64, G65, G66, G69, G73, G74, G76, G90, G92, G93, G94, G95, G99, G101, G102, G103, G108, G110, G117, G124, G129, G131, G132, G133, G137, H1, H2, H3, H7, H11, H14, H16, H21, H25, H31, H32, H33, H34, H39, H43, H51, H52, H53, H56, H58, H59, H60, H61, H62, H63, H64, H65, H66, H68, H69, H70, H71, H73, H74, H78, H79, H80, H105, H106, H107, H113, H114, H120, H123, H128, H129, H131, H134, H137, H139, H140, H149, H150, H151, H160, H161, H162, H169, H170, H172, H173, H174, H175, H176, H177, H180, H181, H182, H183, H185, H194, H198, H199, I3, I4, I5, I6, I7, I11, I14, I15, I16, I18, I19, I23, J3, J4, J6, J7, J8, J9, J10, J11, J13, J18, J19, J20, J21, J22, J27, J28, J30, J43, J48, J49, J52, J53, K2, K14, K15, K19, K20, K26, K29, K34, K35, K43, K44, K58, K62, K64, K65, K71, K88, K91, K95, K96, K98, K100, K101, K110, K111, K112, K113, K114, K115, K116, K117, K118, K119, K120, K121, L10, L14, L16, L17, L18, L21, L22, L26, L27, L28, L29, L31, L33, L35, L36, L37, L38, L43, L44, L45, L46, L53, L55, L60, L62, L67, L68, L69, L79, L80, L81, L82, L83, L89, L96, L104, L105, M4, M5, M6, M9, M10, M15, M16, M20, M21, M22, M26, M30, M31, M32, M34, M35, M36, M37, M38, M39, M40, M41, M42, M48, M49, M50, M51, M52, M53, M62, M63, M76, M77, M80, M81, M86, M87, M88, M89, M90, M95, M96, M97, M106, M107, M108, M110, M111, M120, M121, M126, M130, M131, M132, M147, M150, M152, M153, M154, M155, M157, M172, N1, N5, N8, N11, N15, N16, N17, N18, N19, N20, N21, N22, N23, N28, N30, N31, N40, N61, O9, O14, O17, O18, O21, O28, P2, P7, P8, P9, P10, P14, P16, P17, P18, P19, P20, P21, P22, P25, P30, P31, P32, P33, P34, P35, P36, P38, P39, P40, P41, P42, P45, P46, P47, P48, P50, P53, P55, P56, P57, P58, P59, P60, P61, P62, P63, P75, P76, P77, P80, P82, P83, P85, P91, P93, P98, P99, P106, P107, Q3, R1, R5, R14, R15, R17, R18, R20, R21, R32, R33, R34, R35, R36, R39, R41, R46, R47, R50, R54, R55, R57, R58, R63, R74, R77, R78, R81, R87, R88, R93, R95, R101, R102, S5, S9, S10, S11, S12, S13, S15, S16, S17, S20, S23, S38, S39, S40, S41, S42, S43, S45, S46, S50, S62, S64, S65, S66, S68, S69, S71, S72, S74, S85, S88, S99, S106, S109, S119, S128, S129, S130, W131, S132, S133, S135, S136, S138, S139, S145, S149, S150, S157, S158, S160, S161, S176, S181, S184, S185, S186, S190, S191, S192, S194, S195, S199, S201, S203, S204, S205, S206, S207, S208, S209, S210, S211, S212, S214, S215, S216, S217, S223, S224,

Nu NuR (reactions)—Continued:
S225, S226, S227, T5, T6, T7, T11, T13, T14, T15, T16, T29, T30, T31, T33, T34, T37, T38, T39, T40, T47, T48, T49, T56, T65, T66, T69, T71, T72, T73, T77, T92, T94, T95, T96, T102, V4, V6, V9, V10, V24, V36, W2, W3, W4, W5, W13, W16, W30, W32, W33, W36, W39, W40, W53, W59, W66, W67, W68, W69, W75, W76, W77, W78, W79, W80, W81, W82, W84, W85, W90, W91, W92, W93, W94, W95, W96, W97, W98, W99, W100, W101, W106, W107, W108, W110, W111, W120, W121, W128, W129, W130, W131, W133, W134, W137, W145, W146, W147, Y3, Y4, Y5, Y8, Y9, Z1, Z6, Z9, Z10, Z11.

NuRe (magnetic resonances): A58, A59, B122, B148, H57, L71, N2, N14, P104, R70, S89, S108, S122, S123, W15, Z7.

NuS (spins, states, and wave functions): A84, A92, A93, A100, A108, B131, B135, B136, B138, B149, B251, B255, B266, E16, F20, F25, F26, F27, F39, F41, F80, G61, G107, H10, H18, H184, I19, J39, K13, K49, K105, L37, L56, L59, L101, M11, M69, M151, N3, N6, N7, N13, N14, N33, N34, O20, P3, P4, R13, R37, R75, S3, S134, S219, T32, V7, V10, V28, W61, W139, W142.

NuSt (statistics): A72.

Sd **Solid state:** G115, K6, K37, K122, N38, O11, S146, W35, W62.

SdCr (crystal structure, including electron, neutron, and x-ray diffraction): B26, D54, G71, G72, G119, H83, H156, J33, K4, L2, L52, L86, L90, L91, N4, N54, Q1, R16, R96, R97, R99, S103, S105, W10, W11, W34, W49, W117, W122, W123, W124, W125, W126.

SdEc (elastic constants): J32.

SdEl (electromagnetic properties): C114, G54, M74, P15, P67, P95, T83, Z12.

SdNu (nuclear properties): B122.

SdSp (spectra): G121, H109, H156, H157, H158, L86, N27, S30, S229, W8.

SdTr (transitions, including phase transitions): A58, A59, C89, C100, C114, E45, H17, K103, L2, L52, M73, M74, P54, P96, Q1, S35, S156, S165, S166, T45, W9, W10, W11, W126, Z12.

Se **Isotope separation:** A47, A67, B41, C93, C103, C105, C106, C107, C108, D47, D65, D80, E39, E41, E42, F17, F91, G118, G126, H47, H72, H124, K7, K8, K59, L11, L24, L51, M8, P5, P6, P12, R91, S177, T97, U10, W41.

SeAd (adsorption—including chromatography and ion exchange): D48, H48.

SeCf (centrifuging): B190, B191, G127, S19.

SeCh (chemical reaction): B96, B109, B181, C92, D50, L76, R19, T42, T56.

SeDf (diffusion, including thermal diffusion): B54, B55, B56, B69, B70, B96, C59, C70, C71, C90, C94, C95, D8, D16, D49, D50, D67, F92, F93, G111, G112, H122, I32, J37, K60, L23, M27, M28, W12, W42, W70, W119.

SeDs (distillation): B212, C99, D69, D70, D71, D72, F46, F48, H102, R62, W37.

SeEl (electrolysis): A82, B58, B79, B206, B253, C39, C96, D8, E9, E10, E11, H152, H153, H154, H195, K61, L85, M54, M55, M65, N56, O15, O16, P64, P92, S29, S34, T84, T85, T86, V15, W26, W114.

SeEm (electromagnetic methods): B82, S113.

SeMs (mass spectrometer and mass spectrograph): C49, D8, K24, K66, K67, R66, S127, V22, V23, W14.

So **Solubility.**

SoG (gases in solids): T8.

SoH (in H_2O, HDO, and D_2O): B132, B213, C33, C34, C35, C36, N52.

SoI (in inorganic solvents): B254.

SoO (in organic solvents): B124, J44.

Sp **Spectra and spectroscopic constants:** F49, P26, S34, T83, W144.

SpA (atomic—line): B160, B200, B201, H10, H165, K10, K105, K106, L5, L6, L7, L8, L102, M125, M138, M139, N2, N3, N6, N13, P79, P104, R37, R51, S21, S75, T41.

SpEl (molecular electronic): C48, C62. D11, D12, D55, D56, D73, F14, F84, F85, G6, G7, G8, G10, G11, G12, G13, G14, G20, G125, G134, H144, H155, I1, I9, I10_, L32, M118, M170, N48, N49, N50, N51, O26, O27, P100, P101, R8, R27, R28, R59, R60, S58.

SpFl (fluorescence): B99, B112, B192, G7, G9, G13, K53, R89, S78, S193.

SpM (microwave): A69, A79, B15, B52, B53, C154, C155, G53, G81, H118, J14, J23, J24, J25, J36, K38, K51, K82, K83, K84, L6, L64, L92, L99, L108, M71, M124, N26, R7, R10, S100, S101, S114, S115, S116, S187, S188, S189, T4, T41, T78, U9, W46, W50, W51, W52, W55, W56, W63. W64.

SpVi (vibrational, including Raman): A23, B5, B6, B7, B8, B9, B12, B13, B14, B29, B58, B59, B92, B93, B94, B95, B109, B242, B265, C43, C44, C78, C79, C118, C132, C134, C135, C136, C137, C138, C139, C141, C142, D1, D26, D28, D29, D30, D31, D34, D35, D51, D52, D53, D61, D62, D68, E1, E3, E4, E5, F18, F19, F36, F45, F70, G19, G21, G22, G40, G82, G121, H12, H13, H26, H27, H67, H82, H83, H84, H85, H86, H87, H88, H89, H90, H91, H92, H97, H98, H99, H100, H101, H109, H157, H158, H163, H200, I8, I12, J34, J36, J45, K46, K50, K52, K78, K90, K93, K94, L9, L13, L34, L40, L42, L48, L49, L50, L63, L74, L75, L77, L78, L86, L94, L95, M2, M3, M17 M18, M19, M25, M64, M91, M92, M93, M94, M112, M122, M123, M146, N9, N27, N32, N36, N37, N44, O24, P1, P52, P67, P69, P71, P78, P81, P84, P88, P89, P90, R11, R16, R42, R43, R45, R85, R98, S18, S33, S59. S70, S84, S87, S91, S94, S95, S96, S97, S98, S111, S124, S163, S221, S229, T3, T9, T18, T24, T51, T59, T60, T75, T100, V5, V12, V37, V39, W8, W9, W10, W11, W47, W104, W105, W140, Z4, Z5, Z8.

Sr **Mass spectroscopy and mass spectrography:** B11, B49, B50, C117, C118, D42, D43, D44, D45, E51, E53, E54, F65, F71, H144, H145, H146, K28, K63, L97, L98, M127, M134, M171, N29, N46, N59, R29, R71, S32, S47, S173, S174, S175, T51, T58, T99.

St **Molecular structure:** A57, A69, B5, B7, B8, B9, B13, B52, B99, B262, C62, C141, D26, D34, D35, D59, D62, G6, G7, G10, G11, G12, G13, G61, H86, H100, H101, I9, K46, L13, L74, L75, L77, L78, L94, L95, M74, M91, M93, M123, N27, P1, P110, S33, S96, S98, S103, S163, S229, T9, T18, W8, W22, W105.

St A (molecular association): B228, C89, D68, D72, E46, H112, R98, V39, W117.

StD (molecular constants—interatomic distances, bond angles, moments of inertia, force constants, and potential functions): A79, B12, B14, B15, B52, B73, B95, C79, C154, C155, C163, D30, D31, D51, D56, F18, F19, F45, G14, G40, G81, H26, H27, H67, H99, H118, I12, J25, J34, J36, K38, K52, K84, M2, M3, M17, M25, M71, M92, M94, M124, M146, N26, N37 O26, P51, P71, R10, R11, R42, R43, R96, S18, S79, S100, S114, S115, S116, S188, T75, T78, U9, V18, W63, W64, W73, W104, Z5.

StDi (electron, neutron, and X-ray diffraction): C163.

Sy **Synthesis and preparation of compounds:** A21, A23, A24, A26, A69, A74, B19, B25, B58, B59, B61, B64, B88, B89, B100, B143, B144, B145, B185, B198, B227, B231, B237, B242, B243, B261, C40, C82, C97, C99, C100, C117, C118, C131, C133, C154, D43, D63, D76, E1, E15, E24, E26, E51, F44, F46, F47, F86, F87, G10, G11, G12, G98, H92, H127, H142, H146, H148, H163, H187, I1, I32, J24, J51, K1, K16, K33, K40, K68, K69, K78, K102, L1, L12, L13, L39, L40, L41, L42, L77, L78, L107, M19, M59, M60, M79, M101, M122, M123, N38, N39, N43, N58, O24, P2, P6, P26, P27, P51, P65, P87, R45, R64, R97, S47, S53, S91, S94, S120, S146, S152, S171, S172, S180, S183, T51, T57, T79, T80, T83, T99, T100, U4, V12, V16, V17, V26, W7, W34, W47, W57, W58, W60, W102, W113, W114, W127.

Th **Thermodynamic and related properties:** G54, K56, S34, W144.

ThD (diffusion and heat conduction): B155, G111, G112, I25, I26, I32, M169, T90, T91, U2, W17, W18, W132.

THF (thermodynamic functions for pure substances and reactions between them—E, H, S, C_v, C_p, F, K, ΔH, ΔS, ΔE, ΔC, ΔF, data of state, and thermal expansion): B16, B107, B109, B154, B215, C100, C133, D30, D31, D40, D65, E45, E46, F18, F19, F65, G119, G128, H42, J29, J39, J40, K6, K21, K22, K37, K102, K103, L63, L94, M25, N4, O22, P67, P69, S30, S35, S146, S147, S156, S166, S197, U10, V5, V17, W47, W132, W143, Z8.

ThP (phase equilibria—boiling points, melting points, triple points, heats of transition, critical constants, and vapor pressures): A21, A58, A90, B58, B59, C32, C89, C99, C100, C117, E1, E24, E45, F66, F67, F87, G98, G115, H17, H35, H112, H132, H133, J51, K37, K68, K103, L2, L42, M60, P26, P27, P103, P109, S35, S53, S146, S156, S182, S183, T26, U5, U10, V13, W132.

ThS (statistical mechanics and statistical thermodynamics): B154.

ThSo (properties of solutions—activities, fugacities, pH, vapor pressures, heats of solution and dilution, and colligative properties): A90, B214, C32, H45, N47, N53, S218.

5. Compound Index

This index will be useful in locating references dealing with a particular deuterium or tritium compound. Tritium compounds are designated by a "-t" following the compound name. Each entry in the index contains one or more letter codes and a series of letter-number symbols indicating, respectively, the subject content and the location of the references in the bibliography. A description of the coding system may be found in the Introduction.

Acenaphthene ($C_{12}H_{10}$) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Acetaldehyde (C_2H_4O) **AnMs**:B218; **InKi**:C131; **KiG**: W21, Z2; **KiP**:B123, Z2, Z3; **SpVi**:P69; **Sy**:C131; **ThF**:P69.

Acetaldehyde nitrophenyl hydrazone ($C_8H_9N_3O_2$) **InKi**: C131; **Sy**:C131.

Acetamide (C_2H_5NO) **SpVi**:L48.

Acetate ion-t ($C_2H_3O_2^-$-t) **InBi**:B22.

Acetic acid ($C_2H_4O_2$) **AnDn**:B243; **BiC**:B144; **EqH**:L73; **EqL**:B243, C97, K42, L107; **InBi**:L107; **KiH**:L73; **KiL**:M115; **KiP**:C96; **SeEl**:C96; **SpVi**:H85; **Sy**:B144, B243, C97, L107.

Acetic acid, Salts of **EqL**:M116; **KiL**:M115, M116.

Acetic acid, sodium salt of ($C_2H_3O_2Na$) **EqL**:S80; **InBi**:F30; **InKi**:S80; **KiB**:024s; **KiL**:S80; **SpVi**:L48; **Sy**:O24s.

Acetic acid-t, sodium salt of ($C_2H_3O_2Na$-t) **AnC**:E14; **BiZ**:E14.

Acetone (C_3H_6O) **AnMs**:H42, K16, R71; **EiRf**:C117; **EqH**:K16; **EqL**:F43; **InKi**:F43; **KiH**:K16; **KiP**:B78, M29, T88, T89; **Me**:C117; **SpVi**:H85; **Sr**:C117, R71; **Sy**:C117, K16, T57; **ThF**:H42; **ThP**:C32, C117; **ThSo**:C32.

Acetone dicarboxylic acid ($C_5H_6O_5$) **InBi**:K76; **KiB**:K76.

Acetonitrile (C_2H_3N) **SpM**:K38, T78; **StD**:K38, T78.

Acetophenone (C_8H_8O) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Acetoxy etiocholanal ($C_{21}H_{34}O_3$) **ElRo**:K68; **Sy**:K68; **ThP**:K68.

Acetoxy etiocholanone ($C_{21}H_{32}O_3$) **ElRo**:K68; **Sy**:K68; **ThP**:K68.

Acetyl acetone ($C_5H_8O_2$) **EqL**:N25, S94; **InSt**:N25; **SpVi**:S94; **Sy**:S94.

Acetyl alanine ($C_5H_9NO_3$) **InBi**:B145; **KiB**:B145; **Sy**: B145.

Acetyl aminobenzoic acid ($C_9H_9NO_3$) **InBi**:B145; **KiB**: B145; **Sy**:B145.

Acetylene (C_2H_2) **AdG**:P23; **AnMs**:M133; **ElGd**:H155; **IsSp**:D27, D28, H24, M170, S221, V1; **KiG**:F73, H155, J50; **KiH**:P23; **SpEl**:H155, M170; **SpM**:T4; **SpVi**:D28, H13, H85, K52, P71, S18, S59, S221, V12; **Sr**:H146; **StD**:K52, P71, S18; **Sy**:B25, J51. L77, L78, V12.

Acetylene dibromide ($C_2H_2Br_2$) **AnSp**:J51; **IsSp**:S221; **SpVi**:H82, H92, S221, V12; **Sy**:H92, J51, V12; **ThP**:J51.

Acetylene dichloride ($C_2H_2Cl_2$) **EqG**:B95; **IsSp**:H13; **SpVi**:B93, B95, H13, V5; **StD**:B95; **Sy**:L41; **ThF**:V5.

Acetyl glutamic acid ($C_7H_{11}NO_5$) **InBi**:B145; **KiB**:B145; **Sy**:B145.

Acetyl glycine ($C_4H_7NO_3$) **InBi**:B145; **KiB**:B145; **Sy**:B145.

Acetylleucine ($C_8H_{15}NO_3$) **InBi**:B145; **KiB**:B145; **Sy**:B145

Acetyl sarcosine ($C_5H_9NO_3$) **InBi**:B145; **KiB**:B145; **Sy**:B145.

Adrenaline ($C_9H_{13}NO_3$) **InBi**:G135; **KiB**:G135.

Alanine ($C_3H_7NO_2$) **AnCl**:K85; **AnDn**:K85; **InBi**:A80: **KiB**:A80; K85; **SpVi**:G82.

Allene (C_3H_4) **IsSp**:L95; **SpVi**:L95; **St**:L95.

Allyl benzene (C_9H_{10}) **EqL**:H127; **InSt**:H127; **Sy**:H127.

Allylene (C_3H_4) **SpVi**:H99, J34, L42, M91, Z8; **St**:M91; **StD**:H99, J34; **Sy**:L42; **ThF**:Z8; **ThP**:L42.

Allyl phenol ($C_9H_{10}O$) **InKi**:F42.

Allyl phenyl ether ($C_9H_{10}O$) **InKi**:F42, F44s; **Sy**:F44.

Aluminum **SoI**:B249.

Aluminum bromide **EqL**:P65; **InKi**:P65; **KiL**:P65; **Sy**:P65.

Aluminum bromide, basic ($Al(OH)Br_2$) **EqL**:P65; **InKi**:P65, W1; **KiL**:P65, W1; **Sy**:P65.

Aluminum ethoxide ($C_6H_{15}O_3Al$) **Sy**:C40.

Aluminum hydride (AlH) **SpEl**:N48, N49, N50, N51.

Aluminum oxide **EqH**:E47, P13; **InKi**:E47, P13; **KiH**:P13.

Amino acetic acid. See Glycine.

Amino acids **Ge**:H96; **InBi**:H96, U11; **KiB**:H96, U11; **SpVi**:L49.

Amino ethanol (C_2H_7NO) **KiB**:V26; **Sy**:V26.

Amino phenylbutyric acid ($C_{10}H_{13}NO_2$) **InBi**:B145; **KiB**:B145; **Sy**:B145.

Ammonia (NH_3) **AdG**:T23; **AnMs**:T61; **AnSp**:S159, W52; **Eq**:K56; **EqG**:S159, W50; **EqH**:K31, K32, L41, S118, T23, W52; **EqI**:S198; **EqL**:B232, B262s, H112, S80s, S81s, S82, S83s; **InKi**:S80s; **IsSp**:D29, E3, H13; **KiH**:K31, K32, L3, S118, W52; **KiL**:S80s, S81s, S83s; **Me**:K56; **SdCr**:R16; **SdSp**:H157, H158; **SpEl**:C48; **SpM**:L99, L108, W50, W52, W55, W56; **SpVi**:B265, D29, E3, H13, H157, H158, L34, R16, T18; **Sr**:N29; **St**:T18; **StA**:H112; **ThP**:H112.

Ammonia-t (NH_3-t) **SpVi**:T18; **St**:T18.

Ammonium bromide (NH_4Br) **SdCr**:L52, W11; **SdTr**:L52, S165, W11; **SpVi**:W11.

Ammonium chloride (NH_4Cl) **SdCr**:G71, G72, W10; **SdTr**:S166, T45, W9, W10; **SpVi**:W9, W10; **ThF**:S166; **ThSo**:N47.

Ammonium halides **SdCr**:H156; **SdSp**:H156.

Ammonium hydroxide (NH_4OH) **EqI**:S198.

Ammonium ion (NH_4+) **EqI**:B232, S198; **KiI**:B232.

Ammonium nitrate (NH_4NO_3) **IsKi**:F68.

Ammonium phosphate, dihydrogen ($NH_4H_2PO_4$) **SdCr**: W126; **SdTr**:M73, W126.

Amyl alcohol ($C_5H_{11}OH$) **EqL**:H127; **InSt**:H127; **Sy**: H127.

Amylene (C_5H_{10}) **EqH**:B63; **Me**:B63.

Androstenediol acetate benzoate ($C_{26}H_{30}O_5$) **ElRo**:F87; **Sy**:F87; **ThP**:F87.

Anethole ($C_{10}H_{12}O$) **EqL**:Y13; **InKi**:Y13; **KiL**:Y13.

Aniline hydrochloride (C_6H_7N·HCl) **AnMs**:A23; **Eq**:O11; **Sd**:O11; **SpVi**:A23; **Sy**:A23.

Anisole (C_7H_8O) **EqG**:B225; **EqL**:B231; **InKi**:B225, B231; **SpVi**:T60; **Sy**:B231.

Anthracene ($C_{12}H_{10}$) **KiG**:P110; **SpFl**:R89; **St**:P110.

Argon **AnC**:E10, E12; **MeDf**:W17; **ThD**:W17.

Arsine (AsH_3) **EiD**:L92; **IsSp**:H13; **SpM**:L46; **SpVi**:H13, M2, M3, T18; **St**:T18; **StD**:M2, M3.

Arsine-t (AsH_3-t) **SpVi**:T18; **St**:T18.

Aspartic acid ($C_4H_7NO_4$) **AnCl**:K85; **AnDn**:K85; **KiB**:K85.

Behenic acid ($C_{22}H_{44}O_2$) **InBi**:B88; **KiB**:B88; **Sy**:B88.

Benzene (C_6H_6) **AdG**:B16; **AnMs**:A23; **AnSp**:B100, T103; **EqG**:P110; **EqH**:B19, B63; **EqL**:B100, Y12s; **InKi**:M164, T103; **InSo**:B124s, J44s; **IsSp**:G14, H13; **KiG**:P110; **KiH**:B16, B19, T103; **KiL**:B100, Y12s; **KiR**:G80, M164; **Me**:B63; **MeDf**:G100; **NuS**:G61; **SoO**:B124s, J44s; **SpEl**:G6, G7, G8, G10, G11, G12, G13, G14, I9, I10; **SpFl**:B99, G7, G9, G13, **SpVi**:A23, B5, B6, B7, B8, B9, B12, C142, H13, H100, H101, I8, M122, P84, T60; **St**:B5, B7, B8, B9, B99, G6, G7, G10, G11, G12, G13, G61, H100, H101, I9, P110; **StD**:B12, G14; **Sy**:A23, B19, B100, G10, G11, G12, H163, M122, W57, W58; **ThF**:B16.

Benzene-t (C_6H_6-t) **InKi**:M99, M101; **IsKi**:M101; **KiL**:M101; **Sy**:M101.

Benzene hexachloride ($C_6H_6Cl_6$) **AnSp**:T79; **In**:T79; **Sy**:T79.

Benzene phosphinic acid ($C_6H_7PO_2$) **SpVi**:D1.

Benzene phosphonic acid ($C_6H_7PO_3$) **SpVi**:D1.

Benzoic acid ($C_7H_6O_2$) **KiR**:B197; **SpVi**:T60; **Sy**:W58.

Benzoquinhydrone ($C_{12}H_{10}O_4$) **EqG**:G97; **InSt**:G97; **KiG**:B228; **StA**:B228.

Benzoyl peroxide ($C_{14}H_{10}O_4$) **EqL**:Y12s; **KiL**:Y12s.

Benzylmalonic acid ($C_{10}H_{10}O_4$) **ElRo**:I34; **Sy**:I34.

Benzylmalonic acid, bornyl dimethylamine acid salt of ($C_{22}H_{33}NO_4$) **ElRo**:I34; **Sy**:I34.

Benzylmalonic acid, brucine acid salt of ($C_{33}H_{36}N_2O_8$) **ElRo**:I34; **Sy**:I34.

Benzylmalonic acid, nicotine acid salt of ($C_{20}H_{24}N_2O_4$) **ElRo**:I34; **Sy**:I34.

Benzylpenicillin, disodium salt of ($C_{16}H_{18}N_2O_5SNa_2$) **Sy**:K1.

Benzyl pencilloic acid, methyl ester of ($C_{16}H_{22}N_2O_3S$) **Eq**:M158; **Ge**:M158.

Borine carbonyl (BH_3CO) **KiG**:B263; **SpM**:G81; **StD**:G81.

Boron hydride (B_2H_6) **AnMs**:N57; **AnSp**:B34; **AnTh**:M82; **EqG**:M82; **EqL**:B262; **IsSp**:L94; **Ki**:B34; **KiG**:M82; **SpVi**:L94, W47; **Sr**:D45; **St**:B262, L94; **Sy**:N58, W47; **ThF**:L94, W47.

Bromide ion **EqH**:A36; **EqI**:A36; **KiR**:A36.

Bromo acetoxy etiocholanone ($C_{21}H_{31}O_3Br$) **ElRo**:K68; **Sy**:K68; **ThP**:K68.

Bromobenzene (C_6H_5Br) **AnDn**:F75; **AnSp**:B100; **EqL**:B100; **Sy**:B100.

Bromobenzene-t (C_6H_5Br-t) **InKi**:M101; **IsKi**:M101; **KiL**:M101; **Sy**:M101.

Bromodichloromethane ($CHCl_2Br$) **EqL**:S91; **KiL**:S91; **SpVi**:P78, S91; **Sy**:S91.

Bromoethylbenzene (C_8H_9Br) **InKi**:S120; **KiL**:S120; **Sy**:S120.

Bromoform ($CHBr_3$) **AnSp**:S73; **EqG**:S73; **EqL**:S73; **IsSp**:H13; **KiG**:S73; **KiL**:S73; **SpVi**:D26, F19, H13, M92, M94, R85; **St**:D26; **StD**:F19, M92, M94; **ThF**:F19.

Bromopregnanedione ($C_{21}H_{31}O_2Br$) **ElRo**:K68; **Sy**:K68; **ThP**:K68.

Butadiene (C_4H_6) **InSo**:B124s; **SoO**:B124s.

Butane (C_4H_{10}) **AdG**:H29; **AnMs**:S174; **EqH**:A68, B57, H119, W6; **EqL**:O25; **InKi**:A68, H29, H188, P65, W1, W6; **InSo**:B124s; **IsMs**:S174; **KiH**:A68, B57, H29, H119; **KiL**:P65, W1; **KiR**:H148; **SoO**:B124s; **SpVi**:C118; **Sr**:C118, S174, S175; **Sy**:C118, H148, P65, W7.

Butane-t (C_4H_{10}-t) **AnC**:G57, G58, R54.

2,3-Butanedione dioxime ($C_4H_8N_2O_2$) **InSt**:V39; **SpVi**:V39; **StA**:V39.

1,2-bis (2,3-Butanedione dioxime-N,N[1]) nickel (II). See Nickel dimethyl glyoxime.

Butene. See Butylene.

Butene-t. See Butylene-t.

Butenes. See Butylenes.

Butyl alcohol (C_4H_9OH) **InKi**:K41s.

Butylene (C_4H_8) **AnMs**:D46; **AnMs**:D46; **EqG**:D46; **EqH**:A68, T25; **InKi**:A68, D3; **InSo**:B124s; **KiG**:D3, D46; **KiH**:A68; **KiL**:S180; **SoO**:B124s; **Sy**:S180.

Butylenes **EqL**:P65; **KiL**:P65; **Sy**:P65.

Butyl iodide (C_4H_9I) **KiR**:S196.

Butylmalonic acid ($C_7H_{12}O_4$) **ElRo**:I34; **Sx**:I34.

Butylmalonic acid, bornyldimethylamine acid salt of ($C_{19}H_{25}NO_4$) **ElRo**:I34; **Sy**:I34.

Butyric acid ($C_4H_8O_2$) **ElRo**:I34; **InKi**:S77; **KiG**:S77; **Sy**:I34.

Cadmium iodide **EcP**:N53; **ThSo**:N47, N53.

Cadmium sulfate **EqH**:B213; **SoH**:B213.

Calcium **Sy**:I1.

Calcium hydride (CaH) **SpEl**:N48.

Calcium hydroxide ($Ca(OH)_2$) **EqL**:G55s, L39; **Sy**:I1, L39, W58.

Caproic acid ($C_6H_{12}O_2$) **Sy**:I34.

Caprolactam ($C_6H_{11}NO$) **SpVi**:L48.

Caprylic acid ($C_8H_{16}O_2$) **KiR**:H142; **Sy**:H142.

Carbohydrates **InBi**:S168; **KiB**:S168.

Carbon **AdG**:B219.

Carbon dioxide **AdG**:N43; **ElT**:I27; **KiH**:N43; **KiR**:G15; **MeAc**:I27; **MeDf**:W17; **Sy**:N43; **ThD**:W17.

Carbon monoxide **AdG**:L106, N43; **KiH**:L106, N43; **Sy**:B58, N43.

Cellulose ($(C_6H_{10}O_5)_x$) **AnDn**:F77; **EqH**:F76, F77, R90; **IsSp**:R90; **KiH**:F77.

Cellulose methyl ether ($C_7H_{12}O_5$) **AnDn**:A96; **MeD**:A96; **MeV**:A96.

Cerium **AdG**:V20; **EqH**:V20.

Cerium hydride (CeH) **EqH**:V16, V17; **KiH**:V16, V17; **Sy**:V16, V17; **ThF**:V17.

Cesium nitrate **SoH**:N52.

Charcoal **AdG**:K21, K22.

Chloral (C_2HCl_3O) **InKi**:L21; **KiL**:L21.

Chloramine-t ($C_7H_7NaNO_2SCl$) **InBi**:K76; **KiB**:K76.

Chloracetylene (C_2HCl) **SpM**:W63; **SpVi**:R43; **StD**:R43, W63.

Chloro dibromo methane ($CHClBr_2$) **EqL**:S91; **KiL**:S91; **SpVi**:P81, S91; **Sy**:S91.

Chloroform ($CHCl_3$) **AnSp**:S73; **ElRf**:E1; **EqG**:S73; **EqL**:S73; **IsKi**:N42; **IsMs**:D42; **IsSp**:E3, H13; **KiG**:S73; **KiL**:S73; **KiP**:N42; **MeD**:E1; **SpM**:U9; **SpVi**:D26, E1, E3, H13, M25, S96, Z4, Z5; **Sr**:D42; **St**:D26, S96; **StD**:M25, U9, Z5; **Sy**:B185, E1; **ThF**:M25; **ThP**:E1.

Chlorosulfonic acid (HSO_3Cl) **InKi**:G77; **KiL**:G77.

Chloroxylenol (C_8H_9ClO) **Eql**:T93.

Cholestenone ($C_{27}H_{44}O$) **ElRo**:F87; **InBi**:A81; **KiB**:A81; **Sy**:B64, F87; **ThP**:F87.

Cholesterol ($C_{27}H_{46}O$) **BiC**:B144; **ElRo**:F87; **InBi**:G75, P86; **KiB**:B143, G75; **KiR**:B197; **Sy**:B64, B143, B144, F87; **ThP**:F87.

Cholesterol-t ($C_{27}H_{46}O$-t) **AnC**:B111; **BiC**:B110, K97; **KiB**:B110.

Choline ($C_3H_{15}NO_2$) **InBi**:C111; S112, V25; **KiB**:C111, S112, V25.

CH radical **SpEl**:F14.

Chromic oxide **EqH**:B19; **KiH**:B19; **Sy**:B19.

Citric acid ($C_6H_8O_7$) **AnDn**:M60; **ElRo**:M59, M60; **InBi**:M61; **InSt**:M59; **KiB**:M61; **Sy**:M59, M60; **ThP**:M60.

Cobalt, complex compounds of **KiB**:S93; **KiL**:S93.

Copper **EcO**:B249; **SoI**:B249.

Copper hydride (CuH) **ElGd**:R28; **EqH**:R28; **KiH**:W34; **SdCr**:W34; **SpEl**:N51, R27, R28; **Sy**:W34.

Creatine ($C_4H_9N_3O_2$) **InBi**:C111, V25; **KiB**:C111, V25.

Creatinine ($C_4H_7N_3O$) **InBi**:S112; **KiB**:S112.

Cresol (C_7H_8O) **EqL**:T93.

Crotonic acid ($C_4H_6O_2$) **KiR**:B197.

Cuprous chloride **AdG**:I22; **IsKi**:I22; **KiH**:I22.

Cyanoacetylene (C_3HN) **SpM**:W64; **StD**:W64.

Cyanogen chloride (ClCN) **IsSp**:R44.

Cyanuric acid ($(HCNO)_3$) **SpVi**:N37; **StD**:N37.

1, 2-Cycloheptanedione dioxime ($C_7H_{12}N_2O_2$) **InSt**:V39; **SpVi**:V39; **StA**:V39.

1, 2-bis (1, 2-Cycloheptanedione dioxime-N, N′) nickel ($C_{14}H_{22}N_4O_4Ni$) **InSt**:V39; **SpVi**:V39; **StA**:V39.

Cyclohexadiene (C_6H_8) **EqH**:B63; **Me**:B63.

Cyclohexane (C_6H_{12}) **InSo**:B124s; **KiR**:B198; **SoO**:B124s; **Sy**:B198.

Cyclohexane carboxylic acid. See Hexahydrobenzoic acid.

1, 2-Cyclohexanedione dioxime ($C_6H_{10}N_2O_2$) **InSt**:V39; **SpVi**:V39; **StA**:V39.

1, 2-bis (1, 2-Cyclohexanedione dioxime-N, N′) nickel ($C_{12}H_{18}N_4O_4Ni$) **InSt**:V39; **SpVi**:V39; **StA**:V39.

Cyclohexanone ($C_6H_{10}O$) **EqG**:N24; **InSt**:N24.

Cyclohexene (C_6H_{10}) **EqH**:B63; **KiR**:B198; **Me**:B63; **Sy**:B198.

Cyclo̤ctatetraene (C_8H_8) **SpVi**:L77, L78; **St**:L77, L78; **Sy**:L77, L78.

Cyclopentane (C_5H_{10}) **KiR**:B198; **SpVi**:M123; **St**:M123; **Sy**:B198, M123.

Desthiobenzylpenicillin ($C_{16}H_{20}N_2O_4$) **Sy**:K10.

Diamino diphenyl ($C_{12}H_{12}N_2$) **EqG**:B225; **InKi**:B225.

Diazomethane (CH_2N_2) **SpVi**:C141; **St**:C141; **Sy**:B58.

Diazonitrobenzene chloride ($C_6H_4N_3O_2Cl$) **EqL**:A22; **InKi**:A22.

Diborane. See Boron hydride.

Dibromobenzene ($C_6H_4Br_2$) **AnSp**:B100;**EqL**:B100; **Sy**:B100.

Dibromo chloro methane. See Chloro dibromo methane.

Dibromoethane ($C_2H_4Br_2$) **AnSp**:J51; **ElRf**:V13; **InSt**:H83, H84; **IsSp**:H84; **IsTh**:D40, W143; **MeD**:V13; **SdCr**:H83; **SdSp**:N27, S229; **SpVi**:H83, H84, H86, N27, S229; **St**:H86, N27, S229; **Sy**:J51; **ThF**:D40, W143; **ThP**:J51, V13.

Dibromoethylene. See Acetylene dibromide.

Dibromomethane. See Methylene bromide.

Dichloro bromo methane. See Bromo dichloro methane.

Dichloro diethyl sulfide ($C_4H_8Cl_2S$) **Sy**:B25.

Dichloroethylene. See Acetylene dichloride.

Dichloromethane. See Methylene chloride.

Dichloropropene. See Dichloropropylene.

Dichloropropylene ($C_3H_4Cl_2$) **InSt**:B94; **SpVi**:B94.

Diethylamine ($C_4H_{11}N$) **EqL**:K42.

Dimethoxysuccinamide ($C_6H_{12}N_2O_4$) **InBi** S170; **KiB**:S170.

Dimethylaminoethanol ($C_4H_{11}NO$) **KiB**:V26; **Sy**:V26.

Dimethylanthracene ($C_{16}H_{14}$) **InKi**:H187; **Sy**:H187.

Dimethylanthraquinone ($C_{16}H_{12}O_2$) **InKi**:H187; **Sy**:H187.

Dimethylenegluconic acid ($C_8H_{12}O_5$) **KiR**:B197.

Dimethyl oxalate ($C_4H_6O_4$) **Sy**:B58.

Dinitrobenzene ($C_6H_4N_2O_4$) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Dinitrotoluene-t ($C_7H_6N_2O_4$-t) **InKi**:M100; **KiL**:M100.

Diphenylamine ($C_{12}H_{11}N$) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Diphenylmethane ($C_{13}H_{12}$) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Disilane. See Silicoethane.

Distyrene ($C_{16}H_{14}$) **InKi**:C60.

Dodecane ($C_{12}H_{26}$) **InKi**:G77; **KiL**:G77.

Dodecylamine ($C_{12}H_{27}N$) **KiR**:B197.

Elaidic acid ($C_{18}H_{34}O_2$) **BiZ**:C115.

Enzymes **BiB**:E48; **BiC**:E48; **KiB**:E48, S93; **KiL**:S93.

Ergosterol ($C_{28}H_{44}O$) **KiB**:O24; **SpVi**:O24; **Sy**:B64, O24.

Erucic acid ($C_{22}H_{42}O_2$) **InBi**:B88; **KiB**:B88; **Sy**:B88.

Estrone acetate **ElRo**:P26; **Sp**:P26; **Sy**:P26; **ThP**:P26.

Ethane (C_2H_6) **AnMs**:F69, S174, T99; **AnSp**:T103; **EqH**:W6; **InKi**:T103, W6; **InSt**:T99; **IsMs**:S175, T99; **IsSp**:E3, H13; **KiG**:T87, W20; **KiH**:T103; **SpVi**:B14, E3, H13, H26, H27, H85, H86, H90, P1, P90, R45, S97, S98; **Sr**:D45, H146, S47, S174, S175, T99; **St**:H86, P1, S33, S98; **StD**:B14, H26, H27; **Sy**:R45, S47, T99, W7.

Ethanesulfonic acid ($C_2H_6SO_3$) **InKi**:G77; **KiL**:G77.

Ether ($C_4H_{10}O$) **InBi**:B88s; **KiB**:B88s; **Sy**:B88s.

Ethoxynaphthalene ($C_{12}H_{12}O$) **EqL**:T93.

Ethyl acetamide (C_4H_9NO) **SpVi**:L48.

Ethyl acetate ($C_4H_8O_2$) **KiL**:M115.

Ethyl acetoacetate ($C_6H_{10}O_3$) **EqL**:S94; **SpVi**:S94; **Sy**:S94.

Ethyl alcohol (C_2H_5OH) **AnC**:E10, E12; **EqG**:B225; **EqL**:B226, B229, K42, P43s, S80s, T93s, Y12s; **InKi**:B225, C60s, C131, R30, R31, S80s, S120s; **InSt**:M117s; **IsKi**:R53s; **KiG**:M117s; **KiL**:S80s, S120s, Y12s; **MeDf**:G100; **Sy**:C131, S38, S120s.

Ethyl alcohol-t (C_2H_5OH-t) **InKi**:M102; KiL:M102; **Sy**:W113.

Ethyl benzamide ($C_9H_{11}NO$) **SpVi**:L48.

Ethyl benzene (C_8H_{10}) **ElRo**:E24; **Sy**:E24; **ThP**:E24.

Ethylbromide (C_2H_5Br) **EqG**:P44; **KiG**:P44; **MeDf**:G100; **SpVi**:L13; **St**:L13, **Sy**:C131, L13.

Ethyl dinitrobenzoate ($C_9H_8N_2O_6$) **InKi**:C131; **Sy**:C131.

Ethylene (C_2H_4) **AdG**:P23; **AnMs**:T98, T101; **AnSp**:B29; **Eq**:S34; **EqH**:A68, K80, K81, T101; **Ge**:S34; **InKi**:A68; **Is**:S34; **IsSp**:E3, H13, S221; **IsTh**:K102; **Ki**:S34; **KiG**:J50; **KiH**:A68, P23, T98, T101, T103; **SdTr**:K103; **SpVi**:B29, C44, C138, C139, E3, H13, H85, H87, K46, L9, S59, S221, T75; **Sr**:E51; **St**:K46; **StD**:T75; **Sy**:B25, K102, R45; **Th**:S34; **ThF**:K102, K103; **ThP**:K103.

Ethylene oxide (C_2H_4O) **ElD**:C155; **SpM**:C154, C155; **StD**:C154, C155; **Sy**:C154.

Ethylene sulfide (C_2H_4S) **ElD**:C155; **SpM**:C155; **StD**:C155.

Ethyl iodide (C_2H_5I) **KiG**:J50; **KiR**:S196.

Ethyl malonic acid ($C_5H_8O_4$) **ElRo**:I34; **Sy**:I34.

Ethyl malonic acid, brucine acid salt of ($C_{28}H_{34}N_2O_8$) **ElRo**:I34; **Sy**:I34.

Ethyl radical (C_2H_5) **EgG**:V34; **KiG**:J50, V34, W87.

Fats **InBi**:B86, B87.

Fatty acids **KiB**:B143; **Sy**:B143.

Fenchol. See Fenchyl alcohol.

Fenchyl alcohol ($C_{10}H_{17}OH$) **InKi**:D64.

Ferric oxide gel **AdG**:B100.

Fluorene ($C_{13}H_{10}$) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Fluorobenzene (C_6H_5F) T60.

Fluoroform (CHF_3) **SpVi**:D30, D31; **StD**:D30, D31; **ThF**:D30, D31.

Fluorotoluene (C_7H_7F) **AnDn**:F75.

Formaldehyde (CH_2O) **AnSp**:B29; **IsSp**:H13; **SpFl**:B192; **SpVi**:B29, H13, H85, M146; **StD**:M146.

Formic acid (CH_2O_2) **IsSp**:S221; **SpFl**:S193; **SpVi**:F45, H85, S221, W104, W105; **St**:W105; **StD**:F45, W104.

Formic acid, sodium salt of (CHO_2Na) **EqL**:S80; **InKi**:L25, S80; **KiL**:L25, S80.

Fructose ($C_6H_{12}O_6$) **EqL**:G83, G84; **InKi**:G83, G84.

Fumaric acid ($C_4H_4O_4$) **InBi**:F55; **InKi**:W54; **KiB**:F10, F55; W54; **KiH**:F10.

Gadolinium hydride (GdH_2) **ElMg**:T83; **ElMn**:T83; **EqH**:V16; **KiH**:V16; **SdEl**:T83; **Sp**:T83; **Sy**:T83, V16.

Germanium hydride (GeH_4) **SpVi**:T18; **St**:T18.

Germanium hydride-t (GeH_4-t) **SpVi**:T18; **St**:T18.

Glucose ($C_6H_{12}O_6$) **ElRo**:S148; **EqL**:G83, G84, S148; **InKi**:G83, G84, T74; **KiL**:S144.

Glutamic acid ($C_5H_9NO_4$) **AnCl**:K85; **AnDn**:K85; **InBi**:K72, K74, K75, K77, U12; **KiB**:K73, K74, K75, K77, K85, U120.

Glutamic acid hydrochloride ($C_5H_9O_4$·HCl) **InBi**:K76; **KiB**:K76.

Glycerol ($C_3H_8O_3$) **BiZ**:C115; **InBi**:B89, B90, F13; **Sy**:B89.

Glycine ($C_2H_5NO_2$) **AnCl**:K85; **AnDn**:K85; **KiB**:K85, S152; **SpVi**:G82; **Sy**:S152.

Glycogen ($(C_6H_{10}O_5)_x$) **InBi**:G75; **KiB**:G75.

Gold hydride (AuH) **SpEl**:N51.

Guanidinium ion ($CH_6N_3^+$) **IsSp**:H13; **SpVi**:H13.

Helium **ThD**:M169.

Heptane (C_7H_{16}) **InKi**:G77; **InSo**:B124s; **KiL**:G77; **SoO**:B124s.

Heptylene (C_7H_{14}) **InSo**:B124s; **SoO**:B124s.

Hexadiene (C_6H_{10}) **InSo**:B124s; **SoO**:B124s.

Hexahydrobenzoic acid ($C_7H_{12}O_2$) **KiR**:B198; **Sy**:B198.

Hexahydrocymene ($C_{10}H_{20}$) **ElRo**:A21, A24; **EqL**:A21; **MeD**:A21; **Sy**:A21, A24; **ThP**:A21.

Hexamethylene diamine ($C_6H_{16}N_2$) **KiR**:B197.

Hexane (C_6H_{14}) **InKi**:G77; **KiL**:G77.

Hexaphenylethane ($C_{38}H_{30}$) **EqL**:F43; **InKi**:F43.

Hexestrol-t ($C_{18}H_{22}O_2$-t) **Sy**:W102.

Hydrazine (N_2H_4) **SdSp**:W8; **SpVi**:W8; **St**:W8; **Sy**:B261.

Hydrazoic acid (N_3H) **ElD**:A69; **SpM**:A69; **St**:A69; **Sy**:A69.

Hydrides, diatomic **SpVi**:C79; **StD**:C79.

Hydriodic acid (HI) **ElD**:P54; **EqG**:B107, B109, B215; **IsKi**:B215, N41; **IsSp**:B109; **KiG**:B215, N41; **SdTr**:C100, P54; **SeCh**:B109; **SeDf**:C90; **SpVi**:B109; **Sy**:C100; **ThF**:B107, B109, B215, C100; **ThP**:C100.

Hydriodic acid-t (HI-t) **EqG**:B107; **ThF**:B107.

Hydrobromic acid (HBr) **ElD**:P95, P96; **EqG**:P44; **EqL**:P65, S82; **InKi**:P65; **IsEl**:P96; **IsTh**:C89; **KiG**:P44; **KiL**:P65; **SdEl**:P95; **SdTr**:C89, C100, P96; **SeDf**:C90; **SpVi**:V12; **StA**:C89; **Sy**:C100, J51s, P65, V12, W57; **ThF**:C100; **ThP**:C89, C100.

Hydrobromic acid-t (HBr-t) **EqG**:B107; **ThF**:B107

Hydrocarbons **EqH**:T50; **Sy**:K33.

Hydrochloric acid (HCl) **AdG**:I22; **An**:T64s; **AnMs**:T62; **EcC**:F79, G39; **EcO**:B254s; **EcPC**101, H45; **ElD**:C114; **EqH**:A36; **EqI**:A36; **EqL**:H44, Y10, Y11, Y13; **InKi**:N10s, T64s, Y10, Y11, Y13; **IsKi**:N42; **KiH**:C101, I22; **KiL**:H44, Y10, Y11, Y13; **KiP**:N42; **KiR**:A36; **SdEl**:C114; **SdSp**:H109; **SdTr**:C100, C114; **SeDf**:C90; **SoI**:B254s; **SpVi**:G82s, H109, L34; **Sy**:C100, I34, W57; **ThF**:C100; **ThP**:C100; **ThSo**:H45.

Hydrochloric acid-t (HCl-t) **EqG**:B107; **ThF**:B107.

Hydrocinnamic acid ($C_9H_{10}O_2$) **EqL**:H127; **InSt**:H127; **Sy**:H127.

Hydrocinnamic alcohol ($C_9H_{11}OH$) **EqL**:H127; **InSt**:H127; **Sy**:H127.

Hydrocyanic acid (HCN) **ElD**:H200; **IsSp**:H13; **SpM**:N26, S115, W46; **SpVi**:H13, H200, K90, R42; **StD**:N26, S115, R42.

Hydrofluoric acid (HF) **EqL**:H112; **SpVi**:T3; **StA**:H112; **ThP**:H112.

Hydrofluoric acid-t (HF-t) **EqG**:B107; **ThF**:B107.

Hydrogen (H_2) **AdG**:B16, B17, D65, E28, H48, H111, K17, K21, K22, K23, K108, K109, L106, M7, P23, R91, S8, T24, V20; **BiC**:P72; **EcO**:C39, P92; **EcP**:D65, H152, R91; **El**:O22; **ElD**:I31; **ElGd**:B51, D66, G51, H165, M171; **ElMg**:R10; **ElP**:H50, I21, O22; **ElRf**:I21; **ElSc**:I21; **ElT**:B148, I27, R70; **Eq**:H164, S34, U10; **EqG**:B18, B109, B215, D41, F29, F65, J39, M82, M163, S44, S197, V34, W50, W86; **EqH**:A36, B19, B150, F29, H135, H136, K16, K30, K31, K32, K109, L3, L73, M7, S118, T24, T25, T50, T104, V20, W52, W132; **EqI**:A36; **EqL**:S197; **In**:M72, M140; **InBi**:B88, K86, R24, S26, S63; **InKi**:B42, B150, R23; **InSp**:M136; **InSt**:P72; **Is**:S34; **IsKi**:B105, B106, B215, I22, M29; **IsMs**:H145, S32, S173; **IsSp**:B109, B160, C78, F84, F85, J38, S221; **IsTh**:F66, F67; **Ki**:B34, B105, H5, H164, S34; **KiB**:B88, F10, F55, R50; **KiG**:B18, B106, B215, C91, D23, D41, D46, H42, J46, M29, M44, M82, M85, P110, S44, T63, T87, V34, W86, W87; **KiH**:A68, B16, B17, B19, C76, D65, E23, E28, F10, H110, H111, H135, H136, I22, K16, K17, K30, K31, K32, L3, L106, M7, P23, R91, S8, S118, T98, T101, T103, W51, W52; **KiI**:H152, M171; **KiL**:S24; **KiP**:C96, D23, M29; **KiR**:A36, B197, B198,

Hydrogen(H_2)—Continued:
B271, G15, H141, H142, H143, H148, M161, M162, M163, M164, M165, M166, M167, M168, P72, S86, S196; **Me**:K56, W144; **MeAc**:I27, I28, K104, S179; **MeD**:B216, I29, I30, K45, R94; **MeDf**:B159, C98, D25, I25, I26, K55, M168, W17; **MeSt**:H35; **MeV**:B155, B216, I25, I26, I29, I30, R94, T90, T91, U2, V18, W71, W132; **Sd**:G115, K37; **SoG**:T8; **Sp**:F49, S34, W144; **SpEl**:F84, F85, G134, I1, N48, N49, N50, R8; **SpFl**:R89; **SpM**:K82, K83, K84, R7, R10, T41, W51, W52; **SpVi**:B109, C78, G19, H97, H98, K93, K94, S111, S221, W140; **Sr**:B11, B49, B50, D44, E54, F65, H145, K28, M127, M134, M171, R29, S32, S173; **St**:A57; **StD**:K84, R10, V18, W73; **Sy**:A26, B19, B58, B88, B198, C99, F46, F47, H142, H148, I1, K16, K68, N38, N58, P2, S146, W60, W114; **Th**:K56, P103, S34, W144; **ThD**:B155, G111, G112, I25, I26, I32, M169, T90, T91, U2, W17, W18, W132; **ThF**:B16, B109, B154, B215, D65, F65, G128, H42, J29, J39, K21, K22, K37, O22, S147, S197, U10, W132; **ThP**:A90, C99, F66, F67, G115, H17, H35, H132, H133, K37, P103, U5, U10, W132; **ThS**:B154; **ThSo**:A90.

Hydrogen, mass 4 **Nu**:B207.

Hydrogen difluoride ion (HF_2^-) **IsSp**:H13; **SpVi**:H13.

Hydrogen ion (H^+) **EcC**:G39, T2; **EcP**:D65, R91; **EqL**:G122; **Ki**:C61; **KiH**:D65, R91; **Se**:D65, R91; **Sv**:B49, K63, S173; **ThF**:D65.

Hydrogen molecule ion (H_2^+) **Sr**:B49, K63.

Hydrogen peroxide (H_2O_2) **ElP**:P51; **ElRf**:P51; **EqH**:A36; **IsSp**:P52; **KiL**:D32; **KiR**:A36; **MeD**:P51; **MeSt**:P51; **MeV**:P51; **SpVi**:G40, G46, T24; **StD**:G40, M59, P51; **Sy**:M59, M60s, P51.

Hydrogen selenide (H_2Se) **Eq**:S34; **Is**:S34; **IsSp**:H13; **IsTh**:S35; **Ki**:S34; **SdTr**:S35; **SpEl**:P100, P101; **SpM**:K51; **SpVi**:H13, T18; **St**:T18; **ThF**:S35; **ThP**:S35.

Hydrogen selenide-t (H_2Se-t) **SpVi**:T18; **St**:T18.

Hydrogen sulfide (H_2S) **AnMs**:T61; **ElD**:H118; **Eq**:S34; **EqG**:T17; **Is**:S34; **IsSp**:H13; **IsTh**:S35; **Ki**:S34; **SdCr**:L86; **SdSp**:L86; **SdTr**:S35; **Sp**:S34; **SpEl**:P100, P101; **SpM**:H118, K51, **SpVi**:H13, L86, T18; **St**:T18; **StD**:H118; **ThF**:S35; **ThP**:S35.

Hydrogen sulfide-t (H_2S-t) **SpVi**:T18; **St**:T18.

Hydrogen telluride (H_2Te) **SpEl**:P100, P101.

Hydronium ion (H_3O^+) **EcC**:F79, S218; **Eq**:S34; **EqI**:B214, S198, S218; **InKi**:W54; **IsEq**:B214; **IsMs**:S173; **KiB**:W54; **SeEl**:S34; **ThSo**:B214, S218.

Hydroquinone ($C_6H_6O_2$) **EqG**:G97; **InSt**:G97, G98; **KiB**:S93; **KiG**:B228; **Sy**:G98; **ThP**:G98.

17-α-Hydroxy-21-acetoxy-Δ^4-pregnene-3, 20-dione ($C_{21}H_{28}O_5$) **Sy**:K69.

Hydroxyhydrindene ($C_9H_{10}O$) **EqL**:T93.

Hydroxyl ion (OH^-) **EcC**:G39, H102; **Eq**:M1; **EqL**:S91s; **KiL**:S91s.

Hydroxyl radical **ElGd**:H155, O26; **EqH**:A36; **EqI**:A36; **IsSp**:O27; **KiG**:H155; **KiR**:A36; **SpEl**:H155, O26, O27, S58; **SpVi**:P88; **StD**:O26.

Hydroxy phenylacetic acid ($C_8H_8O_3$) **EqL**:D63; **InKi**:D63; **Sy**:D63.

3,4-bis (p-Hydroxyphenyl)hexane ($C_{18}H_{22}O_2$) **Bi**:L1; **Sy**:L1.

Hydroxy tetrahydronaphthalene ($C_{10}H_{12}O$) **EqL**:T93.

Hypochlorous acid (HOCl) **SpVi**:H67; **StD**:H67.

Hypophosphorous acid (H_3PO_2) **EqL**:A22; **InKi**:A22; **Sy**:W34s.

Indene (C_9H_8) **ElMg**:M43; **ElRf**:M43; **EqL**:S80; **InKi**:S80; **KiL**:S80; **MeD**:M43.

Inositol ($C_6H_{12}O_6$) **InBi**:S171; **Sy**:S171.

Insulin **InBi**:S168; **KiB**:S168.

Iodide ion **EqH**:A36; **EqI**:A36; **KiR**:A36.

Iodine **AnSp**:B215; **Eq**:S34; **EqG**:B215; **IsKi**:B215; **Ki**:S34; **KiG**:B215; **KiR**:S196; **Sy**:C100; **ThF**:B215.

Iodobenzene (C_6H_5I) **KiR**:S196.

Iron **SoI**:B249.

Isobutane (C_4H_{10}) **InKi**:W1; **KiL**:S180, W1; **Sy**:S180.

Isocyanic acid (HNCO) **ElD**:S101; **SpM**:J36, S101; **SpVi**:J36; **StD**:J36.

Isothiocyanic acid (HNCS) **SpM**:B52; **St**:B52; **StD**:B52.

Isotopes **Ge**:B167; **InBi**:B167.

Ketene (C_2H_2O) **ElD**:J25; **SpM**:B15, J24, J25; **SpVi**:F36; **StD**:B15, J25; **Sy**:J24.

Ketoglutaric acid. See Acetone dicarboxylic acid.

Lanthanum hydride (LaH_3) **AdG**:V20; **EqH**:V20.

Lauric acid ($C_{12}H_{24}O_2$) **InBi**:K57; **KiB**:K57; **KiR**:H142; **Sy**:H142.

Lead **EcO**:B249; **SoI**:B249.

Lead chloride **SoH**:N52.

Leucine ($C_6H_{13}NO_2$) **AnCl**:K85; **AnDn**:K85; **InBi**:S153, U12; **KiB**:K85, S152, S153, U12; **Sy**:S152.

Lipids **BiC**:B143; **KiB**:B143; **Sy**:B143.

Lithium aluminum hydride ($LiAlH_4$) **EqL**:A21; **Sy**:D43, E24, F87s, W60.

Lithium aluminum hydride-t ($LiAlH_4$-t) **Sy**:W113.

Lithium hydride (LiH) **IsCr**:N54; **NuIn**:W135; **Sd**:K6; **SdCr**:G119, L90, N54; **Sy**:E24; **ThF**:K6; **ThP**:G119.

Lithium hydride-t (LiH-t) **EqH**:W113; **KiH**:W113; **Sy**:W113.

Lithocholic acid ($C_{24}H_{40}O_3$) **Sy**:P27; **ThP**:P27.

Lysine ($C_6H_{14}N_2O_2$) **InBi**:C82; **KiB**:C82; **Sy**:C82.

Magnesium **EcP**:C101; **KiH**:C101.

Magnesium hydride (MgH) **IsSp**:G134; **SpEl**:G134.

Malic acid ($C_4H_6O_5$) **InBi**:D15.

Malonic acid ($C_3H_4O_2$) **EqL**:C97; **IsKi**:P68; **Sy**:C97.

Mandelic acid ($C_8H_8O_3$) **EqL**:D63; **InKi**:D63; **Sy**:D63.

Manganese hydride (MnH) **SpVi**:N32.

Menthane. See Hexahydrocymene.

Mercapto radical (HS) **SpVi**:P88.

Mercuric cyanide **SoH**:N52.

Mercurous hydride (HgH) **IsSp**:M159.

Mercury **EcO**:B249; **SoI**:B249.

Mercury hydride molecule ion (HgH^+) **SpEl**:F14.

Mesitylene. See Trimethylbenzene.

Methane (CH_4) **AdG**:L106, T23, W136; **AnC**:D9, P59; **AnMs**:H42, H147, O13, S174, T21, T62, T99, W136; **AnSp**:B242; **ElT**:I27; **EqG**:T17, W86; **EqH**:K30, P13, T23, T50, W136; **InKi**:M164, P13; **InSt**:T99; **Is**:S34; **IsMs**:D43, E51, S175, T99; **IsSp**:E3, E5, H13, S95, S221; **IsTh**:K102, S35; **KiG**:H42, W86; **KiH**:K30, L109, P13, W136; **KiP**:C96; **KiR**:H148, M164; **MeAc**:I27; **MeV**:I24; **NuRe**:A58, A59; **SdCr**:N4; **SdTr**:A59, S35; **SeDf**:C94; **SpEl**:H144; **SpVi**:B13, B242, D26, D34, E3, E5, H13, H85, L74, L75, M64, M93, S95, S96, S97, S98, S221, T18, T51, V37; **Sr**:B49, D43, E51, H144, H146, L97, L98, S47, S174, S175, T51, T58, T99; **St**:B13, D26, D34, L74, L75, M93, S96, S98, T18; **Sy**:B242, D43, E51, H148, S47, T51, T99, W7; **ThF**:H42, K102, N4, S35; **ThP**:S35.

Methane-t (CH_4-t) **AnC**:R61; **SpVi**:T18; **St**:T18.

Methionine ($C_5H_{11}NO_2S$) **InBi**:C111, S112, V25; **KiB**:C111, S112, V25.

Methyl acetoxycholinate-t ($C_8H_{19}NO_3$-t) **AnC**:E15; **Sy**:E15.

Methyl acetylene. See Allylene.

Methyl alcohol (CH_3OH) **An**:B58, B59; **EqL**:C97, S80; **Ge**:A74; **InKi**:S80; **InSt**:S70s; **IsSp**:C136, H13; **KiB**:V26; **KiL**:S80; **SdTr**:S156; **SeDs**:D72; **SpVi**:B58, B59, C136, C137, H13, H82, H85, S70s, S163; **St**:S163; **StA**:D72; **Sy**:A74, B58, B59, C97, V26; **ThF**:S156; **ThP**:B58, B59, S156.

Methyl alcohol-t (CH_3OH-t) **InKi**:M102; **KiL**:M102.

Methyl amine (CH_5N) **KiP**:W38.

Methylaminoethanol (C_3H_9NO) **KiB**:V26; **Sy**:V26.

Methylaminoethyl picrate ($C_9H_{10}N_4O_7$) **KiB**:V26; **Sy**:V26.

Methylanthracene ($C_{15}H_{11}$) **InKi**:H187; **Sy**:H187.

Methylanthraquinone ($C_{15}H_9O_2$) **InKi**:H187; **Sy**:H187.

Methyl bromide (CH_3Br) **An**:B59; **IsSp**:C134, E4, H13; **IsTh**:D40; **SpM**:S116; **SpVi**:B59, C134, D26, D62, E4, H13, H82, H88, H89; **St**:D26, D62; **StD**:S116; **Sy**:B59; **ThF**:D40; **ThP**:B59.

Methyl chloride (CH_3Cl) **An**:B59; **IsSp**:E3, E4, H13; **SpM**:M71, M124, S114, S116; **SpVi**:B59, C135, D26, D62, E3, E4, H13, H82, H88, H89, N48, S96; **St**:D26, D62, M93, S96; **StD**:M71, M124, S114, S116; **Sy**:B59; **ThP**:B59.

Methylcholanthrene ($C_{21}H_{16}$) **BiZ**:B31.

Methyl cyanide. See Acetonitrile.

Methylene blue ($C_{16}H_{19}N_3OS$) **KiB**:S93; **KiL**:S93.

Methylene bromide (CH_2Br_2) **IsSp**:H13; **SpVi**:D26, D34, H13; **St**:D26, D34.

Methylene chloride (CH_2Cl_2) **SpVi**:D26, S96; **St**:D26, S96.

Methyl ethoxy naphthalene ($C_{13}H_{14}O$) **EqL**:T93.

Methyl ethylbenzene ketone ($C_{10}H_{12}O$) **ElRf**:E24; **ElRo**:E24; **Sy**:E24; **ThP**:E24.

Methyl ethylbenzene ketoxime ($C_{10}H_{13}NO$) **ElRo**:E24; **Sy**:E24; **ThP**:E24.

Methyl fluoride (CH_3F) **SpM**:J23.

Methyl iodide (CH_3I) **An**:B59; **IsKi**:N41; **IsSp**:C134; **KiB**:V26; **KiG**:N41; **KiR**:S196; **SpM**:S114, S116; **SpVi**:B59, C134, D62, F18, H82, H89; **St**:D62; **StD**:F18, S114, S116; **Sy**:B59, V26; **ThF**:F18; **ThP**:B59.

Methyl isocyanide (CH_3NC) **SpM**:K38, T78; **StD**:K38, T78.

Methyl lithocholate ($C_{25}H_{42}O_3$) **ElRo**:K68; **Sy**:K68; **ThP**:K68.

Methyl naphthalene ($C_{11}H_{10}$) **AnDn**:F75.

Methylnicotinamide ($C_7H_8N_2O_2$) **InBi**:K25; **KiB**:K25.

Methyl oleate ($C_{19}H_{36}O_2$) **KiH**:K39; **Sy**:K40.

Methyl quinoline ($C_{10}H_9N$) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Methyl radical (CH_3) **AdG**:T24, W136; **AnMs**:W136; **EqH**:T24, W136; **IsKi**:M29; **IsSp**:V2; **KiG**:M29, M44, T88, T89; **KiH**:W136; **KiP**:D23, M29, T88, T89.

Methyl silane (CH_3SiH_3) **SpM**:L64.

Methyl stearate ($C_{19}H_{38}O_2$) **Sy**:K40.

Methylthioglycolic acid ($C_3H_6O_2S$) **InBi**:M78.

Mustard gas. See Dichlorodiethyl sulfide.

Myristic acid ($C_{14}H_{28}O_2$) **InBi**:B88, K57; **KiB**:B88, K57; **Sy**:B88.

Naphthalene ($C_{10}H_8$) **EqL**:S80; **InKi**:S80; **KiG**:P110; **KiL**:S80; **KiR**:T12; **SpVi**:C132; **St**:P110.

Naphthalene-t ($C_{10}H_8$-t) **InKi**:M99, M101; **IsKi**:M101; **KiL**:M101; **Sy**:M101.

Naphthoic acid-t ($C_{11}H_8O_2$-t) **AnC**:B111.

Naphthol ($C_{10}H_8O$) **EqL**:T93.

Nickel **AdG**:B16, B17, K23, L106, P23, S8; **EcO**:B249; **EqH**:A68; **Ge**:B16, B17; **InKi**:A68; **KiH**:A68, B16, B17, L106, P23, S8, T98, T103; **MeDf**:B17; **SoI**:B249; **ThF**:B16.

Nickel, deuterized **Sy**:F87.

Nickel dimethyl glyoxime ($C_8H_{14}N_4O_4Ni$) **InSt**:V39; **IsSp**:R98; **SpVi**:R98, V39; **StA**:R98, V39.

Nicotinic acid ($C_6H_5NO_2$) **AnSp**:T80; **Sy**:T80.

Nicotinic acid, methyl ester of ($C_7H_7NO_2$) **AnSp**:T80; **Sy**:T80.

Nitramide (NH_2NO_2) **KiL**:B67.

Nitric acid (HNO_3) **EqH**:A36; **EqI**:A36; **KiR**:A36.

Nitrobenzene ($C_6H_5NO_2$) **AnMs**:A23; **SpVi**:A23; **Sy**:A23, H163.

Nitrobenzene-t ($C_6H_5NO_2$-t) **InKi**:M99.

Nitrogen **MeDf**:W17; **ThD**:W17.

Nitromethane (CH_3NO_2) **IsSp**:H13; **SpVi**:H13.

Nitronaphthalene-t ($C_{10}H_7NO_2$-t) **InKi**:M99.

Nitrophenol ($C_6H_5NO_3$) **SpVi**:H163; **Sy**:H163.

Nitrotoluene ($C_7H_7NO_2$) **EqL**:G82, S80; **InKi**:S80; **KiL**:S80; **SpVi**:G82.

Nitrotoluene-t ($C_7H_7NO_2$-t) **InKi**:M99.

Nitrous acid (HNO_2) **IsSp**:P89; **SpVi**:D68, P89, T9; **St**:T9; **StA**:D68.

Octadecene. See Octadecylene.

Octadecyl alcohol ($C_{18}H_{38}O$) **KiR**:B197.

Octadecylene ($C_{18}H_{36}$) **ElRf**:M79; **KiL**:M79; **MeD**:M79; **Sy**:M79.

Octane (C_8H_{18}) **EqL**:B272; **InKi**:B272; G77; **InSd**:B124s; **KiL**:B272, G77; **SoO**:B124s.

Octene. See Octylene.

Octyl alcohol ($C_8H_{18}O$) **AnSp**:C133; **ElD**:C133; **IsTh**:C133; **Sy**:C133, M79; **ThF**:C133.

Octylene (C_8H_{16}) **EqH**:B63; **Me**:B63.

Oleic acid ($C_{18}H_{34}O_2$) **InBi**:B88; **KiB**:B88; **KiR**:B197; B271; **Sy**:B88.

Organic compounds **AnMs**:G96.

Organic compounds-t **Ge**:P24.

Organic silicon compounds **EqL**:K42.

Oxalic acid ($H_2C_2O_4$) **KiB**:V26; **Sy**:V26.

Oxalic acid, sodium salt of (HC_2O_4Na) **InKi**:L25; **KiL**:L25.

Oxygen **Eq**:W72; **KiG**:J46, W86; **MeDf**:W17; **ThD**:W17.

Palladium **EqH**:A68; **InKi**:A68; **KiH**:A68; **SoG**:T8.

Palmitic acid ($C_{16}H_{32}O_2$) **BiZ**:C115, F12; **InBi**:B88; **KiB**:B88; **KiR**:H142, P1; **Sy**:B88, H142.

Paraffin **Nu**:C20.

Paraffins **Ge**:S87; **IsSp**:S87; **SpVi**:S87.

Pentadecane ($C_{15}H_{32}$) **KiR**:G15.

Pentane (C_5H_{12}) **EqG**:T87; **InKi**:T87; **InSo**:B124s; **KiG**:T87; **SoO**:B124s; **SpVi**:R11; **StD**:R11.

Pentene. See Amylene.

Phenanthrene ($C_{14}H_{10}$) **AnDn**:F75.

Phenetole ($C_8H_{10}O$) **EqG**:B225; **EqL**:B231; **InKi**:B225, B231.

Phenol (C_6H_5OH) **EqG**:B225, B230; **EqL**:B231, H44; **InKi**:B225, B231, F42s, F44s, H187s; **IsSp**:R60; **KiG**:B230; **KiL**:H44; **SpEl**:R59, R60; **Sy**:B231, F44, H187.

Phenylacetic acid ($C_8H_8O_2$) **Sy**:K1.

Phenylacetylchloride (C_8H_7ClO) **InBi**:B61; **Sy**:B61.

Phenyl acetyl valine ($C_{13}H_{17}NO_3$) **InBi**:B61; **Sy**:B61.

Phenylalanine ($C_9H_{11}NO_2$) **InBi**:G135, U12; **KiB**:G135, U12.

Phenylene diamine ($C_6H_8N_2$) **KiB**:S93.

Phenylglyoxal ($C_8H_6O_2$) **EqL**:D63; **InKi**:D63; **Sy**:D63.

Phenyl propionic acid ($C_9H_{10}O_2$) **ElRo**:I34; **Sy**:I34.

Phenyl propyl bromide ($C_9H_{11}Br$) **EqL**:H127; **InSt**:H127; **Sy**:H127.

Phosphine (PH_3) **AnMs**:U4; **ElD**:L92; **IsSp**:H13; **SpM**:L92; **SpVi**:H13, T18; **St**:T18; **Sy**:U4.

Phosphine-t (PH_3-t) **SpVi**:T18; **St**:T18.

Phosphoric acid (H_3PO_4) **SpVi**:L49s; **Sy**:A69.

Phosphorous **Sy**:C100.

Phosphorous tribromide **Sy**:C100.

Picoline (C_6H_7N) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Platinum **AdG**:B16, B17, D65, R91; **EcP**:D65, R91; **EqH**:B19; **Ge**:B16, B17; **KiH**:B16, B17, B19, D65, R91; **KiL**:D32; **MeDf**:B17; **Se**:D65, R91; **Sy**:B19; **ThF**:B16, D65.

Platinum dioxide **EqH**:F29.

Polymethylene ($(CH_2)_n$) **SpVi**:L40, S97; **Sy**:L40.

Potassium amide (KNH_2) **EqH**:C76; **KiH**:C76.

Potassium arsenate, dihydrogen (KH_2AsO_4) **IsCr**:D54; **SdCr**:D54.

Potassium bifluoride (KHF_2) **SpVi**:N36.

Potassium bromate **SoH**:C33.

Potassium bromide **ElD**:D73; **SoH**:C34; **SpEl**:D73.

Potassium chlorate **SoH**:C33, N52.

Potassium chloride **SeDf**:H122; **SoH**:C34.

Potassium chromate **SoH**:C33.

Potassium dichromate **SoH**:C33, N52.

Potassium ferricyanide **SoH**:C34.

Potassium hydride (KH) **Sd**:K6; **SpEl**:I1; **ThF**:K6.

Potassium hydroxide (KOH) **EqH**:C76; **KiH**:C76; **Sy**:H163.

Potassium iodate **SoH**:C34.

Potassium iodide **SoH**:C34.

Potassium nitrate **SoH**:C35; **SpEl**:D11, D12.

Potassium perchlorate **SoH**:C33.

Potassium permanganate **SoH**:C35, N52.

Potassium perrhenate **SoH**:C34.

Potassium phosphate, dihydrogen (KH_2PO_4) **ElD**:G54; **ElMg**:P67; **ElP**:P67; **IsCr**:D54; **IsEl**:P67; **SdCr**:D54, J33, K1, Q1; **SdEc**:J32; **SdEl**:G54, P67, Z12; **SdTr**:Q1, Z12; **SpVi**: P67; **Th**:G54.

Potassium silver cyanide **SoH**:N52.

Potassium sulfate **SoH**:C34.

Potassium thiocyanate **SoH**:C35; **ThSo**:N47.

Pregnanedione ($C_{21}H_{32}O_2$) **ElRo**:K68; **Sy**:K68; **ThP**:K68.

Pregnanolone ($C_{21}H_{34}O_2$) **AnSp**:D61; **ElRo**:K68; **SpVi**:D61; **Sy**:K68; **ThP**:K68.

Pregnanolone formate ($C_{22}H_{34}O_3$) **ElRo**:K68; **Sy**:K68, **ThP**:K68.

Progesterone ($C_{21}H_{30}O_2$) **ElRo**:K68; **Sy**:K68; **ThP**:K68.

Propane (C_3H_8) **AnMs**:H147, K16, R71, S174, S175, T99; **ElRf**:C117; **EqH**:K16, W6; **InKi**:W6; **InSt**:T99; **IsMs**:S175, T99; **KiG**:T87; **KiH**:K16; **Me**:C117; **SpVi**:C87, F70, M17, M18, M19; **Sr**:C117, C118, H146, R71, S47, S174, T99; **StD**:M17, **Sy**:C117, C118, K16, M19, S47, T99, W7; **ThP**:C117.

Propene. See Propylene.

Propionic acid ($C_3H_6O_2$) **Sy**:C131, K102.

Propionic acid, silver salt of ($C_3H_5O_2Ag$) **Sy**:C131.

Propyl alcohol (C_3H_7OH) **ElRf**:C117, **InKi**:K41s; **IsKi**:W65; **KiL**:W65; **Me**:C117; **SpVi**:C118; **Sr**:C117, C118, F71; **Sy**:C117, C118; **ThP**:C117.

Propyl chloride (C_3H_7Cl) **AnMs**:N10, R71; **ElRf**:C117; **InKi**:N10; **Me**:C117; **SpVi**:C118; **Sr**:C117, C118, R71; **Sy**:C117, C118; **ThP**:C117.

Propylene (C_3H_6) **AnMs**:H147, N10; **EqH**:K81; **InKi**:H188, N10.

Propyl iodide (C_3H_7I) **KiR**:S196.

Propyne. See Allylene.

Proteins **KiB**:K73.

Pyrogallol. See Trihydroxybenzene.

Pyrrole (C_4H_5N) **IsSp**:H13; **SpEl**:M118; **SpVi**:H13.

Quinaldine. See Methyl quinoline.

Quinhydrone ($C_{12}H_{10}O_4$) **InSt**:G98; **Sy**:G98.

Quinone ($C_6H_4O_2$) **EqG**:G97; **InSt**:G97, G98; **KiG**:B228; **Sy**:G98; **ThP**:G98.

Reichstein's substance "S". See 17-α-Hydroxy-21-acetoxy-Δ^4-pregnene-3, 20-dione.

Rubidium arsenate, dihydrogen (RbH_2AsO_4) **SdEl**:P15.

Rubidium hydride (RbH) **Sd**:K6; **ThF**:K6.

Rubidium phosphate, dihydrogen (RbH_2PO_4) **SdEl**:P15.

Saccharic acid, potassium salt of ($C_6H_9O_8K$) **InBi**:S37; **KiB**:S37.

Serine ($C_3H_7NO_3$) **Sy**:E26.

Silane. See Silicon hydride.

Silane-t. See Silicon hydride-t.

Silica gel **AdG**:B219; **EqH**:P13; **InKi**:P13; **KiH**:P13.

Silicobromoform ($SiHBr_3$) **IsSp**:H13; **SpVi**:D34, H13; **St**:D34.

Silicochloroform ($SiHCl_3$) **IsSp**:H13; **SpVi**:D34, H13; **St**:D34.

Silicoethane (Si_2H_6) **Ge**:S183; **KiG**:S183; **Me**:S183; **Sy**:S183; **ThP**:S182, S183.

Silicon hydride (SiH_4) **Ge**:S183; **KiG**:S183; **Me**:S183; **Sy**:S183; **ThP**:S182, S183.

Silicon hydride-t (SiH_4-t) **SpVi**:T18; **St**:T18.

Silicon tetrachloride **Sy**:C100.

Silicon tetramethyl ($C_4H_{12}Si$) **SpVi**:R11; **StD**:R11.

Silver chlorate **SoH**:N52.

Silver chloride **AdG**:I22; **IsKi**:I22; **KiH**:H110, I22.

Silver hydride (AgH) **SpEl**:N51.

Sodium borohydride ($NaBH_4$) **EqL**:G55.

Sodium bromate **SoH**:N52.

Sodium carbonate **Sy**:B58.

Sodium chloride **EcP**:C101; **KiH**:C101.

Sodium ethoxide (C_2H_5ONa) **InKi**:S120; **KiL**:S120; **Sy**:C40, S120.

Sodium hydride (NaH) **IsSp**:S30; **IsTh**:S30; **NuIn**:W125; **Sd**:K6; **SdCr**:S105, W125; **SdSp**:S30; **ThF**:K6, S30.

Sodium hydroxide (NaOH) **AdG**:R91; **EcC**:H102; **EcD**:R91; **InKi**:L25; **KiH**:R91, W34; **KiL**:L25; **Se**:R91; **SeEl**:B58, E9, E10, T84; **SpVi**:G82, L49s; **Sy**:W58.

Sodium iodate **KiL**:C37.

Sodium oxalate **SoH**:N52.

Sodium potassium tartrate. See Tartaric acid, sodium potassium salt of.

Sodium sulfate **AdG**:D65; **EcP**:D65; **KiH**:D65; **Se**:D65; **SeDf**:H122; **ThF**:D65.

Sodium sulfite **KiL**:C37.

Stearic acid ($C_{18}H_{36}O_2$) **BiZ**:F12; **InBi**:B88; **KiB**:B88; **KiR**:B197; **Sy**:B88, K40.

Steroids **EqH**:F86; **Sy**:F86.

Stibine (SbH_3) **ElD**:L92; **SpM**:L92.

Styrene (C_8H_8) **EqL**:Y10, Y11, Y12; **InKi**:S120, Y10, Y11, C60; **KiL**:S120, Y10, Y11, Y12; **Sy**:S120.

Succinic acid ($C_4H_6O_4$) **EqL**:L107; **InBi**:F55, K76, W54; **KiB**:F10, F55, K76, T53, T54, W54; **KiH**:F10, L107; **Sy**:L107.

Sulfuric acid (H_2SO_4) **AdG**:D65s, R91s; **An**:B100; **EcO**:B254s; **EcP**:D65s, R91s; **EqL**:B100, B272, O25s; **InKi**: B272, G77, H187s; **KiH**:D65s, R91s; **KiL**:B272, C37, G77, S180; **Se**:D65s, R91s; **SeDf**:H122; **Sol**:B254s; **Sy**:C131, H109s, H163s, K78, S94, S180, T80s; **ThF**:D65s.

Sulfuric acid-t (H_2SO_4-t) **KiL**:S180; **Sy**:S180.

Tartaric acid, sodium potassium, salt of ($C_4H_4O_4NaK$) **SdEl**:M74; **SdTr**:M74; **St**:M74.

Testosterone ($C_{19}H_{28}O_2$) **Sy**:K68.

Tetrachloroethane ($C_2H_2Cl_4$) **AnSp**:L39; **EqL**:L39; **SpVi**:B92; **Sy**:L39.

Tetramethylglucose ($C_{10}H_{20}O_6$) **InBi**:S170; **KiB**:S170.

Tetramethylsilane. See Silicon tetramethyl.

Tetrasilane (Si_4H_{10}) **Ge**:S183; **KiG**:S183; **Me**:S183; **Sy**:S183; **ThP**:S182, S183.

Thallous nitrate **SoH**:C36, N52.

Thallous perchlorate **SoH**:N52.

Thiophene (C_4H_4S) **ElRf**:S53; **MeD**:S53; **SpVi**:K78; **Sy**:K78, S53; **ThP**:S53.

Thorium dihydride (ThH_2) **SdCr**:R99.

Threonine ($C_4H_9NO_3$) **SpVi**:G82.

Toluene (C_7H_8) **An**:B227; **AnSp**:T59; **EqG**:B225; **EqL**:S80; **InKi**:B225, B227, H187s, S80; **InSo**:B124s; **InSt**:M117; **KiG**:M117; **KiL**:S80; **SoO**:B124s; **SpEl**:C62; **SpVi**:S124, T59, T60, T100; **St**:C62; **Sy**:B227, H187s, T100.

Toluene-t (C_7H_8-t) **InKi**:M99, M100, M101; **IsKi**:M101; **KiL**:M100, M101; **Sy**:M101.

Toluene, derivatives of **EqL**:B217.

Toluidene (C_7H_9N) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Toluidine hydrochloride (C_7H_9N. HCl) **Eq**:K122; **Sd**:K122.

Tribromoethane ($C_2H_3Br_3$) **AnSp**:J51; **ElRf**:V13; **IsTh**:D40; **MeD**:V13; **SpVi**:V12; **Sy**:J51, V12; **ThF**:D40; **ThP**:J51, V13.

Tribromomethane. See Bromoform.

Tribromosilane. See Silicobromoform.

Trichloroethylene (C_2HCl_3) **AnSp**:L39; **EqL**:L39; **SpVi**:B92; **Sy**:L39.

Trichloromethane. See Chloroform.

Trichlorosilane. See Silicochloroform.

Triethoxysilane ($C_6H_{16}SiO_3$) **EqL**:B229.

Triethylsilane ($C_6H_{16}Si$) **EqL**:B229.

Trifluoroacetic acid ($C_2HF_3O_2$) **SpVi**:J45.

Trifluoroallylene (C_3HF_3) **SpM**:A79, S100; **StD**:A79, S100.

Trifluoromethane. See Fluoroform.

Trifluoromethylacetylene. See Trifluoroallylene.

Trihydroxybenzene ($C_6H_6O_3$) **KiB**:S93.

Trimesic acid ($C_9H_6O_2$) **Sy**:W58.

Trimethylbenzene (C_9H_{12}) **InSt**:M117; **KiG**:M117; **SpVi**:T60.

Trimethylcyclohexanone ($C_9H_{16}O$) **EqG**:N24; **InSt**:N24.

Trimethyl hydrocinnamyl ammonium bromide ($C_{12}H_{20}NBr$) **EqL**:H127; **InSt**:H127; **Sy**:H127.

Triolein ($C_{57}H_{104}O_6$) **InBi**:B91.

Trioxymethylene ($C_3H_6O_3$) **KiB**:V26; **Sy**:V26.

Tripalmitin ($C_{50}H_{100}O_6$) **BiZ**:C115.

Triphenylmethane ($C_{19}H_{16}$) **EqL**:S80; **InKi**:S80; **KiL**:S80.

Triphenylmethyl ($C_{19}H_{15}$) **EqL**:F43; **InKi**:F43.

Triphenylsilane ($C_{18}H_{16}Si$) **EqL**:B229; **IsKi**:G52; **KiL**:G52.

Trisilane (Si_3H_8) **Ge**:S183; **KiG**:S183; **Me**:S183; **Sy**:S183; **ThP**:S182, S183.

Tritium **AdG**:R64; **ElGd**:A91; **EqG**:D41, J39, J40, M75; **EqH**:A36; **EqI**:A36; **InBi**:B74, S63; **IsKi**:B105, J41; **IsMs**:S32; **Ki**:B105; **KiG**:D41; **KiP**:J41; **KiR**:A36, J41, T12; **MeD**:G116, H17, K36; **Sd**:G115; **SdTr**:H17; **SpEl**:D55, D56; **Sr**:D44, M134, S32; **StD**:D56, **ThF**:G128, J39, J40; **TLP**:G115, H17.

Uranium hydride (UH_3) **An**:S146; **EqH**;W35; **KiH**:S146; **MeD**:S146; **Sd**:N38, S146, W35; **SdCr**:R96, R97; **StD**:R96; **Sy**:N38, N39, R97, S146; **ThF**:S146; **ThP**:S146.

Uranium hydride-t (UH_3-t) **Sy**:R64.

Uranium nitrate hydrates **SpFl**:S78.

Vinyl bromide (C_2H_3Br) **AnSp**:J51; **InSt**:H84; **IsSp**:H84; **SpVi**:H82, H84, H91; **Sy**:J51.

Vinylidene bromide. See Acetylene dibromide.

Water (H_2O) **AdG**:B219, D65, H29, R91, T24; **AdL**:V19; **AnDn**:S49; **AnMs**:S49; **Bi**:C28; **BiC**:B143, B144, C2, D15, E48, G57, G86, G87, H126, H192, J2, K9, K77, M137, O8, P66, P87, S49, S93, V33; **BiZ**:C14; **EcC**:D59, S218; **EcO**:C39; **EcP**:N53; **ElD**:D59, K51, R48, S188, S189; **ElGd**:G20, K107, O26, R6; **ElMm**:J14; **ElMr**:G114; **ElRf**:I2; **ElT**:B148, D59, F28, I27; **Eq**:L63, S34, W72; **EqG**:F29, S197; **EqH**:A36, B213, E47, F29, G85, H30, K107, T24, T26; **EqI**:B214, S198, S218; **EqL**:H112, K42, M141, P66, S197; **In**:G85; **InBi**:A27, E2, F74, G18, G75, G88, H28, H193, K76, P66, S49, S140, S162, S170, S171, S228, T35, V11, V112, V27, V33; **InKi**:G20, H29, L25, T74, W1; **InSo**:B124, J44; **InSt**:U6, V19, W55; **Is**:S34; **IsEq**:B214; **IsSp**:D29, H13, K50, O27, S221; **IsTh**:E45; **Ki**:S34; **KiB**:B143, E8, E48, G75, K76, L88, S169, S170, T35, U11, U12, V26; **KiG**:D3; **KiH**:C101, D32, D65, H30, R91; **KiI**:B232; **KiL**:L25, M116, W1; **KiR**:A36; **Me**:K56, W144; **MeAc**:H94, H103, I27, M14; **MeD**:C38, E45, F75, H36, H37, H103, L47, S52, V21, W22, W23, W117; **MeDf**:G100, K48; **MeV**:A96, B24, D59, H36 H37, L47; **Sd**:W62; **SdCr**:L2, L91, S103,

Water (H_2O)—Continued:
W117, W122; **SdNu**:B122; **SdSp**:G121; **SdTr**:E45, L2; **SoH**:B213; **SoO**:B124, J44; **Sp**:S34, W144; **SpEl**:G20, L32, O27, S58; **SpM**:B53, G53, J14, K51, L6, S187, S188, S189; **SpVi**:C43, D29, D51, D52, D53, G21, G22, G121, H13, I12, K50, L34, L50, L63, M112, N9, S33, S84, S111, S221, T18; **Sr**:K63, N46, N59; **St**:D59, S33, S103, T18, W22; **StA**:E46, H112, W117; **StD**:B73, C163, D51, I12, S188; **StDi**:C163; **Sy**:A23, A26, B25, B58, B144, C40, C99, C100, E51, G98, I1, M59, N38, S146, S171, T57, V26, W57; **Th**:K56, S34, W144; **ThF**:E45, E46, L63, S197; **ThP**:C32, C99, E45, H112, L2, P109, T26, W60; **ThSo**:B214, C32, N47, N53, S218.

Water-t (H_2O-t) **AnC**:G57; **BiC**:G57, P66; **BiZ**:B249, C11, P94; **Eq**:L63; **EqG**:B107; **EqL**:J15, P66; **InBi**:L30, P2, P66, P97; **InSo**:B124, J44; **KiL**:J15; **SoO**:B124, J44; **SpFl**:G125; **SpVi**:L63, T18; **St**:T18; **Sy**:P2; **ThF**:L63, B107.

Xylene (C_8H_{10}) **AnDn**:F75.

Xylenol ($C_8H_{10}O$) **EqL**:T93.

Zinc **SoI**:B249.

Zirconium dihydride (ZrH_2) R99.

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