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A Supplementary Bibliography of Kinetic Data on Gas Phase Reactions of Nitrogen, Oxygen, and Nitrogen Oxides

A Supplementary Bibliography of Kinetic Data on Gas Phase Reactions of Nitrogen, Oxygen, and Nitrogen Oxides

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Foreword

The National Standard Reference Data System was established in 1963 for the purpose of promoting the critical evaluation and dissemination of numerical data of the physical sciences. The program is coordinated by the Office of Standard Reference Data of the National Bureau of Standards but involves the efforts of many groups in universities, government laboratories, and private industry. The primary aim of the program is to provide compilations of critically evaluated physical and chemical property data. These tables are published in the *Journal of Physical and Chemical Reference Data,* in the NSRDS-NBS series of the National Bureau of Standards, and through other appropriate channels.

The task of critical evaluation is carried out in various data centers, each with a well-defined technical scope. A necessary preliminary step to the critical evaluation process is the retrieval from the world scientific literature of all papers falling within the scope of the center. Each center, therefore, builds up a comprehensive well-indexed bibliographical file which forms the base for the evaluation task. Bibliographies derived from these files are published when they appear to be of value to research workers and others interested in the particular technical area.

Further information on NSRDS and the publications which form the primary output of the program may be obtained by writing to the Office of Standard Reference Data, National Bureau of Standards, Washington, DC 20234.

David R. Lide, Jr., Chief
Office of Standard Reference Data

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A SUPPLEMENTARY BIBLIOGRAPHY OF KINETIC DATA ON GAS PHASE REACTIONS OF NITROGEN, OXYGEN, AND NITROGEN OXIDES *

FRANCIS WESTLEY

A bibliography, a reaction oriented list of references supplementing NBS publication COM-71-00841 (NBS-OSRDB-71-2, August 1971), is provided for published papers and reports containing rate data for reactions of N, N_2, N_3, N_2O, N_2O_2, N_2O_3, N_2O_4, N_2O_5, NO, NO_2, NO_3, NO_4, O, O_2 and O_3 with each other. It includes an extensive list of papers dealing with production and reactions of molecular oxygen in excited singlet states ($a^1\Delta_g$, $b^1\Sigma_g^+$, $c^1\Sigma_u$). In addition, two lists of critical reviews dealing with the above reactions are included. About 500 papers are listed. The period covered extends from 1900 through January 1972.

Key words: Bibliography; chemical kinetics; excited state; gas phase; nitrogen atom; nitrogen molecule; nitrogen oxides; oxygen atom; oxygen molecule; ozone.

INTRODUCTION

Less than one year ago - August 1971 - the Office of Standard Reference Data published a bibliography with the same title as the present one: "A Bibliography of Kinetic Data on Gas Phase Reactions of Nitrogen, Oxygen and Nitrogen Oxides", (COM-71-00841, NBS-OSRDB-71-2). The period covered by this previous bibliography extended from 1900 through January 1971. In its introduction it was pointed out that, although the coverage of purely chemical reactions was extensive, this was not quite so with papers dealing with production and reactions of excited species of the N - O system. Moreover, the reactions of molecular oxygen in excited singlet states ($a^1\Delta_g$, and $b^1\Sigma_g^+$), so important in the fields of pollution and atmospheric chemistry, were completely omitted.

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*This publication is an activity of the Chemical Kinetics Information Center, N.B.S. The work was supported by the Office of Standard Reference Data, N.B.S. as part of a program to provide information and data on rates of chemical reactions.

The present supplement redeems our pledge made at the end of the introduction to the previous bibliography, namely that: "it is our plan to prepare a separate bibliography on the production and reactions of excited species of the N - O system."

However, from January 1971 until today an important number of papers dealing with purely chemical reactions of the N - O system were also published. Therefore, the aim of this supplement is manifold:

1) It lists all the pertinent papers and reports on the gas phase kinetics in the N - O system which appeared from January 1971 through January 1972.

2) It lists the earlier papers dealing with the same system, which were omitted in the 1971 bibliography. For instance, a large number of earlier papers dealing with vibrational and rotational relaxation of molecules in the N - O system, omitted in the NBS-OSRDB-71-2 publication, are now included in this supplement. Most of these papers are based on ultrasonic methods of measurement.

3) It lists a number of reactions dealing with N and O species in excited state which were not included in the earlier publication. The largest class belonging to this category is the production and reactions of molecular oxygen in an excited singlet state ($a^1\Delta_g$, $b^1\Sigma_g^+$, and $c^1\Sigma_u$). Its coverage, if not exhaustive, is extensive. It includes all the papers cited by Wayne in his review "Singlet Molecular Oxygen", Adv. in Photochem. 7, 311 (1969), as well as papers published after 1969. A small number of recent papers dealing with molecular oxygen in excited triplet atate ($A^3\Sigma_u^+$, and $B^2\Sigma_u^-$) is also included.

It is our plan to prepare supplements to this bibliography every other year.

This bibliography is not the result of the effort of a single person, but of the whole staff of Chemical Kinetics Information Center. My thanks to all of them.

In particular, I wish to thank Dr. David Garvin, Director of the Center, for his more than helpful suggestions and constant guidance; Mr. James G. Koch, Supervisor, for tracking down and obtaining papers and reports otherwise very difficult to obtain; Mrs. Ann C. Robertson and Mrs. Geraldine W. Zumwalt, for typing a difficult manuscript with particular care.

GUIDELINES FOR THE USER

Arrangement of the report. This bibliography is in three parts:

Part I. Reactions of Nitrogen and Oxygen Species.

Part II. Reactions of Oxygen Species.

Part III. The combined bibliography for Parts I and II arranged alphabetically by authors. The complete reference citation for each article mentioned is given here. Occasionally explanatory notes are appended. These establish the "bibliography chain" for closely related papers by the same authors.

Parts I and II are arranged by reaction, following the order indicated below. At the end of these parts, the two sections I(b) and II(b) include a short list of critical reviews or surveys dealing with the reactions listed in sections I(a) and II(a), respectively.

Ordering of chemical reactions. The bibliography lists references to published papers and reports in which rate data are reported for reactions of N, N_2, N_3, N_2O, N_2O_2, N_2O_3, N_2O_4, N_2O_5, NO, NO_2, NO_3, NO_4, O, O_2 and O_3 with each other. As written above, the sequence of these atoms or molecules defines the order in which the reactions are arranged, i. e.: semialphabetically, by first reactant.

Forward and reverse reactions are listed separately. Reactants are always on the left.

Within each reaction the reactants and products are arranged according to the same scheme: separately and alphabetically. The general "third body", is always last.

So, equations are written:

$N_2O + O \rightarrow N_2 + O_2$ and not $O + N_2O \rightarrow O_2 + N_2$,

$N_2O + M \rightarrow N_2 + O + M$ and not $M + N_2O \rightarrow M + O + N_2$

$O_3 + M \rightarrow O + O_2 + M$ and not $M + O_3 \rightarrow M + O_2 + O$

This ordering scheme runs counter to chemical conventions that order by oxidation state. It does bring the atom and its parent molecule together for this simple collection. The rule for arrangement is also simple. It is a character by character comparison of two formulae or equations from left to right, with the priority order being blank, numerals, and then letters; e.g.: N_2O_5 precedes NO.

Chemical symbols without asterisk (ground state) take precedence over those with asterisk (excited state).e.g:

$NO_2 + O \rightarrow NO + O_2$ precedes $NO_2 + O \rightarrow NO + O_2^*$

The chemical equations of the overall reactions are not always balanced. An unbalanced equation indicates that the author mentions the reactants and the products of the reaction without the help of an equation, or that the chemical equation given by the author is unbalanced.

Very often, a reference mentioning a reaction without a third body, M, will be found under a heading indicating the same reaction with M on both sides.

In order to render the chemical change occuring in a reaction easily observable to the eye, a reactant, or a product may appear two, or even three times in the same heading. E.g.:

$$N_2O_5 + N_2O_5 \rightarrow 4NO_2 + O_2 \text{ (overall)}$$
$$N_2O_5 + NO \rightarrow NO_2 + NO_2 + NO_2 \text{ (overall)}$$

How to find a reaction. It is felt that the most profitable method for finding references dealing with a certain reaction included in this bibliography, would be to consider first all headings with the same reactants, with or without third body M, with or without $h\nu$, in excited, or in ground state, and regardless of the products. Only thereafter, should the user accept, or reject a paper, according to his own objective. As an example: Decomposition of NO. The user should consider the reactions having on the left side:

$NO \rightarrow$; $NO^* \rightarrow$; $NO + h\nu \rightarrow$; $NO + M \rightarrow$; $NO + M^* \rightarrow$; $NO^* + M \rightarrow$; $NO + NO \rightarrow$; $NO + NO^* \rightarrow$:

Display of Chemical Reactions and Formulae. (a). General. Most of the reactions listed in parts I and II show a chemical change. Some of these show a photolytic, chemiluminescent or energy transfer process that occurs simultaneously with the chemical change. In addition, there is an important number of reactions that are simply collisional energy transfer or photo-excitation processes.

An excited species is indicated by an asterisk placed between the symbol of the species and the bracket including its electronic configuration.

An electronic energy transfer from a lower to a higher excited state - or vice versa - is outlined by a double asterisk following the higher excited state. E.g.:

$$N_2^* + M \rightarrow N_2^{**} + M \text{ (electronic transition)}$$
$$NO^{**} \rightarrow NO^* + h\nu$$

(b). Excited states of reactants and products. In part I, symbols defining electronic or vibronic states are very often omitted and an excited atom or molecule is indicated by a simple asterisk. However, for a number of papers, the electronic states are indicated in brackets placed after the short reference.

In part II, the arrangement of electronic symbols is different. Taking into account the large number of papers dealing with molecular oxygen in excited states, as well as the importance of excited oxygen species in the fields of air pollution and atmospheric chemistry, it was felt that a more detailed arrangement of the material included for reactions involving only oxygen species would be useful. For that reason, the electronic configuration of excited states is indicated in the chemical reaction itself, in a bracket following the excited atom or molecule (rather that being indicated at the end of the short reference, as in part I). E.g.:

$$O_3(^1A) + h\nu \rightarrow O^*(^1D) + O_2^*(b^1\Sigma_g^+)$$

As a general rule, if a reaction is purely chemical, the electronic configurations are omitted. However, if a reaction includes even a single electronically excited oxygen species, then the electronic configurations of all the O species (including the ground states) are indicated. The ground states are not followed by asterisks. E.g.:

$$O + O_3 \rightarrow O_2 + O_2$$

$$O(^3P) + O_3(^1A) \rightarrow O_2^*(a^1\Delta_g) + O_2^*(a^1\Delta_g)$$

In the special case when a molecule (or third body) acts as an acceptor for the excited oxygen species, it is indicated by the letter A (Acceptor). E.g.:

$$O_2^*(a^1\Delta_g) + A \rightarrow [O_2\text{-}A]$$

The order of priority of electronic states is based on the lowest minima of the potential energy curves, followed by the next lowest ones [see: Gilmore, F. R., "Potential Energy Curves for N_2, NO, O_2 and corresponding ions," J. Quantit. Spectr. Rad. Trans. 5, 369 (1965)]. E.g.:

Priority of O atoms: $O(^3P)$, $O^*(^1D)$, $O^*(^1S)$; Priority of O_2 molecules: $O_2(X^3\Sigma_g^-)$; $O_2^*(a^1\Delta_g)$; $O_2^*(b^1\Sigma_g^+)$; $O_2^*(c^1\Sigma_u^-)$; $O_2^*(A^3\Sigma_u^+)$; $O_2^*(B^3\Sigma_u^-)$.

If several reactions differ only by the type of energy involved, being similar in every other respect, the priority is based on the nature of the energy, in the order: electronic, rotational, translational, vibrational. This rule applies to certain quenching, or energy transfer processes. The nature of the process is indicated in a bracket following the reaction. E.g.:

$$O_2^*(B^3\Sigma_u^-) + M \rightarrow O_2(X^3\Sigma_g^-) + M \text{ (electronic relaxation)}$$

$$O_2^* + M \rightarrow O_2 + M \text{ (rotational relaxation)}$$

$$O_2^* + M \rightarrow O_2 + M \text{ (translational relaxation)}$$

$$O_2^* + M \rightarrow O_2 + M \text{ (vibrational relaxation)}$$

(c). Excitation of energy transfer agents ("third bodies"). An excited second, or third body is indicated by a second heading centered in the middle of the page. This arrangement results in grouping the reactions according to the second and third bodies. E.g.:

$O_2(X^3\Sigma_g^-) + M^* \rightarrow O_2^*(a^1\Delta_g) + M$ (electronic energy transfer)

$M^* = O^*(^1D)$

.....

Gauthier and Snelling JCPSA6-1971-54-4317

.....

.....

$M^* = O^*(^1S)$

Seaton, M. J. JATPA3-1954-4-295 (calculation)

$M^* = RH^*(T_1)$ (Organic Donor)

Khan, et al. ESTHAG-1967-1-656 (mechanism)

Reference Citations.

The references under each reaction list the author(s) and the sources, in the following form:

Author(s)	Source-Year-Volume-Page	Number of Author(s)
Young, R. A.	JCPSA6-1960-33-1112	1
Young and Black	JCPSA6-1966-44-3741	2
Young, et al.	JCPSA6-1968-49-4769	3 or more

Variations from this format (which we will call "short reference") are usually in the direction of more explicit specification. These variations are never made in the first two fields, source and year. They are fixed and always present.

The sources are indicated by their ASTM CODEN abbreviations*). A guide to these codes follows. As listed in this guide, the codes include an additional sixth cipher, which is a "check character"**. A code prefixed with an asterisk is a code not in the ASTM CODEN set. These are codes we have assigned for reports from industrial laboratories, research institutes and universities. When the CODEN system adopts appropriate codes they will be replaced. The present, temporary codes usually end with Z or U.

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*) Blumenthal, J. G., Karaman, M., and Peters, A., Editors, "CODEN FOR PERIODICAL TITLES" (Including Non-Periodical Titles and Deleted Coden), Vol. I and II, ASTM Data Series DS 23B, (1970); First Supplement DS 23B - S1 (05-023021-42) (1972). (American Society for Testing and Materials, 1916 Race Street, Philadelphia, Penna. 19103).

JOURNAL AND REPORT CODES**

ACHRAY	Accounts of Chemical Research
ACUSAY	Acustica
ADCSAJ	Advances in Chemistry Series
ADPCA2	Advances in Photochemistry
AIAJAH	A.I.A.A. Journal (American Institute of Aeronautics and Astronautics)
AJCHAS	Australian Journal of Chemistry
AKZTAG	Akustische Zeitschrift (Zurich)
ANPHAJ	Annales de Physique (Paris)
ANPYA2	Annalen der Physik (Leipzig)
ANYAA9	Annals of the New York Academy of Sciences
APOPAI	Applied Optics
ASJOAB	Astrophysical Journal
*AVEVZJ	AVCO - Everett Research Report
BAPSA6	Bulletin of the American Physical Society
BBPCAX	Berichte der Bunsengesellschaft fuer Physikalische Chemie
BCSJAB	Bulletin of the Chemical Society of Japan
BJAPAJ	British Journal of Applied Physics
BOOKA7	Book
BSCFAS	Bulletin de la Societe Chimique de France
CBSTB9	Combustion Science and Technology
CCOMA8	Chemical Communications. The Chemical Society (London)
CHDBAN	Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences. Serie B. Sciences Physiques
CHDCAQ	Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences. Serie C. Sciences Chimiques
CHPLBC	Chemical Physics Letters (Amsterdam)
CHREAY	Chemical Reviews
CJCHAG	Canadian Journal of Chemistry
CJPHAD	Canadian Journal of Physics
COREAF	Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences, Paris
CRAUAX	Comptes Rendus (Doklady) de l'Academie des Sciences de l'URSS (Moscow)
CUSCAM	Current Science (India)
DABBBA	Dissertation Abstracts International, B. The Sciences and Engineering (Ann Arbor, Mich.)
DFSOAW	Discussions of the Faraday Society

**The final sixth character in the journal code is a "check character". This is not shown in the listings in ASTM DS 23B and DS 23 S1, but the calculation is explained in the introductions to them. See also NBS Tech. Note 738 "Subroutine for the Calculation of CODEN Check Characters".

EENAA3	Ergebnisse der Exakten Naturwissenschaften
ENTPA5	Entropie. Revue Scientifique et Technique de Thermodynamique
ESTHAG	Enviromental Science and Technology
FPYKA6	Fortschritte der Physik
*GESLZ6	General Electric Company, Space Science Laboratory
HCACAV	Helvetica Chimica Acta
HIECAP	High Energy Chemistry (English)
IJCKBØ	International Journal of Chemical Kinetics
JACSAT	Journal of the American Chemical Society
JAHSAK	Journal of Atmospheric Sciences
JAPIAU	Journal of Applied Physics
JASMAN	Journal of the Acoustical Society of America
JATPA3	Journal of Atmospheric and Terrestrial Physics
JCPQAY	Journal de Chimie Physique
JCPSA6	Journal of Chemical Physics
JCSØA9	Journal of the Chemical Society (London)
JGREA2	Journal of Geophysical Research
JØPYA6	Journal of Physics (Moscow)
JØSAAH	Journal of the Øptical Society of America
JPCHAX	Journal of Physical Chemistry
JQSRAE	Journal of Quantitative Spectroscopy and Radiative Transfer
JTEPAR	Journal of Atmospheric and Terrestrial Physics. Special Supplements (London)
MCHEBQ	mechanical and Chemical Engineering Transaction, Instituttion of Engineering (Australia)
MFMPA2	Massachusetts Institute of Technology, Fluid Mechanics Laboratory, Publications (Cambridge)
NATUAS	Nature (London)
NATWAY	Naturwissenschaften
NUCIAD	Nuovo Cimento
ØPSUA3	Øptics and Spectroscopy (U.S.S.R.)
PAAAAV	Proceeding of the American Academy of Arts and Sciences
PAPHAP	Pure and Applied Physics
PCPSA4	Proceedings of the Cambridge Philosophical Society
PFLDAS	Physics of Fluids
PHCBAP	Photochemistry and Photobiology
PHDTAG	PhD Thesis
PHMAA4	Philosophical Magazine
PHRVAØ	Physical Review
PHYSAG	Physica. (Utrecht, Netherlands)
PHZFAG	Physikalische Zeitschrift
PKAWAV	Koninklijke Akademie van Wetenschappen te Amsterdam, Proceedings
PLRAAN	Physical Review, A (New York) (1970+)
PLSSAE	Planetary and Space Science

PPSAAM	Proceedings of the Physical Society (London), Section A
PPSOAU	Proceedings of the Physical Society (London)
PRLAAZ	Proceedings of the Royal Society (London), Series A Mathematical and Physical Sciences
PRLTAO	Physical Review Letters
PRVAAH	Physical Review, Series A
QJRMAM	Quarterly Journal of the Royal Meteorological Society
RJPCAR	Russian Journal of Physical Chemistry (USSR) English Translation
RMPHAT	Reviews of Modern Physics
*RPREZ8	Rocket Propulsion Est., Westcott, United Kingdom, Technical Report
RVGPA3	Reviews of Geophysics
SCIEAS	Science. American Association for the Advancement of Science
SPIPAG	Scientific Papers of the Institute of Physical and Chemical Research (Tokyo)
SYMCAQ	Symposium on Combustion
TAGUAT	Transactions of the American Geophysical Union
TFSOA4	Transactions of the Faraday Society
ZENAAU	Zeitschrift fuer Naturforschung Pt. A. Astrophysik, Physik und Physikalische Chemie
ZEPYAA	Zeitschrift fuer Physik
ZPCBAL	Zeitschrift fuer Physikalische Chemie, Abteilung B. Chemie der Elementarprozesse, Aufbau der Materie
ZPCFAX	Zeitschrift fuer Physikalische Chemie, Neue Folge (Frankfurt)
ZTPHAU	Zeitschrift fuer Technische Physik
24ZVAA	Chemical Reactions in Urban Atmosphere, Proceedings of the Symposium Held at General Motors Research Laboratories, Warren, Mich., 1969

I(a). REACTIONS INVOLVING N AND O SPECIES

$N + M^* \rightarrow N^* + M$ (energy transfer)

Meyer, et al.	JPCHAX-1970-74-2238 [$N^*(^2P)$; $M^* = N_2^*(A^3\Sigma_u^+, v = 0,1)$]

$N^* + M \rightarrow N + M$

Donovan and Husain	CHREAY-1970-70-489 (^2D) (review)
Hunten and McElroy	RVGPA3-1966-4-303 [^2D, or ^2P] (review)
Meyer, et al.	JPCHAX-1970-74-2238 [$N^*(^2P)$]
Seaton, M. J.	JTEPAR-1955-5-289 [$N^*(^2D)$]

$N^* + M \rightarrow N + M^*$ (energy transfer)

Wallace and McElroy	PLSSAE-1966-14-677 [$N^*(^2D)$; $M^* = O_2^*(^1\Delta_g, ^1\Sigma_g^+)$]

$N + N \rightarrow N_2^*$

Ghosh and Jain	CUSCAM-1971-40-29

$N + N + M \rightarrow N_2 + M$

Broemer and Zwirner	ZENAAU-1969-24-118
Shui, et al.	SYMCAQ-1971-13-21 (calculation)

$N + N + M \rightarrow N_2 + M^*$

Schofield, K.	PLSSAE-1965-15-643

$N + N + M \rightarrow N_2^* + M$

Brennen and Shane	JPCHAX-1971-75-1552 [$N_2^*(^5\Sigma$, or $B^3\Pi_g$, or $A^3\Sigma_u^+$)]
Campbell and Thrush	PRLAAZ-1967-296-201 [$N_2^*(A^3\Sigma_u^+)$]
Golde and Thrush	CHPLBC-1971-8-375 [$N_2^*(a^1\Pi_g)$] (calculation)
Ghosh and Jain	CUSCAM-1971-40-29

$N + N + M \rightarrow N_2 + M + h\nu$

Brennen and Shane	JPCHAX-1971-75-1552

$N + N_2O \rightarrow N_2^* + NO$

Schofield, K.	PLSSAE-1965-15-643

$N + NO \rightarrow N_2 + O$

Groth and Schierholz	PLSSAE-1959-1-333 (mechanism)

$N + NO \rightarrow N_2 + O$ (Continued)

Yang and Servedio	JCPSA6-1967-47-4817 (quantum yield)

$N + NO \rightarrow N_2^* + O$

Schofield, K.	PLSSAE-1965-15-643

$N + NO^* \rightarrow N_2 + O^*$

Fontijn and Ellison	JPCHAX-1968-72-3701 [$NO^*(a^4\Pi_i)$; $O^*(^1S)$] (mechanism)

$N + NO_2 \rightarrow N_2 + O + O$

Schofield, K.	PLSSAE-1965-15-643

$N + NO_2 \rightarrow N_2^* + O_2$

Schofield, K.	PLSSAE-1965-15-643

$N + NO_2 \rightarrow N_2O + O$

Schofield, K.	PLSSAE-1965-15-643

$N + NO_2 \rightarrow NO + NO^*$

Schofield, K.	PLSSAE-1965-15-643

$N + O + M \rightarrow NO + M$

Broemer and Zwirner	ZENAAU-1969-24-118
Shui, et al.	SYMCAQ-1971-13-21 (calculation)

$N + O + M \rightarrow NO + M^*$

Schofield, K.	PLSSAE-1965-15-643

$N + O + M \rightarrow NO^* + M$

Roth, W.	JCPSA6-1961-34-999 [$NO^*(A^2\Sigma^+, v = 3)$] (mechanism)

$N + O^* + M \rightarrow NO^* + M$

Fontijn and Ellison	JPCHAX-1968-72-3701 [$NO^*(a^4\Pi_i$, or $b^4\Sigma^-$); $O^*(^1D)$] (mechanism)

$N + O_2 \rightarrow NO + O$

Bowman, C. T.	CBSTB9-1971-3-37 (review)
Livesey, et al.	CBSTB9-1971-4-9

$N + O_2 \rightarrow NO^* + O$

Schofield, K.	PLSSAE-1965-15-643

$N + O_3 \rightarrow NO + O_2$

Schofield, K.	PLSSAE-1965-15-643

$N_2^* \rightarrow N_2 + h\nu$

Borst and Zipf	PLRAAN-1971-3-979 [$N_2^*(a^1\Pi_g$, or $E^3\Sigma_g^+$)]
Brennen and Shane	JPCHAX-1971-75-1552 [$N_2^*(B^3{}_g^+)$]
Broemer and Spieweck	PLSSAE-1967-15-689 [$N_2^*(A^3\Sigma_u^+)$]
Carleton and Oldenburg	JCPSA6-1962-36-3460 [$N_2^*(A^3\Sigma_u^+)$]
Freund, R. S.	JCPSA6-1969-50-3734 [$N_2^*(E^3\Sigma_g^+)$]
Hesser, J. E.	JCPSA6-1968-48-2518 [$N_2^*(p'^1\Sigma_u^+)$]
Hesser and Dressler	JCPSA6-1966-45-3149 [$N_2^*(p'^1\Sigma_u^+)$]
Holland, R. F.	JCPSA6-1969-51-3940 [$N_2^*(a^1\Pi_g)$]
Meyer, et al.	JCPSA6-1971-55-2084 [$N_2^*(A^3\Sigma_u^+)$]
Schultz, H. A.	JCPSA6-1966-44-377 [$N_2^*(C^3\Pi_u)$]
Shemansky, D. E.	JCPSA6-1969-51-689 [$N_2^*(A^3\Sigma_u^+)$]
Shemansky and Carleton	JCPSA6-1969-51-682 [$N_2^*(A^3\Sigma_u^+)$]
Tinti and Robinson	JCPSA6-1968-49-3229 [$N_2^*(A^3\Sigma_u^+)$]
Wentink and Isaacson	JCPSA6-1967-46-822 [$N_2^*({}^3\Sigma_u^+)$]
Young, R. A.	JCPSA6-1960-33-1112 [$N_2^*(B^3\Sigma_g)$]
Young and St. John	ADCSAJ-1969-80-105 [$N_2^*(A^3\Sigma_u^+$, $v = 0,1$)]
Zelikoff and Aschenbrand	JCPSA6-1957-27-123 [$N_2^*(B^3\Pi_g)$] (mechanism)
Zipf, E. C., Jr.	JCPSA6-1963-39-3534 [$N_2^*(A^3\Sigma_g^+)$]
Zipf, E. C., Jr.	BAPSA6-1964-9-185 [$N_2^*(A^3\Sigma_u^+)$]
Zipf, E. C., Jr.	BAPSA6-1965-10-179 [$N_2^*(A^3\Sigma_u^+)$]

$N_2^{**} \rightarrow N_2^* + h\nu$

Beale and Broida	JCPSA6-1959-31-1030 [$C^3\Pi_u \rightarrow B^3\Pi_g$; or $B^3\Pi_g \rightarrow A^3\Sigma_u^+$]
Bennett and Dalby	JCPSA6-1959-31-434 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Brocklehurst, B.	TFSOA4-1964-60-2151 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Brocklehurst and Downing	JCPSA6-1967-46-2976 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Broemer and Zwirner	ZENAAU-1969-24-118 [$B^3\Pi_g \rightarrow A^3\Sigma_u^+$]
Calo and Axtmann	JCPSA6-1971-54-4961 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Fontijn and Ellison	JPCHAX-1968-72-3701 [$B^3\Pi_g \rightarrow A^3\Sigma_u^+$] (mechanism)

$N_2^{**} \rightarrow N_2^{*} + h\nu$ (Continued)

Hesser, J. E.	JCPSA6-1968-48-2518 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Jonathan and Petty	JCPSA6-1969-50-3804 [$B^3\Pi_g \rightarrow A^3\Sigma_u^+$]
Schmidt, K.	ZENAAU-1956-11-1023 [$N_2^{**}(^3\Pi_u) \rightarrow N_2^{*}(B^3\Pi_g)$]
Shemansky and Carleton	JCPSA6-1969-51-682 [$B^3\Pi_g \rightarrow A^3\Sigma_u^+$]
Stanley, C. R.	PPSAAM-1955-68-709 [$C^3\Pi_u \rightarrow B^3\Pi_g$; or $B^3\Pi_g \rightarrow A^3\Sigma_u^+$)]
Tanaka and Jursa	JØSAAH-1961-51-1239 [$C^3\Pi_u \rightarrow B^3\Pi_g$; or $B^3\Pi_g \rightarrow A^3\Sigma_u^+$]
Tinti and Robinson	JCPSA6-1968-49-3229 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Wagner, K. H.	ZENAAU-1964-19-716 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Wentink and Isaacson	JCPSA6-1967-46-822 [$B^3\Pi_g \rightarrow A^3\Sigma_u^+$]

$N_2^{*} + M \rightarrow N + N + M$

Golde and Thrush	CHPLBC-1971-8-375 [$N_2^{*}(a^1\Pi_g)$] (calculation)

$N_2 + M \rightarrow N_2^{*} + M$ (electronic excitation)

Engelhardt, et al.	PRVAAH-1964-135-1566 [$N_2^{*}(A^3\Sigma_u^+$, $a^1\Pi_g$, or $C^3\Pi_u$)]
Fishburne, E. S.	JCPSA6-1967-47-58
Gilmore, et al.	JQSRAE-1969-9-157 [$N_2^{*}(A^3\Sigma_u^+$, or $a^1\Pi_g$)] (evaluation)
Losev and Smekhov	ØPSUA3-1967-22-484 [$N_2^{*}(B^3\Pi_g)$]

$N_2 + M \rightarrow N_2^{*} + M$ (vibrational excitation)

Engelhardt, et al.	PRVAAH-1964-135-1566
Gilmore, et al.	JQSRAE-1969-9-157 (evaluation)
Schultz, G. J.	PHRVAØ-1959-116-1141
Schultz, G. J.	PHRVAØ-1962-125-229
Schultz, G. J.	PRVAAH-1964-135-988
Taylor, et al.	SYMCAQ-1967-11-49

$N_2 + M^{*} \rightarrow N_2^{*} + M$ (energy transfer)

Andreev, E. A.	CHPLBC-1971-11-429 (calculation)
Bauer and Roesler	ZENAAU-1964-19-656
Billingsley and Callear	TFSØA4-1971-67-257
Bortner, et al.	*GESLZ6-1970-RPT/DASA-2560 (review)
Callear, A. B.	DFSØAW-1962-33-28

$N_2 + M^* \rightarrow N_2^* + M$ (energy transfer) (Continued)

Callear and Wood	TFSØA4-1971-67-598 [$N_2^*(A^3\Sigma_u^+)$]
Calo and Axtmann	JCPSA6-1971-54-4961 [$N_2^*(C^3\Pi_u)$]
Fishburne, E. S.	JCPSA6-1967-47-58 [$N_2^*(C^3\Pi_u)$]
Granzow, et al.	JPCHAX-1968-72-1402 [$N_2^*(A^3\Sigma_u^+)$]
Moore, C. B.	ACHRAY-1969-2-103 (review)
Prince, et al.	JCPSA6-1964-40-2619 [$N_2^*(C^3\Pi_u)$; $M^* = Ar^*$]
Rosser, et al.	JCPSA6-1969-50-4996
Sato and Tsuchiya	CHPLBC-1970-5-293
Schmidt, K.	ZENAAU-1956-11-1023
Schultz, H. A.	JCPSA6-1966-44-377 [$N_2^*(C^3\Pi_u)$; $M^* = Ar^*$]
Sharma and Brau	PRLTAØ-1967-19-1273 (calculation)
Sharma and Brau	JCPSA6-1969-50-924 (calculation)
Taylor and Bitterman	BAPSA6-1968-13-1591
Taylor and Bitterman	JCPSA6-1969-50-1720
Taylor and Bitterman	RMPHAT-1969-41-26 (review)
Taylor, et al.	SYMCAQ-1967-11-49
White, D. R.	JCPSA6-1968-49-5472
Young and Sharpless	JCPSA6-1963-39-1071 [$M^* = Ø^*(^1S)$]

$N_2 + M^{**} \rightarrow N_2^* + M^*$ (energy transfer)

Young and Sharpless	JCPSA6-1963-39-1071 [$M^{**} = Ø^*(^1S)$; $M^* = Ø^*(^1D)$]

$N_2^* + M \rightarrow N_2 + M$ (electronic relaxation)

Callear and Wood	TFSØA4-1971-67-598 [$N_2^*(A^3\Sigma_u^+)$]
Flagan and Appleton	MFMPA2-1971-71-7 [$N_2^*(A^3\Sigma_u^+)$]
Golde and Thrush	CHPLBC-1971-8-375 [$N_2^*(a^1\Pi_g)$]
Hunten and McElroy	RVGPA3-1966-4-303 [$N_2^*(A^3\Sigma_u^+)$] (review)
Meyer, et al.	JCPSA6-1971-55-2084 [$N_2^*(A^3\Sigma_u^+)$]
Ølmsted, et al.	JCPSA6-1965-42-2321 [$N_2^*(a^1\Pi_g)$]
Schultz, H. A.	JCPSA6-1966-44-377 [$N_2^*(C^3\Pi_u)$]
Weinreb and Mannella	JCPSA6-1969-50-3129 [$N_2^*(A^3\Sigma_u^+)$]
Weinreb and Mannella	JCPSA6-1969-51-4973 [$N_2^*(A^3\Sigma_u^+)$]
Young, R. A.	JCPSA6-1960-33-1112 [$N_2^*(a^1\Pi_g$, $v = n$; or $B^3\Pi_g$)]
Zipf, E. C., Jr.	BAPSA6-1964-9-185 [$N_2^*(A^3\Sigma_u^+)$]
Zipf, E. C., Jr.	BAPSA6-1965-10-179 [$N_2^*(A^3\Sigma_u^+)$]

$N_2^* + M \rightarrow N_2 + M$ (rotational relaxation)

Brout, R.	JCPSA6-1954-22-1189 (calculation)
Cottrell and McCoubrey	BOOKA7-1961-81 (review)
Fujii, et al.	JASMAN-1962-34-714
Fujii, et al.	JASMAN-1963-35-961
Greene and Hornig	JCPSA6-1953-21-617
Greenspan, M.	JASMAN-1958-30-672
Greenspan, M.	JASMAN-1959-31-155
Herzfeld and Litovitz	PAPHAP-1959-7-238 (review)
Holmes, et al.	TFSOA4-1962-58-2342
Jonathan and Petty	JCPSA6-1969-50-3804
Miyama and Endoh	JCPSA6-1967-46-2011
O'Brien and Robinson	CHPLBC-1971-8-79 (calculation)
Parbrook and Tempest	ACUSAY-1958-8-345
Parker, J. G.	PFLDAS-1959-2-449
Parker, et al.	JASMAN-1953-25-263
Sessler, G.	ACUSAY-1958-8-395
Sivian, L. J.	JASMAN-1947-19-914
Winter and Hill	JASMAN-1967-42-848
Zartman, I. F.	JASMAN-1949-21-171
Zmuda, A. J.	JASMAN-1951-23-472

$N_2^* + M \rightarrow N_2 + M$ (translational relaxation)

Miyama and Endoh	JCPSA6-1967-46-2011

$N_2^* + M \rightarrow N_2 + M$ (vibrational relaxation)

Appleton, J. P.	JCPSA6-1967-47-3231
Appleton and Steinberg	JCPSA6-1967-46-1521
Arnold, et al.	TFSOA4-1957-53-738 (calculation)
Bauer and Roesler	ZENAAU-1964-19-656
Bender, D.	ANPYA2-1940-38-199
Benson and Berend	JCPSA6-1966-44-470 (calculation)
Boyer, R. A.	JASMAN-1951-23-176
Breshears and Bird	JCPSA6-1968-48-4768
Callear and Wood	TFSOA4-1971-67-272
Cary, B.	PFLDAS-1965-8-26
Clouston, et al.	PRLAAZ-1958-248-429
Cottrell and McCoubrey	BOOKA7-1961-80 (review)
Dixon, et al.	PRLAAZ-1922-100-1
Fritsche, L.	ACUSAY-1960-10-189
Griffith, W.	JAPIAU-1950-21-1319
Griffith, et al.	PHRVAO-1956-102-1209
Guenoche, et al.	ENTPA5-1970-34-35-49
Henry, P. S. H.	PCPSA4-1932-28-249 (calculation)
Herzfeld and Litovitz	PAPHAP-1959-7-241 (review)
Huber and Kantrowitz	JCPSA6-1947-15-275
Jonathan and Petty	JCPSA6-1969-50-3804
Keesom and Lammeren	PKAWAV-1932-35-727
Keller, H. H.	PHZFAG-1940-41-386
Kneser, H. O.	EENAA3-1949-22-121 (review)
Knoetzel, H.	AKZTAG-1940-5-245
Lukasik and Young	JCPSA6-1957-27-1149
McCoubrey, et al.	TFSOA4-1961-57-1472 (review)
Miyama and Endoh	JCPSA6-1967-46-2011
Moore, et al.	JCPSA6-1967-46-4222
Morgan and Schiff	CJCHAG-1963-41-903
Oberst, H.	AKZTAG-1937-2-76
O'Brien and Robinson	CHPLBC-1971-8-79 (calculation)
Parker, J. G.	PFLDAS-1959-2-449
Parker, R. C.	PPSOAU-1937-49-95
Parker, et al.	JASMAN-1953-25-263
Schmidtmueller, N.	AKZTAG-1938-3-115

$N_2^* + M \rightarrow N_2 + M$ (vibrational relaxation) (Continued)

Schweikert, G.	ANPYA2-1915-48-593
Sessler, G.	ACUSAY-1958-8-395
Sivian, L. J.	JASMAN-1947-19-914
Starr and Shaw	JCPSA6-1966-44-4181
Taylor and Bitterman	RMPHAT-1969-41-26 (review)
Taylor, et al.	SYMCAQ-1967-11-49
Tempest and Parbrook	ACUSAY-1957-7-354
Tsuchiya, S.	BCSJAB-1964-37-828
Van Itterbeek and Mariens	PHYSAG-1937-4-207
White, D. R.	JCPSA6-1968-48-525
White, D. R.	JCPSA6-1968-49-5472
Zartman, I. F.	JASMAN-1949-21-171
Zmuda, A. J.	JASMAN-1951-23-472

$N_2^* + M \rightarrow N_2 + M^*$ (energy transfer)

Bauer and Roesler	ZENAAU-1964-19-656
Breshears and Bird	JCPSA6-1968-48-4768
Callear and Wood	TFSØA4-1971-67-272 [$A^3\Sigma_u^+$, $v = 0,1$]
Cheo, P. K.	JAPIAU-1967-38-3563
Fontijn and Ellison	JPCHAX-1968-72-3701 [$N_2^*(A^3\Sigma_u^+)$; $M^* = N\emptyset^*(A^2\Sigma^+)$, or $\emptyset^*(^1S)$] (mechanism)
Golde and Thrush	CHPLBC-1971-8-375 [$N_2^*(a^1\Pi_g)$]
Hurle, I. R.	JCPSA6-1964-41-3911
Mentall, et al.	DFSØAW-1967-44-157
Meyer, et al.	ASJØAB-1969-157-1023 [$N_2^*(A^3\Sigma_u^+)$; $M^* = \emptyset^*(^1S)$, or $\emptyset_2^*$]
Meyer, et al.	JPCHAX-1970-74-2238 [$N_2^*(A^3\Sigma_u^+$, $v = 0,1$); $M^* = N^*(^2P)$, or $\emptyset^*(^1S)$]
Meyer, et al.	JCPSA6-1971-55-2084 [$N_2^*(A^3\Sigma_u^+)$]
Moore, C. B.	ACHRAY-1969-2-103 (review)
Moore, et al.	JCPSA6-1967-46-4222
Parkinson and Zipf	PLSSAE-1970-18-895 [$N_2^*(A^3\Sigma_u^+)$; $M^* = \emptyset^*(^1S)$]
Phillips, L. P.	CJCHAG-1965-43-369 [$N_2^*(A^3\Sigma_u^+)$; $M^* = I_2^*$]
Rosser, et al.	JCPSA6-1969-50-4996
Starr, W. L.	JCPSA6-1965-43-73
Starr and Shaw	JCPSA6-1966-44-4181
Taylor and Bitterman	BAPSA6-1968-13-1591
Taylor and Bitterman	RMPHAT-1969-41-26 (review)
Taylor, et al.	SYMCAQ-1967-11-49
White, D. R.	JCPSA6-1968-49-5472
Young and St. John	ADCSAJ-1969-80-105 [$N_2^*(A^3\Sigma_u^+)$, $v = 0,1$; $M^* = N\emptyset^*(A^2\Sigma^+$, $v = 0,1$)]

$N_2^* + M \rightarrow N_2^{**} + M$ (electronic transition)

Golde and Thrush	CHPLBC-1971-8-375 [$B^3\Pi_g \rightarrow a^1\Pi_g$]
Weinreb and Mannella	JCPSA6-1969-50-3129 [$A^3\Sigma_u^+ \rightarrow B^3\Pi_g$]
Weinreb and Mannella	JCPSA6-1969-51-4973 [$A^3\Sigma_u^+ \rightarrow B^3\Pi_g$]
Young and St. John	ADCSAJ-1969-80-105 [$N_2^*(A^3\Sigma_u^+) \rightarrow N_2^{**}$]

$N_2^* + M^* \rightarrow N_2 + M^{**}$ (energy transfer)

Stedman and Setser	JCPSA6-1969-50-2256 [$M^* = N_2^*(A^3\Sigma_u^+)$; $M^{**} = N_2^{**}(C^3\Pi_u)$]

$N_2^{**} + M \rightarrow N_2^* + M$ (electronic transition)

Brennen and Shane	JPCHAX-1971-75-1552 [$^5\Sigma \rightarrow B^3\Pi_g \rightarrow A^3\Sigma_u^+$]
Brocklehurst, B.	DFSØAW-1962-33-88 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Brocklehurst, B.	TFSØA4-1964-60-2151 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Brocklehurst and Downing	JCPSA6-1967-46-2976 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Freund, R. S.	JCPSA6-1969-50-3734 [$E^3\Sigma_g^+ \rightarrow C^3\Pi_u$, or $B^3\Pi_g$, or $A^3\Sigma_u^+$]
Øldenberg, Ø.	PLSSAE-1959-1-40 [$a^1\Pi_g \rightarrow B^3\Pi_g$]
Schmidt, K.	ZENAAU-1956-11-1023 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Wagner, K. H.	ZENAAU-1964-19-716 [$C^3\Pi_u \rightarrow B^3\Pi_g$]
Young and Black	JCPSA6-1966-44-3741 [$^5\Sigma_g^+ \rightarrow B^3\Pi_g$]

$N_2 + Ø \rightarrow N + NØ$

Bowman, C. T.	CBSTB9-1971-3-37 (review)
Livesey, et al.	CBSTB9-1971-4-9

$N_2 + Ø^* \rightarrow N_2Ø + h\nu$

Seaton, M. J.	JATPA3-1954-4-295 [$Ø^*(^1D)$] (upper limit estimate)

$N_2 + Ø + M \rightarrow N_2Ø + M$

Stuhl and Niki	JCPSA6-1971-55-3943

$4N_2Ø \rightarrow 3N_2 + 2NØ + Ø_2$ (overall)

Gedye, G. R.	JCSØA9-1931-3016

$N_2O \rightarrow N_2 + O^*$

Gedye, G. R. JCSOA9-1931-3016 (mechanism)

$N_2O^* \rightarrow N_2 + O$

Bell, et al. JCSOA9-1955-1440
Bunker, D. L. JCPSA6-1964-40-1946 (calculation)
Gill and Laidler PRLAAZ-1959-250-121 (calculation)
Tschuikow-Roux, E. JPCHAX-1969-73-3891 (calculation)

$N_2O^* \rightarrow N_2O + h\nu$

Gerlovin and Orlova OPSUA3-1964-16-9

$N_2O + h\nu \rightarrow N + NO$

Briner and Karbassi HCACAV-1945-28-1204
Dodge and Heicklen IJCKBO-1971-3-269 (quantum yield)
Groth and Schierholz PLSSAE-1959-1-333 (quantum yield)
Yang and Servedio JCPSA6-1967-47-4817 (quantum yield)

$N_2O + h\nu \rightarrow N + NO^*$

Zelikoff and Aschenbrand JCPSA6-1957-27-123 [$NO^*(A^2\Sigma^+)$] (quantum yield)

$N_2O + h\nu \rightarrow N^* + NO$

Dodge and Heicklen IJCKBO-1971-3-269 [$N^*(^2D)$] (quantum yield)

$N_2O + h\nu \rightarrow N_2 + O$

Briner and Karbassi HCACAV-1945-28-1204
Greenberg and Heicklen IJCKBO-1970-2-185
Dodge and Heicklen IJCKBO-1971-3-269 (quantum yield)
Groth and Schierholz PLSSAE-1959-1-333 (quantum yield)

$N_2O + h\nu \rightarrow N_2 + O^*$

Dodge and Heicklen IJCKBO-1971-3-269 [$O^*(^1D)$] (quantum yield)
Greenberg and Heicklen IJCKBO-1970-2-185 [$O^*(^1D$ or $^1S)$]
Paraskevopoulos, et al. JCPSA6-1971-54-3907 [$O^*(^1D)$] (quantum yield)
Yang and Servedio JCPSA6-1967-47-4817 [$O^*(^1S)$] (quantum yield)

$N_2O + h\nu \rightarrow N_2^* + O$

Dodge and Heicklen IJCKBO-1971-3-269 [$N_2^*(A^3\Sigma_u^+)$] (quantum yield)
Zelikoff and Aschenbrand JCPSA6-1957-27-123 [$N_2^*(B^3\Pi_g)$] (quantum yield)

$N_2O + M^* \rightarrow N + NO + M$

Manning and Noyes JACSAT-1932-54-3907

$N_2O + M^* \rightarrow N + NO^* + M$

Prince, et al. JCPSA6-1964-40-2619 [$NO^*(B^2\Pi_r)$; $M^* = Ar^*$]

$N_2O + M \rightarrow 1/2N_2 + NO + M$ (overall)

Mahenc, et al. CHDCAQ-1971-272-345

$N_2O + M \rightarrow N_2 + O + M$

Batten and Johnston IJCKBO-1971-3-381
Bunker, D. L. JCPSA6-1962-37-393 (calculation)
Garnett, et al. JCPSA6-1969-51-84
Gedye, G. R. JCSOA9-1931-3016 (mechanism)
Gilbert and Ross AJCHAS-1971-24-1541 (calculation)

$N_2O + M^* \rightarrow N_2 + O + M$

Cvetanovic, R. J. JCPSA6-1955-23-1203 (mechanism)
Cvetanovic, R. J. JCPSA6-1955-23-1208
Manning and Noyes JACSAT-1932-54-3907
Simonaitis and Heicklen IJCKBO-1971-3-319 [$M^* = Hg^*$]

$N_2O + M^* \rightarrow N_2 + O^* + M$

Cvetanovic, R. J. JCPSA6-1955-23-1203 (mechanism)
Manning and Noyes JACSAT-1932-54-3907 [$O^*(^1D)$] (mechanism)
Zelikoff and Aschenbrand JCPSA6-1957-27-123 [$O^*(^1S)$; $M^* = N_2^*(B^3\Pi_g)$] (mechanism)

$N_2O + M \rightarrow N_2 + 1/2O_2 + M$ (overall)

Bodenstein and Jost BOOKA7-1941-267 (review)
Foong, et al. MCHEBQ-1970-6-25
Mahenc, et al. CHDCAQ-1971-272-345

$N_2O + M \rightarrow N_2O^* + M$ (vibrational excitation)

Bell, et al. JCSOA9-1955-1440
Gill and Laidler PRLAAZ-1959-250-121 (calculation)
Tschuikow-Roux, E. JPCHAX-1969-73-3891 (calculation)

$N_2O + M^* \rightarrow N_2O^* + M$ (energy transfer)

Callear and Wood TFSOA4-1971-67-272
Moore, C. B. ACHRAY-1969-2-103 (review)

$N_2O^* + M \rightarrow N_2O + M$ (vibrational relaxation)

Abello, T. P. PHRVAO-1928-31-1083
Arditi, et al. CHDBAN-1970-270-477
Arnold, et al. TFSOA4-1957-53-738 (calculation)
Arnold, et al. PRLAAZ-1958-248-445

$N_2O^* + M \rightarrow N_2O + M$ (vibrational relaxation) (Continued)

Bates, et al.	JCPSA6-1968-49-1432
Bell, et al.	JCSOA9-1955-1440
Bunker, D. L.	JCPSA6-1964-40-1946 (calculation)
Buschmann and Schaefer	ZPCBAL-1941-50-73
Cottrell and McCoubrey	BOOKA7-1961-93 (review)
Cottrell, et al.	TFSOA4-1966-62-2655
Cottrell, et al.	TFSOA4-1967-63-2093
Dickens and Ripamonti	TFSOA4-1961-57-735
Dixon, et al.	PRLAAZ-1922-100-1
Eucken and Jaacks	ZPCBAL-1935-30-85
Eucken and Nuemann	ZPCBAL-1937-36-163
Griffith, W.	JAPIAU-1950-21-1319
Griffith, et al.	PHRVAO-1956-102-1209
Herzfeld and Litovitz	PAPHAP-1959-7-252 (review)
Jacox and Bauer	JPCHAX-1957-61-833
Kneser, H. O.	EENAA3-1949-22-121 (review)
Kneser and Zühlke	ZEPYAA-1932-77-649
Kuechler, L.	NATWAY-1938-26-104
McCoubrey, et al.	TFSOA4-1961-57-1472 (review)
Penman, H. L.	PPSOAU-1935-47-543
Railston and Richardson	PPSOAU-1935-47-533
Richardson, E. G.	PRLAAZ-1934-146-56
Schweikert, G.	ANPYA2-1915-48-593
Shilling, W. G.	PHMSAO-1927-3-273
Slobodskaya and Tkachenko	OPSUA3-1967-23-256
Wight, H. M.	JASMAN-1956-28-459
Yardley, J. T.	JCPSA6-1968-49-2816

$N_2O^* + M \rightarrow N_2O + M^*$ (energy transfer)

Moore, C. B.	ACHRAY-1969-2-103 (review)

$N_2O + NO \rightarrow N_2 + NO_2$

Batten and Johnston	IJCKBO-1971-3-381
Schofield, K.	PLSSAE-1965-15-643

$N_2O + NO_2 \rightarrow N_2 + NO + O_2$

Batten and Johnson	IJCKBO-1971-3-381

$N_2O + O \rightarrow N_2 + O_2^*$

Schofield, K.	PLSSAE-1965-15-643

$N_2O + O \rightarrow NO + NO^*$

Schofield, K.	PLSSAE-1965-15-643

$N_2O + O^* \rightarrow N + NO_2$

Scott, et al.	CJCHAG-1971-49-1808 [$O^*(^1D)$]

$N_2O + O \rightarrow N_2 + O_2$

Groth and Schierholz	PLSSAE-1959-1-333 (mechanism)

$N_2O + O^* \rightarrow N_2 + O_2$

Dodge and Heicklen	IJCKBO-1971-3-269 [$O^*(^1D$ or $^1S)$]

$N_2O + O^* \rightarrow N_2 + O_2$ (Continued)

Goldman, et al.	IJCKBO-1971-3-501 [$O^*(^1D)$]
Greenberg and Heicklen	IJCKBO-1970-2-185 [$O^*(^1D)$]
Greenberg and Heicklen	IJCKBO-1972-4-417 [$O^*(^1D)$]
Paraskevopoulos, et al.	JCPSA6-1971-54-3907 [$O^*(^1D)$]
Scott, et al.	CJCHAG-1971-49-1808 [$O^*(^1D)$]
Yang and Servedio	JCPSA6-1967-47-4817 [$O^*(^1S)$] (quantum yield)
Zelikoff and Aschenbrand	JCPSA6-1957-27-123 [$O^*(^1S)$] (mechanism)

$N_2O + O \rightarrow NO + NO$

Groth and Schierholz	PLSSAE-1959-1-333 (mechanism)

$N_2O + O^* \rightarrow NO + NO$

Dodge and Heicklen	IJCKBO-1971-3-269 [$O^*(^1D$ or $^1S)$]
Gedye, G. R.	JCSOA9-1931-3016 (mechanism)
Goldman, et al.	IJCKBO-1971-3-501 [$O^*(^1D)$]
Greenberg and Heicklen	IJCKBO-1970-2-185 [$O^*(^1D)$]
Greenberg and Heicklen	IJCKBO-1972-4-417 [^1D]
Paraskevopoulos, et al.	JCPSA6-1971-54-3907 [$O^*(^1D)$]
Scott, et al.	CJCHAG-1971-49-1808 [$O^*(^1D)$]
Yang and Servedio	JCPSA6-1967-47-4817 [$O^*(^1S)$] (quantum yield)
Zelikoff and Aschenbrand	JCPSA6-1957-27-123 [$O^*(^1S)$] (mechanism)

$N_2O + O_2^* \rightarrow N_2 + O_3$

Goldman, et al.	IJCKBO-1971-3-501

$N_2O_3^* + M \rightarrow N_2O_3 + M$ (vibrational relaxation)

Bauer, et al.	ACUSAY-1959-9-181

$N_2O_4^* \rightarrow NO_2 + NO_2$

Sharma, et al.	JPCHAX-1970-74-923

$N_2O_4 + M \rightarrow NO_2 + NO_2 + M$

Blend, H.	JASMAN-1970-47-757
Keck and Kalelkar	*AVEVZJ-1968-RPT/289 (calculation)

$N_2O_4^* + M \rightarrow N_2O_4 + M$ (vibrational relaxation)

Bauer, et al.	ACUSAY-1959-9-181

$N_2O_4 + O^* \rightarrow N_2O_3 + O_3$

Paraskevopoulos, et al.	JCPSA6-1971-54-3907 [$O^*(^1D)$]

$N_2O_4 + O^* \rightarrow NO + NO_2 + O_2$

Paraskevopoulos, et al. JCPSA6-1971-54-3907 [$O^*(^1D)$]

$N_2O_5^* \rightarrow N_2O_4 + O$

Murphy, R. H. PHDTAG-1969-Calif. Univ., L.A. [$N_2O_5^*(T_1)$]

$N_2O_5^* \rightarrow NO_2 + NO_3$

Tschuikow-Roux, E. JPCHAX-1969-73-3891 (calculation)

$N_2O_5 + h\nu \rightarrow NO_2 + NO_2 + 1/2O_2$ (overall)

Murphy, R. H. PHDTAG-1969-Calif. Univ., L.A. (quantum yield)

$N_2O_5 + M \rightarrow N_2O_5^* + M$ (vibrational excitation)

Gill and Laidler PRLAAZ-1959-250-121 (calculation)
Tschuikow-Roux, E. JPCHAX-1969-73-3891 (calculation)

$N_2O_5^* + M \rightarrow N_2O_5 + M$ (electronic relaxation)

Murphy, R. H. PHDTAG-1969-Calif. Univ., L.A. [$N_2O_5^*(T_1)$]

$N_2O_5^* + M \rightarrow N_2O_5^{**} + M$ (electronic transition)

Murphy, R. H. PHDTAG-1969-Calif. Univ., L.A. [$S_1 \rightarrow T_1$] (mechanism)

$N_2O_5^* + M \rightarrow NO_2 + NO_3 + M$

Gill and Laidler PRLAAZ-1959-250-121 (calculation)

$N_2O_5 + N_2O_5 \rightarrow 4NO_2 + O_2$ (overall)

Bodenstein and Jost BOOKA7-1941-267 (review)

$N_2O_5 + NO \rightarrow NO_2 + NO_2 + NO_2$ (overall)

Norrish, R. G. W. NATUAS-1927-119-123 (mechanism)

$N_2O_5 + NO_2 + h\nu \rightarrow 3NO_2 + 1/2O_2$ (overall)

Murphy, R. H. PHDTAG-1969-Calif. Univ., L.A. (quantum yield)

$N_2O_5 + O \rightarrow N_2O_4 + O_2$

Murphy, R. H. PHDTAG-1969-Calif. Univ., L.A. (upper limit estimate)

$N_2O_5 + O^* \rightarrow .....$

Wayne, R. P. PHCBAP-1966-5-889 [$O^*(^1D)$]

$N\mathcal{O}^* \rightarrow N + \mathcal{O}$

Bubert, H.	JCPSA6-1972-56-1113 [$D^2\Sigma^+$, v = j]
Callear and Pilling	TFSOA4-1970-66-1618 [$C^2\Pi$]
Callear and Pilling	TFSOA4-1970-66-1886 [$D^2\Sigma^+$, or $C^2\Pi$]

$N\mathcal{O}^* \rightarrow N\mathcal{O} + h\nu$

Bortner, et al.	*GESLZ6-1970-RPT/DASA-2560 (review)
Broemer and Zwirner	ZENAAU-1969-24-118 [$N\mathcal{O}^*(B^2\Pi_r)$]
Bubert, H.	JCPSA6-1972-56-1113 [$N\mathcal{O}^*(D^2\Sigma^+$ v = j) $\rightarrow$ [$N\mathcal{O}^*(X_2\Pi_r$ v = n]
Callear and Pilling	TFSOA4-1970-66-1618 [$N\mathcal{O}^*(C^2\Pi)$]
Callear and Pilling	TFSOA4-1970-66-1886 [$N\mathcal{O}^*(D^2\Pi$ or $C^2\Pi$)
Copeland, G. E.	JCPSA6-1972-56-689 [$N\mathcal{O}^*(A^2\Sigma^+)$ v = 0,1,2]
Copeland, et al.	BAPSA6-1970-15-429 [$N\mathcal{O}^*(A^2\Sigma^+$, v = 0,1,2)]
Crosley and Zare	JCPSA6-1968-49-4231 [$N\mathcal{O}^*(A^2\Sigma^+$, v = 1)]
Fontijn and Ellison	JPCHAX-1968-72-3701 [$N\mathcal{O}^*(A^2\Sigma^+$, or $B^2\Pi_r$)] (mechanism)
German, et al.	JCPSA6-1971-54-4039 [$N\mathcal{O}^*(A^2\Sigma^+$, v = 1)]
Hesser, J. E.	JCPSA6-1968-48-2518 [$N\mathcal{O}^*(D^2\Sigma^+)$]
Hesser and Dressler	ASJOAB-1965-142-389 [$N\mathcal{O}^*(D^2\Sigma^+)$]
Hesser and Dressler	JCPSA6-1966-45-3149 [$N\mathcal{O}^*(A^1\Pi)$]
Roth, W.	JCPSA6-1961-34-999 [$N\mathcal{O}^*(A^2\Sigma^+$ v = m)] [$N\mathcal{O}(X^2\Pi_r$ v = n)]
Weinstock and Zare	JCPSA6-1972-56-3456 [$N\mathcal{O}^*(A^2\Sigma^+$, v = 1)]
Zelikoff and Aschenbrand	JCPSA6-1957-27-123 [$N\mathcal{O}^*(A^2\Sigma^+)$] (mechanism)

$N\mathcal{O}^{**} \rightarrow N\mathcal{O}^* + h\nu$

Bubert, H.	JCPSA6-1972-56-1113 [$D^2\Sigma^+$, v = j $\rightarrow$ $A^2\Sigma^+$, v = j]
Callear and Pilling	TFSOA4-1970-66-1618 [$C^2\Pi \rightarrow A^2\Sigma^+$]
Callear and Pilling	TFSOA4-1970-66-1886 [$D^2\Sigma^+$, or $C^2\Pi \rightarrow A^2\Sigma^+$]
Gross and Cohen	JCPSA6-1968-48-2582 [$C^2\Pi \rightarrow A^2\Sigma^+$] (evaluation)

$N\mathcal{O} + M \rightarrow N\mathcal{O}^* + M$ (vibrational excitation)

Bortner, et al.	*GESLZ6-1970-RPT/DASA-2560 (review)
Taylor, et al.	SYMCAQ-1967-11-49

$N\O + M^* \rightarrow N\O^* + M$ (energy transfer)

Bortner, et al.	*GESLZ6-1970-RPT/DASA-2560 (review)
Callear and Wood	TFSØA4-1971-67-272 [$N\O^*(A^2\Sigma)$ v = 0,1,2]
Fontijn and Ellison	JPCHAX-1968-72-3701 [$N\O^*(A^2\Sigma^+)$; $M^* = N_2^*(A^3\Sigma_u^+)$] (mechanism)
Melton and Klemperer	JCPSA6-1971-55-1468 [$N\O^*(A^2\Sigma^+$, v = 0,1)]
Moore, C. B.	ACHRAY-1969-2-103 (review)
Taylor, et al.	SYMCAQ-1967-11-49
Young and St. John	ADCSAJ-1969-80-105 [$N\O^*(A^2\Sigma^+$, v = 0,1; $M^* = N_2^*(A^3\Sigma_u^+$, v = 0,1)]

$N\O^* + M \rightarrow N\O + M$ (electronic relaxation)

Bauer and Sahm	JCPSA6-1965-42-3400
Callear, A. B.	DFSØAW-1962-33-28 [$N\O^*(A^2\Sigma^+)$ v = 0 → $X^2\Pi_r$, v = 1]
Callear and Pilling	TFSØA4-1970-66-1618 [$N\O^*(C^2\Pi$ v = 0]
Callear and Pilling	TFSØA4-1970-66-1886 [$N\O^*(C^2\Pi)$]
Callear, et al.	TFSØA4-1968-64-2296 [$N\O^*(D^2\Sigma^+)$]
Copeland, G. E.	JCPSA6-1972-56-689 [$N\O^*(A^2\Sigma^+$, v = 0,1,2]
Heicklen, J.	JPCHAX-1966-70-2456 [$N\O^*(A^2\Sigma^+)$]
Kneser, et al.	JASMAN-1967-41-1029

$N\O^* + M \rightarrow N\O + M$ (rotational relaxation)

Bauer and Sahm	JCPSA6-1965-42-3400
Kneser, et al.	JASMAN-1967-41-1029

$N\O^* + M \rightarrow N\O + M$ (vibrational relaxation)

Bauer and Sahm	JCPSA6-1965-42-3400
Bauer, et al.	ACUSAY-1959-9-181
Bauer, et al.	JCPSA6-1959-30-1119
Bender, D.	ANPYA2-1940-38-199
Billingsley and Callear	NATUAS-1969-221-1136
Billingsley and Callear	NATUAS-1969-224-687
Billingsley and Callear	TFSØA4-1971-67-257
Bortner, et al.	*GESLZ6-1970-RPT/DASA-2560 (review)
Bradley and Lewis	JCPSA6-1969-50-544
Breshears and Bird	NATUAS-1969-224-268
Callear, A. B.	DFSØAW-1962-33-28
Herzfeld and Litovitz	PAPHAP-1959-7-245 (review)
Hochanadel, et al.	JCPSA6-1969-50-3075
Kneser, H. Ø.	ANPYA2-1941-39-261
Kneser, et al.	JASMAN-1967-41-1029
Nikitin, E. E.	ØPSUA3-1960-9-8
Roth, W.	JCPSA6-1961-34-999
Roth, W.	JCPSA6-1961-34-2204
Taylor, et al.	SYMCAQ-1967-11-49
Van Itterbeek and Thys	PHYSAG-1938-5-640

$N\O^* + M \rightarrow N\O + M^*$ (energy transfer)

Billingsley and Callear	NATUAS-1969-224-687
Billingsley and Callear	TFSØA4-1971-67-257

$NO^* + M \rightarrow NO + M^*$ (energy transfer) (Continued)

Bortner, et al.	*GESLZ6-1970-RPT/DASA-2560 (review)
Callear, A. B.	DFSOAW-1962-33-28
Callear and Williams	TFSOA4-1966-62-2030
Callear and Wood	TFSOA4-1971-67-598 [$C^2\Pi$]
Melton and Klemperer	JCPSA6-1971-55-1468 [$NO^*(A^2\Sigma^+$, $v = 0,1$)]
Moore, C. B.	ACHRAY-1969-2-103 (review)
Taylor, et al.	SYMCAQ-1967-11-49

$NO^{**} + M \rightarrow NO^* + M$ (electronic transition)

Callear and Pilling	TFSOA4-1970-66-1886 [$D^2\Sigma^+ \rightarrow C^2\Pi$]
Gross and Cohen	JCPSA6-1968-48-2582 [$C^2\Pi \rightarrow A^2\Sigma^+$] (evaluation)

$NO^{**} + M \rightarrow NO^* + M^*$ (vibration-vibration resonant exchange)

Hochanadel, et al.	JCPSA6-1969-50-3075

$NO + NO \rightarrow N + NO_2$

Schofield, K.	PLSSAE-1965-15-643

$NO + NO \rightarrow N_2 + O_2$

Mahenc, et al.	CHDCAQ-1969-269-665
Schofield, K.	PLSSAE-1965-15-643

$NO + NO^* \rightarrow N_2 + O_2$

Heicklen, J.	JPCHAX-1966-70-2456 [$NO^*(A^2\Sigma^+)$]

$NO + NO \rightarrow N_2O + O$

Schofield, K.	PLSSAE-1965-15-643

$NO + NO^* \rightarrow N_2O + O$

Heicklen, J.	JPCHAX-1966-70-2456 [$NO^*(A^2\Sigma^+)$]

$NO + NO + O_2 \rightarrow NO_2 + NO_2$

Mahenc, et al.	BSCFAS-1971-1578
Schofield, K.	PLSSAE-1965-15-643

$NO + NO_2 \rightarrow N_2O_3$

Hochanadel, et al.	JCPSA6-1969-50-3075

$NO + NO_2 \rightarrow NO + NO_2$ (exchange)

Sharma, et al.	JPCHAX-1970-74-923

$NO + NO_3 \rightarrow NO_2 + NO_2$

Schofield, K.	PLSSAE-1965-15-643

$NO + O \rightarrow NO_2 + h\nu$

Vanpee, et al.	AIAJAH-1971-9-135

$NO + O + M \rightarrow NO_2 + M$

Broemer and Zwirner	ZENAAU-1969-24-118
Clyne, et al.	TFSOA4-1965-61-2701 (erratum)
Hochanadel, et al.	JCPSA6-1969-50-3075
Stuhl and Niki	JCPSA6-1971-55-3943

$NO + O + M \rightarrow NO_2 + M^*$

Schofield, K.	PLSSAE-1965-15-643

$NO + O_3 \rightarrow NO_2 + O_2$

Johnston, H. S.	SCIEAS-1971-173-517 (review)
Sharma, et al.	JPCHAX-1970-74-923
Stephens, E. R.	24ZVAA-1971-45 (evaluation)

$NO + O_3 \rightarrow NO_2^* + O_2$

Redpath and Menzinger	CJCHAG-1971-49-3063
Schofield, K.	PLSSAE-1965-15-643

$NO_2^* \rightarrow N + O_2$

Bunker, D. L.	JCPSA6-1964-40-1946 (calculation)

$NO_2^* \rightarrow NO_2 + h\nu$

Sackett and Yardley	CHPLBC-1971-9-612 [$NO_2^*(^2B_1)$]
Schwartz, S. E.	DABBBA-1969-30-1073 [$NO_2^*(^2B_1)$]
Sidebottom, et al.	CHPLBC-1972-13-337 [$NO_2^*(^2B_1)$]

$NO_2 + h\nu \rightarrow NO + O$

Dimitriades and Whisman	24ZVAA-1971-89
Hippler and Troe	BBPCAX-1971-75-27 (quantum yield)
Johnston, H. S.	SCIEAS-1971-173-517 (review)
Murphy, R. H.	PHDTAG-1969-Calif. Univ., L.A. (quantum yield)
Paraskevopoulos, et al.	JCPSA6-1971-54-3907 (quantum yield)

$NO_2 + h\nu \rightarrow NO + O^*$

Paraskevopoulos, et al.	JCPSA6-1971-54-3907 [$O^*(^1D)$] (quantum yield)

$NO_2 + h\nu \rightarrow NO + 1/2O_2$ (overall)

Murphy, R. H.	PHDTAG-1969-Calif. Univ., L.A. (quantum yield)
Norrish, R. G. W.	NATUAS-1927-119-123 (mechanism)

$NO_2 + M \rightarrow NO + O + M$

Keck and Kalelkar	*AVEVZJ-1968-RPT/289 (calculation)

$NO_2 + M^* \rightarrow NO_2^* + M$ (energy transfer)

O'Brien and Myers — CHPLBC-1971-9-544 [$M^* = O_2^*(^1\Delta_g$, or $^1\Sigma_g^+$)]

$NO_2^* + M \rightarrow NO_2 + M$ (electronic relaxation)

Sidebottom, et al. — CHPLBC-1972-13-337 [$NO_2^*(^2B_1)$]

$NO_2^* + M \rightarrow NO_2 + M$ (vibrational relaxation)

Bunker, D. L. — JCPSA6-1964-40-1946 (calculation)

$NO_2^* + M \rightarrow NO_2 + M^*$ (energy transfer)

O'Brien and Myers — CHPLBC-1971-9-544 [$M^* = O_2^*(^1\Delta_g$, or $^1\Sigma_g^+$)]

Schwartz, S. E. — DABBBA-1969-30-1073 [$NO_2^*(^2B_1)$]

$NO_2 + NO_2 \rightarrow NO + NO + O_2$

Mahenc, et al. — CHDCAQ-1969-269-665

$NO_2 + NO_2 \rightarrow NO + NO_3$

Schofield, K. — PLSSAE-1965-15-643

$NO_2 + NO_2 \rightarrow NO_2 + NO_2$ (exchange)

Sharma, et al. — JPCHAX-1970-74-923

$NO_2 + NO_2 \rightarrow N_2O_4^*$

Sharma, et al. — JPCHAX-1970-74-923

$NO_2 + NO_2 + M \rightarrow N_2O_4 + M$

Sharma, et al. — JPCHAX-1970-74-923

$NO_2 + NO_3^* \rightarrow NO + NO_2 + O_2$

Murphy, R. H. — PHDTAG-1969-Calif. Univ., L.A.

$NO_2 + NO_3 + M \rightarrow N_2O_5 + M$

Bodenstein and Jost — BOOKA7-1941-267 (review)

$NO_2 + O \rightarrow NO + O_2$

Cupitt and Glass — TFSOA4-1971-67-1
Hippler and Troe — BBPCAX-1971-75-27
Johnston, H. S. — SCIEAS-1971-173-517 (review)
Stephens, E. R. — 24ZVAA-1971-45 (evaluation)

$NO_2 + O \rightarrow NO + O_2^*$

Pitts, et al. ESTHAG-1969-3-241 [$O_2^*(^1\Delta_g)$]

Schofield, K. PLSSAE-1965-15-643 [$v \leq 9$] (review)

$NO_2 + O^* \rightarrow NO + O_2$

Paraskevopoulos, et al. JCPSA6-1971-54-3907 [$O^*(^1D)$]

$NO_2 + O + M \rightarrow NO_3 + M$

Hippler and Troe BBPCAX-1971-75-27

$NO_2 + O + M \rightarrow NO_3 + M^*$

Schofield, K. PLSSAE-1965-15-643

$NO_2 + O_3 \rightarrow NO_3 + O_2$

Bodenstein and Jost BOOKA7-1941-267 (review)
Schofield, K. PLSSAE-1965-15-643

$NO_3 + NO_3 \rightarrow NO_2 + NO_2 + O_2$ (overall)

Bodenstein and Jost BOOKA7-1941-267 (review)

$NO_3^* + M \rightarrow NO_3 + M$

Murphy, R. H. PHDTAG-1969-Calif. Univ., L.A.

I(b). REVIEWS

Bodenstein and Jost BOOKA7-1941-267
Cottrell and McCoubrey BOOKA7-1961 (N_2, N_2O rot. and vib. relax.; pgs. 80, 81, 93)
Donovan and Husain CHREAY-1970-70-489 (N^*)
Gilmore, et al. JQSRAE-1969-9-157 (N, N_2, NO excitation and relaxation)
Herzfeld and Litovitz PAPHAP-1959-7 (N_2, N_2O, NO, rot. and vibr. relax.: pgs. 238, 241, 245, 252)
Johnston, H. S. SCIEAS-1971-173-517 (Nitrogen oxides)
Kneser, H. O. EENAA3-1949-22-121 (N_2, N_2O vibrational relaxation)
Kondratiev, V. N. BOOKA7-1970 (N, N_2, Nitrogen oxides: General Tables)
McCoubrey, et al. TFSOA4-1961-57-1472 (N_2, N_2O vibrational relaxation)
Moore, C. B. ACHRAY-1969-2-103 (N_2, N_2O, NO vibrational energy transfer)
Schiff, H. J. CJCHAG-1969-47-1903
Taylor and Bitterman RMPHAT-1969-41-26 (N_2 vibrational energy transfer)

II(a). REACTIONS INVOLVING O SPECIES

$O^*(^1D) \rightarrow O(^3P) + h\nu$

Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Dalgarno and Walker	JAHSAK-1964-21-463
Young and Ung	JCPSA6-1966-44-3038

$O^*(^1S) \rightarrow O(^3P) + h\nu$

Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Evans and Vallance-Jones	CJPHAD-1965-43-697
Omholt and Harang	JATPA3-1955-7-247

$O^*(^3S^0) \rightarrow O(^3P) + h\nu$

Ajello, J. M.	JCPSA6-1971-55-3156

$O^*(^5S^0) \rightarrow O(^3P) + h\nu$

Ajello, J. M.	JCPSA6-1971-55-3156

$O^{**}(^1S) \rightarrow O^*(^1D) + h\nu$

Fontijn and Ellison	JPCHAX-1968-72-3701 (mechanism)

$O(^3P) + M^* \rightarrow O^*(^1D) + M$ (electronic energy transfer)

$M^* = O_2^*(b^1\Sigma_g^+, v = 2)$

Wallace and Chamberlain	PLSSAE-1959-2-60 (calculation)

$O(^3P) + M^* \rightarrow O^*(^1S) + M$ (electronic energy transfer)

$M^* = N_2^*(A^3\Sigma_u^+)$

Fontijn and Ellison	JPCHAX-1968-72-3701 (mechanism)
Meyer, et al.	ASJOAB-1969-157-1023
Meyer, et al.	JPCHAX-1970-74-2238
Parkinson and Zipf	PLSSAE-1970-18-895

$O^*(^1D) + M \rightarrow O(^3P) + M$ (electronic relaxation)

Bates and Dalgarno	JATPA3-1953-4-112 (estimate)
Biedenkapp, et al.	CHPLBC-1970-5-379
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Castellano and Schumacher	ZPCFAX-1971-76-258
Clerc and Barat	JCPQAY-1966-63-1525
Clerc and Barat	JCPSA6-1967-46-107 (estimation)
Dalgarno and Walker	JAHSAK-1964-21-463
DeMore, W. B.	JCPSA6-1967-47-2777
DeMore and Dede	JPCHAX-1970-74-2621
DeMore and Raper	JCPSA6-1962-37-2048
DeMore and Raper	JCPSA6-1966-44-1780
DeMore and Raper	JCPSA6-1967-46-2500
Dodge and Heicklen	IJCKBO-1971-3-269
Donovan and Husain	CHREAY-1970-70-489 (review)
Donovan, et al.	TFSOA4-1970-66-774 (calculation)
Donovan, et al.	TFSOA4-1971-67-375
Gauthier and Snelling	JCPSA6-1971-54-4317
Gilpin, et al.	JCPSA6-1971-55-1087
Greenberg and Heicklen	IJCKBO-1970-2-185

$O^*(^1D) + M \rightarrow O(^3P) + M$ (electronic relaxation) (Continued)

Greenberg and Heicklen	IJCKBO-1972-4-417
Gulledge, et al.	JGREA2-1968-73-5535
Hunten and McElroy	RVGPA3-1966-4-303 (review)
LeBlanc, et al.	JCPSA6-1966-45-2200
Lowenstein, M.	JCPSA6-1971-54-2282
Norrish and Wayne	PRLAAZ-1965-288-361 (mechanism)
Paraskevopoulos and Cvetanovic	JACSAT-1969-91-7572
Paraskevopoulos, et al.	JCPSA6-1971-54-3907
Pravilov and Vilesov	RJPCAR-1971-45-1018
Preston and Cvetanovic	JCPSA6-1966-45-2888
Quick and Cvetanovic	CJCHAG-1971-49-2193
Raper and DeMore	JCPSA6-1964-40-1053 (mechanism)
Scott, et al.	CJCHAG-1971-49-1808
Seaton, M. J.	JTEPAR-1955-5-289
Slanger and Black	JCPSA6-1971-54-1889
Snelling and Bair	JCPSA6-1968-48-5737 (upper limit estimate)
Sullivan and Warneck	JCPSA6-1967-46-953
Vilesov and Pravilov	HIECAP-1970-4-191
Vilesov and Pravilov	HIECAP-1970-4-475
von Ellenrieder, et al.	CHPLBC-1971-9-152
von Ellenrieder, et al.	ZPCFAX-1971-76-240
Wallace and Hunten	JGREA2-1968-73-4813
Wallace and McElroy	PLSSAE-1966-14-677
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Welge, et al.	BBPCAX-1969-73-911
Yamazaki and Cvetanovic	JCPSA6-1964-41-3703
Young and Ung	JCPSA6-1966-44-3038

$O^*(^1S) + M \rightarrow O(^3P) + M$ (electronic relaxation)

Barth and Hildebrandt	JGREA2-1961-66-985
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Evans and Vallance Jones	CJPHAD-1965-43-697
Hunten and McElroy	RVGPA3-1966-4-303 (review)
LeBlanc, et al.	JCPSA6-1966-45-2200
Omholt and Harang	JATPA3-1955-7-247
Wallace and McElroy	PLSSAE-1966-14-677
Welge, et al.	BBPCAX-1969-73-911
Welge, et al.	CHPLBC-1971-10-13
Young and Black	PLSSAE-1966-14-113

$O^*(^1D) + M \rightarrow O(^3P) + M^*$ (electronic energy transfer)

$M^* = O_2^*(a^1\Delta_g)$

Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Gauthier and Snelling	JCPSA6-1971-54-4317
Gilpin, et al.	JCPSA6-1971-55-1087
Langley and McGrath	PLSSAE-1971-19-416
McCullough and McGrath	CHPLBC-1971-8-353
Seaton, M. J.	ASJOAB-1958-127-67 (calculation)
Vallance Jones and Gattinger	PLSSAE-1963-11-961 (estimate)
Vilesov and Pravilov	HIECAP-1970-4-191
Wayne, R. P.	ADPCA2-1969-7-311 (review)

$M^* = O_2^*(b^1\Sigma_g^+)$

Biedenkapp and Bair	JCPSA6-1970-52-6119
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Castellano and Schumacher	ZPCFAX-1971-76-258
Gauthier and Snelling	ANYAA9-1970-171-220 (mechanism)

$O^*(^1D) + M \rightarrow O(^3P) + M^*$ (electronic energy transfer) (Continued)

Gauthier and Snelling	JCPSA6-1971-54-4317
Gilpin, et al.	JCPSA6-1971-55-1087
Langley and McGrath	PLSSAE-1971-19-416
McCullough and McGrath	CHPLBC-1971-8-353
McCullough and McGrath	CHPLBC-1971-12-98
Seaton, M. J.	ASJOAB-1958-127-67 (calculation)
Seaton, M. J.	JATPA3-1954-4-295 (calculation)
Snelling and Gauthier	CHPLBC-1971-9-254
von Ellenrieder, et al.	CHPLBC-1971-9-152
von Ellenrieder, et al.	ZPCFAX-1971-76-240
Wallace and Chamberlain	PLSSAE-1959-2-60 (calculation)
Wallace and Hunten	JGREA2-1968-73-4813
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Welge, et al.	BBPCAX-1969-73-911
Young and Black	JCPSA6-1967-47-2311

$O^*(^1D) + M \rightarrow O(^3P) + M^*$ (electronic-vibrational energy transfer)

$M^* = N_2^*(X^1\Sigma_g^+, v > 0)$

Seaton, M. J.	ASJOAB-1958-127-67 (calculation)

$M^* = O_2^*(X^3\Sigma_g^-, v > 0)$

McCullough and McGrath	CHPLBC-1971-8-353
McCullough and McGrath	CHPLBC-1971-12-98

$O^*(^1S) + M \rightarrow O(^3P) + M^*$ (electronic energy transfer)

$M^* = N_2^*(?)$

Young and Sharpless	JCPSA6-1963-39-1071 (upper limit estimate)

$M^* = O_2^*(a^1\Delta_g)$

Seaton, M. J.	JATPA3-1954-4-295 (calculation)

$M^* = O_2^*(b^1\Sigma_g^+)$

Seaton, M. J.	JATPA3-1954-4-295 (calculation)

$O^*(^1S) + M \rightarrow O(^3P) + M^*$ (electronic-vibrational energy transfer)

$M^* = N_2^*(X^1\Sigma_g^+, v > 0)$

Seaton, M. J.	ASJOAB-1958-127-67 (calculation)

$O^{**}(^1S) + M \rightarrow O^*(^1D) + M$ (electronic transition)

Barth and Hildebrandt	JGREA2-1961-66-985
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
LeBlanc, et al.	JCPSA6-1966-45-2200
Young and Black	PLSSAE-1966-14-113
Young, et al.	JCPSA6-1968-49-4769

$O^{**}(^1S) + M \rightarrow O^*(^1D) + M^*$ (electronic energy transfer)

$M^* = N_2^*(?)$

Young and Sharpless	JCPSA6-1963-39-1071 (upper limit estimate)

$M^* = O^*(^1D)$

Young and Sharpless	JCPSA6-1963-39-1071

$O^{**}(^1S) + M \rightarrow O^*(^1D) + M^*$ (electronic energy transfer) (Continued)

$M^* = O_2^*(a^1\Delta_g)$

Seaton, M. J. JATPA3-1954-4-295 (calculation)

$M^* = O_2^*(b^1\Sigma_g^+)$

Seaton, M. J. JATPA3-1954-4-295 (calculation)

$O^{**}(^1S) + O(^3P) \rightarrow O^*(^1D) + O^*(^1D)$ (electronic energy transfer)

Young and Sharpless JCPSA6-1963-39-1071

$O + O \rightarrow O_2 + h\nu$

Bates and Dalgarno JATPA3-1953-4-112 (calculation)

$O + O + M \rightarrow O_2 + M$

Billotte, et al. ENTPA5-1971-38-5
Broemer and Zwirner ZENAAU-1969-24-118
Jensen and Jones *RPREZ8-1971-RPT/71-9 (review)
Shui, et al. SYMCAQ-1971-13-21 (calculation)

$O + O + M \rightarrow O_2 + M^*$

$M^* = Ar^*, CO_2^*, He^*, Kr^*, N_2^*, N_2O^*, O^*, O_2^*, SF_6^*, Xe^*$

Schofield, K. PLSSAE-1965-15-643 (evaluation)

$M^* = CN^*$

Setser and Thrush PRLAAZ-1965-288-275

$M^* = Na^*$

Carabetta and Kaskan SYMCAQ-1967-11-321

$M^* = O^*(^1S)$

Schofield, K. PLSSAE-1965-15-643 (evaluation)
Young and Black PLSSAE-1966-14-113

$O(^3P) + O(^3P) + M \rightarrow O_2^*(a^1\Delta_g) + M$

Wayne, R. P. ANYAA9-1970-171-199

$O(^3P) + O(^3P) + M \rightarrow O_2^*(b^1\Sigma_g^+) + M$

Pitts, et al. ESTHAG-1969-3-241 (review)
Wayne, R. P. ADPCA2-1969-7-311 (review)

$O(^3P) + O(^3P) + M \rightarrow O_2^*(A^3\Sigma_u^+) + M$

McNeal and Durana JCPSA6-1969-51-2955 (mechanism)

$O(^3P) + O(^3P) + M \rightarrow O_2^*(B^3\Sigma_u^-) + M$

Myers and Bartle JCPSA6-1967-47-1783

$O + O + M \rightarrow O_2 + M + h\nu$ (overall)

Myers and Bartle JCPSA6-1968-48-3935

$O + O_2 \rightarrow O + O_2$ (exchange)

Garnett, et al. JCPSA6-1969-51-84

$O^*(^1D) + O_2(X^3\Sigma_g^-) \rightarrow O_3(^1A) + h\nu$

Seaton, M. J.	JATPA3-1954-4-295 (upper limit estimate)

$O + O_2 + M \rightarrow O_3 + M$

Bodenstein and Jost	BOOKA7-1941-267 (review)
Dimitriades and Whisman	24ZVAA-1971-89
Francis, P. D.	BJAPAJ-1969-2-1717
Hippler and Troe	BBPCAX-1971-75-27
Stephens, E. R.	24ZVAA-1971-45 (evaluation)
Stuhl and Niki	JCPSA6-1971-55-3943
Vilesov and Pravilov	HIECAP-1970-4-359
Vilesov and Pravilov	HIECAP-1970-4-475
Wood and Heicklen	JPCHAX-1971-75-861

$O + O_2 + M \rightarrow O_3 + M^*$

$M^* = Ar^*, CO_2^*, He^*, N_2^*, O_2^*, O_3^*$

Schofield, K.	PLSSAE-1965-15-643 (evaluation)

$O^*(^1D) + O_2(X^3\Sigma_g^-) + M \rightarrow O_3(^1A) + M$

Vilesov and Pravilov	HIECAP-1970-4-475

$O^*(^1D) + O_3(^1A) \rightarrow O(^3P) + O(^3P) + O_2(X^3\Sigma_g^-)$

Baiamonte, et al.	JCPSA6-1971-55-3617

$O + O_3 \rightarrow O_2 + O_2$

Bodenstein and Jost	BOOKA7-1941-267 (review)
Johnston, H. S.	SCIEAS-1971-173-517 (review)
Kondratiev and Interzarova	IJCKBO-1969-1-105
Krezenski, et al.	IJCKBO-1971-3-467
McCrumb and Kaufman	JCPSA6-1972 (in press)
Michael, J. V.	JCPSA6-1971-54-4455

$O(^3P) + O_3(^1A) \rightarrow O_2(X^3\Sigma_g^+, v = 0) + O_2^*(X^3\Sigma_g^-, v > 0)$

Ellis, et al.	NATUAS-1971-229-153 (mechanism)

$O(^3P) + O_3(^1A) \rightarrow O_2(X^3\Sigma_g^-) + O_2^*(b^1\Sigma_g^+)$

Pitts, et al.	ESTHAG-1969-3-241 (review)
Young and Black	JCPSA6-1966-44-3741

$O(^3P) + O_3(^1A) \rightarrow O_2^*(X^3\Sigma_g^-, v > 0) + O_2^*(a^1\Delta_g)$

Schofield, K.	PLSSAE-1965-15-643 (evaluation)

$O(^3P) + O_3(^1A) \rightarrow O_2^*(a^1\Delta_g) + O_2^*(a^1\Delta_g)$

Vallance Jones and Harrison	JATPA3-1958-13-45 (mechanism)

$O(^3P) + O_3(^1A) \rightarrow O_2^*(b^1\Sigma_g^+) + O_2^*(b^1\Sigma_g^+)$

Heidt, L. J.	JACSAT-1935-57-1710

$O^*(^1D) + O_3(^1A) \rightarrow O_2(X^3\Sigma_g^-) + O_2(X^3\Sigma_g^-)$

Biedenkapp, et al.	CHPLBC-1970-5-379
DeMore and Raper	JCPSA6-1966-44-1780
Gauthier and Snelling	JCPSA6-1971-54-4317
Goldman, et al.	IJCKBO-1971-3-501
Langley and McGrath	PLSSAE-1971-19-413
Langley and McGrath	PLSSAE-1971-19-416
Wayne, R. P.	ADPCA2-1969-7-311 (review)

$O^*(^1D) + O_3(^1A) \rightarrow O_2(X^3\Sigma_g^-) + O_2^*(?)$ (vibrational, or electronic)

Castellano and Schumacher	ZPCFAX-1971-76-258
Ellis, et al.	NATUAS-1971-229-153 (mechanism)
McCullough and McGrath	CHPLBC-1971-12-98
Norrish and Wayne	PRLAAZ-1965-288-200 (mechanism)
Schofield, K.	PLSSAE-1965-15-643 (evaluation)
von Ellenrieder, et al.	CHPLBC-1971-9-152
von Ellenrieder, et al.	ZPCFAX-1971-76-240
Wayne, R. P.	PHCBAP-1966-5-889

$O^*(^1D) + O_3(^1A) \rightarrow O_2^*(X^3\Sigma_g^-, v > 0) + O_2^*(X^3\Sigma_g^-, v > 0)$

Baiamonte, et al.	JCPSA6-1971-55-3617

$O_2^*(a^1\Delta_g) \rightarrow O_2(X^3\Sigma_g^-)$

Pitts, et al.	ESTHAG-1969-3-241 (review)

$O_2^*(a^1\Delta_g) \rightarrow O_2(X^3\Sigma_g^-) + h\nu$

Akimoto and Pitts	JCPSA6-1970-53-1312 (mechanism)
Badger, et al.	JCPSA6-1965-43-4345
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Noxon, J. F.	CJPHAD-1969-39-1110
Vallance Jones and Gattinger	PLSSAE-1963-11-961 (calculation)
Vallance Jones and Harrison	JATPA3-1958-13-45
Wayne, R. P.	ADPCA2-1969-7-311 (review)

$O_2^*(b^1\Sigma_g^+) \rightarrow O_2(X^3\Sigma_g^-) + h\nu$

Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Childs, W. H. J.	PHMSAO-1932-14-1049
Childs and Mecke	ZEPYAA-1931-68-344
Noxon, J. F.	CJPHAD-1961-39-1110
Seaton, M. J.	ASJOAB-1958-127-67 (calculation)
Wallace and Chamberlain	PLSSAE-1959-2-60 (v = 2) (calculation)
Wark and Mercer	APOPAI-1965-4-839
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Young and Black	JCPSA6-1966-44-3741

$O_2^*(A^3\Sigma_u^+) \rightarrow O_2(X^3\Sigma_g^-) + h\nu$

McNeal and Durana	JCPSA6-1969-51-2955 (mechanism)
Young and Black	JCPSA6-1966-44-3741

$O_2^*(B^3\Sigma_u^-) \rightarrow O_2(X^3\Sigma_g^-) + h\nu$

Myers and Bartle	JCPSA6-1967-47-1783
Myers and Bartle	JCPSA6-1968-48-3935

$O_2^{**}(b^1\Sigma_g^+) \rightarrow O_2^*(a^1\Delta_g) + h\nu$

Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Noxon, J. F.	CJPHAD-1961-39-1110
Seaton, M. J.	ASJOAB-1958-127-67 (calculation)

$O_2^*(a^1\Delta_g) + A \rightarrow [O_2\text{-}A]$

Broadbent, et al.	CCOMA8-1968-1315 (mechanism)
Coomber and Pitts	ESTHAG-1970-4-506
Furukawa, et al.	ANYAA9-1970-171-175
Gleason, et al.	JACSAT-1970-92-2068
Herron and Huie	ANYAA9-1970-171-229
Herron and Huie	JCPSA6-1969-51-4164
Kearns, D. R.	CHREAY-1971-71-395 (review)
Khan, et al.	ESTHAG-1967-1-656 (mechanism)
Kummler and Bortner	ANYAA9-1970-171-273 (review)
Pitts, J. N., Jr.	ANYAA9-1970-171-239 (review)
Pitts, J. N., Jr.	24ZVAA-1971-3 (review)
Pitts, et al.	ESTHAG-1969-3-241 (review)
Steer, et al.	ESTHAG-1969-3-946 (mechanism)

$O_2^*(b^1\Sigma_g^+) + A \rightarrow [O_2\text{-}A]$

Kearns, D. R.	CHREAY-1971-71-395 (review)
Khan, et al.	ESTHAG-1967-1-656 (mechanism)
Pitts, et al.	ESTHAG-1969-3-241 (review)

$O_2 + h\nu \rightarrow O + O$

Johnston, H. S.	SCIEAS-1971-173-517 (review)

$O_2 + M \rightarrow O + O + M$

Billotte, et al.	ENTPA5-1971-38-5
Breshears and Bird	JCPSA6-1971-55-4017
Keck, J.	DFSOAW-1962-33-173 (calculation)

$O_2^*(B^3\Sigma_u^-) + M \rightarrow O(^3P) + O(^3P) + M$

Myers and Bartle	JCPSA6-1967-47-1783

$O_2^* + M \rightarrow O + O + M$ (vibrational dissociation)

Clouston, et al.	PRLAAZ-1958-248-429

$O_2(X^3\Sigma_g^-) + M \rightarrow O_2^*(a^1\Delta_g) + M$ (electronic excitation)

Walker, J. C. G.	PLSSAE-1970-18-1043 (mechanism)

$O_2 + M \rightarrow O_2^* + M$ (rotational excitation)

Myers and Bartle	JCPSA6-1968-48-3935

$O_2 + M \rightarrow O_2^* + M$ (vibrational excitation)

Myers and Bartle JCPSA6-1968-48-3935

$O_2(X^3\Sigma_g^-) + M^* \rightarrow O_2^*(a^1\Delta_g) + M$ (electronic energy transfer)

$M^* = (CH_3)_2C{=}C(CH_3)_2^*(T_1)$

Coomber and Pitts ESTHAG-1970-4-506 (mechanism)

$M^* = C_6H_5CHO^*(T_1)$

Coomber and Pitts ESTHAG-1970-4-506 (mechanism)
Kummler and Bortner ESTHAG-1969-3-944 (mechanism)

$M^* = C_6H_6^*(T_1)$

Snelling, D. R. CHPLBC-1968-2-346
Steer, et al. ESTHAG-1969-3-946 (mechanism)

$M^* = C_8H_6N_2^*(T_1)$ (Quinoxaline)

Duncan and Kearns CHPLBC-1971-12-306

$M^* = C_{10}H_8^*(T_1)$ (naphthalene)

Duncan and Kearns CHPLBC-1971-12-306
Kearns, et al. JACSAT-1969-91-1039
Steer, et al. ESTHAG-1969-3-946 (mechanism)
Wasserman, et al. JACSAT-1969-91-1040

$M^* = N^*(^2D)$

Wallace and McElroy PLSSAE-1966-14-677

$M^* = NO_2^*$

O'Brien and Myers CHPLBC-1971-9-544 (mechanism)

$M^* = O^*(^1D)$

Bortner and Kummler *GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Gauthier and Snelling JCPSA6-1971-54-4317
Gilpin, et al. JCPSA6-1971-55-1087
Langley and McGrath PLSSAE-1971-19-416
McCullough and McGrath CHPLBC-1971-8-353
Seaton, M. J. JATPA3-1954-4-295 (calculation)
Seaton, M. J. ASJOAB-1958-127-67 (calculation)
Vallance Jones and Gattinger PLSSAE-1963-11-961 (estimate)
Vilesov and Pravilov HIECAP-1970-4-191

$M^* = O^*(^1S)$

Seaton, M. J. JATPA3-1954-4-295 (calculation)

$M^* = RH^*(T_1)$ (Organic Donor)

Khan, et al. ESTHAG-1967-1-656 (mechanism)

$O_2(X^3\Sigma_g^-) + M^* \rightarrow O_2^*(b^1\Sigma_g^+) + M$ (electronic energy transfer)

$M^* = C_6H_6^*(S_1, \text{ or } T_1)$

Snelling, D. R. CHPLBC-1968-2-346

$M^* = C_{10}H_8^*(T_1)$ (naphthalene)

Khan, et al. ESTHAG-1967-1-656 (mechanism)

$M^* = N^*(^2D)$

Wallace and McElroy PLSSAE-1966-14-677

$O_2(X^3\Sigma_g^-) + M^* \rightarrow O_2^*(b^1\Sigma_g^+) + M$ (electronic energy transfer) (Continued)

$M^* = O^*(^1D)$

Biedenkapp and Bair	JCPSA6-1970-52-6119
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Castellano and Schumacher	ZPCFAX-1971-76-258
Gauthier and Snelling	ANYAA9-1970-171-220 (mechanism)
Gauthier and Snelling	JCPSA6-1971-54-4317
Gilpin, et al.	JCPSA6-1971-55-1087
Langley and McGrath	PLSSAE-1971-19-416
McCullough and McGrath	CHPLBC-1971-8-353
McCullough and McGrath	CHPLBC-1971-12-98
Seaton, M. J.	JATPA3-1954-4-295 (calculation)
Seaton, M. J.	ASJOAB-1958-127-67 (calculation)
Snelling and Gauthier	CHPLBC-1971-9-254
Vilesov and Pravilov	HIECAP-1970-4-191
von Ellenrieder, et al.	CHPLBC-1971-9-152
von Ellenrieder, et al.	ZPCFAX-1971-76-240
Wallace and Chamberlain	PLSSAE-1959-2-60 (calculation)
Wallace and Hunten	JGREA2-1968-73-4813
Welge, et al.	BBPCAX-1969-73-911
Young and Black	JCPSA6-1967-47-2311

$M^* = O^*(^1S)$

Seaton, M. J.	JATPA3-1954-4-295 (calculation)

$O_2(X^3\Sigma_g^-) + M^* \rightarrow O_2^*(c^1\Sigma_u^-) + M$ (electronic energy transfer)

$M^* = Hg^*(6^3P_1)$

Heicklen and Johnston	JPCHAX-1967-71-1391

$O_2(X^3\Sigma_g^-) + M^* \rightarrow O_2^*(B^3\Sigma_u^-) + M$ (electronic energy transfer)

$M^* = CO_2^*(^1B_2, \text{ or } ^3B_2)$

Myers and Bartle	JCPSA6-1967-47-1783

$M^* = N_2^*(A^3\Sigma_u^+)$

Callear and Wood	TFSOA4-1971-67-272

$O_2(X^3\Sigma_g^-) + M^* \rightarrow O_2^*(X^3\Sigma_g^-, v > 0) + M$ (electronic-vibrational energy transfer)

$M^* = O^*(^1D)$

McCullough and McGrath	CHPLBC-1971-12-98
McCullough and McGrath	CHPLBC-1971-8-353

$O_2 + M^* \rightarrow O_2^* + M$ (vibrational energy transfer)

Bauer and Roesler	ZENAAU-1964-19-656
Breshears and Bird	JCPSA6-1968-48-4768
Cottrell and Day	JCPSA6-1965-43-1433
Henderson and Herzfeld	JASMAN-1965-37-986 (review)
Monk, R. G.	JASMAN-1969-46-580
Moore, C. B.	ACHRAY-1969-2-103 (review)
Taylor and Bitterman	RMPHAT-1969-41-26 (review)
White, D. R.	JCPSA6-1968-49-5472

$O_2^*(a^1\Delta_g) + M \rightarrow O_2(X^3\Sigma_g^-) + M$ (electronic relaxation)

Ackerman, et al.	JCPSA6-1970-52-1603
Ackerman, et al.	JCPSA6-1971-54-4960
Akimoto and Pitts	JCPSA6-1970-53-1312

$O_2^*(a^1\Delta_g) + M \rightarrow O_2(X^3\Sigma_g^-) + M$ (electronic relaxation) (Continued)

Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Clark and Wayne	CHPLBC-1969-3-93
Clark and Wayne	CHPLBC-1969-3-405
Clark and Wayne	PRLAAZ-1969-314-111
Duncan and Kearns	CHPLBC-1971-12-306
Evans, et al.	JGREA2-1968-73-2885 (upper limit) estimate)
Evans, et al.	PLSSAE-1969-17-933 (calculation)
Findlay and Snelling	JCPSA6-1971-54-2750
Findlay and Snelling	JCPSA6-1971-55-545
Findlay, et al.	CHPLBC-1969-3-204
Furukawa, et al.	ANYAA9-1970-171-175
Furukawa and Ogryzlo	CHPLBC-1971-12-370
Gleason, et al.	JACSAT-1970-92-2068
Hunten and McElroy	RVGPA3-1966-4-303 (review)
Kearns, D. R.	CHREAY-1971-71-395 (review)
Kummler and Bortner	ANYAA9-1970-171-273 (review)
Kummler and Bortner	ESTHAG-1969-3-944 (mechanism)
Ogryzlo and Tang	JACSAT-1970-92-5034
Olszyna and Heicklen	JPCHAX-1970-74-4188
Pitts, J. N., Jr.	ANYAA9-1970-171-239 (review)
Pitts, J. N., Jr.	*SRUAZ-1971-3 (review)
Snelling and Gauthier	CHPLBC-1971-9-254
Steer, et al.	JCPSA6-1969-51-843
Vallance Jones and Gattinger	PLSSAE-1963-11-961 (calculation)
Wayne, R. P.	ANYAA9-1970-171-199
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Winer and Bayes	JPCHAX-1966-70-302
Zipf, E. C.	CJCHAG-1969-47-1863 (review)

$O_2^*(b^1\Sigma_g^+) + M \rightarrow O_2(X^3\Sigma_g^-) + M$ (electronic relaxation)

Andrews and Abrahamson	CHPLBC-1971-10-113
Arnold, et al.	ADCSAJ-1968-77-133
Beretta and Schumacher	ZPCBAL-1932-17-417
Biedenkapp and Bair	JCPSA6-1970-52-6119
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Derwent and Thrush	TFSOA4-1971-67-2036
Filseth and Welge	ANYAA9-1970-171-226
Filseth, et al.	JCPSA6-1970-52-5502
Gilpin, et al.	JCPSA6-1971-55-1087
Heidt, L. J.	JACSAT-1935-57-1710
Hunten and McElroy	RVGPA3-1966-4-303 (review)
Izod and Wayne	PRLAAZ-1968-308-81
Kearns, D. R.	CHREAY-1971-71-395 (review)
Myers and O'Brien	ANYAA9-1970-171-224
Noxon, J. F.	JCPSA6-1970-52-1852
O'Brien and Myers	JCPSA6-1970-53-3832
Ogryzlo, E. A.	CJCHAG-1969-47-1817
Stuhl and Niki	CHPLBC-1970-5-573
Stuhl and Niki	CHPLBC-1970-7-473
Stuhl and Welge	CJCHAG-1969-47-1870
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Wayne, R. P.	QJRMAM-1967-93-69 (calculation)
Welge, et al.	BBPCAX-1969-73-911
Young and Black	JCPSA6-1967-47-2311
Zipf, E. C.	CJCHAG-1969-47-1863 (review)

$O_2^*(c^1\Sigma_u^-) + M \rightarrow O_2(X^3\Sigma_g^-) + M$ (electronic relaxation)

Simonaitis and Heicklen	IJCKBO-1971-3-319

$O_2^*(A^3\Sigma_u^+) + M \rightarrow O_2(X^3\Sigma_g^-) + M$ (electronic relaxation)

Hunten and McElroy	RVGPA3-1969-4-303 (review)
McNeal and Durana	JCPSA6-1969-51-2955

$O_2^*(B^3\Sigma_u^-) + M \rightarrow O_2(X^3\Sigma_g^-) + M$ (electronic relaxation)

Myers and Bartle	JCPSA6-1967-47-1783
Myers and Bartle	JCPSA6-1968-48-3935

$O_2^* + M \rightarrow O_2 + M$ (rotational relaxation)

Brout, R.	JCPSA6-1954-22-1189 (calculation)
Connor, J. V.	JASMAN-1958-30-297
Cottrell and McCoubrey	BOOKA7-1961-84 (review)
Ener, et al.	JASMAN-1952-24-474
Fujii, et al.	JASMAN-1962-34-714
Fujii, et al.	JASMAN-1963-35-961
Greenspan, M.	JASMAN-1959-31-155
Greene and Hornig	JCPSA6-1953-21-617
Herzfeld and Litovitz	PAPHAP-1959-7-238 (review)
Holmes, et al.	TFSOA4-1962-58-2342
Kneser, H. O.	BAPSA6-1933-8-17
Myers and Bartle	JCPSA6-1968-48-3935
Parbrook and Tempest	ACUSAY-1958-8-345
Parker, J. G.	PFLDAS-1959-2-449
Parker, et al.	JASMAN-1953-25-263
Petralia, S.	NUCIAD-1955-2-241
Sessler, G.	ACUSAY-1958-8-395
Sivian, L. J.	JCPSA6-1936-4-427
Thaler, W. J.	JASMAN-1952-24-15
Winter and Hill	JASMAN-1967-42-848
Wray and Freeman	JCPSA6-1964-40-2785
Zartman, I. F.	JASMAN-1949-21-171

$O_2^* + M \rightarrow O_2 + M$ (translational relaxation)

Wray and Freeman	JCPSA6-1964-40-2785

$O_2^* + M \rightarrow O_2 + M$ (vibrational relaxation)

Angerer and Ladenburg	ANPYA2-1921-66-293
Bauer and Roesler	ZENAAU-1964-19-656
Benson and Berend	JCPSA6-1966-44-470 (calculation)
Boyer, R. A.	JASMAN-1951-23-176
Clark and Henderson	JASMAN-1963-35-1909
Colwell, et al.	PHRVAO-1938-53-686
Cottrell and McCoubrey	BOOKA7-1961-82 (review)
Curtis, R. W.	PHRVAO-1934-46-811
Dadaian and Pumper	CRAUAX-1938-20-539
Dixon, et al.	PRLAAZ-1922-100-1
Esclangon, E.	COREAF-1919-168-165
Evans and Bazley	ACUSAY-1956-6-238
Grabau, M.	JASMAN-1933-5-1
Griffith, et al.	PHRVAO-1956-102-1209
Grossman, E.	ANPYA2-1932-13-681
Grueneisen and Merkel	ANPYA2-1921-66-344
Harlow and Kitching	JASMAN-1964-36-1100
Harris, C. M.	JASMAN-1963-35-11
Harris, C. M.	JASMAN-1966-40-148
Harris and Tempest	JASMAN-1964-36-2390
Harris and Tempest	JASMAN-1964-36-2416
Hebb, T. C.	PHRVAO-1905-20-89
Hebb, T. C.	PHRVAO-1919-14-74

$O_2^* + M \rightarrow O_2 + M$ (vibrational relaxation) (Continued)

Henderson and Herzfeld	JASMAN-1965-37-986 (review)
Henderson and Queen	JASMAN-1962-34-714
Henderson, et al.	JASMAN-1965-37-457
Henry, P. S. H.	PCPSA4-1932-28-249 (calculation)
Herzfeld and Litovitz	PAPHAP-1959-7-241 (review)
Herzfeld and Rice	PHRVAO-1928-31-691 (calculation)
Hubbard, J. C.	PHRVAO-1932-41-523
Ishii, C.	SPIPAG-1935-26-201
Jones, et al.	PPSOAU-1965-86-857 (calculation)
Kao, P. T.	ANPHAJ-1932-17-315
Keesom, et al.	PKAWAV-1931-34-988
Kinoshita and Ishii	SPIPAG-1932-19-83
Kneser, H. O.	BAPSA6-1933-8-17
Kneser, H. O.	ZTPHAU-1935-16-213 (review)
Kneser, H. O.	ZTPHAU-1938-19-486
Kneser, H. O.	ANPYA2-1939-34-665 (review)
Kneser, H. O.	EENAA3-1949-22-121 (review)
Knoetzel, H.	AKZTAG-1940-5-245
Knudsen, V. O.	JASMAN-1931-3-126
Knudsen, V. O.	BAPSA6-1933-8-16
Knudsen, V. O.	JASMAN-1935-6-199
Knudsen and Obert	PHRVAO-1935-47-256
Knudsen and Obert	JASMAN-1936-7-249
Korolev, F. A.	CRAUAX-1938-20-545
Krasnooshkin, P. E.	PHRVAO-1944-65-190 (review)
Kukkamäki, T. J.	ANPYA2-1938-31-398
Lebedew, P.	ANPYA2-1911-35-171 (calculation)
McCoubrey, et al.	TFSOA4-1961-57-1472 (review)
Meyer and Sessler	ZEPYAA-1957-149-15
Mlodsejewski, A.	FPYKA6-1911-66-200
Mokhtar and Richardson	PRLAAZ-1945-184-117
Monk, R. G.	JASMAN-1969-46-580
Myers and Bartle	JCPSA6-1968-48-3935
Neklepajev, N.	ANPYA2-1911-35-175
Norton, G. A.	JASMAN-1935-7-16
Oberst, H.	AKZTAG-1937-2-76
Parker, J. G.	PFLDAS-1959-2-449
Parker, R. C.	PPSOAU-1937-49-95
Parker, et al.	JASMAN-1953-25-263
Pearson, E. B.	PPSOAU-1935-47-136
Pielemeier, W. H.	PHRVAO-1929-34-1184
Pielemeier, W. H.	PHRVAO-1930-35-1417
Pielemeier, W. H.	PHRVAO-1930-36-1005
Pielemeier, W. H.	PHRVAO-1931-38-1236
Pielemeier, W. H.	PHRVAO-1937-52-244
Pielemeier, W. H.	JASMAN-1939-10-313 (review)
Pierce, G. W.	PAAAAV-1925-60-271
Pumper, E. J.	JOPYA6-1939-1-411
Reid, C. D.	PHRVAO-1930-35-814
Reid, C. D.	PHRVAO-1931-3-1147
Richardson, E. G.	PRLAAZ-1934-146-56
Rogers, H. H.	PHRVAO-1934-45-208
Schilling, et al.	JASMAN-1947-19-222
Schmidtmueller, N.	AKZTAG-1938-3-115
Schnaus, U. E.	JASMAN-1965-37-1
Schweikert, G.	ANPYA2-1915-48-593
Sessler, G.	ACUSAY-1958-8-395
Shields and Lee	JASMAN-1963-35-1909
Sinness and Roseveare	JCPSA6-1936-4-427
Sivian, L. J.	JASMAN-1947-19-914
Smith and Tempest	JASMAN-1961-33-1626
Taylor and Bitterman	RMPHAT-1969-41-26 (review)
Tempest and Parbrook	ACUSAY-1957-7-354
Thiesen, M.	ANPYA2-1908-25-506

$O_2^* + M \rightarrow O_2 + M$ (vibrational relaxation) (Continued)

Van Itterbeek and Mariens PHYSAG-1937-4-207
Van Itterbeek and Mariens PHYSAG-1937-4-609
Van Itterbeek and Thys PHYSAG-1938-5-298
Van Itterbeek and Van Paemel PHYSAG-1938-5-593
White, D. R. JCPSA6-1968-49-5472
Wray and Freeman JCPSA6-1964-40-2785
Zartman, I. F. JASMAN-1949-21-171

$O_2^*(a^1\Delta_g) + M \rightarrow O_2(X^3\Sigma_g^-) + M^*$ (electronic energy transfer)

$M^* = I^*(^2P_{1/2})$

Arnold, et al. JCPSA6-1966-44-2529 (mechanism)
Derwent, et al. CHPLBC-1970-6-115

$M^* = NO_2^*$

O'Brien and Myers CHPLBC-1971-9-544 (mechanism)

$O_2^*(b^1\Sigma^+) + M \rightarrow O_2(X^3\Sigma_g^-) + M^*$ (electronic energy transfer)

$M^* = N_2^*$

Young and Black JCPSA6-1966-44-3741
Young and Sharpless JGREA2-1962-67-3871

$M^* = NO_2^*$

O'Brien and Myers CHPLBC-1971-9-544 (mechanism)

$M^* = O^*(^1D)$

Wallace and Chamberlain PLSSAE-1959-2-60 (calculation)

$O_2^*(c^1\Sigma_u^-) + M \rightarrow O_2(X^3\Sigma_g^-) + M^*$ (electronic energy transfer)

$M^* = C_3F_6^*(T_1)$

Heicklen and Johnston JPCHAX-1967-71-1391

$M^* = Hg^*(6^3P_1)$

Heicklen and Johnston JPCHAX-1967-71-1391

$O_2^*(B^3\Sigma_u^-) + M \rightarrow O_2(X^3\Sigma_g^-) + M^*$ (electronic energy transfer)

$M^* = CO_2^*(^1B_2, \text{ or } ^3B_2)$

Myers and Bartle JCPSA6-1967-47-1783

$O_2^* + M \rightarrow O_2 + M^*$ (vibrational energy transfer)

Bauer and Roesler ZENAAU-1964-19-656
Calvert, J. B. JASMAN-1965-37-386 (mechanism)
Henderson and Herzfeld JASMAN-1965-37-986 (review)
Henderson, et al. JASMAN-1965-37-457
Jones, et al. PPSOAU-1965-86-857 (calculation)
Monk, R. G. JASMAN-1969-46-580
Moore, C. B. ACHRAY-1969-2-103 (review)
Taylor and Bitterman RMPHAT-1969-41-26 (review)
White, D. R. JCPSA6-1968-49-5472
Yardley and Moore JCPSA6-1968-48-14

$O_2^*(a^1\Delta_g) + M^* \rightarrow O_2^{**}(b^1\Sigma_g^+) + M$ (electronic energy transfer)

$M^* = I^*(^2P_{1/2})$

Arnold, et al.	JCPSA6-1966-44-2529 (mechanism)
Derwent, et al.	CHPLBC-1970-6-115

$O_2^{**}(b^1\Sigma_g^+) + M \rightarrow O_2^*(a^1\Delta_g) + M$ (electronic transition)

Coomber and Pitts	ESTHAG-1970-4-506 (mechanism)

$O_2(X^3\Sigma_g^-) + O_2^*(c^1\Sigma_u^-) \rightarrow O(^3P) + O_3(^1A)$

Simonaitis and Heicklen	IJCKBO-1971-3-319

$O_2^*(a^1\Delta_g) + O_2^*(a^1\Delta_g) \rightarrow O_2(X^3\Sigma_g^-) + O_2^{**}(b^1\Sigma_g^+)$ (electronic energy transfer)

Arnold and Ogryzlo	CJPHAD-1967-45-2053
Arnold, et al.	ADCSAJ-1968-77-133
Bortner and Kummler	*GESLZ6-1969-RPT/GE-9500-ECS-SR-1 (review)
Derwent and Thrush	TFSOA4-1971-67-2036
Izod and Wayne	PRLAAZ-1968-308-81
March, et al.	PHCBAP-1965-4-971 (mechanism)
Schofield, K.	PLSSAE-1967-15-643 (review)
Myers and O'Brien	ANYAA9-1970-171-224 (mechanism)
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Wayne, R. P.	PHCBAP-1966-5-889
Wayne, R. P.	QJRMAM-1967-93-69 (mechanism)
Winer and Bayes	JPCHAX-1966-70-302
Young and Black	JCPSA6-1965-42-3740

$O_2^*(a^1\Delta_g) + O_2^*(a^1\Delta_g) \rightarrow O_2(X^3\Sigma_g^-) + O_2(X^3\Sigma_g^-) + h\nu$

Akimoto and Pitts	JCPSA6-1970-53-1312 (mechanism)
Arnold, et al.	JCPSA6-1964-40-1769 (mechanism)
Arnold, et al.	PHCBAP-1965-4-963
Arnold, et al.	JCPSA6-1966-44-2529 (review)
Bader and Ogryzlo	DFSOAW-1964-37-46 (mechanism)
Derwent and Thrush	TFSOA4-1971-67-2036
Falick and Mahan	JCPSA6-1967-47-4778
Gray and Ogryzlo	CHPLBC-1969-3-658
Wayne, R. P.	ADPCA2-1969-7-311 (review)

$O_2^*(a^1\Delta_g) + O_2^{**}(b^1\Sigma_g^+) \rightarrow O_2(X^3\Sigma_g^-) + O_2(X^3\Sigma_g^-) + h\nu$

Gray and Ogryzlo	CHPLBC-1969-3-658

$O_2^*(b^1\Sigma_g^+) + O_2^*(b^1\Sigma_g^+) \rightarrow O_2(X^3\Sigma_g^-) + O_2(X^3\Sigma_g^-) + h\nu$

Gray and Ogryzlo	CHPLBC-1969-3-658

$O_3^* \rightarrow O + O_2$

Bunker, D. L.	JCPSA6-1964-40-1946 (calculation)
Gill and Laidler	PRLAAZ-1959-250-121 (calculation)

$O_3 + h\nu \rightarrow O + O_2$

Bodenstein and Jost	BOOKA7-1941-267 (review)
Ellis, et al.	NATUAS-1971-229-153 (mechanism)
Johnston, H. S.	SCIEAS-1971-173-517 (review)

$O_3(^1A) + h\nu \rightarrow O(^3P) + O_2^*(b^1\Sigma_g^+)$

Heidt, L. J.	JACSAT-1935-57-1710

$O_3(^1A) + h\nu \rightarrow O^*(^1D) + O_2(X^3\Sigma_g^-)$

Biedenkapp, et al.	CHPLBC-1970-5-379
DeMore, W. B.	JCPSA6-1967-47-2777 (quantum yield)
DeMore and Dede	JPCHAX-1970-74-2621
Norrish and Wayne	PRLAAZ-1965-288-361 (quantum yield)

$O_3(^1A) + h\nu \rightarrow O^*(^1D) + O_2^*(a^1\Delta_g)$

Castellano and Schumacher	ZPCFAX-1971-76-258 (quantum yield)
Gauthier and Snelling	ANYAA9-1970-171-220 (mechanism)
Gauthier and Snelling	JCPSA6-1971-54-4317
Gilpin, et al.	JCPSA6-1971-55-1087
Jones and Wayne	PRLAAZ-1971-321-409 (quantum yield)
Kummler, et al.	ESTHAG-1969-3-248 (calculation)
Langley and McGrath	PLSSAE-1971-19-413 (quantum yield)
Langley and McGrath	PLSSAE-1971-19-416
McCullough and McGrath	CHPLBC-1971-12-98
Norrish and Wayne	PRLAAZ-1965-288-200 (quantum yield)
Vallance Jones and Gattinger	PLSSAE-1963-11-961 (mechanism)
von Ellenrieder, et al.	CHPLBC-1971-9-152
von Ellenrieder, et al.	ZPCFAX-1971-76-240 (quantum yield)
Wallace and Hunten	JGREA2-1968-73-4813 (mechanism)
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Wayne, R. P.	PHCBAP-1966-5-889
Wayne, R. P.	QJRMAM-1967-93-69 (mechanism)

$O_3(^1A) + h\nu \rightarrow O^*(^1D) + O_2^*(b^1\Sigma_g^+)$

Gauthier and Snelling	JCPSA6-1971-54-4317
Gilpin, et al.	JCPSA6-1971-55-1087
Norrish and Wayne	PRLAAZ-1965-288-200 (quantum yield)
Wallace and Hunten	JGREA2-1968-73-4813 (mechanism)

$O_3 + M \rightarrow O + O_2 + M$

Bunker, D. L.	JCPSA6-1962-37-393 (calculation)
Keck and Kalelkar	*AVEVZJ-1968-RPT/289 (calculation)
Michael, J. V.	JCPSA6-1971-54-4455

$O_3 + M^* \rightarrow O + O_2 + M$

$M^* = CO^*, CO_2^*, COS^*, CS^*, O_2^*, O_3^*, SO^*$, or SO_2^*

Olszyna and Heicklen	JPCHAX-1970-74-4188
	$M^* = N_2^*(X^1\Sigma_g^+, v>4)$
Schofield, K.	PLSSAE-1965-15-643 (evaluation)
	$M^* = O^*(^1D)$
Baiamonte, et al.	JCPSA6-1971-55-3617
	$M^* = O_2^*(X^3\Sigma_g, v > 6)$
Schofield, K.	PLSSAE-1965-15-643 (evaluation)
	$M^* = O_2^*(a^1\Delta_g)$
Findlay and Snelling	JCPSA6-1971-54-2750
Kaufman and Kelso	DFSOAW-1964-37-26 (mechanism)
Langley and McGrath	PLSSAE-1971-19-413
McNeal and Cook	TAGUAT-1967-48-73

$O_3 + M^* \rightarrow O + O_2 + M$ (Continued)

Mathias and Schiff	JCPSA6-1964-40-3118
Norrish and Wayne	PRLAAZ-1965-288-200 (mechanism)
Schofield, K.	PLSSAE-1965-15-643 (evaluation)
Snelling and Gauthier	CHPLBC-1971-9-254
Wayne, R. P.	ADPCA2-1969-7-311 (review)
Wayne, R. P.	ANYAA9-1970-171-199

$$M^* = O_2^*(b^1\Sigma_g^+)$$

Clyne, et al.	PHCBAP-1965-4-957 (mechanism)
Gauthier and Snelling	JCPSA6-1971-54-4317
Heidt, L. J.	JACSAT-1935-57-1710
Kaufman and Kelso	DFSOAW-1964-37-26 (mechanism)
Mathias and Schiff	JCPSA6-1964-40-3118
Norrish and Wayne	PRLAAZ-1965-288-200 (mechanism)
Schofield, K.	PLSSAE-1965-15-643 (evaluation)
Wayne, R. P.	ADPCA2-1969-7-311 (review)

$O_3(^1A) + M^* \rightarrow O(^3P) + O_2^*(a^1\Delta_g) + M$

$$M^* = O_2^*(X^3\Sigma_g^-, v \geq 25)$$

Schofield, K. PLSSAE-1965-15-643 (evaluation)

$O_3(^1A) + M^* \rightarrow O^*(^1D) + O_2(X^3\Sigma_g^-) + M$

$$M^* = O_2^*(?)$$

Norrish and Wayne PRLAAZ-1965-288-200 (mechanism)

$O_3 + M \rightarrow O_3^* + M$ (vibrational excitation)

Gill and Laidler PRLAAZ-1959-250-121 (calculation)

$O_3^* + M \rightarrow O_3 + M$ (vibrational relaxation)

Bunker, D. L. JCPSA6-1964-40-1946 (calculation)

II(b). REVIEWS

Bodenstein and Jost BOOKA7-1941-267

Bortner, et al. *GESLZ6-1970-RPT/DASA-2560 (N_2, NO excitation, relaxation, energy transfer)

Cottrell and McCoubrey BOOKA7-1961-(O_2 rot. and vibr. relax.: pgs. 82, 84)

Donovan and Husain CHREAY-1970-70-489 (O^*)

Gilmore, et al. JQSRAE-1969-9-157 (O, O_2 excitation and relaxation)

Herzfeld and Litovitz PAPHAP-1959-7 (O_2 rot. and vibr. relax.: pgs. 238, 241)

Johnston, H. S.	SCIEAS-1971-173-517 (O, O_2, O_3)
Kearns, D. R.	CHREAY-1971-74-395 [$O_2^*(A^1\Delta_g)$ and $O_2^*(b^1\Sigma_g^+)$]
Kneser, H. O.	EENAA3-1949-22-121 (O_2 vibrational relaxation)
Kondratiev, V. N.	BOOKA7-1970 (O, O_2, O_3: General Tables)
McCoubrey, et al.	TFSOA4-1961-57-1472 (O_2 vibrational relaxation)
Moore, C. B.	ACHRAY-1969-2-103 (O_2 vibrational energy transfer)
Pitts, J. N., Jr.	ANYAA9-1970-171-239 3$O_2^*(^1\Delta_g)$]
Pitts, J. N., Jr.	24ZVAA-1971-3 [$O_2^*(^1\Delta_g)$]
Schiff, H. J.	CJCHAG-1969-47-1903
Taylor and Bitterman	RMPHAT-1969-41-26 (O_2 vibrational energy transfer)
Wayne, R. P.	ADPCA2-1969-7-311 [$O_2^*(a^1\Delta_g)$ and $O_2^*(b^1\Sigma_g^+)$]

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Ackerman, R. A., Pitts, J. N., Jr., and Steer, R. P., "Singlet Oxygen in the Environmental Sciences. VIII. Absolute Rates of Deactivation of $O_2(^1\Delta_g)$ by Terminal Olefins, Tetramethylethylene, and Methyl Chloride," J. Chem. Phys. 52, 1603 (1970)

Ackerman, R. A., Rosenthal, I., and Pitts, J. N., Jr., "Singlet Oxygen in the Environmental Sciences. X. Absolute Rates of Deactivation of $O_2(^1\Delta_g)$ in the Gas Phase by Sulfur Compounds," J. Chem. Phys. 54, 4960 (1971)

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16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)

A bibliography, a reaction oriented list of references supplementing NBS publication COM-71-00841 (NBS-OSRDB-71-2, August 1971), is provided for published papers and reports containing rate data for reactions of N, N_2, N_3, N_2O, N_2O_2, N_2O_3, N_2O_4, N_2O_5, NO, NO_2, NO_3, NO_4, O, O_2 and O_3 with each other. It includes an extensive list of papers dealing with production and reactions of molecular oxygen in excited singlet state ($a^1\Delta_g$, $b^1\Sigma_g^+$, $c^1\Sigma_u$). In addition, two lists of critical reviews dealing with the above reactions are included. About 500 papers are listed. The period covered extends from 1900 through January 1972.

17. KEY WORDS (Alphabetical order, separated by semicolons)

Bibliography; chemical kinetics; excited state; gas phase; nitrogen atom; nitrogen molecule; nitrogen oxides; oxygen atom; oxygen molecule; ozone.

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