

Property Index to Volumes 1–4 (1972–1975)

This cumulative index to Volumes 1–4 covers both articles that have appeared in the journal and compilations listed in the section Data Compilation Abstracts. A complete citation is given for each entry. Property terms have been chosen to correspond to common usage; cross references are given for synonymous or closely related terms.

Absorptance

See: **Spectral emissivity, reflectance, and other radiative properties**

Absorption coefficient

See: **Optical transmission coefficient**

Absorption coefficient, spectral

See: **Transition probabilities for atoms and molecules**

Activation energies of chemical reactions

A Critical Review of the Gas-Phase Reaction Kinetics of the Hydroxyl Radical—Wm. E. Wilson, Jr. **1**, 535 (1972).

Evaluated Chemical Kinetic Rate Constants for Various Gas Phase Reactions—Keith Schofield. **2**, 25 (1973).

Survey of Photochemical and Rate Data for Twenty-eight Reactions of Interest in Atmospheric Chemistry—R. F. Hampson, Editor. **2**, 267 (1973).

Rate Constants for the Reactions of Atomic Oxygen (O^3P) with Organic Compounds in the Gas Phase—John T. Herron and Robert E. Huie. **2**, 467 (1973).

High Temperature Properties and Decomposition of Inorganic Salts. Part 4. Oxy-Salts of the Halogens—Kurt H. Stern. **3**, 481 (1974).

Critical Review of Hydrogen Atom Transfer Reactions in the Liquid Phase—D. G. Hendry, T. Mill, J. A. Howard, L. Piszkiwicz and H. K. Eigenmann. **3**, 937 (1974).

(Abstract) Critical Evaluation of Rate Data for Homogeneous, Gas-Phase Reactions of Interest in High-Temperature Systems (High Temperature Reaction Rate Data, No. 1–5)—D. L. Baulch, et al. **1**, 576 (1972).

(Abstract) Supplementary Tables of Bimolecular Gas Reactions—E. Ratajczak and A. F. Trotman-Dickenson. **1**, 577 (1972).

(Abstract) Handbook of Kinetic Constants of Gaseous Reactions—V. N. Kondratiev. **1**, 838 (1972).

(Abstract) Rate Constants for Homolytic Liquid-Phase Reactions—E. T. Denisov. **1**, 839 (1972).

(Abstract) Evaluated Kinetic Data for High Temperature Reactions, Volume 1. Homogeneous Gas Phase Reactions of the H–O System—D. L. Baulch, et al. **2**, 202 (1973).

(Abstract) Selected Specific Rates of Reactions of the Solvated Electron in Alcohols (NSRDS–NBS–42)—Edgar Watson, Jr. and Sathyabhama Roy. **2**, 202 (1973).

(Abstract) Second Supplementary Tables of Bimolecular Gas Reactions—J. A. Kerr and E. Ratajczak. **2**, 658 (1973).

(Abstract) Evaluated Kinetic Data on Gas Phase Addition Reactions. Reactions of Atoms and Radicals with Alkenes, Alkynes, and Aromatic Compounds—J. A. Kerr and M. J. Parsonage. **3**, 309 (1974).

Activity coefficients

Osmotic Coefficients and Mean Activity Coefficients of Uni-univalent Electrolytes in Water at 25 °C—Walter J. Hamer and Yung-Chi Wu. **1**, 1047 (1972).

(Abstract) Selected Thermodynamic Values and Phase Diagrams for Copper and Some of Its Binary Alloys—Ralph Hultgren and Pramod D. Desai. **1**, 217 (1972).

Atomic energy levels and spectra

Energy Levels of Neutral Helium ($^4\text{He } 1$)—W. C. Martin. **2**, 257 (1973).

First Spectra of Neon, Argon, and Xenon 136 in the 1.2–4.0 μm Region—Curtis J. Humphreys. **2**, 519 (1973).

Ground Levels and Ionization Potentials for Lanthanide and Actinide Atoms and Ions—W. C. Martin, Lucy Hagan, Joseph Reader, and Jack Sugar. **3**, 771 (1974).

Reference Wavelengths from Atomic Spectra in the Range 14–25240 Å—Victor Kaufman and Bengt Edlén. **3**, 825 (1974).

Energy Levels of Iron, Fe I through Fe XXVI—Joseph Reader and Jack Sugar. **4**, 353 (1975).

Binding Energies in Atomic Negative Ions—H. Hotop and W. C. Lineberger. **4**, 539 (1975).

(Abstract) Ionization Potentials and Ionization Limits Derived From the Analyses of Optical Spectra (NSRDS–NBS–34)—Charlotte E. Moore. **1**, 217 (1972).

(Abstract) Selected Tables of Atomic Spectra, Atomic Energy Levels and Multiplet Tables, C I, C II, C III, C IV, C V, C VI (NSRDS–NBS–3, Section 3)—Charlotte E. Moore. **1**, 217 (1972).

(Abstract) Selected Tables of Atomic Spectra, Atomic Energy Levels and Multiplet Tables, N IV, N V, N VI, N VII (NSRDS–NBS–3, Section 4)—Charlotte E. Moore. **1**, 217 (1972).

(Abstract) The Solar Spectrum from λ 7498 to λ 12016. A Table of Measures and Identifications—J. W. Swensson, W. S. Benedict, L. Delbouille, and G. Roland. **1**, 576 (1972).

(Abstract) Atomic Energy Levels as Derived From the Analyses of Optical Spectra, Vol. I, ^1H to ^{23}V ; Vol. II, ^{24}Cr to ^{41}Nb ; Vol. III, ^{42}Mo to ^{57}La and ^{72}Hf to ^{89}Ac (NSRDS–NBS–35)—Charlotte E. Moore. **1**, 837 (1972).

(Abstract) A Multiplet Table of Astrophysical Interest. Part I—Table of Multiplets and Part II—Finding List of All Lines in the Table of Multiplets (NSRDS–NBS–40)—Charlotte E. Moore. **1**, 837 (1972).

(Abstract) Resonances in Electron Impact on Atoms and Diatomic Molecules (NSRDS–NBS–50)—G. J. Schulz. **3**, 310 (1974).

(Abstract) Electronic Absorption and Internal and External Vibrational Data of Atomic and Molecular Ions Doped in Alkali Halide Crystals (NSRDS–NBS–52)—S. C. Jain, A. V. R. Warriar, and S. K. Agarwal. **3**, 1019 (1974).

Atomic form factor

Atomic Form Factors, Incoherent Scattering Functions, and Photon Scattering Cross Sections—J. H. Hubbell, Wm. J. Veigele, E. A. Briggs, R. T. Brown, D. T. Cromer, and R. T. Howerton. **4**, 471 (1975).

Azeotropic composition

(Abstract) Azeotropic Data—III (Advances in Chemistry Series No. 116)—Lee H. Horsley. **3**, 309 (1974).

Band gap

See: **Energy bands of solids**

Band spectra

See: **Electronic molecular spectra**

Binding energy

See: **Bond dissociation energy**
Electron affinity

Boiling point

Physical and Thermodynamic Properties of Aliphatic Alcohols—R. C. Wilhoit and B. J. Zwolinski. **2**, Supplement 1 (1973).

JANAF Thermochemical Tables, 1974 Supplement—M. W. Chase, J. L. Curnutt, A. T. Hu, H. Prophet, A. N. Syverud, and L. C. Walker. **3**, 311 (1974).

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(Abstract) Azeotropic Data—III (Advances in Chemistry Series No. 116)—Lee H. Horsley. **3**, 309 (1974).

Bond dissociation energy (see also Thermodynamic properties)

The Spectrum of Molecular Oxygen—Paul H. Krupenie. **1**, 423 (1972).

(Abstract) Bond Dissociation Energies in Simple Molecules (NSRDS-NBS-31)—B. deB. Darwent. **1**, 218 (1972).

(Abstract) Spectroscopic Data Relative to Diatomic Molecules—B. Rosen. **1**, 218 (1972).

Bulk modulus

See: Elastic constants

Cell constants

See: Lattice constants

Combustion, heat of

See: Heat of combustion
Thermodynamic properties

Compressibility factor

See: Elastic constants
Equation of state

Compton scattering cross section

Atomic Form Factors, Incoherent Scattering Functions, and Photon Scattering Cross Sections—J. H. Hubbell, Wm. J. Veigele, E. A. Briggs, R. T. Brown, D. T. Cromer, and R. T. Howerton. **4**, 471 (1975).

Condensation coefficient

See: Evaporation and condensation coefficients

Conductance

See: Electrical conductance

Conductivity, electrical

See: Electrical resistivity

Conductivity, thermal

See: Thermal conductivity

Consolute point

An Analysis of Coexistence Curve Data for Several Binary Liquid Mixtures Near Their Critical Points—A. Stein and G. F. Allen. **2**, 443 (1973).

Critical micelle concentration

(Abstract) Critical Micelle Concentrations of Aqueous Surfactant Systems (NSRDS-NBS-36)—Pasupati Mukerjee and Karol J. Mysels. **1**, 219 (1972).

Critical supersaturation ratio

Selected Values of Critical Supersaturation for Nucleation of Liquids from the Vapor—G. M. Pound. **1**, 119 (1972).

Critical temperature, pressure (see also Equation of state)

Analysis of Specific Heat Data in the Critical Region of Magnetic Solids—F. J. Cook. **2**, 11 (1973).

An Analysis of Coexistence Curve Data for Several Binary Liquid Mixtures Near Their Critical Points—A. Stein and G. F. Allen. **2**, 443 (1973).

(Abstract) The Critical Constants of Inorganic Substances—J. F. Mathews. **2**, 201 (1973).

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Cross section

See: Compton scattering cross section
Dissociation cross section
Electron impact cross section
Excitation cross section
High energy reaction cross section
Neutron cross section
Photon cross section
Rayleigh scattering cross section

Crystal lattice frequencies

See: Phonon spectra

Crystal structure

Behavior of the Elements at High Pressures—John Francis Cannon. **3**, 781 (1974).

(Abstract) Structure Data of Organic Crystals, Part A: C_1 . . . C_{13} ; Part B: C_{14} . . . C_{120} (Landolt-Börnstein, Group III, Vol. 5)—E. Schudt and G. Weitz. **1**, 838 (1972).

(Abstract) Structure Data for Elements and Intermetallic Phases (Landolt-Börnstein, Group III, Vol. 6)—P. Eckerlin and H. Kandler. **1**, 838 (1972).

(Abstract) Crystal Structure Transformation in Binary Halides (NSRDS-NBS-41)—C. N. R. Rao and M. Natarajan. **2**, 440 (1973).

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(Abstract) Transition Metal Oxides, Crystal Chemistry, Phase Transitions and Related Aspects (NSRDS-NBS-49)—C. N. R. Rao and G. V. Subba Rao. **3**, 1019 (1974).

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(Abstract) Crystal Structure Transformations in Inorganic Nitrites, Nitrates, and Carbonates (NSRDS-NBS-53)—C. N. R. Rao, B. Prakash, and M. Natarajan. **4**, 857 (1975).

Debye characteristic temperature

Elastic Properties of Metals and Alloys. I. Iron, Nickel and Iron-Nickel Alloys—H. M. Ledbetter and R. P. Reed. **2**, 531 (1973).

Critical Analysis of the Heat-Capacity Data of the Literature and Evaluation of Thermodynamic Properties of Ruthenium, Rhodium, Palladium, Iridium, and Platinum from 0 to 300 K. A Survey of the Literature Data on Osmium—George T. Furukawa, Martin L. Reilly, and John S. Gallagher. **3**, 163 (1974).

(Abstract) Handbook of Electronic Materials, Volume 5, Group IV Semiconducting Materials—M. Neuberger. **1**, 575 (1972).

Density

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Thermodynamic Properties of Nitrogen Including Liquid and Vapor Phases from 63 K to 2000 K with Pressures to 10,000 Bar—R. T. Jacobsen and R. B. Stewart. **2**, 757 (1973).

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Dielectric constant (see also Electric dipole moments of molecules)

Compilation of the Static Dielectric Constant of Inorganic Solids—K. F. Young and H. P. R. Frederikse. **2**, 313 (1973).

(Abstract) Electrolytic Conductance and the Conductances of Halogen Acids in Water (NSRDS-NBS-33)—Walter J. Hamer and Harold J. DeWane. **1**, 218 (1972).

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Diffusion coefficient

Gaseous Diffusion Coefficients—T. R. Marrero and E. A. Mason. **1**, 3 (1972).

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Diffusivity

See: **Thermal conductivity**

Dipole moment

See: **Electric dipole moments of molecules**

Dissociation cross section

(Abstract) Dissociation in Heavy Particle Collisions—G. W. McClure and J. M. Peek. **2**, 201 (1973).

Dissociation energy

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Elastic constants

Elastic Properties of Metals and Alloys, I. Iron, Nickel and Iron-Nickel Alloys—H. M. Ledbetter and R. P. Reed. **2**, 531 (1973).

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Electric dipole moments of molecules

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Microwave Spectra of Molecules of Astrophysical Interest. VI. Carbonyl Sulfide and Hydrogen Cyanide—Arthur G. Maki. **3**, 221 (1974).

Microwave Spectra of Molecules of Astrophysical Interest. VII. Carbon Monoxide, Carbon Monosulfide, and Silicon Monoxide—Frank J. Lovas and Paul H. Krupenie. **3**, 245 (1974).

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Microwave Spectral Tables. I. Diatomic Molecules—Frank J. Lovas and Eberhard Tiemann. **3**, 609 (1974).

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Electrical conductance

Molten Salts: Volume 3, Nitrates, Nitrites, and Mixtures. Electrical Conductance, Density, Viscosity, and Surface Tension Data—G. J. Janz, Ursula Krebs, H. F. Siegenthaler, and R. P. T. Tomkins. **1**, 581 (1972).

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Molten Salts: Volume 4, Part 2, Chlorides and Mixtures. Electrical Conductance, Density, Viscosity, and Surface Tension Data—G. J. Janz, R. P. T. Tomkins, C. B. Allen, J. R. Downey, G. L. Gardner, U. Krebs, and S. K. Singer. **4**, 871 (1975).

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Electrical resistivity

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Electron affinity

Binding Energies in Atomic Negative Ions—H. Hotop and W. C. Lineberger. **4**, 539 (1975).

Electron impact cross section

(Abstract) Total Electron-Atom Collision Cross Sections at Low Energies—A Critical Review—Benjamin Bederson and L. J. Kieffer. **2**, 439 (1973).

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Electron swarm parameters

A Survey of Electron Swarm Data—J. Dutton. **4**, 577 (1975).

Electronic molecular spectra

Atlas of the Observed Absorption Spectrum of Carbon Monoxide between 1060 and 1900 Å—S. G. Tilford and J. D. Simmons. **1**, 147 (1972).

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(Abstract) Tables of Band Features of Diatomic Molecules in Wavelength Order, Version A, 1974—Ingvar Kopp, Rolf Lindgren, and Bo Rydh. **3**, 1020 (1974).

Emissivity

See: **Special emissivity, reflectance, and other radiative properties**

Energy, activation

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Energy bands of solids

Compilation of Energy Band Gaps in Elementary and Binary Compound Semiconductors and Insulators—W. H. Strehlow and E. L. Cook. **2**, 163 (1973).

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Energy, binding

See: **Bond dissociation energy**
Electron affinity

Energy, dissociation

See: **Bond dissociation energy**
Thermodynamic properties

Energy gap

See: **Energy bands of solids**
Semiconductor properties

Energy levels

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Molecular energy levels and constants

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Enthalpy of formation

See: **Heat of formation**
Thermodynamic properties

Entropy

See: **Thermodynamic properties**

Equation of state

High-Pressure Calibration. A Critical Review—D. L. Decker, W. A. Bassett, L. Merrill, H. T. Hall, and J. D. Barnett. **1**, 773 (1972).

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(Abstract) Thermodynamic and Thermophysical Properties of Helium—N. V. Tsederberg, V. N. Popov, and N. A. Morozova. **1**, 578 (1972).

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See: **Equation of state**

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See: **Vibrational spectra (Infrared, Raman)**

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See: **Spectral emissivity, reflectance, and other radiative properties**

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See: Electrical conductance

Specific gravity

See: Density

Specific heat

See: Heat capacity

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See: **Nuclear reaction energies**

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See: **Optical transmission coefficient**

Transmittance

See: **Spectral emissivity, reflectance and other radiative properties**

Transport properties

See: **Diffusion coefficient**
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Vapor pressure (see also Equation of state)

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Virial coefficients

See: **Equation of state**

Viscosity

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Wavelengths of spectral lines

See: **Atomic energy levels and spectra**
Electronic molecular spectra
Rotational spectra
Vibrational spectra (Infrared, Raman)

Work function

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Young's modulus

See: Elastic constants