

New Data Compilations

*Reviewed by the Editorial Board,
National Bureau of Standards*

Crystal Structure Transformations in Binary Halides. C. N. R. Rao and M. Natarajan, Department of Chemistry, Indian Institute of Chemistry, Kanpur-16, India. National Bureau of Standards NSRDS-NBS 41. 43 pages. Available from U.S. Government Printing Office, Washington, D.C. 20402. (Catalog No. C13.48:41), July 1972. \$0.55.

A critical survey of the data describing crystal structure transformations in binary halides is compiled. Data on thermodynamic, crystallographic, spectroscopic, and electron properties are given for each transformation. Experimental techniques used to obtain the data are named and comments on the data are included in the tables. The literature is surveyed up to 1970. References have been selected on the basis of their pertinence to the data which are cited and do not represent all the available literature.

Selected Specific Rates of Reactions of the Solvated Electron in Alcohols. Edgar Watson, Jr. and Sathyabhama Roy, Radiation Chemistry Data Center, Radiation Laboratory, University of Notre Dame, Ind. 46556. National Bureau of Standards NSRDS-NBS 42. 13 pages. Available from U.S. Government Printing Office, Washington, D.C. 20402. (Catalog No. C13.48:42), August 1972. \$0.30.

Solvated electrons are generated in alcohols by radiolysis, photolysis, reaction with sodium, etc. Rates of reactions of e_s^- with solvent and solute molecules, ions, and transients, in alcohol solutions, have been compiled. Arrhenius parameters are tabulated for some reactions.

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JC&ED Editorial Board*

Thermodynamic and Transport Properties of Ethylene and Propylene (Termodinamicheskiye i Transportnyye Svoystva Etilena i Propilena). D. M. Vashchenko et al., 182 pp. Monograph No. 8, State Committee of Standards of the Soviet Ministry, U.S.S.R., State Office of Standards and Reference Data Series, Standards Publishing House, Moscow, 1971. English translation available from Office of Standard Reference Data, National Bureau of Standards, U.S. Department of Commerce, Washington, D.C. 20234. 203 pp. 1972.

The monograph presents an extensive review of published experimental and theoretical data on the properties of these two hydrocarbons, along with recommended values. Properties include PVT data on liquid and gas

phases, liquid-vapor saturation data, ideal gas thermodynamic functions, speed of sound and related properties, specific heat, viscosity, and thermal conductivity.

Techniques of Chemistry, Vol. 2. Organic Solvents, Physical Properties, and Methods of Purification. John A. Riddick and William B. Bunger. 1401 pp. Wiley-Interscience, New York, N.Y. 1970. 3rd ed., \$24.95.

Tables of selected values of the common physical properties of 354 organic liquids, with references to the sources, are given. Some discussion of empirical smoothing equations and values of parameters, purity criteria, and methods of purification, are also included. Compounds are indexed by boiling point, freezing point, density, cryoscopic constant, dielectric constant, and dipole moment, as well as by name. The bibliography contains 5358 references.

American Institute of Physics Handbook. 2342 pp. Dwight E. Gray, Coordinating Ed., McGraw-Hill, Inc., New York, N.Y. 1972. 3rd ed., \$49.50.

The previous 1957 edition has been extensively revised by a large staff of editors and 137 contributors to the various sections. The major chapters are: Mathematics Bibliography; SI Units; Mechanics; Acoustics; Heat; Electricity and Magnetism; Optics; Atomic and Molecular Physics; Nuclear Physics; and Solid State Physics. The new edition contains comprehensive and authoritative data on numerous special topics of physics and related sciences.

ASRDI Oxygen Technology Survey. Vol. I: Thermophysical Properties. Hans M. Roder and Lloyd A. Weber, Eds., NASA SP-3071, National Technical Information Service, Springfield, Va., 1972, 426 pp. \$6.00.

As part of its role of providing safety-related information to NASA, the Aerospace Safety Research and Data Institute has surveyed the literature on the physical, thermodynamic, and transport properties of solid, liquid, and gaseous oxygen and compiled extensive graphs and tables of recommended values primarily at low temperatures. In addition to the usual transport properties related to viscosity and thermal conductivity, and to the usual thermodynamic properties derived from heat capacity and P-V-T relations, values of electrical conductivity, Corona onset voltage, dielectric constant (liquid and gas), emissivity, total band absorbance, velocity of sound, surface tension, and infrared rotational band and vibration-rotation bands are presented. Many tables are printed in both metric and English units.