

New Data Compilations

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

Radiation Chemistry of Gaseous Ammonia. *Donald B. Peterson*, University of San Diego, San Diego, Calif. National Bureau of Standards NSRDS-NBS 44. 40 pages. Available from U.S. Government Printing Office, Washington, D.C. 20402. (SD Catalog No. C13.48:44). Issued February 1974. \$0.70.

This report is one of a series of data publications on radiation chemistry for which sufficient data are available to permit a critical evaluation and to designate preferred values. A tabulation of elementary processes, yields of intermediates, and yields of stable products is given. Extensive discussion is given for the effect of various parameters such as pressure, dose rate, total dose, and temperature. Some rate constants are given as are some aspects of the mechanism of the decomposition. Physical property data such as bond energies, ionization energies, and electron affinities for the major intermediates are also given.

Radiation Chemistry of Ethanol. *Gordon R. Freeman*, University of Alberta, Edmonton T6G 2G2, Canada. National Bureau of Standards NSRDS-NBS. 43 pages. Available from U.S. Government Printing Office, Washington, D.C. 20402. (SD Catalog No. C13.48:48). Issued February 1974. \$0.80.

This report is one of a series of data publications on radiation chemistry for which sufficient data are available to permit a critical evaluation and to designate preferred values. The yields (G values) for products and intermediates for the irradiation of ethanol in the solid, liquid, and gaseous state are compiled and reviewed. Rates of reactions of transient ions and radicals and spectroscopic parameters, including optical and esr spectra, are also included. The compilation is conveniently divided into gas, solid, and liquid phases, and the data sheets and figures are numbered in such a way that future additions or revisions can be conveniently added.

*Reviewed by the
JC&ED Editorial Board*

Radiation Chemistry of Nitrous Oxide Gas Primary Processes, Elementary Reactions, and Yields. *G. R. A. Johnson*, Department of Chemistry, University of Newcastle upon Tyne, Newcastle upon Tyne, NE1 7RU, Newcastle, England. National Bureau of Standards NSRDS-NBS 45. 19 pages. Available from U.S. Government Printing Office, Washington, D.C. 20402. (SD Catalog No. C13.48:45). Issued December 1973. \$0.60.

Data on the radiation yields from nitrous oxide gas and the effects of variables, including dose rate, total dose, pressure, temperature, applied fields, and scavengers, are reviewed. The use of N₂O as a scavenger in other systems is discussed. There are 21 tables and 72 references.

Tables of Molecular Vibrational Frequencies. Part 7. *T. Shimanouchi*, Department of Chemistry, University of Tokyo, Japan. *J. Phys. Chem. Ref. Data*, **2**, 225-53 (1973).

The fundamental vibration frequencies of 50 molecules were selected and tabulated. This is a continuation of the series previously published in the NSRDS-NBS series. See *J. Chem. Eng. Data*, **19**, 104 (1974). Selections are based on observed infrared and Raman spectra and on normal coordinate analyses. Included are inorganic and organic compounds of halogens, N and P; metal organic compounds of Hg, Ge, and Sn; and inorganic compounds of Mn, Re, and V.

Compilation of the Static Dielectric Constant of Inorganic Solids. *K. F. Young and H. P. R. Frederikse*, Institute for Materials Research, National Bureau of Standards, Washington, D.C. *J. Phys. Chem. Ref. Data*, **2**, 313-409 (1973).

The static dielectric constant and the temperature and frequency of measurement of 300 inorganic solids are compiled. Temperature and pressure dependence of the dielectric constant are given for some substances. Data are presented in tabular and graphical form. Compound Index and 215 references.

Physical Methods in Heterocyclic Chemistry. Vol. V. Handbook of Molecular Dimensions, X-Ray Bond Angles and Lengths. *P. J. Wheatley*, Department of Physical Chemistry, Cambridge, England. 597 pp. Academic Press, New York, N.Y. 1972. \$39.00.

The book consists of an extensive compilation of bond lengths and angles of the heterocyclic component of each species derived from X-ray crystallography. Each entry contains the name of the compound, the structural formula, and the reference. It covers the literature through 1970.