mendations 1994) [*Pure Appl. Chem.*, Vol. 66, No. 5, pp. 1077–1184, 1994]. Additional terms have been added from inorganic and macromolecular chemistry. Some misleading terms are included, together with guidance on correct usage or acceptable alternatives. Many of the symbols used in stereochemical nomenclature are mentioned, but details of their assignment or their incorporation into chemical names are left to the appropriate recommendations. Terminology related to techniques used in the determination of stereochemistry is largely excluded, as well as terms used to describe reaction mechanisms.

New Publications from the American Chemical Society and the American Institute of Physics

Evaluated Kinetic and Photochemical Data for Atmospheric Chemistry, Organic Species: Supplement VII. IUPAC Subcommittee on Gas Kinetic Data Evaluation for Atmospheric Chemistry, by R. Atkinson, D. L. Baulch, R. A. Cox, R. F. Hampson Jr., J. A. Kerr (Chairman), M. J. Rossi, and J. Troe. USD 97.00. Published in the _Journal of Physical and Chemical Reference Data_, Vol. 28, No. 2, pp. 191–393, 1999, by the American Chemical Society (1155 Sixteenth Street, N.W., Washington, DC 20036-9976) and the American Institute of Physics (Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502) for the National Institute of Standards and Technology [S0047-2689(99)00102-6].

This paper updates and extends part of the previous database of critical evaluations of the kinetics and photochemistry of gas-phase chemical reactions of neutral species involved in atmospheric chemistry [*J. Phys. Chem. Ref. Data* **9**, 295 (1980); **11**, 327 (1982); **13**, 1259 (1984); **18**, 881 (1989); **21**, 1125 (1992); **26**, 521 (1997); **26**, 1329 (1997)].

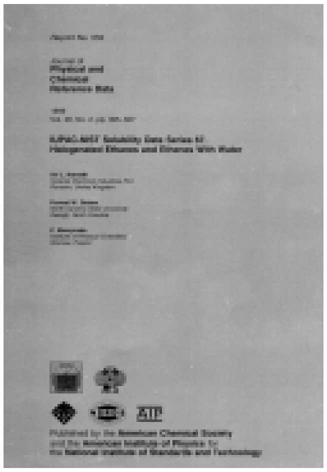
The present evaluation is limited to the organic family of atmospherically important reactions. The work has been carried out by the authors under the auspices of the IUPAC Subcommittee on Gas Phase Kinetic Data Evaluation for Atmospheric Chemistry. Data sheets have been prepared for 171 thermal and photochemical reactions, containing summaries of the available experimental data with notes giving details of the experimental procedures.

For each thermal reaction, a preferred value of the rate coefficient at 298 °K is given, together with a temperature dependence where possible. The selection of the preferred value is discussed, and estimates of the accuracies of the rate coefficients and temperature coefficients have been made for each reaction.

For each photochemical reaction, the data sheets list the preferred values of the photoabsorption cross-sections and the quantum yields of the photochemical reactions, together with comments on how they were selected.

The data sheets are intended to provide the basic physical chemical data needed as input for calculations that model atmospheric chemistry. A table summarizing the preferred rate data is provided, together with an Appendix listing the available values of enthalpies of formation of the reactant and product species.

IUPAC-NIST Solubility Data Series 67. Halogenated Ethanes and Ethenes with Water, by Ari L. Horvath, Forrest W. Getzen, and Z. Maczynska. USD 109.00. Published in the _Journal of Physical and Chemical Reference Data_, Vol. 28, No. 2, pp. 395–627, 1999, by the American Chemical Society (1155 Sixteenth Street, N.W., Washington, DC 20036-9976) and the American Institute of Physics (Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502) for the National Institute of Standards and Technology [S0047-2689(99)00202-0].



This volume covers the solubilities of halogenated ethanes and ethenes with water, heavy water, seawater, and aqueous electrolyte solutions. All data were critically examined for their reliability, and best value estimates were selected on the basis of such evaluations. Referenced works are presented in the standard IUPAC-NIST Solubility Data Series format. Reported and best value data are presented in tabular form and, where justified, data correlation equations and graphical illustrations are provided. Throughout the volume, SI conventions have been employed as the customary units.

The importance of these data arises from the fact that halogenated ethanes and ethenes have commercial uses as industrial chemicals, propellants, solvents, and the like. In such applications, often from spillage, leakage, or mishandling, they contact water and are exposed to the atmosphere. The data are essential for concentration estimates for the halogenated ethanes and ethenes in drinking and ground water, foodstuffs, human tissue, marine organisms, and the atmosphere.

The halogenated aliphatics are of particular interest to health scientists, engineers, environmentalists, and atmospheric chemists in that they represent a class of chemical materials that has many significant industrial applications. However, at the same time, these substances have been shown, in some cases, to be carcinogenic and also to be especially damaging to the earth's atmospheric composition through their chemical reactivity, which results in atmospheric ozone depletion. The high ozone depletion potentials of this class of chemical substances emphasizes the importance of having available complete, accurate, and reliable data for mutual solubilities with water. The availability of such data is essential for estimates of halogenated hydrocarbon levels in both natural waters and aqueous industrial liquids that result from industrial fabrication, industrial waste removal processes, and the like. The data also provide significant solubility values for studies concerning the health of human and other biological systems.

***IUPAC-NIST Solubility Data Series 68. Aliphatic Compounds C_3–C_{14} with Water,* by Ari L. Horvath and Forrest W. Getzen. USD 67.00. Published in the *Journal of Physical and Chemical Reference Data*, Vol. 28, No. 3, pp. 649–777, 1999, by the American Chemical Society (1155 Sixteenth Street, N.W., Washington, DC 20036-9976) and the American Institute of Physics (Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502) for the National Institute of Standards and Technology [S0047-2689(99)00403-1].**

This volume covers the solubilities of halogenated aliphatic C_3–C_{14} compounds with water, heavy water, seawater, and aqueous electrolyte solutions. All data were critically examined for their reliability, and best value estimates were selected on the basis of such evaluations. Referenced works are presented in the standard IUPAC-NIST Solubility Data Series format. Reported and best value data are presented in tabular form and, where justified, data correlation equations and graphical illustrations are provided. Throughout the volume, SI conventions have been employed as the customary units.

The importance of these data arises from the fact that halogenated aliphatics have commercial uses in a variety of applications such as industrial chemicals, process raw materials, solvents, and the like. In such applications, they are often in contact with water and are routinely exposed to the atmosphere. Sometimes, such contact and exposure results from spillage, leakage, or mishandling. Reliable data are essential for concentration estimates for the halogenated aliphatics in drinking and ground water, foodstuffs, human tissue, marine organisms, and the atmosphere.

The halogenated aliphatics are of particular interest to health scientists, engineers, environmentalists, and atmospheric chemists in that they represent a class of chemical materials that has many significant industrial applications. However, at the same time, some of this class of substances have been shown to be carcinogenic and also to be especially harmful for the earth's atmospheric and natural water composition. Indeed, the chemical reactivity of some halogenated aliphatics has resulted in atmospheric ozone depletion. The high ozone depletion potentials of such chemical substances emphasizes the importance of having available complete, accurate, and reliable data for mutual solubilities with water. The availability of such data is essential for estimates of halogenated aliphatic hydrocarbon levels in both natural water and aqueous industrial liquids that result from industrial fabrication, industrial waste removal processes, and the like. The data also provide significant solubility values for studies concerning the health of human and other biological systems.

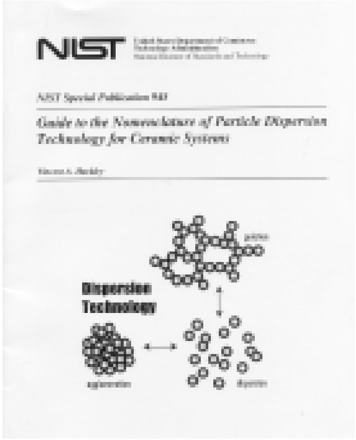
***IUPAC-NIST Solubility Data Series 69. Ternary Alcohol–Hydrocarbon–Water Systems,* by Adam Skrzecz, David Shaw, and Andrzej Maczynski. USD 117.00. Published in the *Journal of Physical and Chemical Reference Data*, Vol. 28, No. 4, pp. 983–1236, 1999, by the American Chemical Society (1155 Sixteenth Street, N.W., Washington, DC 20036-9976) and the American Institute of Physics (Suite 1NO1, 2 Huntington Quadrangle, Melville, NY 11747-4502) for the National Institute of Standards and Technology [S0047-2689(99)00304-9].**

The mutual solubilities of ternary systems containing alcohols, hydrocarbons, and water are reviewed. An exhaustive search of the literature was attempted for numerical data on all alcohols and hydrocarbons that are liquid at STP. Data were found for alcohols with up to nine carbon atoms, but mostly with fewer than four carbons. Data for a variety of hydrocarbon structural types were found, including alkane, alkene, and arene. A total of 205 original studies treating 116 ternary systems that have been published through 1992 are compiled. For 47 systems, sufficient data were available to allow critical evaluation. All solubility data are expressed as mass and mole fractions as well as the originally reported units. Similar reviews of the related binary systems have previously been prepared for the Solubility Data Series.

New Publications from the National Institute of Standards and Technology

***Guide to the Nomenclature of Particle Dispersion Technology for Ceramic Systems,* by Vincent A. Hackley. NIST Special Publication 945, U.S. Department of Commerce, Technology Administration, National Institute of Standards and Technology, 24 pp., 2000. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325.**

This little pamphlet is the work of a committee of academic, government, and industry specialists and is designed to provide a collection of standard definitions for the most common technical terms used in the area of particle dispersion technology for ceramic systems. The aim is certainly a worthy one, because the fields of particle technology and colloid science cover a diverse range of applications and have given rise to an equally diverse nomenclature.



The nomenclature problem stems partly from the wide range of areas to which the subject has some relevance—from food science through pharmaceuticals and cosmetics all the way to agricultural and soil engineering. But there is also the fact that many of these areas have a very long history of prescientific technological development, and in none of them is that more evident than in ceramics. The modern scientific understanding of ceramic processing has been grafted onto the enormously rich legacy of art and craft that underpinned the technology until relatively recently, and which still strongly influences some areas even today.

Because I had an opportunity to look at the material and offer comments prior to publication, I have not found any obvious deficiencies in the final work. There are some odd statements, however, such as the separation of the term *fine* from *coarse,* which is said to correspond to a dimension less or more than *roughly* 37 µm (my emphasis). It seems curious to make the separation so precisely and call it *roughly* until one translates that dimension into a sieve size and then recognizes it in terms of an aperture for a standard screen measured in the old f.p.s. unit of inches. Such are the strange ways in which we are reminded of the history of the subject.

There are well over a hundred definitions, covering the description of disperse systems, states of subdivision, association and dissociation processes, dispersion stability, and interfacial and electrokinetic properties. Each is succinct and carefully presented together with a bibliography and index.

I would not pretend that everyone will agree that every definition is couched in the most effective way. There will even be arguments about the exact meaning of some terms. When the phenomenon of particle association is described by terms like aggregation, agglomeration, coagulation, and flocculation (and there may be more), there is ample room for disagreement on details, but the definitions offered here have the weight of common usage behind them. The purpose of the exercise is to encourage a wider and more consistent use of the terms. That can only be an aid to communication and a contribution to clarity. The distinguished group of advisors on this project and the recorder, Vince Hackley, are to be congratulated on so ably performing such an important service.

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New Book from The Royal Society of Chemistry

***Chemistry, Society, and Environment: A New History of the British Chemical Industry.* Editor: Colin Russell (History of Chemistry Research Group, Open University, Milton Keynes MK6 7AA, England, UK).**

Public attitudes toward science have turned from awe to mistrust, and nowhere is this transformation more apparent than in the public image of the chemical