

# Editorial: IUPAC-NIST Solubility Data Series

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This issue of *Journal of Physical and Chemical Reference Data* (JPCRD) contains not only a guide to preparation and interpretation of articles in the IUPAC-NIST Solubility Data Series (SDS; see the article by Gamsjäger *et al.*),<sup>1</sup> but also the latest contribution to the SDS (see the article on solubility of esters in water by Góral *et al.*).<sup>2</sup> It is therefore an opportune time to reflect on the history and value of the SDS.

Solubility data have been published for over 100 years. Because solubility is important in many different disciplines, these data have been reported in a wide variety of journals and other publications, with widely varying units and nomenclature. This has resulted in the unfortunate situation that workers in one field often may not be aware that the data they need have been published in a journal devoted to a different field, and sometimes in the even more unfortunate situation where erroneous information is used because of misunderstandings concerning the sometimes obtuse units in which solubility may be reported.

The IUPAC Solubility Data Series was the brainchild of the late Professor A. S. Kertes, who envisioned a venue for collecting and publishing all available solubility data on important systems, with data converted to a common set of units and the data sources documented as to methods, purity of chemicals used, and (to the extent possible) uncertainties of the measurements. Critical evaluations are also produced when there are enough independent data sources to justify such evaluation. The efforts to produce these compilations were carried out by the Commission on Solubility Data of the International Union of Pure and Applied Chemistry (IUPAC), which has since become the Subcommittee on Solubility and Equilibrium Data of the IUPAC Analytical Chemistry Division.

The first volume in the SDS, on the solubility of helium and neon in liquids, was published in 1979 as a monograph.

Publication of these compilations as monographs by commercial publishers, with camera-ready copy supplied by IUPAC, continued through Volume 65 in 1996. In the 1990s, IUPAC became interested in publishing these data in a journal, both to improve accessibility and to allow the flexibility to produce volumes in multiple parts. This coincided with the interests of the NIST Office of Standard Reference Data (now subsumed in the Measurement Services Division), whose mission was to support the dissemination of critically evaluated data of importance to science and industry. As a result, it was decided that these compilations would henceforth be published in JPCRD, and renamed the IUPAC-NIST Solubility Data Series. Volume 66, the first published in JPCRD, appeared in 1998, and publication has continued at the rate of approximately two volumes per year.

The IUPAC Subcommittee continues to support projects on collection and evaluation of data on solubilities for a variety of systems. Upcoming volumes include one on alkali metal nitrates, one on oxygen and ozone (an update of a previous volume), and one on hydroxybenzoic acid derivatives. Compounds of interest for human health and environmental concerns are of particular interest for future volumes. Additional participation in these efforts is welcomed; Interested parties should contact either Mark Salomon or the Chair of the IUPAC Subcommittee on Solubility and Equilibrium Data (currently Professor Maria Clara F. Magalhães, mclara@ua.pt).

This partnership between IUPAC and NIST has been fruitful, and both partners look forward to continued success of these efforts to provide science and industry with reliable information about solubilities in important systems.

<sup>1</sup> H. Gamsjäger, J. W. Lorimer, M. Salomon, D. G. Shaw, and P. T. Tompkins, *J. Phys. Chem. Ref. Data* **39**, 023101 (2010).

<sup>2</sup> M. Góral, D. G. Shaw, A. Mączyński, and B. Wiśniewska-Gocłowska, *J. Phys. Chem. Ref. Data* **39**, 023102 (2010).

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