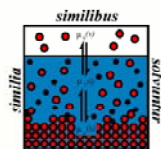


### Tools of the Trade



### SUBCOMMITTEE ON SOLUBILITY AND EQUILIBRIUM DATA

### Introduction

Solubility data find important uses in chemistry and in a wide range of related fields. For example, solubility data are employed to determine thermodynamic quantities, to predict the safety of radioactive waste depositories, and to assess the effectiveness of pharmacological agents.

The Subcommittee on Solubility and Equilibrium Data (SSED) and its predecessors in IUPAC have taken on the task of making reliable solubility data available as widely as possible to chemists and non-chemists. Four major tools of the trade are offered by the SSED to all users of solubility data.

### 1) Solubility Data Series

The original—and still primary—task of the SSED is the Solubility Data Project (SDP) with its resulting product the Solubility Data Series (SDS).

**To be truly useful, data must be evaluated.**

The SDS is an important tool for anyone needing compiled and critically evaluated solubility data. The list of 83 SDS volumes published to date includes numerous widely important systems. Nevertheless, other important systems remain to be covered or are in need of updated treatment. The SSED is always interested in hearing from qualified individuals with interest in continuing this work.

### 2) Solubility phenomena, standard reference texts

- G. T. Hefter and R. P. T. Tomkins, editors, *The Experimental Determination of Solubilities* (2003) John Wiley & Sons.
- P. G. T. Fogg and J. Sangster, editors, *Chemicals in the Atmosphere: Solubility, Sources and Reactivity* (2003) John Wiley & Sons.
- E. Königsberger and L.-C. Königsberger, editors, *Bio-mineralization—Medical Aspects of Solubility* (2006) John Wiley & Sons.
- T. M. Letcher, editor, *Developments and Applications in Solubility* (2006) The Royal Society of Chemistry.
- T. M. Letcher, editor, *Thermodynamics, Solubility and Environmental Issues* (2007) Elsevier.

### 3) International Symposia on Solubility Phenomena

– Including Related Equilibrium Processes

From 1984 to the present, twelve conferences have been held at various sites in Africa, Asia, Europe, North and South America. In addition to a broad scientific program, some ISSP have included special topic workshops. These biennial ISSP have become the main scientific event for the solubility community. These symposia accomplish the IUPAC mission to effectively promote the cooperation of scientists speaking different languages, using different alphabets and belonging to different cultures.

### 4) Glossary of terms related to solubility

➤ (IUPAC RECOMMENDATIONS 2008)

In part because solubility is a topic of interest to individuals both in chemistry and in other fields, there is potential for inconsistent use of terminology and consequent ambiguity and miscommunication. In response to this situation an SSED task group has prepared a glossary of solubility-related terms that are consistent with one another and with other terminology recommended by IUPAC.

### New project proposal

**TR, project title:** An Introduction to the IUPAC-NIST Solubility Data Series: Preparation and Use of Compilations and Evaluations

Chair: D. Shaw, TM: HG, JWL, MS, RT

SSED will continue the task to achieve IUPAC conformity in all solubility aspects by revising the three introductions to the gas/liquid, liquid/liquid and solid/liquid SDS. Moreover as a result of changes in SDS publisher and the passage of time, it is now necessary to prepare and publicize background information for the guidance of both users of and contributors to the SDS.