

PREFACE

This volume of The Solubility Data Series is concerned with the solubility of hydrogen sulfide and of hydrogen selenide in aqueous and non-aqueous solvents. Data on the solubility of deuterium sulfide in deuterium oxide are also included. The editors believe that all relevant data published before January 1987 have been included but will be grateful for details of significant omissions.

Solubilities of hydrogen sulfide in a wide range of aqueous and non-aqueous solvents have been reported in the chemical literature. Much of this work is of a high standard. Reliance may be placed on data if there is consistency between measurements by different workers. In the case of some systems, however, there are wide divergences of data. As far as possible the evaluator has indicated which he considers to be reliable data where there are discrepancies but some systems merit re-examination using modern techniques. It is hoped that the publication of this, and similar volume will stimulate further experimental work on systems for which data is in doubt or is lacking.

In aqueous solutions of hydrogen sulfide equilibria involving hydrosulfide and sulfide ions play an important role in determining the solubility of the gas. If other weak acids and bases are also present there will be other equilibria established. Literature references to the theoretical treatment of some such complex systems are included but there has been no attempt to analyse the merits of different theoretical models for prediction of solubility which have been published. Similar equilibria exist in aqueous solutions of hydrogen selenide but these have received little study.

The editors recommend that all published reports of experimental measurements of the solubility of gases should include a complete record of primary experimental observations of temperature, pressure, composition of the phases etc. If such full publication is not possible then authors should endeavour to deposit such a record in an accessible data store.

The editors are grateful for support and encouragement from fellow members of the I.U.P.A.C. Commission on Solubility Data. In particular we wish to acknowledge help and advice given by Prof. A.L. Mather and we are grateful for the provision of data awaiting publication by Prof. W. Hayduk and by Prof. S. Lynn. In addition we would like to express our appreciation for the opportunity to use a daisy-wheel printer owned by Pergamon Press and to Lesley Flanagan for help in preparing the manuscript.

Peter Fogg

London

Colin Young

Melbourne

August 1987