PREFACE

This volume of *The Solubility Data Series* covers the solubility of ammonia, *N*-methylmethanamine and *N*,*N*-dimethylmethanamine in pure liquids not including water. Data on the solubility of some higher amines at pressures below the vapor pressure of the liquid amine are also included as are data on the solubility of deuterated methanamine and deuterated *N*-methylmethanamine. The volume also covers the available data on the solubility of phosphine, arsine, stibine, bismuthine, silane, germane and stannane in non-aqueous solvents. The editors believe that all solubility values published up to June 1983 have been included but would be grateful to learn of significant omissions.

In few cases can one be certain that the available data has an accuracy better than about ±3%. In many cases data may have an accuracy less than this. It is hoped that this and other similar volumes in *The Solubility Data Series* will draw attention to the systems for which there is lack of good data and will stimulate further experimental work in the field.

The editors wish to make a plea that authors publishing gas solubility data should always report the primary experimental observations of temperature, pressure, volume, etc. and should indicate the precise method used to calculate solubility values. Much of the value, for instance, of an Ostwald coefficient is lost if the pressure at which measurements were made is not reported. Henry's law constants have been defined and calculated in a variety of ways and the precise significance of a particular value is often lost if pressure measurements are not given.

A variety of techniques have been used to measure solubilities of the systems under consideration. The merits of experimental methods have been taken into account in the evaluation of data. Estimates have also been made as to whether particular values fit general patterns of solubility which appear to emerge when similar systems are compared. However, much more accurate experimental work is needed before such patterns are precisely defined.

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