

BOOK REVIEWS

A. L. HORVATH, **Physical Properties of Inorganic Compounds (SI Units)**. Edward Arnold, London (1975). pp. 466 + xiii. Price £22.50

N. B. VARGAFTIK, **Tables on the Thermophysical Properties of Liquids and Gases**. 2nd edn, Hemisphere, Washington (1975). pp. 758 + xii. Price £32.50

K. RAŽNJEVIĆ, **Handbook of Thermodynamic Tables and Charts**. Hemisphere, Washington (1976). pp. 392 + viii.

HORVATH'S book sets out to present the data for twelve different properties of thirty-one different substances in graphical form, each graph dealing with only one element of this array and of such a format that it is easy to read with considerable accuracy. The result is such a pleasure to use, apart from its weight, that it is a pity that the final conclusion must be that it is a high price to pay for a comparatively limited amount of data.

The substances are the most common pure fluids (plus air) in use in heavy chemical engineering. The properties are the principal thermodynamic and transport properties, plus the solubility in water and, where appropriate, phase diagrams of the fluid-water mixture. The general introduction on sources of data is excellent, giving over two hundred references, and there are useful notes and additional references for each fluid. A set of unit conversion tables is included, and there is a property index.

Vargaftik's book deals with much the same range of properties, but in tabular form, and for a far wider range of liquids and gases, and room is found for some data on mixtures. The tables are drawn from a wide variety of sources,

over four hundred being cited, and it is necessary to refer to them for information on the reliability of the data. Generally, users will be content to rely on Prof. Vargaftik's acknowledged reputation. The book is the English translation of the second edition of a Russian work which is well-known, and it is unusual in its equal weighting of Russian and western literature. The book format is clear, but the running heads are uninformative, a feature which is redeemed by the four useful indexes. SI units are used throughout, and there is an adequate set of conversion tables.

Ražjević's book is organised by state of aggregation, and within this by substance. The range of the tables on liquids and gases falls in extent between those of the other two books, but there are also included the properties of a wide variety of solids, including engineering and architectural materials. A number of Mollier diagrams is included, but the main presentation is tabular, including an unusually large number of tables of unit conversions. Two systems of units are used throughout, but since one is SI and the other differs mainly in the use of the kp cm^{-2} for pressure and the IT calorie for energy, this seems no great advantage. The most obvious weakness of the book is its failure to document the source of any numbers: the author must be taken on trust. The main indexes are by substance only and there is a separate index for units and measures. The format of the tables is clear and that of the diagrams as clear as can be hoped for in black and white for the page size used, but there is an awkward break at the centre join of the pages. The two pull-out Mollier diagrams for steam are in two colours and of a larger size.

All three books are aimed at the chemical engineer, but a reasonable proportion of the data are useful to those working in the heat transfer field.

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