FOREWORD TO THE FIRST EDITION

The requirements of modern science and technology necessitate the knowledge of thermophysical properties of gases and liquids.

This area of science, in addition to experimental work, centers on research in diffusion, thermal conductivity and viscosity of gases, as well as on the derivation of equations of state for real gases. Over the recent years, a large amount of data on thermophysical properties of gases and liquids have been collected; these data are of great practical interest.

The present book attempts to provide a systematic presentation of data obtained over the last 5 - 10 years. Most reliable data for pure substances, gas mixtures and solutions are presented. The data are essentially based on experimental results. Most often, the data are given for whole-number temperatures and pressures, and in the cases of mixtures for concentrations convenient for practical calculations.

The Handbook gives data for thermophysical properties of a number of gases: hydrogen, lithium, nitrogen, argon and steam; data are given at high temperatures and take into account the dissociation of the given gas. Data on thermophysical properties of vapors of lithium, sodium and potassium up to 2,000°K take into account the dimerization of these substances in the gaseous state. The book gives I-S [entropy-enthalpy] charts for these substances in the range of high temperatures.

In the compilation of this Handbook, data reported in both monographic and periodical literature have been cited.

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