PREFACE

The problem of liquids and solutions has played an important role in modern physical chemistry. A number of qualitative and quantitative theories have been proposed to predict the properties of liquids and solutions from the knowledge of the properties of pure components.

For the last few decades, ultrasonic velocity in conjunction with density data has been found to be very useful tool for estimating a number of important thermodynamic properties of liquids and solutions, which are not assessable by other methods.

The experimental methods are sometimes found to be very cumbersome and even difficult in some cases whereas theoretical deductions are found to be useful in such cases.

Therefore, in the present work an attempt has been made to calculate large number of thermodynamically important properties viz., thermal expansion coefficient, isothermal compressibility, isentropic compressibility, heat capacities ratio, Gruneisen parameter, internal pressure, B/A, molecular radius, intermolecular free length, acoustic impedance, Debye temperature of pure liquids by theoretical methods using only few input data mainly ultrasonic velocity and density etc.