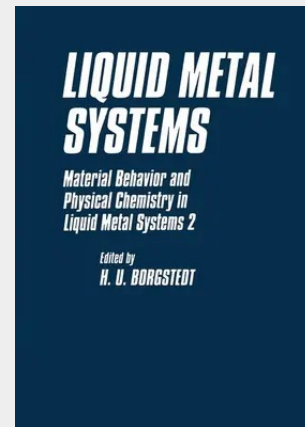


Liquid Metal Systems

Material Behavior and Physical Chemistry in Liquid Metal Systems 2

Liquid metal technology has been the subject of an impetuous development in the recent decades, mainly due to the application of liquid metals in nuclear techniques. The technological development has been supported by studies of the basic physical-chemical properties of liquid metals: One major concern is the material behaviour in contact with the liquid metals, corrosion and the possible deterioration of metallic and ceramic materials which are in use as constructional or functional materials in such systems. Since the corrosion is in many cases not only a simple dissolution process, the chemical background of such processes had to be studied. Such studies included the determination of solubilities of metals and non-metals in liquid metals, the measurement of thermodynamic data of dissolved materials and of chemical equilibria. Several formerly unknown chemical compounds are formed in liquid metal~ Ind are only stable in this environment. The research and development devoted to the fission reactor techniques were more or less completed in several countries, further work is in progress in some countries in which the interest in fast breeder reactors arose recently. Even the worldwide program on fusion reactor technology is related to liquid metals, and several laboratories are now contributing to this new technology.

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