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Phase equilibria involving oxide-fluoride melts of sodium and aluminium

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Abstract

In this paper, within the frameworks of the generalized model of "regular" ionic solutions there are described thermodynamic properties of oxide-fluoride melts NaF – Na_2O – Al_2O_3 – AlF_3 in the temperature range 1270-2300 K. Standard Gibbs energies of the formation reactions of the intermediates of fluorides and oxides of sodium and aluminum have been calculated. Qvazibinars of the system studied have been built. Thermodynamic properties are made consistent with thermodynamic melting characteristics of pure oxides and fluorides, Gibbs energy of the exchange reaction and phase diagrams.