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Calculation of the concentration of autocomplexes in halide melts of bivalent metals

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Abstract

Model calculation of chemical equilibrium of the reaction $M^{2+} + 4X^{-} = (MX_4)^{2-}$ in halide melts of bivalent metals has been presented. It was found that the concentration of autocomplex anions is strongly reduced by the effects of the electrostatically screened interaction between ions in the reaction mixture. It is shown that the shift of the chemical equilibrium state with the largest possible number of autocomplexes to their complete dissociation occurs within a rather narrow temperature range and accompanies the maximum atomic density.