

过程与工艺

The Applicability of Debye-Hückel Model in NaAl(OH)₄-NaOH-H₂O System

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摘要 Focusing on the most important NaAl(OH)₄-NaOH-H₂O system in the industry of alumina production, the feasibility of establishing a calculation model of activity coefficients according to Debye-Hückel theory via the equilibrium solubility data of sodium aluminate solution is discussed in this paper. Firstly, the hypotheses for applying Debye-Hückel theory into NaAl(OH)₄-NaOH-H₂O system are involved and the values of parameters are determined. Then the applicability of Debye-Hückel model in NaAl(OH)₄-NaOH-H₂O system is testified. The results indicate that Debye-Hückel model is applicable to the establishment of calculation model of activity coefficients in NaAl(OH)₄-NaOH-H₂O system and the value of $\gamma_{\text{NaAl(OH)}_4}$ is estimated as 0.3595 nm.

关键词 [activity coefficients,Debye-Hückel theory,sodium aluminate solution,applicability](#)

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