

THERMODYNAMIC MODELING OF SULFIDE CAPACITIES OF MELTS

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Recent studies on the modeling of sulfide capacities of oxide melts are reviewed. In general, empirical correlations proposed for calculating sulfide capacities are only valid over a limited melt composition and temperature ranges. The Reddy and Blander model, predicting sulfide capacities in oxide melts "a priori" was developed in 1987. This model led to the prediction of capacities such as sulfide capacities and solubilities such as sulfides, phosphates, sulfates, carbonates and halides in multicomponent melts, from knowledge of equilibrium constant and thermodynamic activity of basic oxide. The sulfur distribution ratios between metal and slag were calculated. Discussion of these concepts with some key examples will illustrate their usefulness and practicality in industrial slags and fluxes systems.