

Abstract

Nonlinear correlative analyses between thermodynamic and some physico-chemical properties of rare-earth metals (RE) and their alloys with indium are performed for the isostructural phases RE and REIn₃. The thermodynamics values (Gibbs energies of formation, enthalpies of formation, and entropies of formation at 298 K and 775 K and standard entropies) of LnIn₃ phases are calculated on the basis of calorimetry and potentiometry results. The proposed correlation between physico-chemical and thermodynamic properties agrees for all the isostructural phases REX (X are others elements of the periodic table). The resulting thermodynamic data are recommended for metallurgical handbook