

MIXING PROPERTIES IN THE IN-PB AND IN-MG LIQUID ALLOYS.

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Abstract

The mixing properties of liquid alloys In-Pb and In-Mg have been investigated at temperatures of 873 and 900 K, respectively, using a theoretical model that takes into consideration the formation of complexes in liquid alloys. The energetics obtained from the study were used to determine the concentration-concentration fluctuation at the long wavelength limit $S_{cc}(0)$, the mutual diffusivities, surface tension and surface concentration for the alloys throughout the concentration range. Our studies showed that mutual diffusivity values decreased in phase segregating In-Pb while they increased in compound-forming In-Mg with increasing concentration of up to 0.6 of the atomic fraction of indium.