

Al – Nd (Aluminum – Neodymium)

Phase diagram

Thermodynamic calculations of the Al-Nd system have been performed by Clavaguera et al. [96 Cla]. As a basis for these calculations thermodynamic data have been taken and phase equilibria present in the literature. An optimized phase diagram obtained by this procedure is shown in Fig. 1. This phase diagram is in good agreement with experimental results obtained by [60 Sav], [65 Bus], [89 Gol] and [90 Kon]. Also, it agrees well with the diagram proposed by Okamoto [91 Oka].

Thermodynamics

Enthalpies of formation calculated by [96 Cla] are shown in Fig. 2. In Fig. 3 enthalpies of mixing of liquid alloys at 1400 K [96 Cla] are plotted.

By melt spinning metastable crystalline phases could be detected. Cooling the melt with the stoichiometry $\text{Al}_{91}\text{Nd}_9$ partially amorphous alloys have been found [94 Bat].

Figures

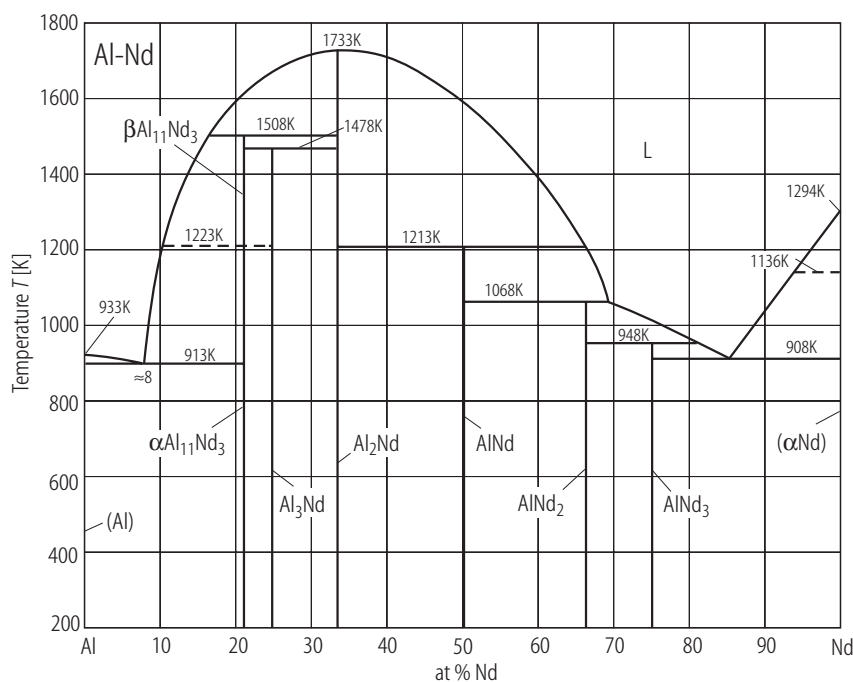


Fig. 1. Al–Nd. Phase diagram calculated by [96 Cla].

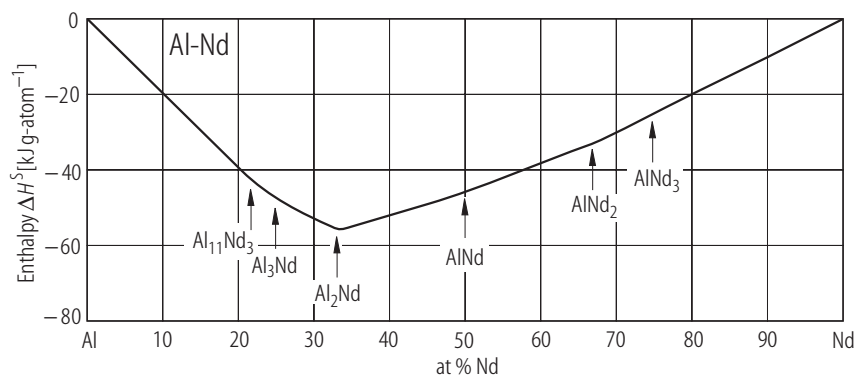


Fig. 2. Al-Nd. Standard enthalpies of formation calculated by [96 Cla].

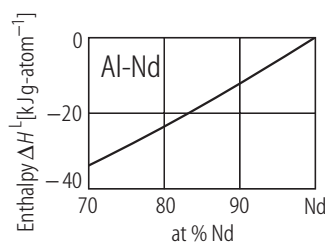


Fig. 3. Al-Nd. Enthalpies of mixing of liquid alloys at 1400 K [96 Cla].

References

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