

Al – Si (Aluminum – Silicon)

Phase diagram

Soma et al. [90 Som] have investigated the solubility of Si in Aluminum under pressure. The results are given in Fig. 1.

Thermodynamics

By high temperature isoperibolic calorimetry Witusiewicz et al. [00 Wit] have determined enthalpies of mixing of liquid ternary Al-Ni-Si alloys. Besides other thermodynamic values, thermodynamic activities of binary liquid alloys have been obtained by evaluation of experimentally determined ΔH^L -values. These activities are plotted in Fig. 2.

Also, the integral enthalpies of mixing of liquid alloys have been determined. The results are very similar to those given in Fig. 11 of the Al-Si article about Al-Si alloys [Landolt-Börnstein].

Figures

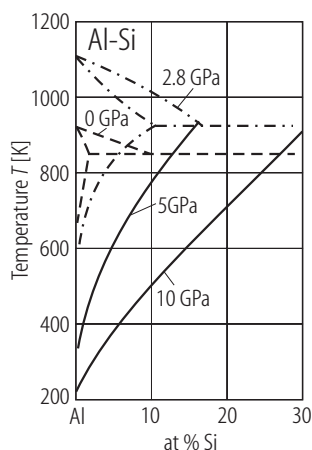


Fig. 1. Al–Si. Solubility of Si in Al under pressure [90 Som].

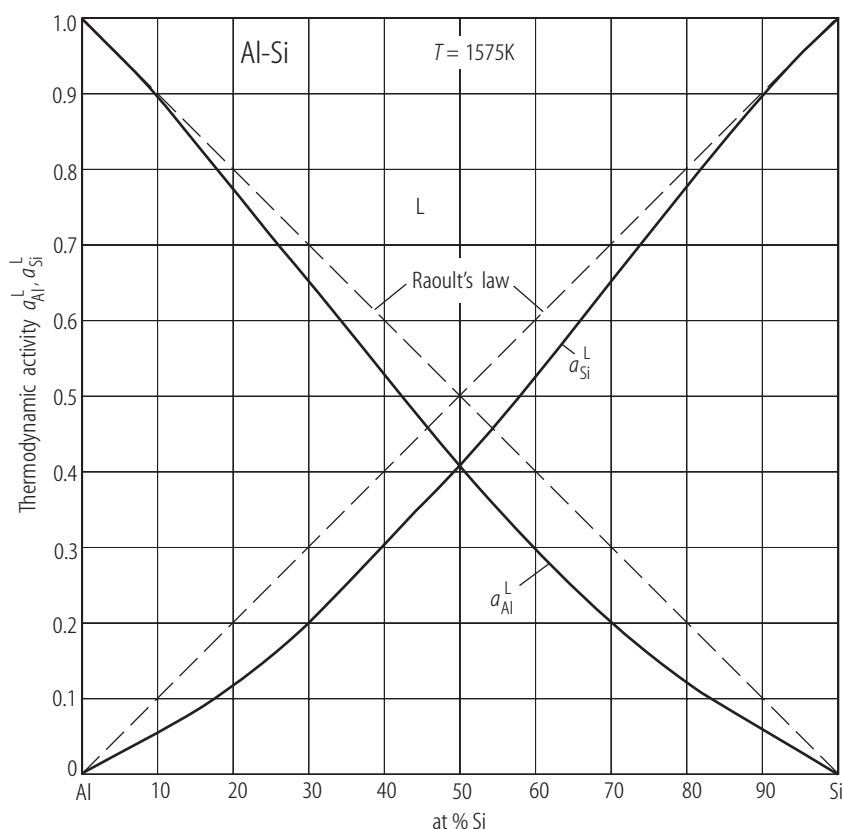


Fig. 2. Al-Si. Thermodynamic activities of the components of liquid Al-Si alloys evaluated by [00 Wit] from calorimetric experiments ($T = 1575\text{ K}$)

References

- [90 Som] Soma, T., Funayama, Y., Kagaya, H.-M.: J. Mater. Sci. **25** (1990) 3917
- [00 Wit] Witusiewicz, V.T., Arpshofen, I., Seifert, H.-J., Sommer, F., Aldinger, F.: J. Alloys and Comp. **305** (2000) 157
- [Landolt-Börnstein] New Series, Group IV, Vol. 5, Subvolume a to j, Predel, B., Madelung, O. (ed.), Springer-Verlag (1991) to (1998)