

Ag – Sn (Silver – Tin)

Phase diagram

A thorough discussion of phase equilibria is given by Xie et al. [96 Xie]. The authors compare recent results of thermodynamic optimization with previous experimental results and data found by modelling.

In the frame of modelling of the ternary Ag-Sn-Zn liquid alloys, the phase diagram and some thermodynamic properties of binary Ag-Sn liquids were calculated.

On the basis of thermodynamic data present in the literature, an optimal phase diagram has been calculated (see Fig. 1).

Crystal structure

Yuantao et al. [92 Yua] have determined lattice constants of the fcc (Ag) solid solutions. The results obtained are given in Fig. 2.

Thermodynamics

The notations of activity isotherms of liquid Ag-Sn alloys in Fig. 7 of the chapter concerning the Ag-Sn system in [Landolt-Börnstein] (a_{Ag}^{L} and a_{Sn}^{L}) have to be interchanged.

The most recent determinations of thermodynamic activities have been performed by Kameda [87 Kam] using a galvanic cell with fused salt electrolytes. The results obtained at 973 K are plotted in Fig. 3.

Kameda [87 Kam] also has determined enthalpies of mixing of liquid Ag-Sn alloys. The results are shown in Fig. 4.

Figures

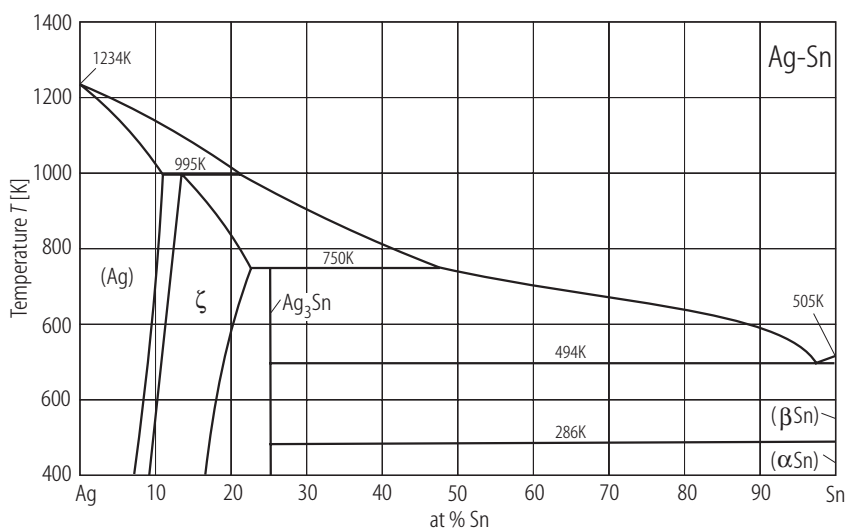


Fig. 1. Ag-Sn. Phase diagram calculated by [99 Oht].

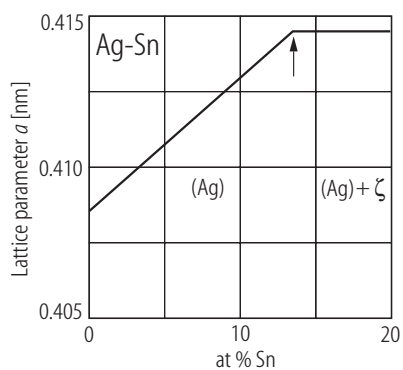


Fig. 2. Ag-Sn. Lattice constants of fcc (Ag) solid solutions [92 Yua].

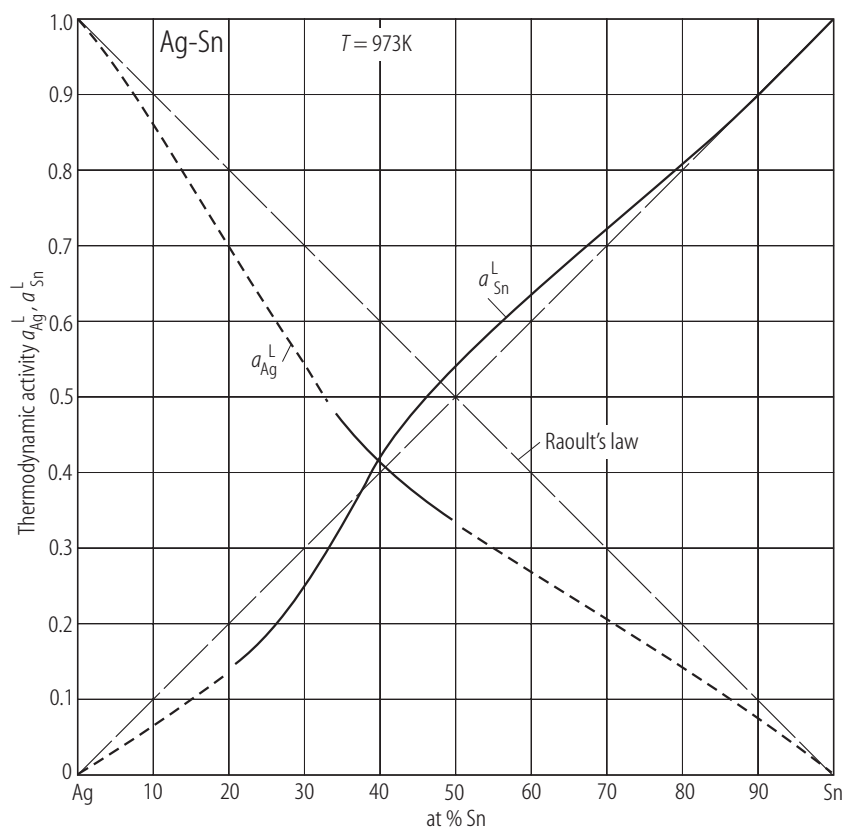


Fig. 3. Ag-Sn. Thermodynamic activities obtained by [87 Kam]. Solid curve: calculated data, experimentally confirmed; dashed curve: only calculated.

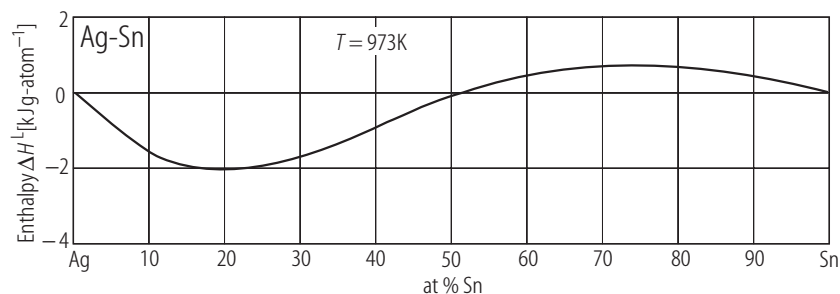


Fig. 4. Ag-Sn. Enthalpies of mixing of liquid alloys [87 Kam].

References

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