

Ag-Sr (Silver-Strontium)

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The Ag-Sr phase diagram in [Massalski2] (dashed lines in Fig. 1) was as assessed by [1990Bar] based on experimental phase boundary data reported by [1930Wei] and [1970Heu].

The Ag-Sr phase diagram shown with solid lines in Fig. 1 was obtained by [2006Liu] by thermodynamic assessment. The phase boundary data adopted in the thermodynamic model were the same as those used by [1990Bar]. Generally, the calculated phase diagram represents scattered experimental phase boundary data. Unlikely asymmetry in liquidus boundaries in [1990Bar] has been eliminated in the calculated phase diagram. The greatest difference between [1990Bar] and [2006Liu] is observed at the $L \rightarrow \text{Ag}_4\text{Sr} + \text{Ag}_2\text{Sr}$ eutectic point. (Temperatures and compositions of invariant reactions are for the diagram of [1990Bar].) Experimental data of [1970Heu] support the eutectic reaction at 686 °C, but consistency in the liquidus shape (symmetry, curvature) of Ag_2Sr requires a tempera-

ture much higher (702 °C according to [2006Liu]). If the eutectic temperature is correct, the melting point of Ag_2Sr would be lower. In order to solve this inconsistency, this area should be reexamined experimentally.

References

- 1930Wei:** F. Weibke, Thermal Diagrams of the Silver-Strontium and Silver-Barium Systems, *Z. Anorg. Chem.*, 1930, **193**, p 297-310, in German
- 1970Heu:** T. Heumann and N. Harmsen, The Partial Phase Diagram of Silver-30% Strontium, *Z. Metallkd.*, 1970, **61**(12), p 906-908, in German
- 1990Bar:** M.R. Baren, The Ag-Sr (Silver-Strontium) System, *Bull. Alloy Phase Diagrams*, 1990, **11**(2), p 117-124
- 2006Liu:** Y. Liu and D. Liang, Thermodynamic Modeling of the Ag-Sr System, *J. Alloys Compd.*, 2006, **407**, p 74-77

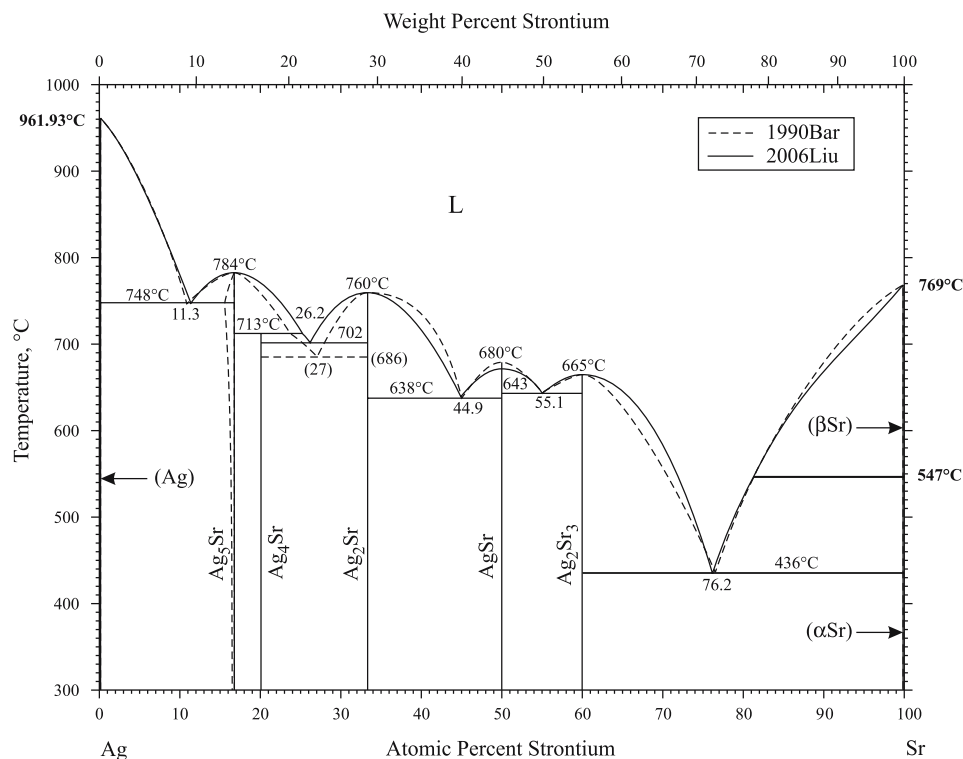


Fig. 1 Ag-Sr phase diagram