

# Al-Sr (Aluminum-Strontium)

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The Al-Sr phase diagram in [Massalski2] was adopted from [1989Alc]. Although the overall phase diagram well represented numerous scattered experimental data, the liquidus of the  $\text{Al}_2\text{Sr}$  phase appeared to be too pointed at the congruent melting point.

This phase diagram was thermodynamically evaluated by [1994Cha] and [2003Wan]. The results are shown in Fig. 1. [2003Wan] claimed that the thermodynamic data that they had used were more up to date. The two diagrams are based on the same essential experimental phase boundary data. Although the liquidus boundaries of  $\text{Al}_2\text{Sr}$  and  $\text{Al}_7\text{Sr}_8$  seem to be displaced significantly between the two diagrams, experimental data in this region are so scattered that it cannot be judged which is better based on the agreement of the calculated result and the experimental data.

[1994Cha] proposed an eutectoidal decomposition of  $\text{Al}_7\text{Sr}_8$  on cooling at  $345 \pm 25$  °C (not shown in Fig. 1). This must be confirmed.

## References

- 1989Alc:** C.B. Alcock and V.P. Itkin, The Al-Sr (Aluminum-Strontium) System, *Bull. Alloy Phase Diagrams*, Vol 10 (No. 6), 1989, p 624-630
- 1994Cha:** P. Chartrand and A.D. Pelton, Critical Evaluation and Optimization of the Thermodynamic Properties and Phase Diagrams of the Al-Mg, Al-Sr, Mg-Sr, and Al-Mg-Sr Systems, *J. Phase Equilib.*, Vol 15 (No. 6), 1994, p 591-605
- 2003Wan:** C. Wang, Z. Jin, and Yong Du, Thermodynamic Modeling of the Al-Sr System, *J. Alloys Compd.*, Vol 358, 2003, p 288-293

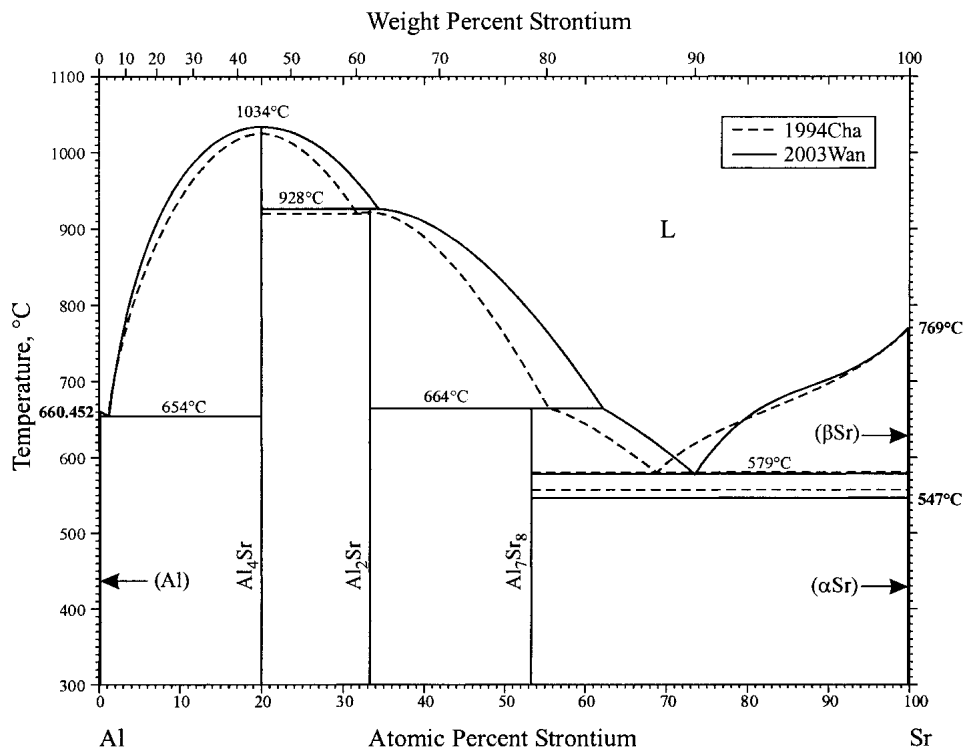


Fig. 1 Al-Sr phase diagram