

# Sn-Sr (Tin-Strontium)

H. Okamoto

The Sn-Sr phase diagram in [Massalski2] was redrawn from [1981Mar] (0-35 at.% Sr) and [1981Wid] (35-100 at.% Sr).

The entire phase diagram was reinvestigated by [2004Pal] by means of differential thermal analysis, x-ray diffraction, and optical microscopy. The result is shown in Fig. 1. [Massalski2] reported that SnSr and SnSr<sub>2</sub> were dimorphic. However, [2004Pal] found no phase transitions in these compounds. The Sn<sub>5</sub>Sr<sub>3</sub> phase was unknown in [Massalski2].

Sn-Sr crystal structure data shown in Table 1 were taken from [Massalski2] and [2004Pal].

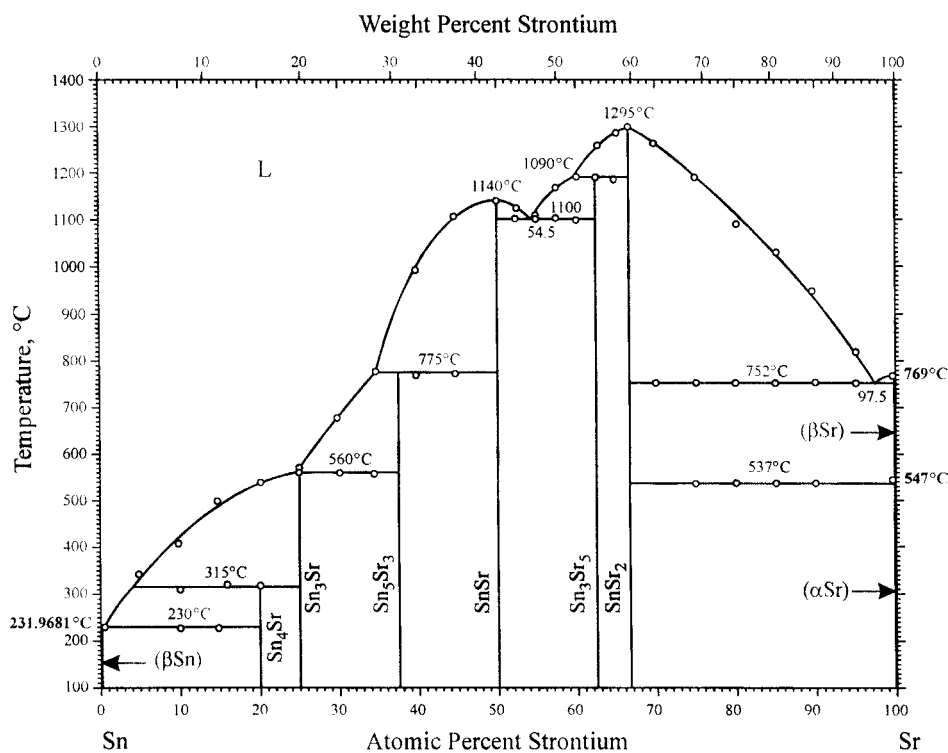
## References

- 1981Mar:** D. Marshall and Y.A. Chang, Constitution of the Tin-Strontium System up to 35 at.% Sr, *J. Less-Comm. Met.*, 1981, **78**, p 139-145  
**1981Wid:** A. Widera and H. Schäfer, The Sr-Sn Phase Diagram and a Compound Sr<sub>3</sub>SnO, *J. Less-Comm. Met.*, 1981, **77**, p 29-36, in German  
**2004Pal:** A. Palenzona and M. Pani, The Phase Diagram of the Sr-Sn System, *J. Alloys Compd.*, 2005, **384**, p 227-230

**Table 1** Sn-Sr crystal structure data

Phase	Composition, at.% Sr	Pearson symbol	Space group	Strukturbericht designation	Prototype
(βSn)	0	<i>tI4</i>	<i>I4<sub>1</sub>/amd</i>	A5	βSn
(αSn)(a)	0	<i>cF8</i>	<i>Fd3m</i>	A4	C (diamond)
Sn <sub>4</sub> Sr	20	<i>oC20</i>	<i>Cmcm</i>	...	...
Sn <sub>3</sub> Sr	25	<i>hR48</i>	<i>R3m</i>	...	PuGa <sub>3</sub>
Sn <sub>5</sub> Sr <sub>3</sub>	37.5	<i>OC32</i>	<i>Cmcm</i>	...	Pu <sub>3</sub> Pd <sub>5</sub>
SnSr	50	<i>oC8</i>	<i>Cmcm</i>	<i>B<sub>f</sub></i>	CrB
Sn <sub>3</sub> Sr <sub>5</sub>	62.5	<i>tI32</i>	<i>I4/mcm</i>	<i>D8<sub>7</sub></i>	Cr <sub>5</sub> B <sub>3</sub>
SnSr <sub>2</sub>	66.7	<i>oP12</i>	<i>Pnma</i>	<i>C23</i>	Co <sub>2</sub> Si
(βSr)	100	<i>cI2</i>	<i>Im3m</i>	A2	W
(αSr)	100	<i>cF4</i>	<i>Fm3m</i>	A1	Cu

(a) Not shown in Fig. 1



**Fig. 1** Sn-Sr phase diagram