

# Cd-Sc (Cadmium-Scandium)

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The Sc-Cd phase diagram shown in Fig. 1 was determined by [96Pal] from DTA, metallographic analysis, XRD, and electron microscopy. The Sc-rich part of the phase diagram up to 40 at.% Cd is speculative.

Crystal structure and lattice parameter data are summarized in Tables 1 and 2, respectively.

## Cited References

- 63Lau:** E. Laube and H. Nowotny, *Monatsh. Chem.*, 94, 162-163 (1963) in German.  
**64Sch:** R.V. Schablaske, B.S. Tani, and M.G. Chasanov, *Trans. Metall. Soc. AIME*, 230, 248-249 (1964).  
**96Pal:** A. Palenzona and P. Manfrinetti, *J. Alloy. Compd.*, 237, 121-123 (1996).

**Table 1 Sc-Cd Crystal Structure Data**

Phase	Composition, at. % Cd	Pearson symbol	Space group	Strukturbericht designation	Prototype	Reference
(βSc) .....	0 to ?	<i>cI2</i>	<i>Im<math>\bar{3}m</math></i>	A2	W	...
(αSc) .....	0 to ?	<i>hP2</i>	<i>P6<math>_3</math>/mmc</i>	A3	Mg	...
ScCd .....	? to 50	<i>cP2</i>	<i>Pm<math>\bar{3}m</math></i>	B2	CsCl	[63Lau]
ScCd <sub>3</sub> .....	75	<i>hP8</i>	<i>P6<math>_3</math>/mmc</i>	D0 <sub>19</sub>	Ni <sub>3</sub> Sn	[64Sch]
ScCd <sub>7</sub> .....	87.5	<i>oC32</i>	<i>Cmcm</i>	...	...	[96Pal]
(Cd) .....	100	<i>hP2</i>	<i>P6<math>_3</math>/mmc</i>	A3	Mg	...

**Table 2 Sc-Cd Lattice Parameter Data**

Phase	Composition, at. % Cd	Lattice parameters, nm			Reference
		<i>a</i>	<i>b</i>	<i>c</i>	
(βSc) .....	0	0.4541	...	...	...
(αSc) .....	0	0.33088	...	0.52680	...
ScCd .....	Sc rich	0.3524	...	...	[96Pal]
		0.3513	...	...	[64Sch]
		0.3510	...	...	[96Pal]
ScCd <sub>3</sub> .....	75	0.6330	...	0.4853	[64Sch]
		0.6332	...	0.4854	[96Pal]
ScCd <sub>7</sub> .....	87.5	0.7304	0.9993	0.9306	[96Pal]
(Cd) .....	100	0.29788	...	0.56167	...

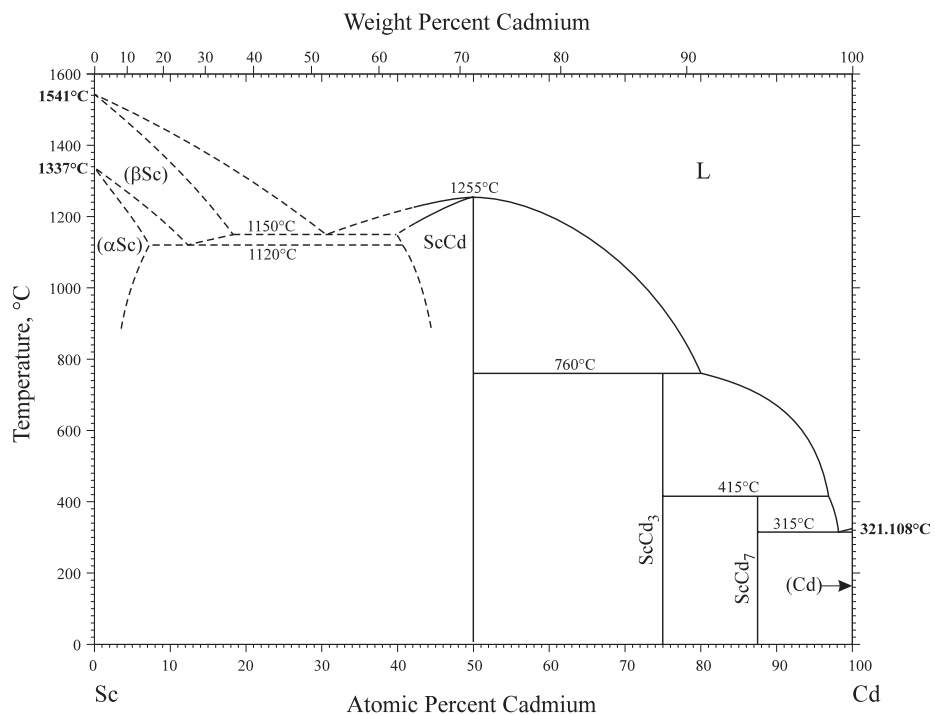


Fig. 1 The Sc-Cd phase diagram.