Cl-Sn (Chlorine-Tin)

H. Okamoto

[Massalski2] showed a partial Sn-Cl phase diagram copied from [1977The] for the composition range between Sn and SnCl₂. Prior to [1977The], [1972Chi] reported a partial phase diagram between SnCl₂ and SnCl₄. Afterward, [1978Pop] reported a complete Sn-Cl phase diagram. No significant conflicts are seen among these three reports.

The Sn-Cl phase diagram shown in Fig. 1 was drawn in this work based on [1978Pop]. In order to eliminate unlikely features in [1978Pop], modification has been made by taking into account [1972Chi] and [1977The].

Sn-Cl crystal structure data are given in Table 1.

References

- 1972Chi:** N.D. Chikanov, The Sn²⁺, Sn⁴⁺, Sn³⁺, Sn⁵⁺ || Cl System, *Russ. J. Inorg. Chem.*, 1972, **17**(1), p 147
- 1977The:** F. Thevet and C. Dagron, Partial Constitution of Binary Tin-Chlorine, Contribution to the Study of Iodide and Chloride Stannous Systems; Evidence of Presence of Two Iodochlorides, *Bull. Soc. Chim. Fr.*, Part 1, 1977, **11-12**, p 1078-1080, in French
- 1978Pop:** A.P. Popov, T.I. Kurdina, and K.T. Panina, Fusion Diagram of the Sn-Cl System, *Russ. J. Inorg. Chem.*, 1978, **12**, p 463-465

Table 1 Sn-Cl crystal structure data

Phase	Composition, at.% Cl	Pearson symbol	Space group	Strukturbericht designation	Prototype
(βSn)	0	<i>tI4</i>	<i>I4₁/amd</i>	<i>A5</i>	βSn
(αSn)	0	<i>cF8</i>	<i>Fd3m</i>	<i>A4</i>	C (diamond)
SnCl ₂	66.7	<i>oP12</i>	<i>Pnam</i>	...	...
SnCl ₄	80	<i>mP20</i>	<i>P2₁/c</i>	...	...
(Cl)	100	<i>oC8</i>	<i>Cmca</i>	<i>A14</i>	I

Fig. 1 Sn-Cl phase diagram