Cl-Sb (Chlorine-Antimony)

H. Okamoto

The Sb-Cl phase diagram was unknown in [Massalski2].

The Sb-Cl phase diagram shown in Fig. 1 is based on [1927Bil] with the liquidus modified in the range from SbCl_3 to SbCl_5 according to [1972Chi]. The reaction of SbCl_5 was unknown in [1927Bil], but the overall form of the phase diagram shown by [1927Bil] was in good agreement with [1972Chi].

Sb-Cl crystal structure data are summarized in Table 1. The crystal structures of SbCl_3 and SbCl_5 were first determined by [1956Lin] and [1954Ohl], respectively, and confirmed later by many other investigators [2007Vil]. The crystal structure of SbCl_9 ($\text{SbCl}_5 \cdot 2\text{Cl}_2$ in [1927Bil]) is unknown.

References

- 1927Bil:** W. Biltz and K. Jeep, On the Behavior of Some Haologenides to Halogen, *Z. Anorg. Allg. Chem.*, 1927, **162**, 32-48, in German
- 1954Ohl:** S. Ohlberg, The Crystal Structure of Antimony Pentachloride at -30°C , *Acta Crystallogr.*, 1954, **7**, p 640-641
- 1956Lin:** I. Lindqvist and A. Niggli, The Crystal Structure of Antimony Trichloride, *J. Inorg. Nucl. Chem.*, 1956, **2**, p 345-347
- 1972Chi:** N.D. Chikanov, The Sn^{2+} , Sn^{4+} , Sn^{3+} , Sn^{5+} || Cl System, *Russ. J. Inorg. Chem.*, 1972, **17**(1), p 147
- 2007Vil:** P. Villars and K. Cenzual, *Pearson's Crystal Data CD-ROM*, Release 2007/8, ASM International, OH, USA

Table 1 Sb-Cl crystal structure data

Phase	Composition, at.% Cl	Pearson symbol	Space group	Strukturbericht designation	Prototype
SbCl_3	75	<i>oP16</i>	<i>Pnma</i>	...	SbCl_3
SbCl_5	83.3	<i>hP12</i>	<i>P6_3/mmc</i>	...	SbCl_5
SbCl_9	90	...	...	...	...
(Cl)	100	<i>oC8</i>	<i>Cmca</i>	A14	I

Fig. 1 Sb-Cl phase diagram