Comment on Sb-Tm (Antimony-Thulium)

H. Okamoto

[91Abd] determined the Tm-Sb phase diagram (Fig. 1) by means of DTA, XRD, and microstructural analysis. A melting point of TmSb was reported earlier at 1700 °C [74Sam]. A peritectic melting of TmSb₂ at 640 °C in Fig. 1 was also reported by the same authors [88Abd]. Under pressure, TmSb₂ is stable to higher temperatures since [69Eat] found this phase to form at 1000 °C under > 50 kbar pressure. Tm-Sb crystal structure data are given in Table 1.

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Table 1 Tm-Sb Crystal Structure Data

Phase	Composition, at.% Sb	Pearson symbol	Space group	Strukturbericht designation	Prototype	Reference
(Tm)	0	<i>hP2</i>	<i>P6₃/mmc</i>	A3	Mg	...
β Tm ₅ Sb ₃	37.5	...	...	...	...	[91Abd]
α Tm ₅ Sb ₃	37.5	<i>hP16</i>	<i>P6₃/mcm</i>	<i>D8₈</i>	Mn ₅ Si ₃	[91Abd]
β TmSb	50	...	...	...	...	[91Abd]
α TmSb	50	<i>cF8</i>	<i>Fm3m</i>	B1	NaCl	[60Bri]
TmSb ₂	66.7	<i>oC6</i>	<i>C222</i>	...	...	[69Eat]
(Sb)	100	<i>hR2</i>	<i>R3m</i>	A7	α As	...

Fig. 1 Tm-Sb phase diagram.