Ge-Ti (Germanium-Titanium)

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The complete Ge-Ti phase diagram in [Massalski2] was redrawn from [1989Rud], which superseded a partial phase diagram (60-100 at.% Ti) evaluated by [1987Mur].

[2011Liu] obtained the Ge-Ti phase diagram shown in Fig. 1 by thermodynamic calculation. Experimental phase boundary data reported by [1989Rud], reviewed by [1987Mur], and observed by the authors themselves were used as the basis of the thermodynamic model.

Table 1 shows Ge-Ti crystal structure data shown in [Massalski2] with modifications for consistency with Fig. 1.

References

- 1987Mur:** J.L. Murray, The Ge-Ti (Germanium-Titanium) System, *Phase Diagrams of Binary Titanium Alloys*, J.L. Murray, ed., ASM International, Metals Park, OH, 1987, p 118-122
- 1989Rud:** M.V. Rudometkina, D.Yu. Seropegin, A.V. Gribov, L.S. Gusei, Phase Equilibria in the Ti-Nb-Ge System at 1170 K, *J. Less-Common Met.*, 1989, **147**(2), p 239-247
- 2011Liu:** D. Liu, H. Yan, X. Yuan, Y. Chung, Y. Du, H. Xu, L. Liu, P. Nash, Thermodynamic Modeling of the Ge-Ti System Supported by Key Experiment, *Thermochim. Acta*, 2011, **521**, p 148-154

Table 1 Ge-Ti crystal structure data

Phase	Composition, at.% Ti	Pearson symbol	Space group	Strukturbericht designation	Prototype
(Ge)	0-2.2	<i>cF8</i>	<i>Fd3m</i>	A4	C (diamond)
Ge ₂ Ti	33.3	<i>oF24</i>	<i>Fddd</i>	C54	TiS ₂
Ge ₅ Ti ₆	54.5	<i>oI44</i>	<i>Immm</i>	...	Nb ₆ Sn ₅
Ge ₃ Ti ₅	62.5	<i>hP16</i>	<i>P6₃/mcm</i>	D8 ₈	Mn ₅ Si ₃
(βTi)	91.2-100	<i>cI2</i>	<i>Im3m</i>	A2	W
(αTi)	95.9-100	<i>hP2</i>	<i>P6₃/mmc</i>	A3	Mg

Fig. 1 Ge-Ti phase diagram