Cr-Ta (Chromium-Tantalum)

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The Cr-Ta phase diagram in [Massalski2] was redrawn from [87Ven] with a change in the form of βCr_2Ta solidus to comply with the Gibbs-Konovalov rule. The (Ta) liquidus and some other boundaries were speculative.

[93Dup] obtained the Cr-Ta phase diagram (Fig. 1) by optimization of thermodynamic parameters. Calculated phase boundaries agree well with existing experimental data as shown.

Cr-Ta crystal structures of ß and αCr_2Ta (Table 1) were determined by [52Duw].

Cited References

52Duw: P. Duwez and H. Martens, *Trans. AIME, 194,* 72-74 (1952).

87Ven: M. Venkatraman and J.P. Neumann, *Bull. Alloy Phase Diagrams, 8*(2), 112-116 (1987).

93Dup: N. Dupin and I. Ansara, *J. Phase Equilibria, 14*(4), 451-456 (1993).

Table 1 Cr-Ta Crystal Structure Data

Phase	Composition, at.% Ta	Pearson symbol	Space group	Strukturbericht designation	Prototype
(Cr)	0 to 5	*cI2*	$Im\bar{3}m$	*A2*	W
βCr_2Ta	30 to 38	*hP12*	$P6_3/mmc$	*C14*	$MgZn_2$
αCr_2Ta	33 to 36	*cF24*	$Fd\bar{3}m$	*C15*	Cu_2Mg
(Ta)	100	*cI2*	$Im\bar{3}m$	A_2	W

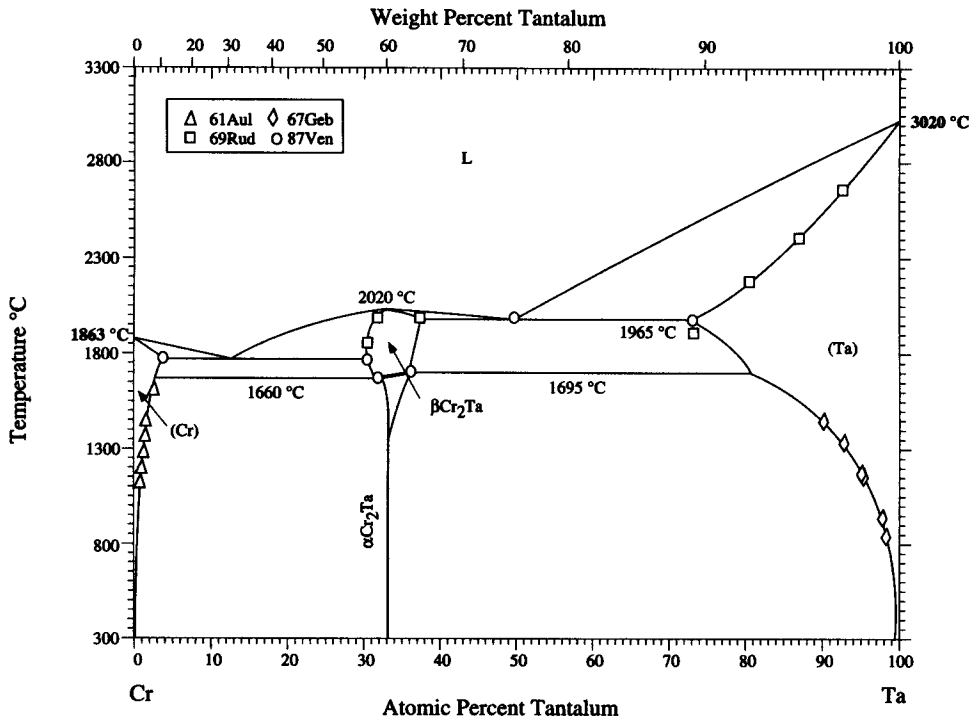

Fig. 1 Cr-Ta phase diagram.