# Hf-Ta (Hafnium-Tantalum)

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The Hf-Ta phase diagram in [Massalski2] is from the assessment of [89Kri]. Phase boundaries of the solid phases were drawn on the basis of experimental data obtained by [64Ode], [69Rud], and [75Kru]. The assessed liquidus was speculative.

Figure 1 shows the Hf-Ta phase diagram calculated by [95Gui]. The calculated boundaries agreed generally with the experimental data selected by [89Kri] and the boundaries assessed by [89Kri]. [89Kri] also calculated the liquidus and solidus based on a regular solution model. However, the calculated solid phase miscibility gap was not mentioned probably due to a large error (calculated critical point of the miscibility gap is 50 at.% Ta, 1757 °C). Accordingly, the liquidus calculated by [95Gui] is more likely to show the real equilibrium state than the liquidus speculated or calculated by [89Kri].

## Cited References

**64Ode:** L.L. Oden, D.K. Deardorf, M.I. Copeland, and H. Kato, U.S. Bureau of Mines, Rep. Invest. No. 6521, U.S. Department of Interior, Washington, D.C. (1964).

**69Rud:** E. Rudy, Tech. Rep. No. AFML-TR-65-2, Part V, Air Force Materials Laboratory, Wright Patterson Air Force Base, OH (1969).

**75Kru:** M.P. Krug, L.L. Oden, and P.A. Romans, *Metall. Trans. A, 6*, 997-1002 (1975).

**89Kri:** R. Krishnan, S.P. Garg, and N. Krishnamurthy, *J. Alloy Phase Diagrams, 5*(2), 117-124 (1990).

**95Gui:** A.F. Guillermet, Z. *Metallkd., 86*(6), 382-387 (1995).

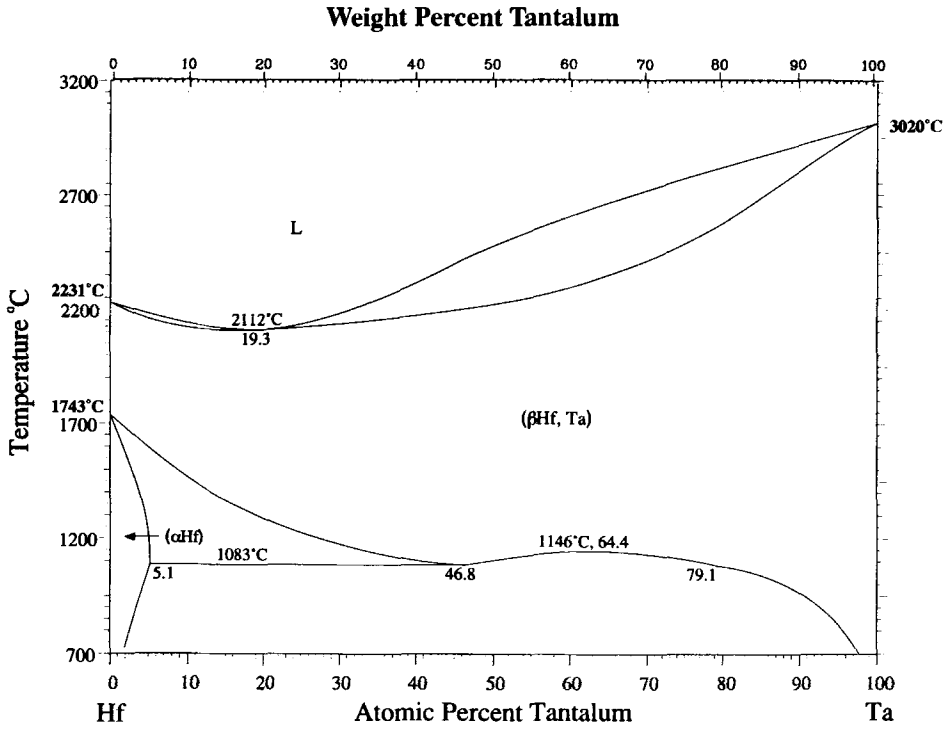


**Fig 1** Hf-Ta phase diagram.