

Au – Ta (Gold – Tantalum)

Phase diagram

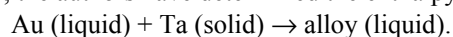
From results present in the literature Okamoto et al. [Massalski] have constructed the tentative diagram shown in Fig. 1.

Thermodynamics

Using high-temperature calorimetry Fitzner et al. [92 Fit] have determined the standard enthalpy of formation of the intermediate phase Au_2Ta_3 . The value obtained amounts to

$$\Delta H_{298}^{\text{S}} = -20.56 \pm 2.21 \text{ kJ g-atom}^{-1}$$

Furtheron, the authors have determined the enthalpy of mixing of liquid alloys on the basis of the reaction



The determined $\Delta H^{\text{S} \rightarrow \text{L}}$ -values are plotted in Fig. 2.

Figures

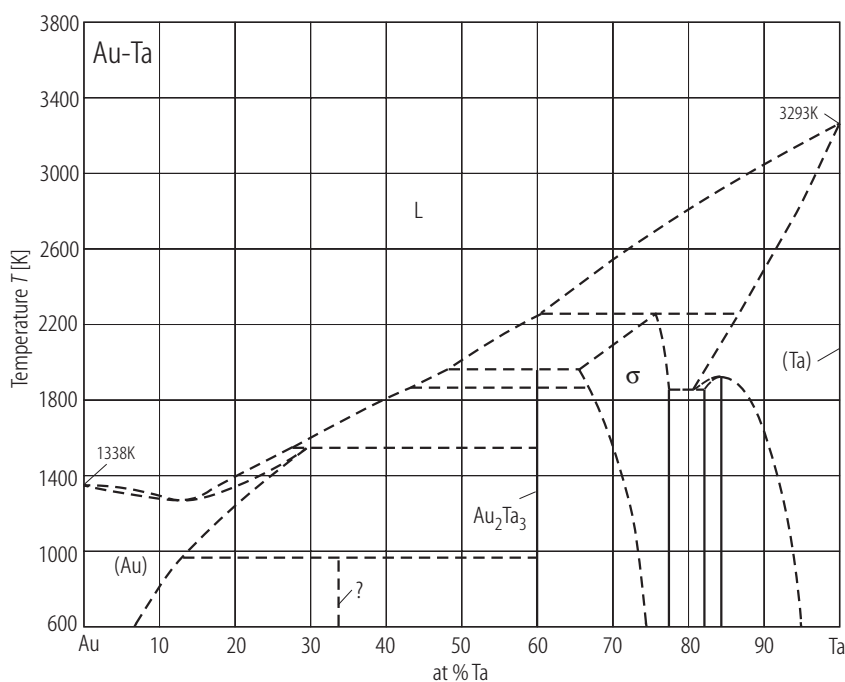


Fig. 1. Au-Ta. Tentative phase diagram calculated by Okamoto et al. [Massalski].

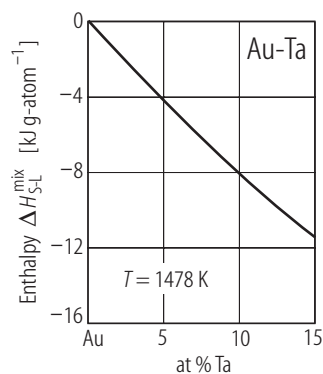


Fig. 2. Au-Ta. Enthalpy of mixing of liquid alloys Au-Ta from liquid Au and solid Ta at 1473 K [92 Fit].

References

- [92 Fit] Fitzner, K., Selhaoui, N., Kleppa, O.J.: Metallurg. Trans. A **23A** (1992) 1836
[Massalski] Massalski, T.B., (ed.): "Binary Alloy Phase Diagrams", Second Edition, The Materials Information Society, ASM International, Materials Park, Ohio (1992)