

## Ag – Hf (Silver – Hafnium)

### Phase diagram

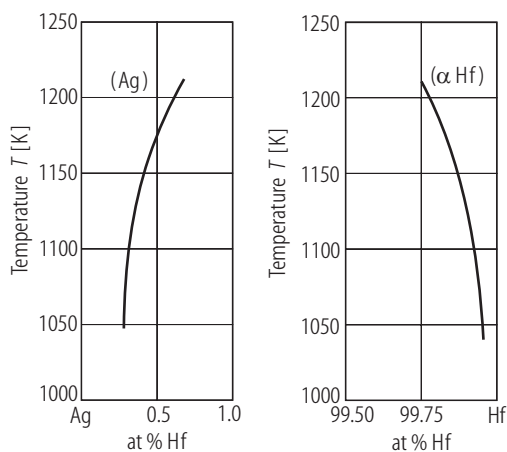
A short discussion of phase equilibria is given by Okamoto [96 Oka]. He mentioned that Taguchi et al. [95 Tag] have determined some parts of the phase diagram by reaction diffusion. First the determination of the solubility limits of the terminal solid solutions (Ag) and (Hf) should be mentioned (see Fig. 1). Two intermediate phases have been found: AgHf and AgHf<sub>2</sub> (see Fig. 2).

### Thermodynamics

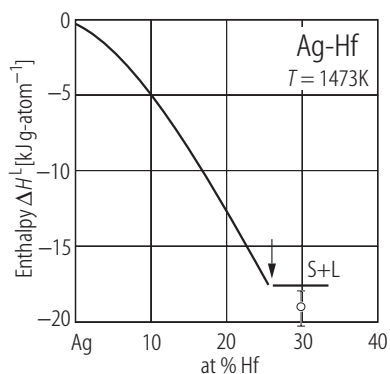
Fitzner et al. [92 Fit] determined, by direct synthesis calorimetry, enthalpies of mixing, for concentrations < 30 at% Hf. The results are plotted in Fig. 3. The same authors have calculated the enthalpy of the formation of AgHf. The result:

$$\Delta H^S = -10.74 \pm 2.0 \text{ kJ g-atom}^{-1}$$

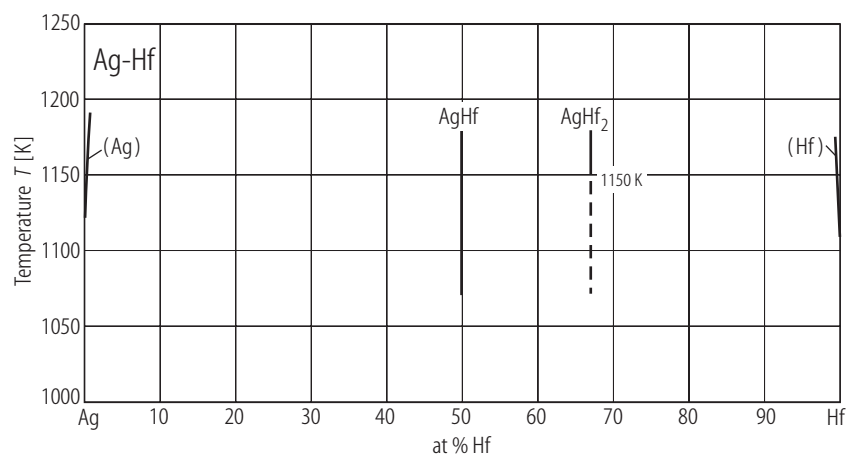
### Figures



**Fig. 1. Ag-Hf.** Limits of solid solution of (Ag) and (Hf).



**Fig. 3. Ag-Hf.** Enthalpies of mixing of liquid alloys for < 30 at% Hf [92 Fit].



**Fig. 2. Ag-Hf.** Partial phase diagram taken from Okamoto et al. [96 Oka].

### References

- [92 Fit] Fitzner, K. Kleppa, O.J.: Metallurg. Trans. A **23A** (1992) 997  
[95 Tag] Taguchi, O., Iijima, Y.: J. Alloys and Comp. **226** (1995) 185  
[96 Oka] Okamoto, H.: J. Phase Equilibria **17** (1996) 547