

## Ag – Hg (Silver – Mercury)

### Phase diagram

A recent discussion of this system has been published by Baren [96 Bar] (see Fig. 1). The phase diagram is almost the same as given by [Landolt-Börnstein].

From results of electrical resistance measurements, Aleksandrov et al. [71 Ale] found that at 233 K in solid mercury about 0.02 at% Ag are soluble.

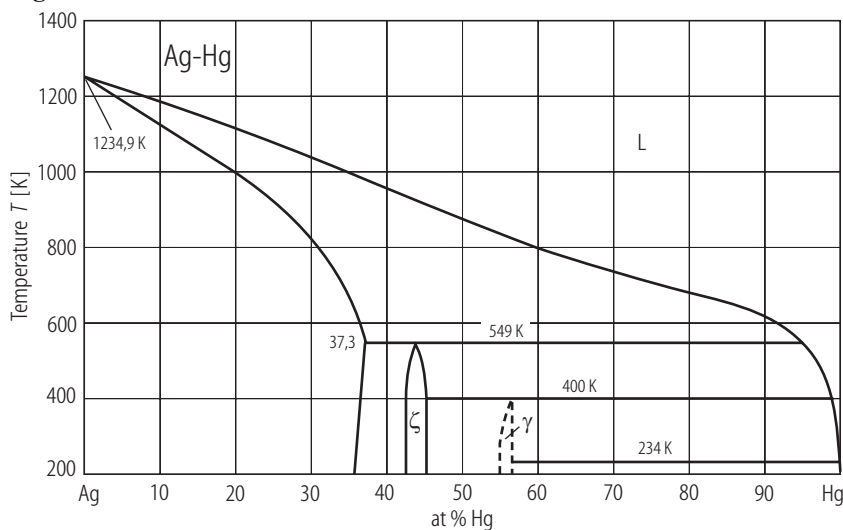
### Crystal structure

Especially the structure of the  $\gamma$  - phase has been investigated several times. As a result a cubic structure similar to that of the  $\gamma$  - brass structure [33 Ste] has been mentioned. [69 Bai] have discussed an orthorhombic and tetragonal structure. [71 And] pointed out that the existence of vacancies may be important. For more details the reader is referred to the discussion by Baren [96 Bar].

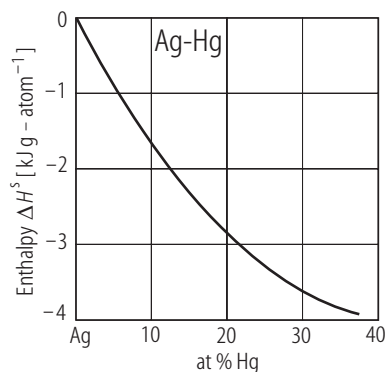
### Thermodynamics

Enthalpies of formation have been determined by [60 Ray] using the isopiestic method. The results obtained are plotted in Fig. 2.

### Figures



**Fig. 1. Ag-Hg.** Phase equilibria calculated from thermodynamic data determined by [60 Ray] taken from Baren [96 Bar].



**Fig. 2. Ag-Hg.** Enthalpies of formation of solid alloys relative to liquid Hg and solid Ag [60 Ray].

### References

- [33 Ste] Stenbeck, S.: Z. Anorg. Chem. **214** (1933) 16  
[60 Ray] Rayson, H.W., Alexander, W.A.: Acta Met. **8** (1960) 833  
[69 Bai] Baird, H.W., Muller, F.A.: J. Biomed. Mater. Res. **3** (1969) 375  
[71 Ale] Aleksandrov, B.N., Lomonos, O.J.: Zh. Fiz. Khim. **45** (1971) 3003  
[71 And] Anderson, P., Jensen, S.J.: Scand. J. Dent. Res. **79** (1971) 466  
[96 Bar] Baren, M.R.: J. Phase Equilibria **17** (1996) 122  
[Landolt-Börnstein] New Series, Group IV, Vol. 5, Subvolume a to j, Predel, B., Madelung, O. (ed.), Springer-Verlag (1991) to (1998)