

## Am – Hg (Americium – Mercury)

### Phase diagram

The phase diagram is not known.

Am alloys can be prepared by electroreduction of Am (III) ions on a Hg-electrode [68 Dav], [79 Sam], [86 Tik]. The solubility of Am in Hg at 298 K was estimated by [89 Gum]. Its value amounts to about  $10^{-2}$  at% Am.

Some properties of Am-amalgams were investigated by [86 Tik]. Nuclear gamma-resonance spectroscopy experiments using a solid Am-amalgam, which has been heat-treated at 473 K have evidenced the existence of an intermediate compound. The stoichiometry of this compound, however, is not known.

### Thermodynamics

The partial molar excess Gibbs energy of formation of a dilute amalgam has been estimated by [79 Sam]. Its value is

$$\Delta H = -136 \pm 6 \text{ kJ mol}^{-1}$$

(see [95 Gum]).

### References

- [68 Dav] David, F., Bousissieres, G.: J. Nucl. Chem. Letters **4** (1968) 153
- [79 Sam] Samhoun, K., David, F.: J. Inorg. Nucl. Chem. **41** (1979) 357
- [86 Tik] Tikhonov, M.F., Nepomnyashchii, V.Z., Kalinina, S.V., Khokhlov, A.D., Bulkin, V.I., Filin, B.M.: Radiokhimiya **28** (1986) 804
- [89 Gum] Guminski, C.: J. Mater. Sci. **24** (1989) 2661
- [95 Gum] Guminski, C.J.: J. Phase Equilibria **16** (1995) 333