

Am – U (Americium – Uranium)

Phase diagram

Ogawa [93 Oga] has calculated the phase diagram on the basis of the regular solution model. The interactive forces between the different atoms were taken from Brewer's valence bond theory [80 Bre]. The results are plotted by [93 Oga] and discussed and reproduced by Okamoto [99 Oka] (see Fig. 1).

Crystal structure

The crystallographic data of solid Am-U phases are compiled in Table 1.

Table 1. Crystallographic data of Am-U solid phases [99 Oka].

Phase	Composition [at % U]	Structure	Prototype
α -U	? – 100	ort	α -U
β -U	98 – 100	tet	β -U
γ -U	90 – 100	cub	W
α -Am	0 - ?	hex	α -La
β -Am	0 – 10	cub	Cu
γ -Am	0 - 23	cub	W

Figure

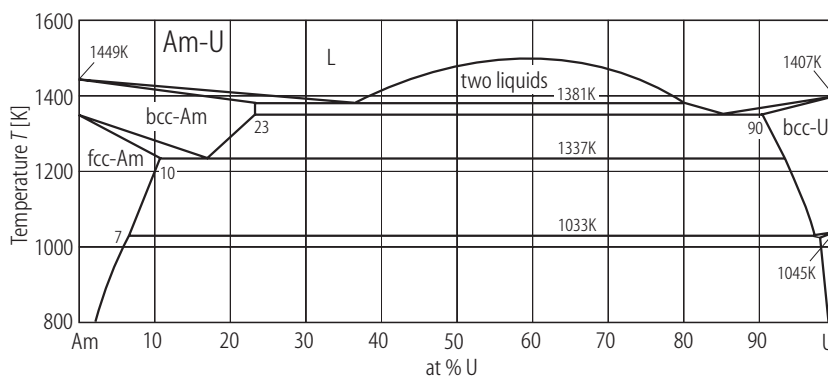


Fig. 1. Am–U. Phase diagram of Am-U system calculated by [93 Oga].

Reference

- [80 Bre] Brewer, L. and R.H. Lamoreaux, At. Energy Rev., Spec. Issue 7 (1980) 11
- [93 Oga] Ogawa, T.: J. Alloys and Comp. **194** (1993) 1
- [99 Oka] Okamoto, H., J. Phase Equilibria **20** (1999) 452