Am-Pu (Americium-Plutonium)

H. Okamoto

The Am-Pu phase diagram in [Massalski2] was drawn based on sparse experimental data reported by [1966Ell]. [1999Oka] revised the high-temperature part ((β Am, δ Pu) and above in Fig. 1) of this phase diagram according to [1993Oga] who used a regular solution model to estimate phase boundaries. Accordingly, the entire phase diagram was mostly speculative.

Figure 1 shows the Am-Pu phase diagram calculated by [2011Got]. New experimental phase boundary data of [1990Shu] were taken into account in addition to those of [1966Ell]. Therefore, this phase diagram may be more reliable than [1999Oka] diagram. However, existence and/or temperature of reactions at low temperatures, particularly (β Am, δ Pu) $\rightarrow$ (α Am) + (α Pu) eutectoid, must be confirmed experimentally.

References

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Fig. 1 Am-Pu phase diagram