Am-Zr (Americium-Zirconium)

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The Am-Zr phase diagram was unknown in [Massalski2].
The Am-Zr phase diagram shown in Fig. 1 was calculated by [2010Kur] based on the thermodynamic database created consistently for actinide elements. Because the interaction parameters used were tentative, the phase diagram must be confirmed experimentally.

Table 1 shows Am-Zr crystal structure data. The composition range for each phase was read from the phase diagram.

Reference

2010Kur: K. Kurata, Thermodynamic Database on U-Pu-Zr-Np-Am-Fe Alloy System II—Evaluation of Np, Am, and Fe Containing Systems, *IOP Conf. Series: Mater. Sci. Eng.*, 2010, **9**, 12023, 8 pp

Table 1 Am-Zr crystal structure data

Phase	Composition, at.% Zr	Pearson symbol	Space group	Strukturbericht designation	Prototype
(γAm)	0 to 1.5	<i>cI2</i>	<i>Im$\bar{3}m$</i>	<i>A2</i>	W
(βAm)	0 to 0.5	<i>cF4</i>	<i>Fm$\bar{3}m$</i>	<i>A1</i>	Cu
(αAm)	0	<i>hP4</i>	<i>P6₃/mmc</i>	<i>A3'</i>	αLa
(βZr)	95.5 to 100	<i>cI2</i>	<i>Im$\bar{3}m$</i>	<i>A2</i>	W
(αZr)	100	<i>hP2</i>	<i>P6₃/mmc</i>	<i>A3</i>	Mg

Fig. 1 Am-Zr phase diagram [2010Kur]