P-Zn (Phosphorus-Zinc) System

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The partial Zn-P phase diagram (0-70 at.% Zn) in [Massalski2] was redrawn from [1991Dut].

The complete Zn-P phase diagram shown in Fig. 1 was calculated by [2009Tu] based on essentially the same experimental phase boundary data as [1991Dut]. The polymorphism of Zn_3P_2 and ZnP_2 was not taken into account in the thermodynamic model. Transition temperatures of these compounds are shown in Fig. 1 as assessed by [1991Dut].

Table 1 shows Zn-P crystal structure data.

References

1991Dut: J. Dutkiewicz, The P-Zn (Phosphorus-Zinc) System, *J. Phase Equilib.*, 1991, **12**(4), p 435-438
2009Tu: H. Tu, F. Yin, X. Su, Y. Liu, and X. Wang, Experimental Investigation and Thermodynamic Modeling of the Al-P-Zn Ternary system, *Calphad*, 2009, **33**, p 755-760

Table 1 Zn-P crystal structure data

Phase	Composition, at.% P	Pearson symbol	Space group	Strukturbericht designation	Prototype
(Zn)	0	<i>hP2</i>	<i>P6₃/mmc</i>	<i>A3</i>	Mg
$\beta\text{Zn}_3\text{P}_2$	40	<i>c**</i>	...	...	...
$\alpha\text{Zn}_3\text{P}_2$	40	<i>tP40</i>	<i>P4₂/nmc</i>	<i>D5₉</i>	P_2Zn_3
βZnP_2	66.7	<i>mP24</i>	<i>P2₁/c</i>	...	ZnAs_2
αZnP_2	66.7	<i>tI24</i>	<i>P4₁2₁2</i>	...	...
(α P)	100	<i>c**</i>	...	...	...

Fig. 1 Zn-P phase diagram