

Ho-Zn (Holmium-Zinc)

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A schematic Ho-Zn phase diagram in [Massalski2] was drawn by [Moffatt] based on information summarized by [1970Bru].

[2005Sac] investigated the Ho-Zn system by means of differential thermal analysis, x-ray diffraction, optical and scanning electron microscopy, and electron probe micro-analysis. The result is shown in Fig. 1. Ho₂Zn₁₇ is reported to be dimorphic, but the polymorphic transformation temperature has not been reported.

Ho-Zn crystal structure data shown in Table 1 were obtained from [2005Sac] and [Pearson3].

References

- 1970Bru:** G. Bruzzone, M.L. Fornasini, and F. Merlo, Rare-Earth Intermediate Phases with Zinc, *J. Less-Common. Met.*, 1970, **22**, p 253-264
- 2005Sac:** A. Saccone, A.M. Cardinale, S. Delfino, and R. Ferro, Binary Phase Diagrams of the Rare Earth Metals with Zinc: The Tb-Zn, Ho-Zn, and Er-Zn Systems, *Z. Metallkd.*, 2005, **96**(12), p 1369-1379

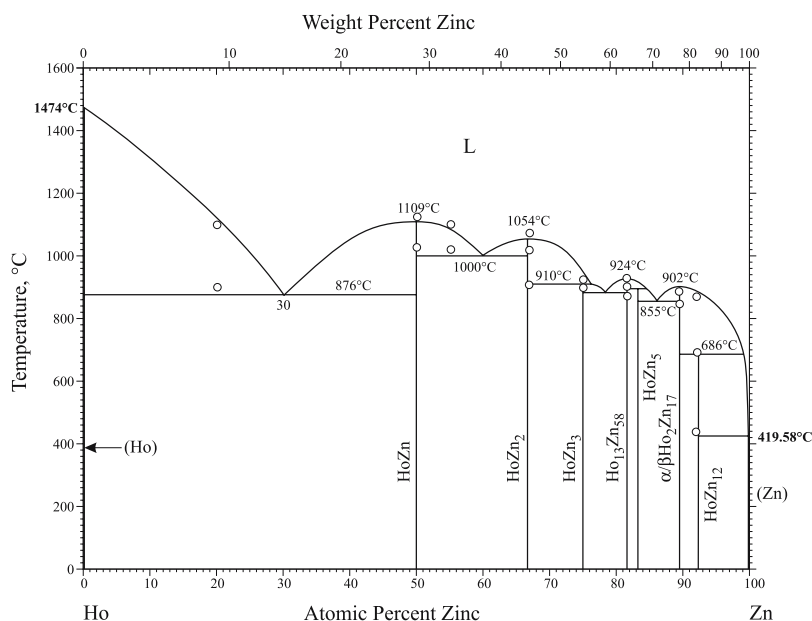


Fig. 1 Ho-Zn phase diagram

Table 1 Ho-Zn crystal structure data

Phase	Composition, at.% Zn	Pearson symbol	Space group	Struktur-bericht designation	Prototype
(Ho)	0	<i>hP2</i>	<i>P6₃/mmc</i>	<i>A3</i>	Mg
HoZn	50	<i>cP2</i>	<i>Pm$\bar{3}$m</i>	<i>B2</i>	CsCl
HoZn ₂	66.7	<i>oI12</i>	<i>Imma</i>	...	CeCu ₂
HoZn ₃	75	<i>oP16</i>	<i>Pnma</i>	...	YZn ₃
Ho ₁₃ Zn ₅₈	81.7	<i>hP142</i>	<i>P6₃/mc</i>	...	Gd ₁₃ Zn ₅₈
HoZn ₅	83.3	<i>hP36</i>	<i>P6₃/mmc</i>	...	ErZn ₅
βHo ₂ Zn ₁₇	89.5	<i>hR19</i>	<i>R$\bar{3}$m</i>	...	Th ₂ Zn ₁₇
αHo ₂ Zn ₁₇	89.5	<i>hP38</i>	<i>P6₃/mmc</i>	...	Th ₂ Ni ₁₇
HoZn ₁₂	92.3	<i>tI26</i>	<i>I4/mmm</i>	<i>D2_b</i>	Mn ₁₂ Th
(Zn)	100	<i>hP2</i>	<i>P6₃/mmc</i>	<i>A3</i>	Mg