Ni-Zn (Nickel-Zinc)

H. Okamoto

[2003Oka] introduced that the Ni-Zn phase diagram shown in [Massalski2] has been thermodynamically analyzed by [2000Vas] and [2002Su]. [2011Xio] improved the thermodynamic modeling of this system by taking into account the order-disorder transition in β phase. The calculated phase diagram is shown in Fig. 1. Table 1 shows Ni-Zn crystal structure data.

2002Su: X. Su, N.Y. Tang, and J.M. Toguri, Thermodynamic Assessment of the Ni-Zn System, *J. Phase Equilib.*, 2002, **23**, p 140-148
2003Oka: H. Okamoto, Ni-Zn (Nickel-Zinc), *J. Phase Equilib.*, 2003, **24**(3), p 280-281
2011Xio: W. Xiong, H. Xu, and Y. Du, Thermodynamic Investigation of the Galvanizing Systems, II: Thermodynamic Evaluation of the Ni-Zn System, *CALPHAD*, 2011, **25**, p 276-283

References

2000Vas: G.P. Vassilev, T. Gomez-Acebo, and J.C. Tédenac, Thermodynamic Optimization of the Ni-Zn System, *J. Phase Equilib.*, 2000, **21**, p 287-301

Table 1 Ni-Zn crystal structure data

Phase	Composition, at.% Zn	Pearson symbol	Space group	Strukturbericht designation	Prototype
(Ni)	0-37.9	<i>cF4</i>	<i>Fm$\bar{3}m$</i>	A1	Cu
β	46.5-57.5	<i>cP2</i>	<i>Pm$\bar{3}m$</i>	B2	CsCl
β_1	43-51.2	<i>tP2</i>	<i>P4/mmm</i>	B11	γ CuTi
γ	71.5-85.2	<i>cI52</i>	<i>I$\bar{4}3m$</i>	D8 ₂	Cu ₅ Zn ₈
δ	88.9	<i>mC50</i>	<i>C12/m1</i>	...	...
(Zn)	100	<i>hP2</i>	<i>P6₃/mmc</i>	A3	Mg

Fig. 1 Ni-Zn phase diagram [2011Xio]