JPEDAV (2008) 29:125
DOI: 10.1007/s11669-007-9234-3
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Nd-Y (Neodymium-Yttrium)

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The Nd-Y phase diagram in [Massalski2] was redrawn from [1982Gsc]. However, it contained an impossible phase field (αNd, αY), which is a continuous single phase field extending from (αNd) to (αY) with different crystal structures.

Although this problem was solved in the Nd-Y phase diagram calculated by [2006Guo] (Fig. 1), phase boundaries associated with (αNd) and (αY) must be confirmed experimentally.

Table 1 shows Nd-Y crystal structure data.

Table 1 Nd-Y crystal structure data

Phase	Composition, at.% Y	Pearson symbol	Space group	Strukturbericht designation	Prototype
(βNd, βY)	0 to 100	*cI*2	$Im\bar{3}m$	*A*2	W
(αNd)	0 to 34.5	*hP*4	$P6_3/mmc$	*A*3′	αLa
δ	33 to 34	*hR*3	$R\bar{3}m$	···	αSm
(αY)	38 to 100	*hP*2	$P6_3/mmc$	*A*3	Mg

References

1982Gsc: K.A. Gschneidner, Jr. and F.W. Calderwood, The Nd-Y (Neodymium-Yttrium) System, *Bull. Alloy Phase Diagrams*, 1982, **3**(3), p 202-205

2006Guo: C. Guo, Z. Du, and C. Li, A Thermodynamic Description of the Mg-Nd-Y System, *Proceedings of the 13th National Symposium on Phase Diagrams, China-Japan Joint Symposium on Phase Diagrams, Materials Design and Their Applications*, Xiamen, China, 2006, p 107-110

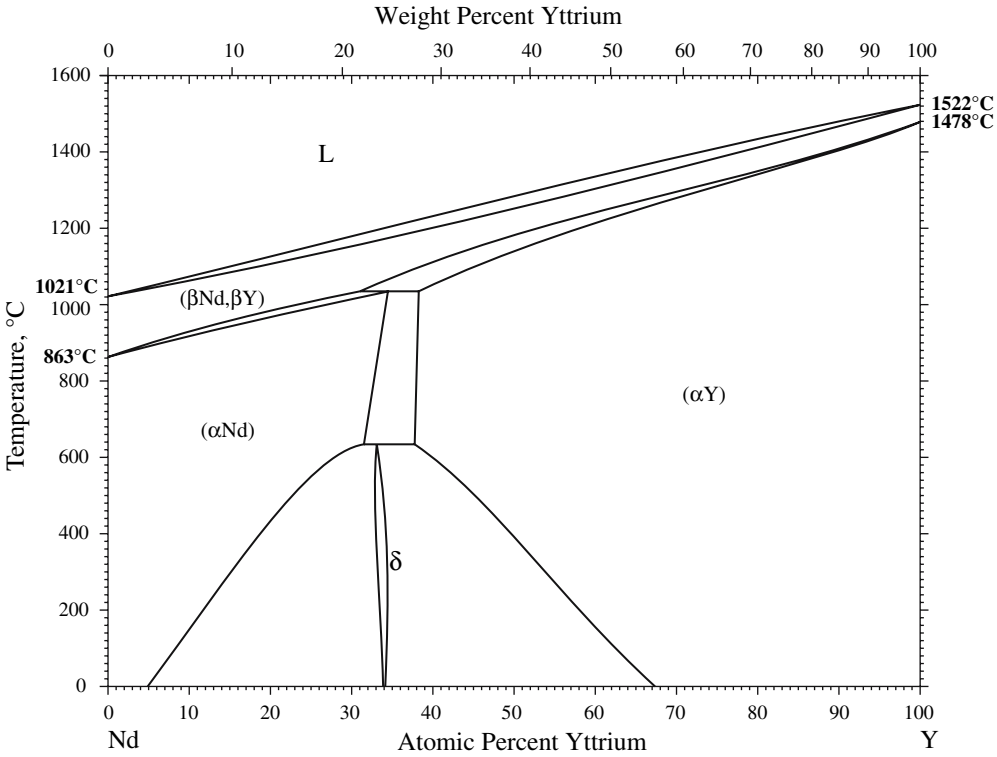

Fig. 1 Nd-Y phase diagram