

Pr-Y (Praseodymium-Yttrium)

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The Pr-Y phase diagram in [Massalski2] was redrawn from [Moffatt], who assumed similarity of the Pr-Y system to the Nd-Y system. Accordingly, it contained an impossible phase field (α Pr, α Y), which is a continuous single phase field extending from (α Pr) to (α Y) with different crystal structures, as in the Nd-Y system.

Table 1 Pr-Y crystal structure data

Phase	Composition, at.% Y	Pearson symbol	Space group	Strukturbericht designation	Prototype
(β Pr, β Y)	0-100	<i>cI2</i>	<i>Im</i> $\bar{3}m$	A2	W
(α Pr)	0-30	<i>hP4</i>	<i>P6</i> $_3$ / <i>mmc</i>	A3'	α La
δ	31-32	<i>hR3</i>	<i>R</i> $\bar{3}m$...	α Sm
(α Y)	31.5-100	<i>hP2</i>	<i>P6</i> $_3$ / <i>mmc</i>	A3	Mg

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

Table 1 shows Pr-Y crystal structure data.

Reference

2006Du: Z. Du, C. Guo, and C. Li, A Thermodynamic Description of the Mg-Pr-Y System and Mg-based Alloys Database, *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 89-94

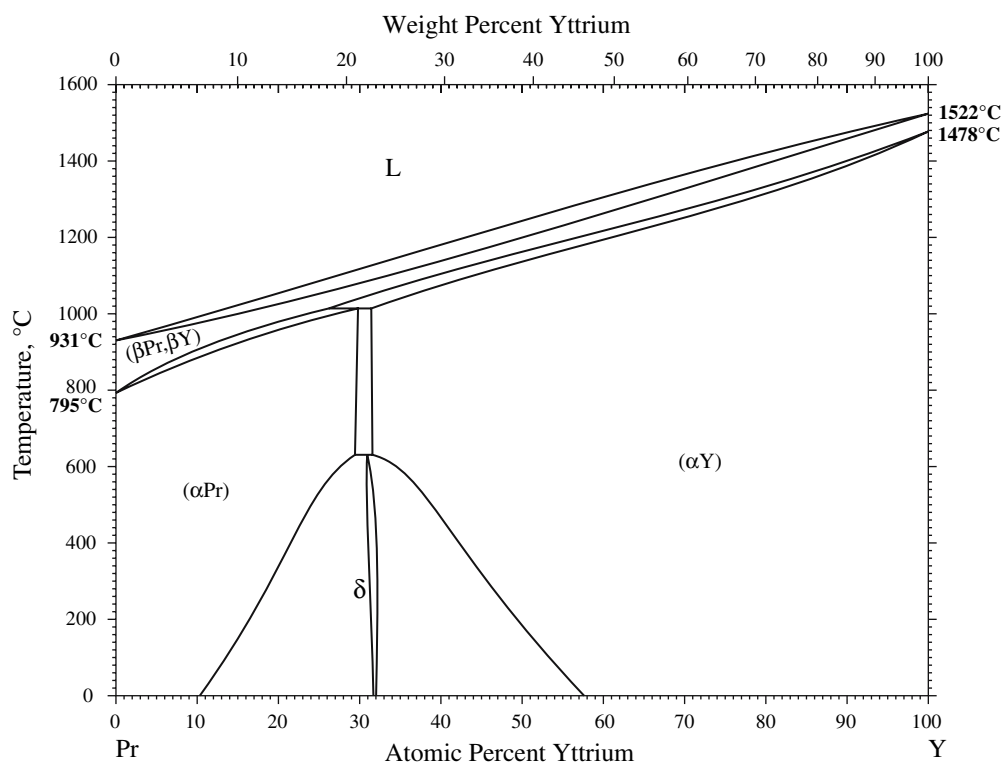


Fig. 1 Pr-Y phase diagram