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Mg-Y (Magnesium-Yttrium)

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The Mg-Y phase diagram in [Massalski2] was assessed thermodynamically by [1988Ran], as introduced by [1992Oka]. This phase diagram obtained by [1988Ran] is shown with dashed lines in Fig. 1. [2003Fab] reassessed this system using new information on the thermodynamic model. The result is shown with solid lines in Fig. 1. Table 1 shows special points of this phase diagram.

Table 1 Special points of the Mg-Y phase diagram

Reaction	Composition, at.% Y			Temperature, °C	Reaction type
L ↔ Mg		0		650	Melting
L ↔ (Mg) + ε	8.2	3.5	13.5	572	Eutectic
L + Mg_2Y ↔ ε	14.1	26.4	16.0	608	Peritectic
L + MgY ↔ Mg_2Y	28.9	46.6	32.3	783	Peritectic
L + (βY) ↔ MgY	47.2	58.0	49.8	942	Peritectic
(βY) ↔ MgY + (αY)	69.0	79.7	50.5	774	Eutectoid
L ↔ βY		100		1522	Melting
βY ↔ αY		100		1478	Allotropic

References

1988Ran: Q. Ran, H.L. Lukas, G. Effenberg, and G. Petzow, Thermodynamic Optimization of the Mg-Y System, *Calphad,* 1988, **12**(4), p 375-381

1992Oka: H. Okamoto, Mg-Y (Magnesium-Yttrium), *J. Phase Equilibria,* 1992, **13**(1), p 105-106

2003Fab: O.B. Fabrichnaya, H.L. Lukas, G. Effenberg, and F. Aldinger, Thermodynamic Optimization in the Mg-Y System, *Intermetallics,* 2003, **11**(11-12), p 1183-1188

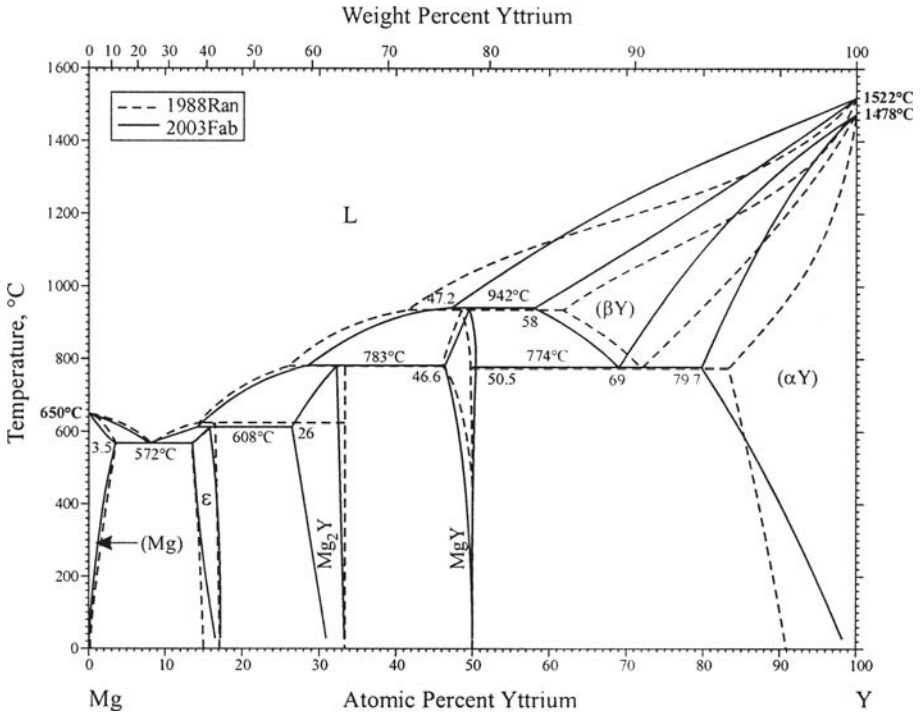

Fig. 1 Mg-Y phase diagram