

B-Mg (Boron-Magnesium)

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The Mg-B phase diagram in [Massalski2] was adopted from [1988Nay]. However, the phase diagram has a problem related to the boiling of the liquid phase [1994Oka].

Figure 1 shows the Mg-B phase diagram calculated by [2001Liu]. The phase diagram data used by [2001Liu] are

essentially the same as in [1998Nay]. Therefore, the boiling behavior of solid phases in [1988Nay] and [2001Liu] is similar. However, the boiling curve problem in [1988Nay] described above is solved in [2001Liu].

Mg-B crystal structure data in Table 1 is according to [1998Nay].

Table 1 B-Mg Crystal Structure Data

Phase	Composition, at.% Mg	Pearson Symbol	Space Group	Strukturbericht Designation	Prototype
(βB)	0	<i>hR108</i>	$R\bar{3}m$
B ₇ Mg	12.5	<i>oI64</i>	<i>Imam</i>
B ₄ Mg	20	<i>oP20</i>	<i>Pnam</i>
B ₂ Mg	33.3	<i>hP3</i>	<i>P6/mmm</i>	C32	AlB ₂
(Mg)	100	<i>hP2</i>	<i>P6₃/mmc</i>	A3	Mg

References

1988Nay: A.A. Nayeb-Hashemi and J.B. Clark: *Phase Diagrams of Binary Magnesium Alloys*, A.A. Nayeb-Hashemi and J.B. Clark, ed., ASM International, Materials Park, OH, 1988, pp. 43-46.

1994Oka: H. Okamoto and T.B. Massalski: *J. Phase Equilibria*, 1994, 15(5), pp. 500-21.

2001Liu: Z.K. Liu, Y. Zhong, D.G. Schlom, X.X. Xi, and Q. Li: *Calphad*, 2001, 25(2), pp. 299-303.

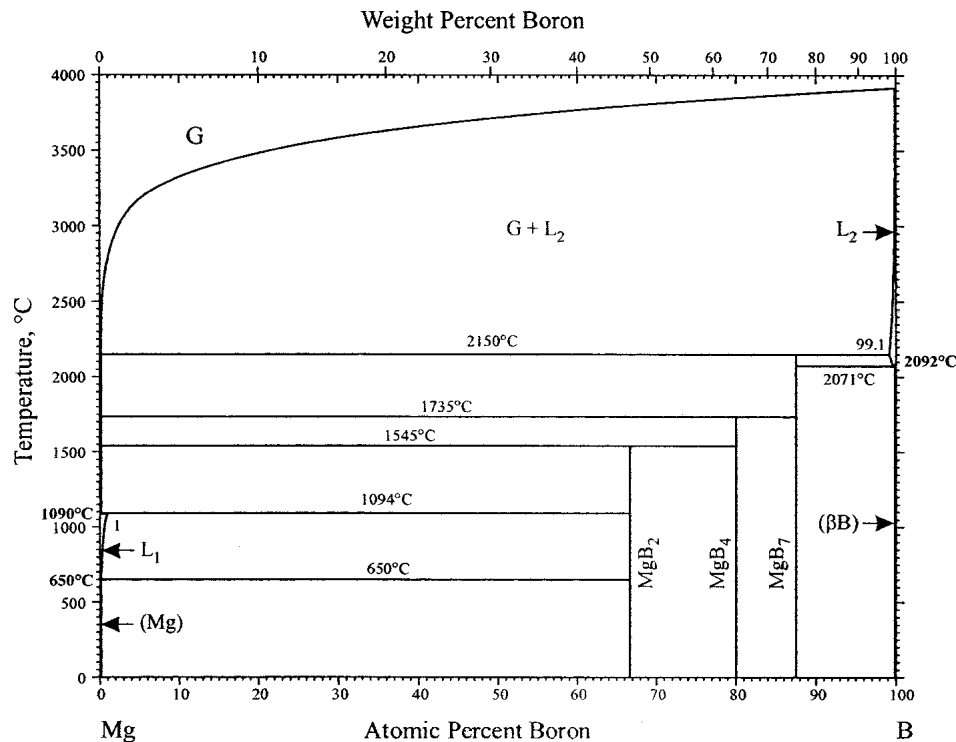


Fig. 1 B-Mg phase diagram