JPEDAV (2008) 29:201
DOI: 10.1007/s11669-008-9266-3
1547-7037 ©ASM International

B-Nb (Boron-Niobium)

H. Okamoto

The B-Nb phase diagram in [Massalski2] was redrawn from [Moffatt], which was based on [1959Now], with an additional phase B_6Nb_5 found later and minor modifications in phase boundaries for thermodynamic consistency.

[2003Bor] reexamined the B-Nb system in the 50-100 at.% Nb range and observed (1) no liquid formation during heat treatment of as-cast alloys at 1700 °C, (2) the existence of L = BNb + (Nb) eutectic reaction at 84 at.% Nb, and (3) the existence of BNb + (Nb) = B_2Nb_3 peritectoid reaction. This result is consistent with the B-Nb phase diagram reported by [1969Rud]. Figure 1 is drawn by compromising the data of [1959Now], [1969Rud], and [2003Bor]. All invariant temperatures must be confirmed experimentally.

References

1959Now: H. Nowotny, F. Benesovsky, and Kieffer, Contribution to the Configuration of the Niobium-Boron and Tantalum-Boron Systems, *Z. Metallkd.*, 1959, **50**, p 417-423 in German

1969Rud: E. Rudy, *Compounds of Phase Diagram Data, AFML-TR-65-2, Part V, Air Force Materials Lab.*. Wright Patterson AFB, OH, 1969

2003Bor: L.A. Borges, Jr., G.C. Coelho, C.A. Nunes, and P.A. Suzuki, New Data on Phase Equilibria in the Nb-rich Region of the Nb-B System, *J. Phase Equilibria*, 2003, **24**(2), p 140-146

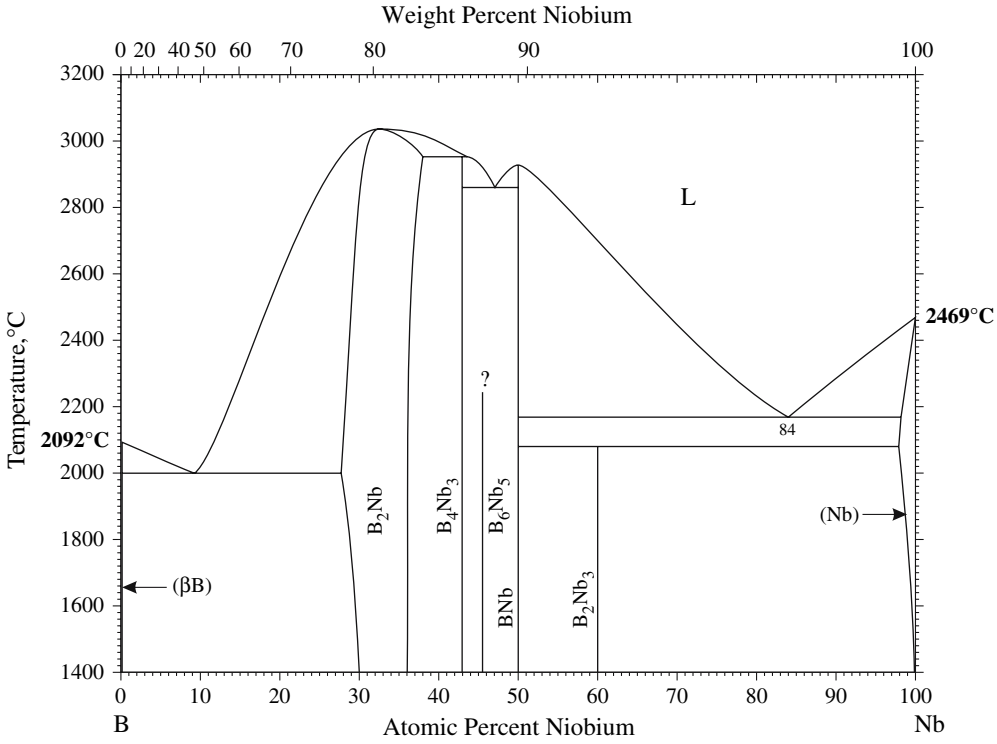

Fig. 1 B-Nb phase diagram