

Ni-Pr (Nickel-Praseodymium)

H. Okamoto

The Ni-Pr phase diagram in [Massalski2] was redrawn from [1991Pan]. As reported by [2001Oka], [1999Du] calculated the diagram as shown with dashed lines in Fig. 1. For, example, the problem of asymmetric NiPr liquidus in [1991Pan] was solved.

Solid lines in Fig. 1 show the Ni-Pr phase diagram was calculated by [2005Hua]. The most significant difference between [1999Du] and [2005Hua] is found in the shape of liquidus boundaries around Ni_3Pr_7 and NiPr_3 . The temperatures of eutectic reactions involving these compounds in [2005Hua] are based on their own differential thermal analysis (DTA) measurements. According to a criterion given by [2001Oka], the liquidus boundaries of Ni_3Pr_7 and NiPr_3 as reported by [1999Du] appear too pointed.

Accordingly, the diagram of [2005Hua] seems to be more reliable.

References

- 1991Pan:** Y.Y. Pan and P. Nash, *Phase Diagrams of Binary Nickel Alloys*, P. Nash, Ed., ASM International, 1991, p 256-260
- 1999Du:** Z. Du, D. Wang, and W. Zhang, Thermodynamic assessment of the Co-Pr, Er-Ni, and Ni-Pr systems, *J. Alloys Compds.*, Vol 284, 1999, p 206-212
- 2001Oka:** H. Okamoto, Ni-Pr (Nickel-Praseodymium), *J. Phase Equilibria*, Vol 22 (No. 4), 2001, p 513
- 2005Hua:** M. Huang and T.A. Lograsso, Experimental Investigation and Thermodynamic Modeling of the Ni-Pr System, *J. Alloys Compds.*, Vol 395, 2005, p 75-79 (2005)

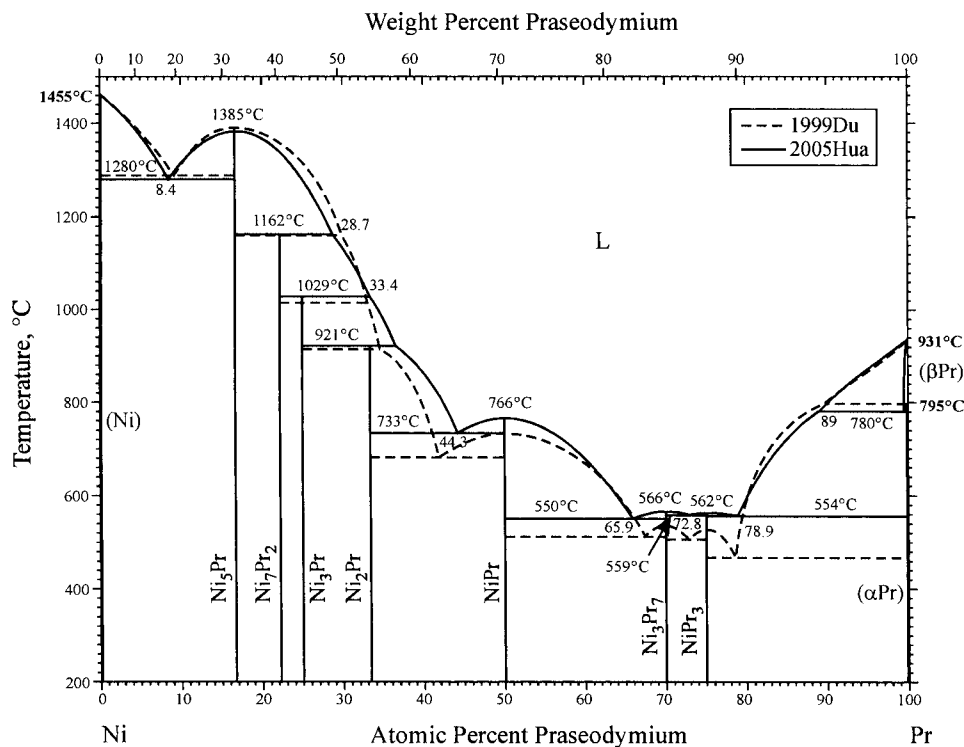


Fig. 1 Ni-Pr phase diagram