

# Al-Ni (Aluminum-Nickel)

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The Al-Ni phase diagram in [Massalski2] was adopted from [1991Nas]. Solid lines in Fig. 1 show the Al-Ni phase diagram modified by [1993Oka] based on the work of [1990Jia] for the boundaries of AlNi + AlNi<sub>3</sub> and AlNi<sub>3</sub> + (Ni) two-phase fields. [2003Ma] reexamined the AlNi<sub>3</sub>/AlNi<sub>3</sub> + (Ni) phase boundary in detail by means of aging treatments at 1000 to 1200 °C and dissolution experiments at 600 to 900 °C. The result is shown with a dashed line in Fig. 1. For comparison, the AlNi<sub>3</sub> phase field assessed by [1991Nas] is shown with dotted lines in Fig. 1. If the Ni-rich boundary of AlNi<sub>3</sub> is as reported by [2003Ma], the Al-rich boundary may have to be modified substantially so that it meets the Ni-rich boundary at its peritectic decomposition

temperature on heating. Further investigation is needed with regard to this point.

## References

- 1990Jia:** C.C. Jia: Ph.D. Thesis, Tohoku University, 1990.  
**1991Nas:** P. Nash, M.F. Singleton, and J.L. Murray: "Al-Ni (Aluminum-Nickel)," *Phase Diagrams of Binary Nickel Alloys*, P. Nash, ed., ASM International, Materials Park, OH, 1991, pp. 3-11.  
**1993Oka:** H. Okamoto: "Al-Ni (Aluminum-Nickel)," *J. Phase Equilibria*, 1993, 14(2), pp. 257-59.  
**2003Ma:** Y. Ma and A.J. Ardell: "The ( $\gamma + \gamma'$ )/ $\gamma'$  Phase Boundary in the Ni-Al Phase Diagram from 600 to 1200 °C," *Z. Metallkd.*, 2003, 94(9), pp. 972-75.

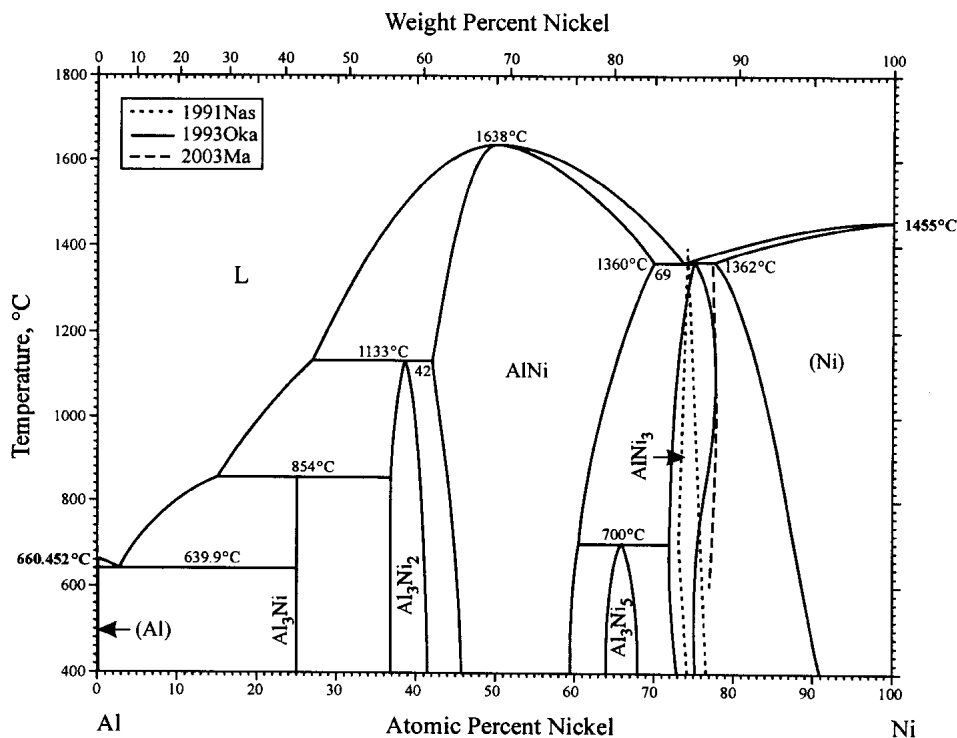


Fig. 1 Al-Ni phase diagram