

Ni-Pt (Nickel-Platinum)

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The Ni-Pt phase diagram in [Massalski2] was redrawn from [1991Nas], which was based on experimental data reported before 1981. Phase boundaries of low-temperature ordered phases have not been well defined.

[1986Cad] reported the phase boundaries of the ordered Ni_3Pt , NiPt, and NiPt_3 phases. (The NiPt_3 phase was missing in the diagram of [1991Nas].) However, boundaries of the low-temperature part of these phases were not well defined.

Figure 1 shows the Ni-Pt phase diagram calculated by [2009Lu]. It may be difficult to confirm the phase boundaries of the low-temperature phases experimentally due to the slow process in reaching the equilibrium state.

Table 1 shows Ni-Pt crystal structure data.

References

- 1991Nas:** P. Nash and M.F. Singleton, Ni-Pt (Nickel-Platinum), *Phase Diagrams of Binary Nickel Alloys*, P. Nash, Ed., ASM International, Materials Park, OH, 1991, p 261-264
- 1986Cad:** M.C. Cadeville, C.E. Dahmani, and F. Kern, Magnetism and Spatial Order in Ni-Pt and Co-Pt Alloys, *J. Mag. Mater.*, 1986, **54-57**, p 1055-1056
- 2009Lu:** X.G. Lu, B. Sundman, and J. Ågren, Thermodynamic Assessment of the Ni-Pt and Al-Ni-Pt Systems, *Calphad*, 2009, **33**, p 450-456

Table 1 Ni-Pt crystal structure data

Phase	Composition, at.% Pt	Pearson symbol	Space group	Strukturbericht designation	Prototype
(Ni,Pt)	0-100	$cF4$	$Fm\bar{3}m$	A1	Cu
Ni_3Pt	~25	$cP4$	$Pm\bar{3}m$	$L1_2$	AuCu_3
NiPt	~50	$tP4$	$P4/mmm$	$L1_0$	AuCu
NiPt_3	~75	$cP4$	$Pm\bar{3}m$	$L1_2$	AuCu_3

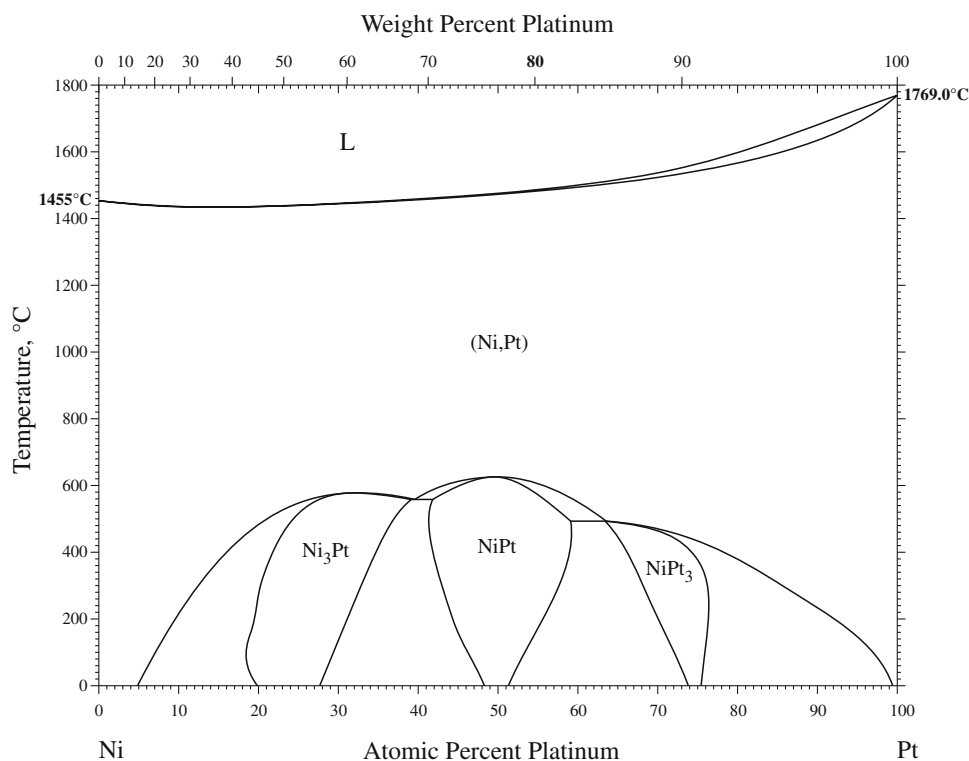


Fig. 1 Ni-Pt phase diagram