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Dy-Pt (Dysprosium-Platinum)

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The Dy-Pt phase diagram in [Massalski2] was redrawn from [Moffatt] who assumed similarity to the Er-Pt phase diagram. [2005Mac] investigated the Dy-Pt system in the 0 to 50 at.% Pt range by using differential thermal analysis, metallography, x-ray powder diffraction, and electron probe microanalysis. Figure 1 shows the result reported by [2005Mac] for 0 to 50 at.% Pt and the trend shown in [Moffatt] for 50 to 100 at.% Pt. Table 1 shows Dy-Pt crystal structure data given in [Massalski2].

Reference

2005Mac: D. Macciò, F. Rosalbino, A. Saccone, and S. Delfino, Partial Phase Diagrams of the Dy-Pt and Ho-Pt Systems and Electrocatalytic Behavior of the DyPt and HoPt Phases, *J. Alloys Compd.,* 2005, **391,** p 60-66

Table 1 Dy-Pt crystal structure data

Phase	Composition, at.% Pt	Pearson symbol	Space group	Strukturbericht designation	Prototype
(βDy)	0	*cI*2	$Im\bar{3}m$	*A*2	W
(αDy)	0	*hP*2	$P6_3/mmc$	*A*3	Mg
Dy_3Pt	25	*oP*16	*Pnma*	$D0_{11}$	Fe_3C
Dy_2Pt	33.3	*oP*12	*Pnma*	*C*23	Co_2Si
Dy_5Pt_3	37.5	*hP*16	$P6_3/mcm$	$D8_8$	Mn_5Si_3
Dy_5Pt_4	44.4	*oP*36	*Pnma*	…	…
DyPt	5	*oP*8	*Pnma*	*B*27	FeB
Dy_3Pt_4	57.1	*hR*14	$R\bar{3}$	…	…
$DyPt_2$	66.7	*cF*24	$Fd\bar{3}m$	*C*15	Cu_2Mg
$DyPt_3$	75	*cP*4	$Pm\bar{3}m$	$L1_2$	$AuCu_3$
$DyPt_5$	83.3	*o**72	…	…	…
(Pt)	100	*cF*4	$Fm\bar{3}m$	*A*1	Cu

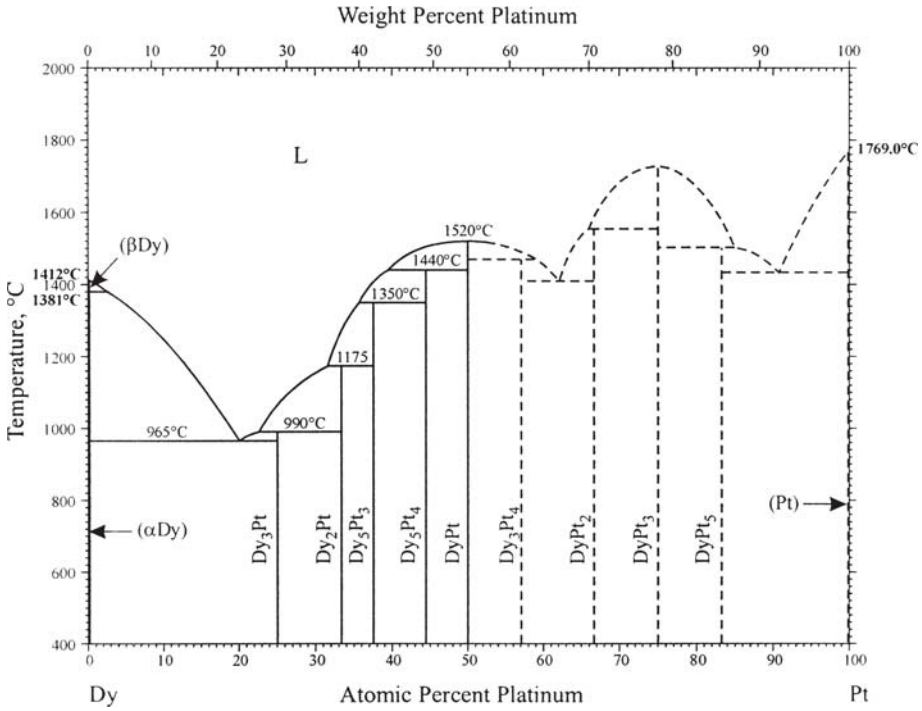

Fig. 1 Dy-Pt phase diagram