

General

Tradenames

PGP, J.M. Ney Co. (USA);

Designation

ASM Metals Handbook, 9th ed., Vol.2, p.685: "Alloy 1"

Density	1.69e4	-	1.76e4	kg/m ³
Price	* 6.218e4	-	8.138e4	FRF/kg
Production Energy	* 7.53e4	-	8.32e4	
Recycle Fraction	* 0.8	-	0.9	

Composition

Composition (Summary)

40-50Pt/25-30Au/25-30Pd

Base	Pt (Platinum)			
Au (Gold)	25	-	30	%
Pd (Palladium)	25	-	30	%
Pt (Platinum)	40	-	50	%

Mechanical

Bulk Modulus	* 185	-	260	GPa
Compressive Strength	* 550	-	1035	MPa
Elongation	14	-	15	%
Elastic Limit	550	-	1035	MPa
Endurance Limit	* 340	-	620	MPa
Fracture Toughness	* 120	-	150	MPa.m ^{1/2}
Hardness - Vickers	190	-	255	HV
Loss Coefficient	* 2e-4	-	5e-4	
Modulus of Rupture	* 550	-	1035	MPa
Poisson's Ratio	* 0.39	-	0.41	
Shape Factor	1			
Shear Modulus	* 40	-	55	GPa
Tensile Strength	860	-	1240	MPa
Young's Modulus	* 125	-	140	GPa

Thermal

Maximum Service Temperature	* 270	-	390	°C
Melting Point	1500	-	1530	°C
Minimum Service Temperature	-273			°C
Specific Heat	* 155	-	165	J/kg.K
Thermal Conductivity	* 48	-	80	W/m.K
Thermal Expansion	* 10.6	-	11.2	µstrain/°C

Electrical

Resistivity	* 10	-	15	µohm.cm
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Optical

Transparency	Opaque
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Environmental Resistance

Flammability	Very Good
Fresh Water	Very Good
Organic Solvents	Very Good
Oxidation at 500C	Very Good
Sea Water	Very Good
Strong Acid	Very Good
Strong Alkalis	Very Good
UV	Very Good
Wear	Good
Weak Acid	Very Good
Weak Alkalis	Very Good

Notes

Typical Uses

Dentistry;