

OVERVIEW

Full Name	Palladium (None)
Symbol	Pd
Atomic Number	46
Series	Transition Metal
Block / Group / Period	d-block Group 10 Period ...
Electron Config.	[Kr]4d¹⁰
Phase at STP	Solid
Colour	Silver
Discovery	1803 in The United Kingdom

THERMAL PROPERTIES

Melting Point	1554.9 °C	°C
Melting Point (abs.)	1828.05 K	K
Boiling Point	2963 °C	°C
Boiling Point (abs.)	3236 K	K
Heat of Fusion	16.7 kJ/mol	kJ/mol
Heat of Vaporization	380 kJ/mol	kJ/mol
Specific Heat (solid)	240 J/(kg K)	J/(kg·K)
Thermal Conductivity	71 W/(m K)	W/(m·K)
Thermal Expansion	0.0000118 K⁻¹	K ⁻¹

MECHANICAL PROPERTIES

Density (solid, STP)	12.023 g/cm³	g/cm ³
Density (liquid, MP)	10.38 g/cm³	g/cm ³
Young's Modulus	121 GPa	GPa
Shear Modulus	44 GPa	GPa
Bulk Modulus	180 GPa	GPa
Poisson's Ratio	0.39	
Speed of Sound	3070 m/s	m/s
Mohs Hardness	4.75	
Vickers Hardness	461 MPa	MPa
Brinell Hardness	37.2 MPa	MPa

ELECTRICAL PROPERTIES

Type	Conductor	
Conductivity	1×10⁷ S/m	S/m
Resistivity	1×10⁻⁷ m²·Ω	Ohm·m

MAGNETIC PROPERTIES

Type	Paramagnetic	
Vol. Susceptibility	0.0007899	
Mass Susceptibility	6.57×10⁻⁸ m³/Kg	m ³ /kg

REACTIVITY

Valence	4	
Electronegativity	2.2	(Pauling)
Electron Affinity	53.7 kJ/mol	kJ/mol
Ionization Energies	804.4, 1870	kJ/mol

ATOMIC DIMENSIONS

Atomic Radius	169 pm	pm
Covalent Radius	139 pm	pm
Van der Waals Radius	163 pm	pm

CRYSTAL STRUCTURE

Structure	Face-centered Cubic	
Lattice Constant	389.07, 389.07, 389.07 pm	
Space Group	Fm₃	#225

ISOTOPES & NUCLEAR

Stability	Stable	
Stable Isotopes	102Pd, 104Pd, 105Pd, 106Pd, 108P...	
Isotopic Abundance	102Pd1.02%104Pd11.14%105Pd22.33%...	
Known Isotopes	91Pd ■ 124Pd (34 total)	
Neutron Cross Sect.	6.9	barns

ELEMENTAL ABUNDANCES

Universe	2×10⁻⁷%	%
Earth's Crust	6.3×10⁻⁷%	%

HEALTH & SAFETY

DOT Hazard Class	4.2	
RTECS Number	RT3480500	
NFPA Health/Fire/Rx	0 / 0 / 0	