

## OVERVIEW

Full Name	Magnesium (None)
Symbol	Mg
Atomic Number	12
Series	Alkaline Earth Metal
Block / Group / Period	s-block   Group 2   Period 3
Electron Config.	[Ne]3s <sup>2</sup>
Phase at STP	Solid
Colour	Silver
Discovery	1755 in The United Kingdom

## THERMAL PROPERTIES

Melting Point	650 °C	°C
Melting Point (abs.)	923 K	K
Boiling Point	1090 °C	°C
Boiling Point (abs.)	1363 K	K
Heat of Fusion	8.7 kJ/mol	kJ/mol
Heat of Vaporization	128 kJ/mol	kJ/mol
Specific Heat (solid)	1020 J/(kg K)	J/(kg·K)
Thermal Conductivity	160 W/(m K)	W/(m·K)
Thermal Expansion	0.0000248 K <sup>-1</sup>	K <sup>-1</sup>

## MECHANICAL PROPERTIES

Density (solid, STP)	1.738 g/cm <sup>3</sup>	g/cm <sup>3</sup>
Density (liquid, MP)	1.584 g/cm <sup>3</sup>	g/cm <sup>3</sup>
Young's Modulus	45 GPa	GPa
Shear Modulus	17 GPa	GPa
Bulk Modulus	45 GPa	GPa
Poisson's Ratio	0.29	
Speed of Sound	4602 m/s	m/s
Mohs Hardness	2.5	
Brinell Hardness	260 MPa	MPa

## ELECTRICAL PROPERTIES

Type	Conductor
Conductivity	2.3×10 <sup>7</sup> S/m S/m
Resistivity	4.399999999999999×10 <sup>-8</sup> m/Ω·m

## MAGNETIC PROPERTIES

Type	Paramagnetic
Vol. Susceptibility	0.000012
Mass Susceptibility	6.9×10 <sup>-9</sup> m <sup>3</sup> /Kg m <sup>3</sup> /kg

## REACTIVITY

Valence	2
Electronegativity	1.31 (Pauling)
Electron Affinity	0 kJ/mol kJ/mol
Ionization Energies	737.7, 1450.7 kJ/mol

## ATOMIC DIMENSIONS

Atomic Radius	145 pm	pm
Covalent Radius	141 pm	pm
Van der Waals Radius	173 pm	pm

## CRYSTAL STRUCTURE

Structure	Simple Hexagonal
Lattice Constant	320.94, 320.94, 521.08 pm
Space Group	P63/mmc #194

## ISOTOPES &amp; NUCLEAR

Stability	Stable
Stable Isotopes	24Mg, 25Mg, 26Mg
Isotopic Abundance	24Mg78.99%25Mg10%26Mg11.01%
Known Isotopes	19Mg ■ 40Mg (22 total)
Neutron Cross Sect.	0.063 barns

## ELEMENTAL ABUNDANCES

Universe	0.059%	%
Earth's Crust	2.9%	%
Oceans	0.13%	%
Human Body	0.027%	%

## HEALTH &amp; SAFETY

DOT Hazard Class	4.1
NFPA Health/Fire/Rx	0 / 0 / 0