

OVERVIEW		
Full Name	Aluminium (Aluminium)	
Symbol	Al	
Atomic Number	13	
Series	Poor Metal	
Block / Group / Period	p-block Group 13 Period ...	
Electron Config.	[Ne]3s23p1	
Phase at STP	Solid	
Colour	Silver	
Discovery	1825 in Denmark	
THERMAL PROPERTIES		
Melting Point	660.32 °C	°C
Melting Point (abs.)	933.47 K	K
Boiling Point	2519 °C	°C
Boiling Point (abs.)	2792 K	K
Heat of Fusion	10.7 kJ/mol	kJ/mol
Heat of Vaporization	293 kJ/mol	kJ/mol
Specific Heat (solid)	904 J/(kg K)	J/(kg·K)
Thermal Conductivity	235 W/(m K)	W/(m·K)
Thermal Expansion	0.0000231 K ⁻¹	K ⁻¹
MECHANICAL PROPERTIES		
Density (solid, STP)	2.7 g/cm ³	g/cm ³
Density (liquid, MP)	2.375 g/cm ³	g/cm ³
Young's Modulus	70 GPa	GPa
Shear Modulus	26 GPa	GPa
Bulk Modulus	76 GPa	GPa
Poisson's Ratio	0.35	
Speed of Sound	5100 m/s	m/s
Mohs Hardness	2.75	
Vickers Hardness	167 MPa	MPa
Brinell Hardness	245 MPa	MPa
ELECTRICAL PROPERTIES		
Type	Conductor	
Conductivity	3.8×10 ⁷ S/m	S/m
Resistivity	2.6×10 ⁻⁸ m ?	Ohm·m
Superconducting Pt.	1.175	K
MAGNETIC PROPERTIES		
Type	Paramagnetic	
Vol. Susceptibility	0.0000211	
Mass Susceptibility	7.8×10 ⁻⁹ m ³ /Kg	m ³ /kg
REACTIVITY		
Valence	3	
Electronegativity	1.61	(Pauling)
Electron Affinity	42.5 kJ/mol	kJ/mol
Ionization Energies	577.5, 1816.7	kJ/mol
ATOMIC DIMENSIONS		
Atomic Radius	118 pm	pm
Covalent Radius	121 pm	pm
CRYSTAL STRUCTURE		
Structure	Face-centered Cubic	
Lattice Constant	404.95, 404.95, 404.95 pm	
Space Group	Fm_ 3m	#225
ISOTOPES & NUCLEAR		
Stability	Stable	
Stable Isotopes	27Al	
Isotopic Abundance	27Al100%	
Known Isotopes	21Al ■ 42Al (22 total)	
Neutron Cross Sect.	0.233	barns
ELEMENTAL ABUNDANCES		
Universe	0.005%	%
Earth's Crust	8.1%	%
Oceans	5×10 ⁻⁷ %	%
Human Body	0.00009%	%
HEALTH & SAFETY		
DOT Hazard Class	4.3	
RTECS Number	BD0330000	
NFPA Health/Fire/Rx	0 / 0 / 0	