

OVERVIEW		
Full Name	Tin (Stannum)	
Symbol	Sn	
Atomic Number	50	
Series	Poor Metal	
Block / Group / Period	p-block Group 14 Period ...	
Electron Config.	[Kr]5s24d105p2	
Phase at STP	Solid	
Colour	Silver	
Allotropes	WhiteTin, GrayTin	
Discovery	3000 BC	
THERMAL PROPERTIES		
Melting Point	231.93 °C	°C
Melting Point (abs.)	505.08 K	K
Boiling Point	2602 °C	°C
Boiling Point (abs.)	2875 K	K
Heat of Fusion	7 kJ/mol	kJ/mol
Heat of Vaporization	290 kJ/mol	kJ/mol
Specific Heat (solid)	217 J/(kg K)	J/(kg·K)
Thermal Conductivity	67 W/(m K)	W/(m·K)
Thermal Expansion	0.00022 K ⁻¹	K ⁻¹
MECHANICAL PROPERTIES		
Density (solid, STP)	7.31 g/cm ³	g/cm ³
Density (liquid, MP)	6.99 g/cm ³	g/cm ³
Young's Modulus	50 GPa	GPa
Shear Modulus	18 GPa	GPa
Bulk Modulus	58 GPa	GPa
Poisson's Ratio	0.36	
Speed of Sound	2500 m/s	m/s
Mohs Hardness	1.5	
Brinell Hardness	51 MPa	MPa
ELECTRICAL PROPERTIES		
Type	Conductor	
Conductivity	9.1×10 ⁶ S/m	S/m
Resistivity	1.1×10 ⁻⁷ m ?	Ohm·m
Superconducting Pt.	3.72	K
MAGNETIC PROPERTIES		
Type	Diamagnetic	
Vol. Susceptibility	-0.0000227	
Mass Susceptibility	-3.1×10 ⁻⁹ m ³ /Kg	m ³ /kg
REACTIVITY		
Valence	4	
Electronegativity	1.96	(Pauling)
Electron Affinity	107.3 kJ/mol	kJ/mol
Ionization Energies	708.6, 1411.8	kJ/mol
ATOMIC DIMENSIONS		
Atomic Radius	145 pm	pm
Covalent Radius	139 pm	pm
Van der Waals Radius	217 pm	pm
CRYSTAL STRUCTURE		
Structure	Centered Tetragonal	
Lattice Constant	583.18, 583.18, 318.19 pm	
Space Group	I41/amd	#141
ISOTOPES & NUCLEAR		
Stability	Stable	
Stable Isotopes	112Sn, 114Sn, 115Sn, 116Sn, 117S...	
Isotopic Abundance	112Sn0.97%114Sn0.66%115Sn0.34%11...	
Known Isotopes	99Sn ■ 137Sn (39 total)	
Neutron Cross Sect.	0.62	barns
ELEMENTAL ABUNDANCES		
Universe	4×10 ⁻⁷ %	%
Earth's Crust	0.00022%	%
Oceans	9.9×10 ⁻¹⁰ %	%
Human Body	0.00002%	%
HEALTH & SAFETY		
RTECS Number	XP7320000	
NFPA Health/Fire/Rx	0 / 0 / 0	