

Zinc ${}_{30}\text{Zn}^{65.37}$

Known in India and China before 1500.

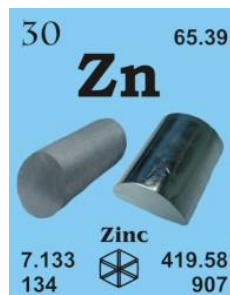
[German, zink]

French: zinc

German: Zink

Italian: zinco

Spanish: cinc



Atomic number	30
Density in g/cm ³	7.133
Atomic radius in pm	142
Atomic weight	65.39
Melting point in °C	419.58
Boiling point in °C	907

Description: Zinc is a bluish-white metal that is brittle when cast. It tarnishes in air and reacts with acids and alkalis. Zinc is used for galvanizing iron, in alloys such as brass, and in batteries. Zinc oxide is used in rubber and as a polymer stabiliser.

ZINC SINGLE CRYSTAL PROPERTIES

State:	single crystal
Crystal structure:	hexagonal
Production method:	Bridgman
Standard size:	diameter 10-20mm thickness 1-2mm
Orientation:	(1001), (1-100) and (11-20)
Orientation accuracy:	<2°, <1°, <0.4° or <0.1°
Polishing:	as cut, one or two sides polished
Roughness of surface:	<0.03µm
Purity:	99.999%
	C 3
	H < 1
	O 9
	N < 5
	Cu 1.60
	Fe 1.80
	Ni < 1
	Pb 0.30
	Si 0.30
	Ga, Hf and Ta are below the detection limit
Density:	7.14 g/cm ³
Melting point:	419.58 °C / 692.73 °K
Boiling point:	906.85 °C / 1180 °K
Molar volume:	9.17 cm ³
Thermal conductivity:	116 [300 K] Wm ⁻¹ K ⁻¹
Coefficient of linear thermal expansion:	25.0 x 10 ⁻⁶ K ⁻¹
Electrical resistivity:	5.916x 10 ⁻⁸ [293 K] Wm

Typical analysis (ppm):



Mass magnetic susceptibility:	-2.20 x 10 ⁻⁹ (s) kg-1m ³
Young's modulus:	104.5 GPa
Rigidity modulus:	41.9 GPa
Bulk modulus:	69.4 GPa
Poisson's ratio:	0.249
Radii:	Zn ²⁺ 83; atomic 133; covalent 125
Electronegativity:	1.65 (Pauling); 1.66 (Allred); 4.45 eV (absolute)
Effective nuclear charge:	4.35 (Slater); 5.97 (Clementi); 8.28 (Froese-Fischer)
Number of Isotopes (incl. nuclear isomers):	23
Isotope mass range:	57 -> 78
Crystal structure, (cell dimensions / pm), space group	hexagonal
X-ray diffraction: mass absorption coefficients:	CuK α 60.3 (μ/r) / cm ² g ⁻¹ MoK α 55.4 (μ/r) / cm ² g ⁻¹
Neutron scattering length:	0.5680 b/10 ⁻¹² cm
Thermal neutron capture cross-section:	1.11 sa / barns

