

Cobalt Disk Single Crystal

Formula: Co

Percentage Purity: 99.99%

Thickness: 1mm

Diameter: 10mm

Orientation: -1

Orientation Accuracy: = 1°

Polish: Unpolished

CAS Number: 7440-48-4

UOM Code: 113-936-91

SKU: 1000026323-group

Product Code: CO00-SC-000241

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	27
Crystal structure	Hexagonal close packed
Electronic structure	Ar 3d ⁷ 4s ²
Valences shown	2, 3
Atomic weight(amu)	58.9332
Thermal neutron absorption cross-section(Barns)	37.5
Photo-electric work function(eV)	5
Atomic radius - Goldschmidt(nm)	0.125
Ionisation potential(No./eV)	2/ 17.06
Ionisation potential(No./eV)	4/ 51.3
Ionisation potential(No./eV)	3/ 33.5
Ionisation potential(No./eV)	1/ 79.5
Ionisation potential(No./eV)	1/ 79.5
Ionisation potential(No./eV)	6/ 102

Mechanical Properties

Element	Value
Material condition	Hard

Element	Value
Material condition	Soft
Poisson's ratio	0.32
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Bulk modulus(GPa)	181.5
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Tensile modulus(GPa)	211
Tensile modulus(GPa)	211
Hardness - Vickers(kgf mm ²)	320
Hardness - Vickers(kgf mm ²)	170
Tensile strength(MPa)	1135
Tensile strength(MPa)	760
Yield strength(MPa)	345-485

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	6.34@20@20°C
Temperature coefficient(K ⁻¹)	0.0066@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	-1.33

Physical Properties

Element	Value
Boiling point(C)	2870
Density(gcm ³)	8.9@20°C

Thermal Properties

Element	Value
Melting point(C)	1495
Latent heat of evaporation(J g ⁻¹)	6490
Latent heat of fusion(J g ⁻¹)	263
Specific heat(J K ⁻¹ kg ⁻¹)	456@25°C
Thermal conductivity(W m ⁻¹ K ⁻¹)	100@0-100°C
Coefficient of thermal expansion($\times 10^{-6}$ K ⁻¹)	12.5@0-100°C