

Copper Top Hat Single Crystal

Formula: Cu

Percentage Purity: 99.999%

Top Section Thickness: 1mm

Bottom Section Thickness: 1mm

Outside Diameter: 10mm

Inside Diameter: 8mm

Orientation: -100

Orientation Accuracy: = 1°

Polish: Unpolished

CAS Number: 7440-50-8

UOM Code: 779-444-86

SKU: 1000081049-group

Product Code: CU00-SC-000242

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	29
Crystal structure	Face centred cubic
Electronic structure	Ar 3d ¹⁰ 4s ¹
Valences shown	1, 2
Atomic weight(amu)	63.546
Thermal neutron absorption cross-section(Barns)	3.8
Photo-electric work function(eV)	4.5
Natural isotope distribution(Mass No./%)	65/ 30.8
Natural isotope distribution(Mass No./%)	63/ 69.2
Atomic radius - Goldschmidt(nm)	0.128
Ionisation potential(No./eV)	4/ 55.2
Ionisation potential(No./eV)	6/ 103
Ionisation potential(No./eV)	1/ 7.73
Ionisation potential(No./eV)	5/ 79.9
Ionisation potential(No./eV)	3/ 36.8
Ionisation potential(No./eV)	2/ 20.29

Mechanical Properties

Element	Value
Material condition	Soft
Material condition	Hard
Poisson's ratio	0.343
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Bulk modulus(GPa)	137.8
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Tensile modulus(GPa)	129.8
Tensile modulus(GPa)	129.8
Izod toughness(J m ²)	68
Izod toughness(J m ²)	58
Hardness - Vickers(kgf mm ²)	87
Hardness - Vickers(kgf mm ²)	49
Tensile strength(MPa)	314
Tensile strength(MPa)	224
Yield strength(MPa)	270
Yield strength(MPa)	54

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	1.69@20@20°C
Temperature coefficient(K ⁻¹)	0.0043@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	0.76

Physical Properties

Element	Value
Boiling point(C)	2567
Density(gcm ³)	8.96@20°C

Thermal Properties

Element	Value
Melting point(C)	1083
Latent heat of evaporation(J g ⁻¹)	4796
Latent heat of fusion(J g ⁻¹)	205
Specific heat(J K ⁻¹ kg ⁻¹)	385@25°C
Thermal conductivity(W m ⁻¹ K ⁻¹)	401@0-100°C
Coefficient of thermal expansion($\times 10^{-6}$ K ⁻¹)	17@0-100°C