Molybdenum Top Hat Single Crystal

Formula: Mo
Percentage Purity: 99.999%
Top Section Thickness: 1mm
Bottom Section Thickness: 1mm
Outside Diameter: 10mm
Inside Diameter: 8mm
Orientation: -111
Orientation Accuracy: = 0.5°
Polish: Polished
Surface Finish: = 0.03µm Ra
CAS Number: 7439-98-7
UOM Code: 368-789-24
SKU: 1000152149-group
Product Code: MO00-SC-000205

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	42
Crystal structure	Body centred cubic
Electronic structure	Kr 4d? $5s^1$
Valences shown	2, 3, 4, 5, 6
Atomic weight(amu)	95.94
Thermal neutron absorption cross-section(Barns)	2.65
Photo-electric work function(eV)	4.2
Natural isotope distribution(Mass No./%)	95/ 15.9
Natural isotope distribution(Mass No./%)	96/ 16.7
Natural isotope distribution(Mass No./%)	98/ 24.1
Natural isotope distribution(Mass No./%)	97/ 9.6
Natural isotope distribution(Mass No./%)	92/ 14.8
Natural isotope distribution(Mass No./%)	94/ 9.3
Natural isotope distribution(Mass No./%)	100/ 9.6
Atomic radius - Goldschmidt(nm)	0.14
Ionisation potential(No./eV)	2/ 16.15

Element	Value
Ionisation potential(No./eV)	5/ 61.2
Ionisation potential(No./eV)	68
Ionisation potential(No./eV)	1/ 7.10
Ionisation potential(No./eV)	3/ 27.2
Ionisation potential(No./eV)	4/ 46.4

Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.293
Poisson's ratio	0.293
Bulk modulus(GPa)	261.2
Bulk modulus(GPa)	261.2
Tensile modulus(GPa)	324.8
Tensile modulus(GPa)	324.8
Hardness - Vickers(kgf mm?²)	250
Hardness - Vickers(kgf mm?²)	200
Tensile strength(MPa)	485-550
Tensile strength(MPa)	620-690
Yield strength(MPa)	550
Yield strength(MPa)	415-450

Electrical Properties

Element	Value
Electrical resistivity(µOhmcm)	5.7@20@20°C
Superconductivity critical temperature(K)	0.915
Temperature coefficient(K?¹)	0.00435@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	1.45

Physical Properties

Element	Value
Boiling point(C)	4612
Density(gcm?³)	10.22@20°C

Thermal Properties

Element	Value
Melting point(C)	2617

Element	Value
Latent heat of evaporation(J g?¹)	6153
Latent heat of fusion(J g?¹)	290
Specific heat(J K?¹ kg?¹)	251@25°C
Thermal conductivity(W m?¹ K?¹)	138@0-100°C
Coefficient of thermal expansion(x10?? K?¹)	5.1@0-100°C