

Ruthenium Thin Film Disk

Formula: Ru

Percentage Purity: 99.9%

Thickness: 0.1 μ m

Diameter: 10mm

Area Density: 122 μ g/cm²

Support: Permanent Mylar® 3.5 μ m

CAS Number: 7440-18-8

UOM Code: 011-413-33

SKU: 1000001503-group

Product Code: RU00-MF-000200

Material Properties for Precious Metals

Atomic Properties

Element	Value
Atomic number	44
Crystal structure	Hexagonal close packed
Electronic structure	Kr 4d ⁷ 5s ¹
Valences shown	0,1,2,3,4,5,6,7,8
Atomic weight(amu)	101.07
Thermal neutron absorption cross-section(Barns)	3
Photo-electric work function(eV)	4.71
Natural isotope distribution(Mass No./%)	99/ 12.7
Natural isotope distribution(Mass No./%)	96/ 5.5
Natural isotope distribution(Mass No./%)	104/ 18.6
Natural isotope distribution(Mass No./%)	98/ 1.9
Natural isotope distribution(Mass No./%)	101/ 17.1
Natural isotope distribution(Mass No./%)	100/ 12.6
Natural isotope distribution(Mass No./%)	102/ 31.6
Atomic radius - Goldschmidt(nm)	0.134
Ionisation potential(No./eV)	2/ 16.8
Ionisation potential(No./eV)	3/ 28.5
Ionisation potential(No./eV)	1/ 7.36

Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.25
Poisson's ratio	0.25
Bulk modulus(GPa)	286
Bulk modulus(GPa)	286
Tensile modulus(GPa)	432
Tensile modulus(GPa)	432
Hardness - Vickers(kgf mm ²)	750
Hardness - Vickers(kgf mm ²)	350
Tensile strength(MPa)	495
Yield strength(MPa)	372

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	7.7@20@20°C
Superconductivity critical temperature(K)	0.49
Temperature coefficient(K ⁻¹)	0.0041@0-100

Physical Properties

Element	Value
Boiling point(C)	3900
Density(gcm ³)	12.2@20

Thermal Properties

Element	Value
Melting point(C)	2310
Latent heat of evaporation(J g ⁻¹)	5610
Latent heat of fusion(J g ⁻¹)	252
Specific heat(J K ⁻¹ kg ⁻¹)	238@20°C
Thermal conductivity(W m ⁻¹ K ⁻¹)	117@0-100°C
Coefficient of thermal expansion($\times 10^{-6}$ K ⁻¹)	9.6@0-100°C