Niobium Thin Film Disk

Formula: Nb
Percentage Purity: 99.9%
Thickness: 0.025µm
Diameter: 10mm
Area Density: 21µg/cm²
Support: Permanent Mylar® 3.5µm
CAS Number: 7440-03-1
UOM Code: 030-371-15
SKU: 1000003826-group
Product Code: NB00-MF-000100

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	41
Crystal structure	Body centred cubic
Electronic structure	Kr 4d? $5s^1$
Valences shown	2, 3, 4, 5
Atomic weight(amu)	92.9064
Thermal neutron absorption cross-section(Barns)	1.15
Photo-electric work function(eV)	4.3
Atomic radius - Goldschmidt(nm)	0.147
Ionisation potential(No./eV)	3/ 25.0
Ionisation potential(No./eV)	2/ 14.3
Ionisation potential(No./eV)	6/ 103
Ionisation potential(No./eV)	1/ 6.88
Ionisation potential(No./eV)	4/ 38.3
Ionisation potential(No./eV)	5/ 50.5

Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft

Element	Value
Poisson's ratio	0.397
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Bulk modulus(GPa)	170.3
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Tensile modulus(GPa)	104.9
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Izod toughness(J m?¹)	10-120
Hardness - Vickers(kgf mm?²)	115
Hardness - Vickers(kgf mm?²)	160
Tensile strength(MPa)	330
Tensile strength(MPa)	585
Yield strength(MPa)	550
Yield strength(MPa)	240

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	16@20@20°C
Superconductivity critical temperature(K)	9.25
Temperature coefficient(K?¹)	0.0026@0-100°C

Physical Properties

Element	Value
Boiling point(C)	4742
Density(gcm?³)	8.57@20°C

Thermal Properties

Element	Value
Melting point(C)	2468
Latent heat of evaporation(J g?¹)	7360
Latent heat of fusion(J g?¹)	290
Specific heat(J K?¹ kg?¹)	268@25°C
Thermal conductivity(W m?¹ K?¹)	53.7@0-100°C
Coefficient of thermal expansion(x10?? K?¹)	7.2@0-100°C