Niobium Rod

Order Goodfellow's Niobium Rod (Nb ? 99.9%), used in superconducting magnets, vacuum furnaces, and corrosive environments. Buy online now. **SKU:** 1000001214-group
Product Code: NB00-RD-000145

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
Poisson's ratio	0.397
Poisson's ratio	0.397
Bulk modulus(GPa)	170.3
Bulk modulus(GPa)	170.3
Tensile modulus(GPa)	104.9
Tensile modulus(GPa)	104.9

Element	Value
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°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