Polyimide-Insulated Iron Wire

Polyimide?insulated iron wire combines magnetic permeability, strength, and thermal endurance with chemically resistant insulation for electromagnets, inductors, transformers, magnetic actuators, and research on high?temperature magnetic cycling and insulation ageing. **SKU:** 1000005679-group
Product Code: FE00-SW-000116

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	26
Crystal structure	Body centred cubic
Electronic structure	Ar 3d? 4s²
Valences shown	2, 3, 4, 6
Atomic weight(amu)	55.847
Thermal neutron absorption cross-section(Barns)	2.56
Photo-electric work function(eV)	4.4
Natural isotope distribution(Mass No./%)	58/ 0.3
Natural isotope distribution(Mass No./%)	57/ 2.1
Natural isotope distribution(Mass No./%)	56/ 91.8
Natural isotope distribution(Mass No./%)	54/ 5.8
Atomic radius - Goldschmidt(nm)	0.128
Ionisation potential(No./eV)	2/ 16.18
Ionisation potential(No./eV)	5/ 75.0
Ionisation potential(No./eV)	4/ 54.8
Ionisation potential(No./eV)	3/ 30.65
Ionisation potential(No./eV)	1/ 7.87
Ionisation potential(No./eV)	Jun-99

Mechanical Properties

Element	Value
Hardness - Mohs	04-5
Material condition	Polycrystalline
Poisson's ratio	0.293

Element	Value
Bulk modulus(GPa)	169.8
Tensile modulus(GPa)	211.4
Izod toughness(J m?¹)	8-16
Tensile strength(MPa)	180-210
Yield strength(MPa)	120-150

Electrical Properties

Element	Value
Electrical resistivity(µOhmcm)	10.1@20°C
Temperature coefficient(K?¹)	0.0065@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	1.98

Physical Properties

Element	Value
Boiling point(C)	2750
Density(gcm?³)	7.87@20°C

Thermal Properties

Element	Value
Melting point(C)	1535
Latent heat of evaporation(J g?¹)	6095
Latent heat of fusion(J g?¹)	272
Specific heat(J K?¹ kg?¹)	444@25°C
Thermal conductivity(W m?¹ K?¹)	80.4@0-100°C
Coefficient of thermal expansion(x10?? K?¹)	12.1@0-100°C