Polyimide-Insulated Iron Wire

Discover Goodfellow's polyimide-insulated iron wire for advanced electrical and thermal applications. Enhance your research with our specialised materials now. **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? $4s^2$
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
Bulk modulus(GPa)	169.8

Element	Value
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