

Iron Powder

Formula: Fe

Percentage Purity: 99%

Maximum Particle Size: 450µm

Weight: 500g

CAS Number: 7439-89-6

UOM Code: 044-778-22

SKU: 1000006255-group

Product Code: FE00-PD-000110

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	26
Crystal structure	Body centred cubic
Electronic structure	Ar 3d ⁷ 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
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Hardness - Mohs	04-May
Material condition	Polycrystalline
Poisson's ratio	0.293
Bulk modulus(GPa)	169.8
Tensile modulus(GPa)	211.4
Izod toughness(J m ⁻¹)	Aug-16
Tensile strength(MPa)	180-210
Yield strength(MPa)	120-150

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	10.1@20@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($\times 10^{-6}$ K ⁻¹)	12.1@0-100°C