Cobalt Spooled Wire

Cobalt spooled wire delivers strength, corrosion resistance, and magnetic performance for electromagnetic coils, springs, connectors, and automated manufacturing and materials research. **SKU:** 1000006423-group
Product Code: CO00-WR-000100

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	27
Crystal structure	Hexagonal close packed
Electronic structure	Ar 3d? 4s²
Valences shown	2, 3
Atomic weight(amu)	58.9332
Thermal neutron absorption cross-section(Barns)	37.5
Photo-electric work function(eV)	5
Atomic radius - Goldschmidt(nm)	0.125
Ionisation potential(No./eV)	2/ 17.06
Ionisation potential(No./eV)	4/ 51.3
Ionisation potential(No./eV)	3/ 33.5
Ionisation potential(No./eV)	1/ 79.5
Ionisation potential(No./eV)	1/ 79.5
Ionisation potential(No./eV)	6/ 102

Mechanical Properties

Element	Value
Material condition	Hard
Material condition	Soft
Poisson's ratio	0.32
Poisson's ratio	0.32
Bulk modulus(GPa)	181.5
Bulk modulus(GPa)	181.5
Tensile modulus(GPa)	211
Tensile modulus(GPa)	211

Element	Value
Hardness - Vickers(kgf mm?²)	320
Hardness - Vickers(kgf mm?²)	170
Tensile strength(MPa)	1135
Tensile strength(MPa)	760
Yield strength(MPa)	345-485

Electrical Properties

Element	Value
Electrical resistivity(µOhmcm)	6.34@20°C
Temperature coefficient(K?¹)	0.0066@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	-1.33

Physical Properties

Element	Value
Boiling point(C)	2870
Density(gcm?³)	8.9@20°C

Thermal Properties

Element	Value
Melting point(C)	1495
Latent heat of evaporation(J g?¹)	6490
Latent heat of fusion(J g?¹)	263
Specific heat(J K?¹ kg?¹)	456@25°C
Thermal conductivity(W m?¹ K?¹)	100@0-100°C
Coefficient of thermal expansion(x10?? K?¹)	12.5@0-100°C