

Copper Foil

Formula: Cu

CAS Number: 7440-50-8

SKU: 1000002473-group

Product Code: CU00-FL-000280

Material Properties for Metals

Atomic Properties

Element	Value
Atomic number	29
Crystal structure	Face centred cubic
Electronic structure	Ar 3d ¹⁰ 4s ¹
Valences shown	1, 2
Atomic weight(amu)	63.546
Thermal neutron absorption cross-section(Barns)	3.8
Photo-electric work function(eV)	4.5
Natural isotope distribution(Mass No./%)	65/ 30.8
Natural isotope distribution(Mass No./%)	63/ 69.2
Atomic radius - Goldschmidt(nm)	0.128
Ionisation potential(No./eV)	4/ 55.2
Ionisation potential(No./eV)	6/ 103
Ionisation potential(No./eV)	1/ 7.73
Ionisation potential(No./eV)	5/ 79.9
Ionisation potential(No./eV)	3/ 36.8
Ionisation potential(No./eV)	2/ 20.29

Mechanical Properties

Element	Value
Material condition	Soft
Material condition	Hard
Poisson's ratio	0.343
Poisson's ratio	0.343

Element	Value
Bulk modulus(GPa)	137.8
Bulk modulus(GPa)	137.8
Tensile modulus(GPa)	129.8
Tensile modulus(GPa)	129.8
Izod toughness(J m ²)	68
Izod toughness(J m ²)	58
Hardness - Vickers(kgf mm ²)	87
Hardness - Vickers(kgf mm ²)	49
Tensile strength(MPa)	314
Tensile strength(MPa)	224
Yield strength(MPa)	270
Yield strength(MPa)	54

Electrical Properties

Element	Value
Electrical resistivity(μOhmcm)	1.69@20@20°C
Temperature coefficient(K ⁻¹)	0.0043@0-100°C
Thermal emf against Pt (cold 0C - hot 100C)(mV)	0.76

Physical Properties

Element	Value
Boiling point(C)	2567
Density(gcm ³)	8.96@20°C

Thermal Properties

Element	Value
Melting point(C)	1083
Latent heat of evaporation(J g ⁻¹)	4796
Latent heat of fusion(J g ⁻¹)	205
Specific heat(J K ⁻¹ kg ⁻¹)	385@25°C
Thermal conductivity(W m ⁻¹ K ⁻¹)	401@0-100°C
Coefficient of thermal expansion($\times 10^{-6}$ K ⁻¹)	17@0-100°C