

# Copper Foil (Light Tight)

**Formula:** Cu

**Percentage Purity:** 99.99%

**Temper:** As Rolled

**Thickness:** 0.02mm

**Length 1:** 100mm

**Length 2:** 100mm

**CAS Number:** 7440-50-8

**UOM Code:** 014-634-42

**SKU:** 1000001862-group

**Product Code:** CU00-FL-000350

## Material Properties for Metals

### Atomic Properties

| Element   | Value                               |
|---|-------------------------------------|
| Atomic number                                     | 29                                  |
| Crystal structure                                 | Face centred cubic                  |
| Electronic structure                              | Ar 3d <sup>10</sup> 4s <sup>1</sup> |
| 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 |
| Bulk modulus( GPa )                       | 137.8 |
| Bulk modulus( GPa )                       | 137.8 |
| Tensile modulus( GPa )                    | 129.8 |
| Tensile modulus( GPa )                    | 129.8 |
| Izod toughness( J m <sup>2</sup> )        | 68    |
| Izod toughness( J m <sup>2</sup> )        | 58    |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 87    |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 49    |
| Tensile strength( MPa )                   | 314   |
| Tensile strength( MPa )                   | 224   |
| Yield strength( MPa )                     | 270   |
| Yield strength( MPa )                     | 54    |

## Electrical Properties

| Element   | Value          |
|---|----------------|
| Electrical resistivity( $\mu\text{Ohmcm}$ )       | 1.69@20@20°C   |
| Temperature coefficient( K <sup>-1</sup> )        | 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 <sup>3</sup> ) | 8.96@20°C |

## Thermal Properties

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