# Gold Foil

**Formula:** Au
**Percentage Purity:** 99.9%
**Thickness:** 0.0025mm
**Length 1:** 50mm
**Length 2:** 50mm
**CAS Number:** 7440-57-5
**UOM Code:** 347-102-41
**SKU:** 1000031202
**Product Code:** AU00-FL-000180

## Material Properties for Precious Metals

### Atomic Properties

| Element | Value |
|---|---|
| Atomic number | 79 |
| Crystal structure | Face centred cubic |
| Electronic structure | Xe $4f^{1}$? $5d^{1}$? $6s^{1}$ |
| Valences shown | 1,3 |
| Atomic weight( amu ) | 196.9665 |
| Thermal neutron absorption cross-section( Barns ) | 98.8 |
| Photo-electric work function( eV ) | 4.8 |
| Atomic radius - Goldschmidt( nm ) | 0.144 |
| Ionisation potential( No./eV ) | 1/ 9.22 |
| Ionisation potential( No./eV ) | 2/ 20.5 |

### Mechanical Properties

| Element | Value |
|---|---|
| Material condition | Soft |
| Material condition | Hard |
| Poisson's ratio | 0.42 |
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| Bulk modulus( GPa ) | 171 |
| Bulk modulus( GPa ) | 171 |
| Tensile modulus( GPa ) | 78.5 |

| Element | Value |
| --- | --- |
| Tensile modulus( GPa ) | 78.5 |
| Hardness - Vickers( kgf mm?² ) | 20-30 |
| Hardness - Vickers( kgf mm?² ) | 60 |
| Tensile strength( MPa ) | 130 |
| Tensile strength( MPa ) | 220 |
| Yield strength( MPa ) | 205 |
| Yield strength( MPa ) | - |

## Electrical Properties

| Element | Value |
| --- | --- |
| Electrical resistivity( µOhmcm ) | 2.20@20@20°C |
| Temperature coefficient( K?¹ ) | 0.004@0-100°C |
| Thermal emf against Pt (cold 0C - hot 100C)( mV ) | 0.74 |

## Physical Properties

| Element | Value |
| --- | --- |
| Boiling point( C ) | 3080 |
| Density( gcm?³ ) | 19.3@20°C |

## Thermal Properties

| Element | Value |
| --- | --- |
| Melting point( C ) | 1064.4 |
| Latent heat of evaporation( J g?¹ ) | 1738 |
| Latent heat of fusion( J g?¹ ) | 64.9 |
| Specific heat( J K?¹ kg?¹ ) | 129@25°C |
| Thermal conductivity( W m?¹ K?¹ ) | 318@0-100°C |
| Coefficient of thermal expansion( x10?? K?¹ ) | 14.1@0-100°C |