

# Grade 2 Titanium Foil (Light Tight)

**Grade:** Grade 2

**Standard:** ASTM B265 Chemistry only

**Formula:** Ti

**Percentage Purity:** 98.9%

**Thickness:** 0.015mm

**Length 1:** 25mm

**Length 2:** 25mm

**CAS Number:** 7440-32-6

**UOM Code:** 000-035-19

**SKU:** 1000000013-group

**Product Code:** TI00-FL-000133

## Material Properties for Metals

### Atomic Properties

| Element   | Value                              |
|---|------------------------------------|
| Atomic number                                     | 22                                 |
| Crystal structure                                 | Hexagonal close packed             |
| Electronic structure                              | Ar 3d <sup>2</sup> 4s <sup>2</sup> |
| Valences shown                                    | 2,3,4                              |
| Atomic weight( amu )                              | 47.88                              |
| Thermal neutron absorption cross-section( Barns ) | 6.1                                |
| Photo-electric work function( eV )                | 4.1                                |
| Natural isotope distribution( Mass No./% )        | 50/ 5.3                            |
| Natural isotope distribution( Mass No./% )        | 49/ 5.5                            |
| Natural isotope distribution( Mass No./% )        | 46/ 8.0                            |
| Natural isotope distribution( Mass No./% )        | 48/ 73.7                           |
| Natural isotope distribution( Mass No./% )        | 47/ 7.5                            |
| Atomic radius - Goldschmidt( nm )                 | 0.147                              |
| Ionisation potential( No./eV )                    | 3/ 27.5                            |
| Ionisation potential( No./eV )                    | 4/ 43.3                            |
| Ionisation potential( No./eV )                    | 5/ 99.2                            |
| Ionisation potential( No./eV )                    | 1/ 6.82                            |
| Ionisation potential( No./eV )                    | 2/ 13.6                            |
| Ionisation potential( No./eV )                    | 6/ 119                             |

## Mechanical Properties

| Element                                   | Value           |
|---|-----------------|
| Material condition                        | Polycrystalline |
| Material condition                        | Annealed        |
| Poisson's ratio                           | 0.361           |
| Poisson's ratio                           | 0.361           |
| Poisson's ratio                           | -               |
| Bulk modulus( GPa )                       | 108.4           |
| Bulk modulus( GPa )                       | -               |
| Bulk modulus( GPa )                       | 108.4           |
| Tensile modulus( GPa )                    | -               |
| Tensile modulus( GPa )                    | 120.2           |
| Tensile modulus( GPa )                    | 120.2           |
| Izod toughness( J m <sup>2</sup> )        | 61              |
| Izod toughness( J m <sup>2</sup> )        | 61              |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 60              |
| Hardness - Vickers( kgf mm <sup>2</sup> ) | 60              |
| Tensile strength( MPa )                   | 230-460         |
| Tensile strength( MPa )                   | 230-460         |
| Yield strength( MPa )                     | 140-250         |
| Yield strength( MPa )                     | 140-250         |

## Electrical Properties

| Element                                     | Value          |
|---|----------------|
| Electrical resistivity( $\mu\text{Ohmcm}$ ) | 54@20@20°C     |
| Superconductivity critical temperature( K ) | 0.4            |
| Temperature coefficient( K <sup>-1</sup> )  | 0.0038@0-100°C |

## Physical Properties

| Element                     | Value    |
|-----------------------------|----------|
| Boiling point( C )          | 3287     |
| Density( gcm <sup>3</sup> ) | 4.5@20°C |

## Thermal Properties

| Element   | Value |
|---|-------|
| Melting point( C )                              | 1660  |
| Latent heat of evaporation( J g <sup>-1</sup> ) | 8893  |
| Latent heat of fusion( J g <sup>-1</sup> )      | 365   |

| <b>Element</b>  | <b>Value</b> |
|---|--------------|
| Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )                   | 523@25°C     |
| Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )             | 21.9@0-100°C |
| Coefficient of thermal expansion( x10 <sup>-6</sup> K <sup>-1</sup> ) | 8.9@0-100°C  |