

# Ion Implanted Titanium Disk

**Grade:** Ion Implanted

**Formula:** Ti

**Percentage Purity:** 99.6%

**Thickness:** 0.5mm

**Diameter:** 6.5mm

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

**UOM Code:** 152-124-00

**SKU:** 1000051674-group

**Product Code:** TI00-FL-000123

## 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>-1</sup> )	61
Izod toughness( J m <sup>-1</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