# Titanium, Ti

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Density | 4.50 g/cc | 0.163 lb/in³ | |

| Chemical Properties | Metric | English | Comments |
|---|---|---|---|
| Atomic Mass | 47.867 | 47.867 | 1995 |
| Atomic Number | 22 | 22 | |
| Thermal Neutron Cross Section | 5.6 barns/atom | 5.6 barns/atom | |
| X-ray Absorption Edge | 2.497 Å | 2.497 Å | K |
| | 23.389 Å | 23.389 Å | $L_I$ |
| | 26.831 Å | 26.831 Å | $L_{II}$ |
| | 27.184 Å | 27.184 Å | $L_{III}$ |
| Electrode Potential | 0.20 V | 0.20 V | |
| Electronegativity | 1.54 | 1.54 | Pauling |
| Ionic Radius | 0.680 Å | 0.680 Å | Crystal Ionic Radius for Valence +4 |
| | 0.760 Å | 0.760 Å | Crystal Ionic Radius for Valence +3 |
| | 0.940 Å | 0.940 Å | Crystal Ionic Radius for Valence +2 |
| | 0.960 Å | 0.960 Å | Crystal Ionic Radius for Valence +1 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Hardness, Brinell | 70 | 70 | electrolytic Ti |
| Hardness, Vickers | 60 | 60 | |
| Tensile Strength, Ultimate | 220 MPa | 31900 psi | |
| Tensile Strength, Yield | 140 MPa | 20300 psi | |
| Elongation at Break | 54 % | 54 % | |
| Modulus of Elasticity | 116 GPa | 16800 ksi | |
| Poissons Ratio | 0.34 | 0.34 | |
| Shear Modulus | 43.0 GPa | 6240 ksi | calculated |

| Electrical Properties | Metric | English | Comments |
|---|---|---|---|
| Electrical Resistivity | 0.0000554 ohm-cm | 0.0000554 ohm-cm | |
| Magnetic Susceptibility | 0.00000125 | 0.00000125 | cgs/g |
| Critical Magnetic Field Strength, Oersted | 56 | 56 | |
| Critical Superconducting Temperature | 0.360 - 0.440 K | 0.360 - 0.440 K | |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| Heat of Fusion | 435.4 J/g | 187.3 BTU/lb | |
| | 8.90 µm/m-°C | 4.94 µin/in-°F | |
| CTE, linear | @Temperature 20.0 - 100 °C | @Temperature 68.0 - 212 °F | |
| | 10.1 µm/m-°C | 5.61 µin/in-°F | |
| | @Temperature 1000 °C | @Temperature 1830 °F | |
| Specific Heat Capacity | 0.528 J/g-°C | 0.126 BTU/lb-°F | |
| Thermal Conductivity | 17.0 W/m-K | 118 BTU-in/hr-ft²-°F | |
| Melting Point | 1650 - 1670 °C | 3000 - 3040 °F | |
| Boiling Point | 3287 °C | 5949 °F | |

| Optical Properties | Metric | English | Comments |
|---|---|---|---|
| Emissivity (0-1) | 0.63 | 0.63 | unoxidized; 650 nm |

| Component Elements Properties | Metric | English | Comments |
|---|---|---|---|
| Titanium, Ti | 100 % | 100 % | |

| Descriptive Properties | |
|---|---|
| CAS Number | 7440-32-6 |