

Grade 1 Titanium is commercially pure (CP) and has the highest purity of commercially available titanium. It has the highest strength to density ratio of any metallic element and has the lowest strength of the CP grades. Grade 1 Titanium is biocompatible and exhibits excellent corrosion resistance in highly oxidizing to mildly reducing environments, including chlorides. It is easily welded and cold worked.

Dimensional

| Thickness | Maximum Width |
|-------------------------------------|--|
| 0.025" - 0.003" (.635 - .08mm) | 17.5" (444.5mm) as rolled edge 17.0" (431.8mm) with a slit edge |
| 0.0029" - 0.001" (.079 - .0254mm) | 16.5" (419.1mm) as rolled edge 16.0" (406.4mm) with a slit edge |
| 0.0009" - 0.0004" (.025 - .01mm) | 15.5" (393.7mm) as rolled edge 15.5" (393.7mm) with a slit edge |
| 0.00039" - 0.00008" (.099 - .002mm) | 4.25" (107.95mm) as rolled edge 4.0" (101.6mm) with a slit edge |

Typical Mechanical Properties (Annealed)

| UTS ksi (MPa) | YS ksi (MPa) | Elongation % |
|---------------|--------------|------------------|
| 50 (345) | 35 (220) | Information only |

Chemical Composition (wt %)

| Element | Minimum | Maximum | Element | Minimum | Maximum |
|---------|---------|---------|------------------|---------|---------|
| N | - | .03 | O | - | .18 |
| C | - | .08 | Residual - each | - | .1 |
| H | - | .015 | Residual - total | - | .4 |
| Fe | - | .20 | Titanium | Balance | |

Physical Properties

| | |
|--------------------------|---|
| Density* | 0.163 lb/in ³ (4.48 g/cm ³) |
| Beta Transus | 1640°F (890°C) |
| Melting (liquidus) Point | 3034°F (1668°C) |
| Thermal Conductivity* | 12.70 Btu hr ⁻¹ ft ⁻¹ °F ⁻¹ (21.97 W m ⁻¹ K ⁻¹) |
| Electrical Resistivity* | 18 μΩ•in (0.45 μΩ•m) |
| Magnetic Permeability | Nonmagnetic |
| Young's Modulus | 1.68 x 10 ⁷ lb/in ² (116 GPa) |
| Shear Modulus | 6.38 x 10 ⁶ lb/in ² (44 GPa) |
| Poisson's Ratio | 0.32 |

* Typical values at room temperature of about 20 to 25°C (68 to 78°F)

TYPICAL APPLICATIONS

- Lightweight honeycomb structures for the aerospace industry
- Industrial applications such as E-Beam equipment used for food sterilization and vulcanizing rubber
- Medical implants and devices
- Speaker domes

DELIVERY

Availability

Global.

Size

Available in thicknesses and widths per table.

Temper

Available in the annealed or as rolled condition.

Surface

Clean uniform surface, 1Ra - 16Ra without discoloration or surface defects. Available with a slit edge (typical burr <10% of strip thickness) or with an as-rolled edge.

Packing

Properly packaged to avoid damage in transit. International packaging available upon request.

Conformance

ASTM B265, ASTM F67 (latest revision), DFARS Compliant.

Certifications

ISO9001, AS9001, Nadcap.

