

# TECHNICAL DATA

## Tantalum

The king of corrosion, Tantalum fasteners exceed the resistance of zirconium and nickel alloys in the harshest environments. Tantalum is immune to numerous acids and chemicals, offering the resistance of glass, but with the mechanical properties of metal. Tantalum screws also offer high purity, radiopaque and biocompatibility attributes. Though they provide extreme high temperature stability in vacuum environments, tantalum bolts can become brittle in oxygen above 250°C.

### Properties

Ultimate Tensile Strength	50 ksi Alloyed 40 ksi Commercially Pure
Yield Strength at 0.2%	35 ksi Alloyed 25 ksi Commercially Pure
Elongation %	25 Alloyed 50 Commercially Pure
Usable Temperature Limit	572°F / 300°C Air 3600°F / 2000°C Vacuum

### Key Benefits

- The most extreme corrosion resistance – far exceeding nickel alloys, zirconium and titanium.
- Inert to most acids and harsh chemicals
- Biocompatible and radiopaque
- Extreme high temperature stability in vacuum environments

### Chemistry & Specifications

Tantalum 2.5%W	Ta	W	Nb	Mo	O	Ti	Ni	Fe	N	C	Si	H
Typical %	Bal	2.5	0.50	0.020	0.015	0.010	0.010	0.010	0.010	0.010	0.005	0.002

Tantalum (CP)	Ta	Nb	W	Mo	O	Ti	Ni	Fe	N	C	Si	H
Max %	>99.95	0.100	0.050	0.020	0.015	0.010	0.010	0.010	0.010	0.010	0.010	0.010

SPECIFICATIONS: UNS R05252 (Alloyed Tantalum with 2.5% Tungsten: Ta-2.5W); UNS R05200 (Commercially Pure)

### Material Data

