ideal-tek s.a.
switzerland

Technical Datasheet: Nonferrous alloy type TA

General Notes

- **Titanium Grade 1** (unalloyed titanium)
- engineering materials with extraordinary combination of properties: relatively low density (4.5 g/cm^3), good mechanical properties and a very high melting point that allows the use at high temperatures (1600 °F, 870°C)
- good corrosion resistance at room temperature to air, marine and a variety of industrial environments
- good cold formability, high ductility
- fully non-magnetic
- generally it is used when in addition to the corrosion resistance, high strength-to-weight ratio is required
- bio-compatible (maintain cell integrity, no inflammatory response),
- typical applications include handling of components in cleaning/chemical processes also at high temperature, histology, biology, medicine, surgery.

Composition

Component	Wt.%	Component	Wt.%	Component	Wt.%
Ti	99.5	C	≤0.1	Fe	≤0.2
O	≤0.18	N	≤0.03	H	≤0.015

Mechanical properties:

State	annealed	
Density	4.51 g/cm^3	
Hardness, Vickers	122 HV	
Tensile strength, ultimate:	330 MPa	
Tensile strength, yield	240 MPa	
Elongation, break	30%	
Modulus of elasticity	100 GPa	

Thermal properties

Coef. of lin. therm expansion:	9.2 E-6/°C	0°C-315°C
Specific heat capacity	0.52 J/(g·K)	
Continuos use temperature:	350°C	
Thermal conductivity:	16 W/(m·K)	

Electrical properties

Resistivity	0.45E-4 Ohm.cm