

**TECHNICAL DATA SHEET**

# 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<sup>3</sup>), 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 (100%)
- » 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.%
<b>Ti</b>	99.5	<b>C</b>	≤0.1	<b>Fe</b>	≤0.2
<b>O</b>	≤0.18	<b>N</b>	≤0.03	<b>H</b>	≤0.015

## Mechanical properties

State	<b>annealed</b>
Density	<b>4.51 g/cm<sup>3</sup></b>
Hardness, Vickers	<b>190 HV</b>
Tensile strength, ultimate	<b>330 MPa</b>
Tensile strength, yield	<b>240 MPa</b>
Elongation, break	<b>30%</b>
Modulus of elasticity	<b>100 GPa</b>

## Thermal properties

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

## Electrical properties

Resistivity	<b>0.45 E-4 Ohm.cm</b>
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This document contains information based on average values as obtained from the results of laboratory tests and observations made on the material. Ideal-tek SA declines all responsibility from an improper use of the product described in this document.