

Technical datasheet

Ti Grade 7 / W.Nr. 3.7235

Titanium Grade 7 is essentially commercially pure titanium (Grade 2) with the addition of a small amount of palladium (0.12–0.25%), which imparts exceptional corrosion resistance particularly in harsh chemical environments.

Available products

Product form	Size range from	Size range from
Sheet/plate	1.57 mm thickness	38.1 mm thickness
Bar	6.35 mm diameter	203.2 mm diameter
Welded and seamless tubes	OD 6.35 mm	OD 323.8 mm

Chemical composition (%)

Ti	C	O	N	Fe	Pd	H
Balance	0.08 max	0.25 max	0.03 max	0.30 max	0.12 - 0.25 max	0.015 max

Major specifications

ASTM B265 / ASTM B348	UNS R52400
ASTM B338 / 861 / 862	

Physical properties

Density	4.51 g/cm ³	Beta transus temperature	920 ± 4 °C
Melting point	1670°C		

Mechanical properties – minimum room temperature properties per ASTM F136

Yield strength	270-450 MPa
Tensile strength	345 MPa min
Elongation	20 %

Key attributes

Grade 7 is a commercially pure alpha-phase titanium alloy - essentially commercially pure titanium (Grade 2) with the addition of palladium (0.12–0.25%). As a result, it has superior resistance to crevice corrosion and pitting, especially in reducing and oxidizing conditions, excellent performance in environments with high chloride concentrations including seawater and brine, and resistance to acids such as sulphuric and nitric acid.

Mechanical properties, machining and welding characteristics are comparable to Grade 2.

Its combination of superior corrosion resistance, good mechanical properties and weldability make Grade 7 the ideal choice in environments requiring exceptional corrosion resistance and performance.

Applications

Heat exchangers
Reactors
Marine piping, components and seawater heat exchangers
Nuclear power plant equipment