

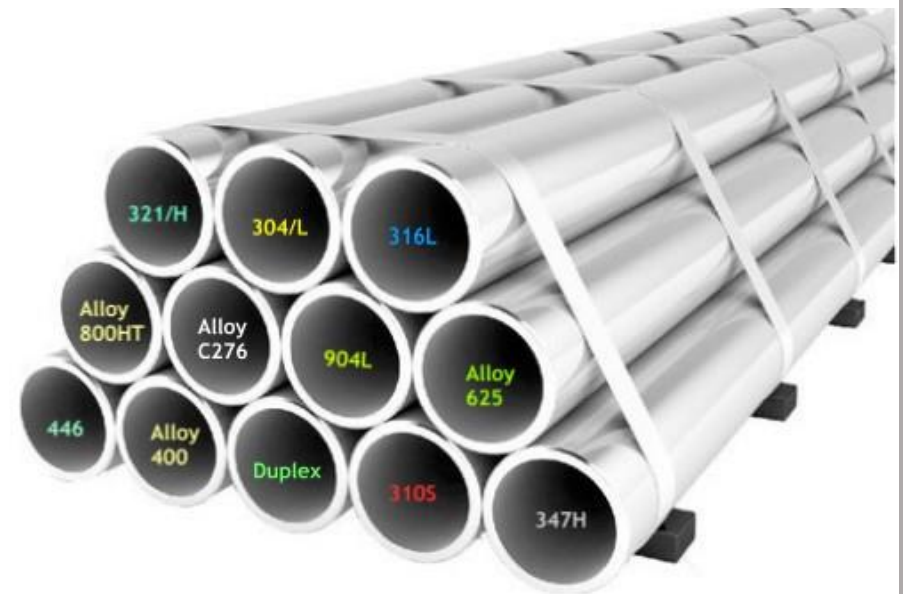
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# TITANIUM

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## Datasheet for Titanium

- Pipes & Tubes
- Sheets & Plates
- Bars & Rods, Forgings
- Fittings & Flanges
- Nuts & Bolts
- Valves



WWW.STEELPIPESFACTORY.COM – METALLICA METALS

We are a metal supplier of Hastelloy, Monel, Inconel, Incoloy, Stainless Steel, Duplex, Super Duplex, Nickel Alloys and more.

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# Datasheet for Titanium

## **R50250 (Grade 1), R50400 (Grade 2), R50700 (Grade 4), R56400 (Grade 5), R52400 (Grade 7), R56320 (Grade 9), R52250 (Grade 11), R53400 (Grade 12), R53400 (Grade 16), R53400 (Grade 23)**

### What is Titanium?

- Titanium products are lightweight, strong, corrosion resistant and abundant in nature. Titanium Seamless Pipe and its alloys possess tensile strengths from 30,000 psi to 200,000 psi (210-1380 MPa), which are equivalent to those strengths found in most of alloy steels. We supply Titanium Pipes to leading Oil & Gas industry fabricators to build heat exchangers, air-coolers and other process equipment's.
- Titanium is well known for its excellent properties like high corrosion-resistance, strength, lightness. Titanium is relatively a new metal which was discovered back in 1970, we at Metallica, have created different products with titanium like titanium cup, condenser titanium tubes, titanium bars, titanium plate, etc. It was started to be produced in industries in 1948 after a very long time of maturation since its discovery. Titanium is immensely friendly to the environment and has naturally abundant reserves. Through research and continuous development, this material is found to have nearly indefinite possibilities.
- Our Titanium Grade 2 Pipes and Tubes and Titanium Grade 5 Pipes and Tubes are one of the most dependable products in the titanium supply industry. Our name as titanium expert continues to grow because of the pipes and tubes. Many titanium suppliers like us are finding more ways for the usage of titanium products that are perfect fit for heat exchangers, heat pump, condensers as well as all kinds of sport products such as titanium bicycle, golf clubs, and tennis racquets, wheelchairs and another special fields that need high strength and light weight applications.

### Titanium Product Specification

Specifications	ASTM B 167 ASME SB 167 / ASTM B 829 ASME SB 829 / ASTM B 517 ASME SB 517
Titanium Seamless Pipe size	4 to 219mm W. T.: 0.5 to 20mm
Titanium Welded Pipe size	5.0 mm – 1219.2 mm
Titanium EFW Pipe size	5.0 mm – 1219.2 mm

Specialized in	Large Diameter Size
Titanium Pipe Schedule	SCH5, SCH10, SCH40, STD, SCH80, SCH160
Titanium Pipe Finish	Polished, AP (Annealed & Pickled), BA (Bright & Annealed), MF
Titanium Pipe Form	Round, Square, Hollow, Rectangular, Hydraulic, Straight Pipes Etc.
Titanium Pipe Length	Single Random, Double Random & Cut Length.
End	Plain End, Bevelled End, Threaded.
Marking	All Titanium Pipes are marked as follows: Standard, Grade, OD, Thickness, Length, Heat No. (Or according to the customer's request.)
Material Test Certificates (MTC)	Material Test Certificates (MTC) as per EN 10204 3.1 and EN 10204 3.2

- **Trademark Notice:** Some names are trade names and/or trademarks of specific manufacturers. We are not affiliated with any manufacturer(s). Orders will be filled to meet specifications from any available source(s). Names are listed solely for reference to help identify products consistent with listed specifications.
- We can also cut, thread, and groove Titanium Pipes to meet your specifications.
- We can provide round bar, square bar, hexagonal bar, eight square bar, flat bar etc.

### ASTM Product Specification of Titanium

Titanium Bar/Rod	ASTM B348/SB348, AMS 4928, ASTM F67, ASTM F136
Titanium Sheet/Plate/Foil/Strip	ASTM B265/SB265, AMS 4911, ASTM F67, ASTM F136
Titanium Pipe/Tube	ASTM B338, ASME SB338, ASTM B861, ASME SB861
Titanium Wire	ASTM B863, ASTM B348, ASME SB348, AWS A5.16, AMS 4951
Titanium Forgings	ASTM B381, ASME SB381
Titanium Fasteners	DIN912, DIN913, DIN916, DIN933, DIN934, DIN963, DIN7991, DIN6921, ISO7380, ISO7984, etc.

Titanium Fittings	ASTM B363, ASME/ANSI B16.9, MSS SP-43, HG/T 3651
Titanium Flange	ASME/ANSI B16.5
Titanium Anodes /Electrodes	OEM SERVICE
Titanium Oxide (as agent)	RUTILE TYPE AND ANATASE

### Equivalents of Titanium

Grades	UNS No.		Grades	UNS No.	
Grade 1	UNS R50250	CP-Ti	Grade 9	UNS R56320	Ti-3Al-2.5V
Grade 2	UNS R50400	CP-Ti	Grade 11	UNS R52250	Ti-0.15Pd
Grade 4	UNS R50700	CP-Ti	Grade 12	UNS R53400	Ti-0.3Mo-0.8Ni
Grade 5	UNS R56400	Ti 6Al-4V	Grade 16	UNS R52402	Ti-0.05Pd
Grade 7	UNS R52400	Ti-0.20Pd	Grade 23	UNS R56407	Ti-6Al-4V ELI

### Chemical Properties of Titanium

Grade	C	O	N	H	Fe	Al	V	Pd	Ni	Mo	Other Elements	Other Elements
	(≤)	(≤)	(≤)	(≤)	(≤)						Max. each	Max. total
Gr1	0.08	0.18	0.03	0.015	0.2	—	—	—	—	—	0.1	0.4
Gr2	0.08	0.25	0.03	0.015	0.3	—	—	—	—	—	0.1	0.4

Gr4	0.08	0.25	0.03	0.015	0.3	—	—	—	—	—	0.1	0.4
Gr5	0.08	0.2	0.05	0.015	0.4	5.5~6.75	3.5~4.5	—	—	—	0.1	0.4
Gr7	0.08	0.25	0.03	0.015	0.3	—	—	0.12~0.25	0.12~0.25	—	0.1	0.4
Gr9	0.08	0.15	0.03	0.015	0.25	2.5~3.5	2.0~3.0	—	—	—	0.1	0.4
Gr11	0.08	0.18	0.03	0.15	0.2	—	—	0.12~0.25	—	—	0.1	0.4
Gr12	0.08	0.25	0.03	0.15	0.3	—	—	—	0.6~0.9	0.2~0.4	0.1	0.4
Gr16	0.08	0.25	0.03	0.15	0.3	—	—	0.04~0.08	—	—	0.1	0.4
Gr23	0.08	0.13	0.03	0.125	0.25	5.5~6.5	3.5~4.5	—	—	—	0.1	0.1

### Mechanical Properties of Titanium

Grade	Tensile strength		Yield strength		Elongation in 4D	Reduction of Area
	Min		Min (0.2%, offset)		Min (%)	Min (%)
	ksi	MPa	ksi	MPa		
Gr1	35	240	20	138	24	30
Gr2	50	345	40	275	20	30
Gr4	80	550	70	483	15	25
Gr5	130	895	120	828	10	25
Gr7	50	345	40	275	20	30

Gr9	90	620	70	483	15	25
Gr11	35	240	20	138	24	30
Gr12	70	483	50	345	18	25
Gr16	50	345	40	275	20	30
Gr23	120	828	110	759	10	15

### Properties of Titanium

- Titanium is best material for medical equipment's.
- High tensile strength and excellent corrosion resistance and formability.
- Greater working range than aluminum.
- Offers excellent corrosion resistance, superior formability and strength between grades 1 and 3.
- Biocompatibility of these Titanium Pipes is excellent, especially when direct contact with tissue or bone is required.
- Used in high tensile strength applications even at high temperatures.
- Ability to withstand extreme temperatures.

### Applications of Titanium

- Heat Pump
- Chemical Fields: such as: titanium gasket.
- Oceanering/Marine Industry
- Power Plant
- Bicycles
- Exhaust Pipe
- Aerospace Structures
- Medical Industry
- Oil and Gas
- Structure Processing Fields: some machining parts.
- Equipment Fields, such as: Heater exchanger, Anode

## Types of Titanium Products

Titanium Hollow Pipe	Titanium Thin Wall Pipe
Titanium Seamless Pipe	Titanium Heat Exchanger Tube
Titanium Bush Hex Pipe	ASTM B338 Titanium Seamless Pipe
Titanium Round Pipe	Titanium Welded Pipe
Ti Grade Titanium Alloy Round Pipe	ASTM B338 Titanium Round Pipe
Titanium Aero engine tube	ASTM B338 Titanium Custom Pipe
Ti Grade Titanium Alloy Custom Pipe	ASTM B338 Titanium Thick Wall Pipe
Titanium Elliptical and Oval Tube	ASTM B338 Titanium Thin Wall Pipe
Titanium Pipe Fittings	Titanium Forging
SCH40 Titanium pipe	Titanium Fasteners
Titanium flex pipe	Titanium Plates, Sheets and Bars
Ti Grade Titanium Alloy Polished Pipe	UNS Titanium lined pipe
Titanium Exhaust Pipe	Titanium Micro Tube
Titanium Bar/Billet	Titanium Wire/Welding Wire
Titanium Boiler Tube	Titanium Coil Tubing
Titanium Capillary Tube	Titanium U Shaped Tube
Titanium Gas Tube Ar 15 supplier	Precision Titanium Tubing

## Manufacturing Titanium Products

<a href="#">Titanium Sheet</a>	<a href="#">Titanium Plate Cuttings/Profiles</a>	<a href="#">Titanium Nuts, Bolts and Fasteners</a>
<a href="#">Titanium Plate</a>	<a href="#">Titanium Foil, Coil</a>	<a href="#">Titanium Wire</a>
<a href="#">Titanium Blocks/Slabs</a>	<a href="#">Titanium Strip</a>	<a href="#">Titanium Ingot</a>
<a href="#">Titanium Rod/Bar</a>	<a href="#">Titanium Pipes and Tubes</a>	<a href="#">Titanium Forgings and Castings</a>
<a href="#">Titanium Flanges</a>	<a href="#">Titanium Forged Fittings</a>	<a href="#">Titanium Buttweld Fittings</a>

## About Metallica Metals – The Steel Pipes Factory

- Established in 1975, the Metallica Metals Group (The Steel Pipes Factory) has its operations spread across major cities in India. We are a pioneer in the stainless steel pipes, nickel alloy products, titanium products, carbon steel pipes and alloy steel pipes manufacturing and processing industry. Our products including pipe fittings, flanges, pipes, sheet plates and valves are exported to over 70 countries across the world, while in India we have supplied to even the remote areas. With over 250 tons of sale in stainless steel and carbon steel pipes every day, Metallica has emerged as a prominent vendor for many buyers in India and Overseas
- More than 3000 tons ready from stock and new production ready in just a few weeks.
- Feel free to contact us on - Email: [info@metallicametals.com](mailto:info@metallicametals.com) | Tel: +91 8928722715 | +91-22-66581538, +91-22-67436694, +91-22-66109768

## Our Key Products

### **STAINLESS STEEL & NICKEL ALLOYS**

[Pure Nickel Alloys](#)  
[Monel Alloys \(Ni-Cu Alloys\)](#)  
[Inconel \(Ni-Cr-Mo\) Alloys](#)  
[Incoloy Alloys \(Ni-Cr-Fe\)](#)  
[Hastelloy Alloys](#)  
[Stainless Steel 304/304L](#)  
[Stainless Steel 309S/309H](#)  
[Stainless Steel 310/310S](#)

### **INSTRUMENTATION TUBES & FITTINGS**

[Instrumentation Tube](#)  
[Hydraulic Tubing](#)  
[Seamless Tubing](#)  
[Instrumentation Tube Fittings](#)  
[Double Compression Tube Fittings](#)  
[Precision Pipe Fittings](#)  
[Needle & Gauge Valves](#)  
[Manifold Valves](#)

### **PRODUCTS**

[Steel Sheet & Plate](#)  
[Steel Coil & Strip](#)  
[Steel Pipes](#)  
[Steel Tubes](#)  
[Electropolish Tube](#)  
[Heat Exchanger Tubes](#)  
[Steel Bars/Rods & Wire](#)  
[Fasteners \(Nut, Bolt, Washer\)](#)



Stainless Steel 316/316L

Stainless Steel 316Ti

Stainless Steel 317/317L

Stainless Steel 321/321H

Stainless Steel 347/347H

Stainless Steel 904L

Duplex Steels (UNS S32205, UNS S31803)

Super Duplex Steels (UNS S32760 / UNS  
S32750)

Stainless Steel 254 SMO (UNS S31254 / 1.4547)

Steel Angle Bars

Hex Steel Bars

Round Steel Bars & Rod

Flat Steel Bars

Forgings, Rings & Forged Blocks

Stainless Steel Pipe

Stainless Steel Seamless Pipe

Stainless Steel Welded Pipe

Stainless Steel Tubes

Stainless Steel Furnace Tubes

Stainless Steel Seamless Tubing

Stainless Steel Heat Exchanger Tubes

Large Diameter Pipe

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