



- **TITANIUM BARS**

- **TITANIUM SHEETS**

- **TITANIUM PIPES**



- **NICKEL**



PAKSHAL STEEL & ENGG. CO.

(THE TITANIUM PEOPLE)


- **NIOBIUM**

- **ZIRCONIUM**

- **TANTALUM**

- **TITANIUM**

- **HASTELLOY**



- **TUNGSTEN**

AN ISO 9001:2015 Certified Company

www.pakshalsteel.com



PAKSHAL STEEL & ENGG. CO.

About us

Pakshal Steel is an eminent exporter and supplier of Titanium products like titanium bars, titanium sheets & plates in the steel market industry worldwide. Our technicians make steps towards recuperating the assertion of offering standard quality materials. We dedicate ourselves to provide round bars, titanium sheets and titanium plates of in orders for Titanium Grade 1,2,3,4,5,7,9,11,12,23, ISO 5832-3 Medical Grade.

Every member of our **Pakshal Steel** is very much dedicated to serve our clients at the appointed time in a very chivalrously and efficient manner. We time and again deliver made to orders in a speed mode along with your precise specifications.

We are breaking the new ground in bringing to the market a striking metal variety in the course of the online retails stand. We are entirely devoted to lessening the procedure of purchasing striking titanium products. It is our attempt to make our online shop a high-quality supplier for small amount of these products to meet market requirements, where you do not longer have to pay money for full length bar or sheets or least amount order quantities as demanded by full service stockists or other retailers. In addition, as we have grown, our sophistication in packaging and shipping the products has also grown well.

Pakshal Steel offer a whole procession of commercially pure and 6AL-4V titanium bars, sheets and plates, which includes round, square and rectangular bars that further varies from 1/4" in diameter up to 16" diameter. These bars, Sheets and Plates are available to different business-related industries, and we can also deliver DOMESTIC/DFAR material by means of full mill test reports for an absolute traceability. We also make it quite easy to locate and purchase the titanium products that our clients need for their respective projects. Meanwhile, we as well have no minimum order requirements, so no matter if you need a major shipment or a single round bar, we can offer you the materials as per your requirements. **Pakshal Steel** delivers what assures: expertly, promptly and to your specification and to your correct specification requirements. We thank you and welcome you for the prospect to show ourselves to you!





AISI	Analysis				Analysis				Composition		
	Fe ≤ %	O %	N %	H %	C %	Pd %	Al %	V %	Single Residual %	Total Residual %	Ti ≤ %
Titanium Gr. 1	0.15	0.12	0.03	0.013	0.06	-	-	-	0.10	0.40	Rest
Titanium Gr. 2	0.20	0.18	0.03	0.013	0.06	-	-	-	0.10	0.40	Rest
Titanium Gr. 5	0.30	0.20	0.05	0.012	0.08	-	5.50-6.75	3.50-4.50	0.10	0.40	Rest
Titanium Gr. 7	0.15	0.12	0.03	0.013	0.06	0.15-0.25	-	-	0.10	0.40	Rest
Titanium Gr. 9	0.25	0.12	0.02	0.0	0.05	-	2.5-3.5	2.5-3.5	-	-	Bal
Titanium Gr. 12	0.30	0.25	0.03	0.015	-	-	0.2	-	14.9	-	Rest
Titanium Gr. 23	0.25	0.13	0.05	0.012	0.08	-	5.50-6.75	3.50-4.50	0.10	0.40	Rest

TITANIUM

Titanium Grade 1

Grade 1 has very good weld ability. Being substantially single-phase material, the microstructure of the alpha phase is not affected greatly by thermal treatments or welding temperatures. Therefore, the mechanical properties of a correctly welded joint are equal to, or exceed those of the parent metal and show good ductility.

Titanium Grade 2

Grade 2 has very good weld ability. Being substantially single phase material, the microstructure of the alpha phase is not affected greatly by thermal treatments or welding temperatures. Therefore, the mechanical properties of a correctly welded joint are equal to, exceed those of the parent metal and show good ductility.

Compressor blades, discs and rings for engines, aircraft components, pressure vessels, rocket engine cases, offshore pressure vessels.

Titanium Grade 5

Since the two-phase microstructure of alpha-beta titanium alloys responds to thermal treatment, the temperatures encountered during the welding cycle can effect the material being welded.



Titanium Grade 7

Grade 2 has very good weld ability. Being substantially single phase material, the microstructure of the alpha phase is not affected greatly by thermal treatments or welding temperatures. Therefore, the mechanical properties of a correctly welded joint are equal to, or exceed those of the parents metal and show good ductility

Titanium Grade 23 ELI (ISO 5832-3) Medical Grade

Material Notes : Information provided by Allvac and the references. Annealing Temperature 700-7850C. ELI (Extra low Interstitial) grade has lower impurity limits, especially oxygen and iron. Alpha-beta alloy Excellent, especially when direct contact with or bone is required. ti-6Al-4V's poor shear strength makes it undesirable for bone screws or plates. It also has poor surface wear properties and tends to seize when in sliding contact with itself and other metals. Surface treatments such as nitriding and oxidizing can improve the surface wear properties.

Tantalum

Unalloyed tantalum has a density of approximately 16.6 gm per cm³ and a tensile strength in the range 37 to 71 kg/mm². Tantalum is inert to practically all organic and inorganic compounds at temperatures under 150°C. The only exception to this are hydrofluoric acid, fuming sulphuric acid, strong alkalies and oxalic acid. That is, at temperatures under 150°C, Tantalum is inert to 25% concentrations of hydrochloric acid, to all concentration of nitric acid (including fuming) to 98% sulphuric acid, to 85% phosphoric acid and to aqua regia, However, in chromium plating baths, tantalum is not affected by the presence of fluoride ion.

Zirconium

Unalloyed zirconium has a density of approximately 16.49 gm per cm³ and a tensile strength in the range 56 to 63 kg/mm². Zirconium exhibits excellent corrosion resistance to most organic and mineral acids, and resists attack by alkaline solutions and fused alkalies. Zirconium is particularly useful for handling Sulphuric and hydrochloric acids, provided that in the latter case no ferric ion is present. Zirconium is also useful in immersion tin plating equipment.

Niobium

The density of Niobium is 8.4 gm per cm³. Platinum - Niobium anode for cathodic protection : The breakdown voltage of Niobium (Columbium) is over 100 volts in sea water. This means that the anode may be operated safely at high voltage when such operation is desirable.



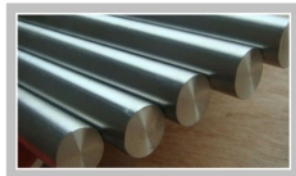
Titanium Round Bars

We have large stocks of Round Bars in Grade 1,2,3,4,5,7,9,11,12,23 and AMS 4928, 4930,4965, 4967 for Aerospace.

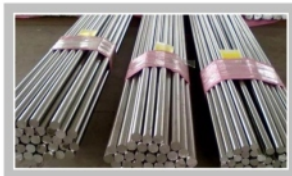
Medical Grade as per ISO 5832-3, Materials in ready stocks.

Pakshal Steel is renowned Titanium Round Bar Stockist and supplier of Titanium Bars exporter in the steel market industry worldwide. Our technicians make steps towards recuperating the assertion of offering standard quality materials. Titanium Bright bars recognized relatively across the world as a low-weight and high material, which has more or less 60 percent of steel in it.

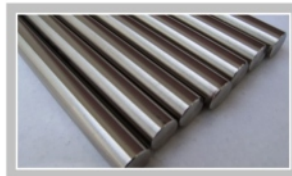
However, it has other exceptionally attractive properties also such as most remarkably high corrosion resistance, and first-rate electrical conductivity. In addition, in its purest forms, such as like in Titanium wire Supplier, it is extremely flexible and trouble-free to work.



Titanium Alloy Round Bars



Titanium Grade 2 Round Bars



Titanium Gr 23 ELI (ISO 5832-3)

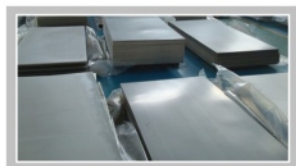
Titanium Sheets & Plates

We have large stocks of Round Bars in Grade 1,2,3,4,5,7,9,11,12,23 and AMS- 4911, 4907,4905, for Aerospace.

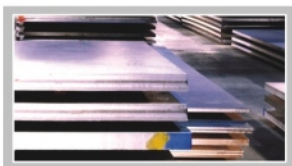
Medical Grade as per ISO 5832-3, Materials in ready stocks.

Pakshal Steel is a leader of Stockist & Suppliers in Titanium Sheets and Plates, having accessibility in a huge range of titanium and titanium alloy sheets and plates. Titanium Sheets & Plates is a heat treatable and has soaring ductility and strength alongside with first-rate fabricability and weldability. It's a grouping of exceptional good strength and corrosion resistance, showing the maximum strength of all of the unalloyed grades. They are used in a range of chemical procedure paraphernalia in addition to in aeronautical and marine applications.

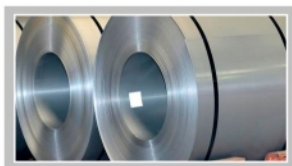
Titanium Plates is an unalloyed, standard strength titanium product. This titanium grade is used in aircraft engines, marine and airframes parts, where it's distinguishing characteristics are corrosion resistance and good weldability.



Titanium Sheets



Titanium Plates



Titanium Coils

Titanium Pipes & Tubes

We have large stocks of Titanium Pipes & Tubes, Grade 2, 6Al-4V ELI ISO 5832-3 Medical Grade

Hollow Pipes. Titanium Pipes & Tubes Supplier & Exporter.

Standard : ASTM B861, B338, B388, B862 / ASME SB861, SB861, SB338, SB388, SB862

Type : Seamless / ERW / Welded / Fabricated / LSAW Pipes

Pipe Range : 1/2" NB to 24"NB in Sch. 10s, 40s, 80s

Form : Round, Square, Rectangular, Hydraulic Etc.

End : Plain End, Bevelled End, Treaded

Tubes Range : 1mm OD upto 254mm OD in Thickness 0.1 to 20mm.

Length : as per Client Requirements





Hastelloy C - 22

(UNS N06022 : W. Nr. 2,4602; NIC21Mo14W) is a fully austenitic advanced temperatures. This alloy provides exceptional resistance to general corrosion, pitting, crevice corrosion, chemical / petrochemical processing, pollution control (flue gas desulfurization), power, marine, pulp and paper processing, and waste disposal industries Used in pollution control, chemical processing pulp and paper production and waste treatment Standard product forms are round, forging stock, tube, pipe, plate, sheet strip and wire.

Limiting Chemical Composition, %

Ni	Reminder	Mn	0.05 max	W	2.5 - 3.5	P	0.02 max
Fe.....	2.0 - 3.5	Si	0.08 max	C	0.015 max	Mo	12.5 - 14.5
V	0.35 max	Cr	20.0-22.5	S	0.02 max	Co	2.5 max

ASME SB-574, SB-575, SB-619, SB-622, SB-626, Section VII Div. I, Werkstoff Nr. 2.4602

Specification and Designations

UNS N06022, ASTM B-574, B-575, B-619, B-622, B-626, DIN 17744, 17750

Hastelloy C - 276

A nickel-molybdenum-chromium alloy with an addition of tungsten Having excellent corrosion resistance in a wide range of severe environments. The high molybdenum content makes the alloy especially resistant to pitting and crevice corrosion. The low carbon content minimizes carbide precipitation during welding to maintain corrosion resistance in as welded structures. Used in pollution control, chemical processing pulp and paper production and waste treatment Standard product forms are round, forging stock, tube, pipe, plate, sheet, strip and wire.

Limiting Chemical Composition, %

Ni	Reminder	W	3.0 - 4.5	V	0.35 max
Mo.....	15.0 - 17.0	Co	2.5 max	P	0.04 max
Cr	14.5 -16.5	Mn	1.0 max	S	0.03 max
Fe	4.0 - 7.0	C	0.01 max	Si	0.08 max

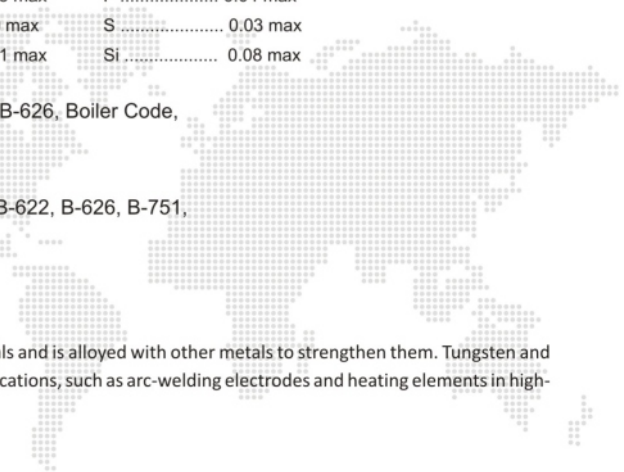
ASME SB-574, SB-575, SB-619, SB-622, SB-626, Boiler Code, Section I, III, IV, IX, Werkstoff Nr. 2.4819

Specification and Designations

UNS N10276, ASTM B-574, B-575, B-619, B-622, B-626, B-751, NACE MR-01-75, Din 17744, 17750-17752

Tungsten

Tungsten has the highest melting point of all metals and is alloyed with other metals to strengthen them. Tungsten and its alloys are used in many high-temperature applications, such as arc-welding electrodes and heating elements in high-temperature furnaces.





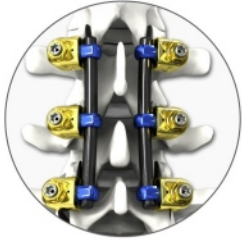
PAKSHAL STEEL & ENGG. CO.

INDUSTRIES WE SERVE



- Aerospace
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- Engineering
- Nuclear Power
- Ship Building
- Petrochemical
- Medical Industries
- Surgical Implant





PAKSHAL STEEL & ENGG. CO.

An ISO 9001:2015 Certified Company

Importers, Stockists & Suppliers of Titanium & Nickel Base Alloys

Specialist in Medical Grade Titanium, Round Bars & Sheets 6AL4V ELI
as per ISO 5832-3 & Grade 5

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