

# Goodfellow

Serving The Needs of Science and Industry Worldwide

Au service de la Science et de l'Industrie dans le monde entier

Weltweiter Lieferant für Wissenschaft und Industrie

Metals and Alloys  
Métaux et Alliages  
Metalle und Legierungen

Ceramics  
Céramiques  
Keramiken

Polymers  
Polymères  
Polymere

Composites  
Composites  
Verbundwerkstoffe



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# Standard Price List for Titanium

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## Introduction

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Goodfellow is well known as a specialist supplier of small to medium size quantities of metals, alloys, ceramics, polymers and other materials to meet the research, development and specialist production requirements of science and industry worldwide. We realise that "small" means different things to different people, but we consider small to mean any quantity from a few grammes to a few kilos.

Goodfellow offers two distinct services to meet the requirements of our customers:

- The first meets the needs of our customers who need small quantities of products from our standard range of materials within 24-48 hours.
- The second service is for those who require larger quantities or further processing of our standard products or who need an item which falls within our general area of supply expertise.

The range of materials offered by Goodfellow is extensive, as are the forms in which the various products are available. This Catalog provides a detailed overview of our standard products which are available from stock. Full details of all of these items, including prices and technical information, can be found in our web Catalog at [www.goodfellowusa.com](http://www.goodfellowusa.com).

### Materials

#### ***Metals and Alloys***

Goodfellow supplies virtually all of the pure metals from Aluminum to Zirconium as well as a comprehensive range of alloys. Most are available in a variety of forms, including rod, wire and foil. The Catalog details those materials which are available as standard products from stock. Custom-made items are also available, so please contact us if you are unable to identify the item you require.

#### ***Ceramics***

The ceramic materials offered by Goodfellow have been carefully chosen and include both the established as well as more recently developed products. All are available as either standard or custom-made products in a variety of forms and sizes. The Catalog details those items which are

available from stock. For ceramic components made to customer drawings, our Ceramic and Glass Division would be delighted to help. Please visit [www.goodfellow-ceramics.com](http://www.goodfellow-ceramics.com) for further information.

#### ***Polymers***

The range of polymers supplied by Goodfellow is broad and includes both the familiar as well as some of the more unusual or recently developed materials. The Catalog details those items which are available from stock; please contact us if you are unable to find the item you specifically require.

#### ***Compounds & Intermetallics***

Goodfellow can supply aluminides, borides and silicides as well as other intermetallics and compounds. The majority of these items are made to order, and the Catalog details those which are available. Please contact us with details of your requirements.

#### ***Composites***

Some examples of these materials are listed in the Catalog. As some of these are manufactured on a custom-made basis, please contact us with details of your requirements.

#### ***Glasses***

Goodfellow offers two distinct types of glass products. The first are generally silica-based and transparent. Generally, these products are made to order for customers, so we do not list them in our Catalog, however, they are available through the Goodfellow Ceramic and Glass Division. Please contact us with your requirements.

The second type of glass product is commonly referred to as "metallic glasses" or "glassy metals". In contrast to crystalline metals and alloys with highly ordered atomic structures, these are non-crystalline (amorphous) metals or, more usually, alloys. Our Catalog details those glassy metals which are available from stock; please contact us if you are unable to find the item you specifically require.

**Product Descriptions**



**Bar**

A straight length of rectangular, square or oval section material.

**Tolerances**

Section dimensions:	≤ 10mm	± 10%
	> 10mm	± 1mm
Length:	< 100mm	± 1mm
	≥ 100mm	+ 5% / -1%



**Bolt**

A threaded pin that can be screwed into a nut or a tapped hole to fasten items together. Bolts are available with different head styles and also in metric and inch-threaded sizes.

**Tolerances**

See item



**Chopped Fiber**

Fibers cut into short lengths called cut, staple or chopped fiber.

**Tolerances**

Fiber diameter:	± 25%
Number of strands:	± 10%
Tex number:	± 10%
Length:	+ 5% / -1%



**Crucible**

A vessel in which other materials may be heated or melted, usually at high temperatures.

**Tolerances**

Height:	± 10%
Inside Dimensions:	± 10%
Outside Dimensions:	± 10%



**Fabric**

Woven fabrics are made by the regular interlacing of two arrays of yarns at right angles to each other, these being referred to as the warp and weft (see also Non-woven fabric).

**Tolerances**

Fabric thickness:	± 25%
Number of yarns:	± 10%
Tex number:	± 10%
Size (linear dimension):	< 100mm ± 5mm
	≥ 100mm ± 5%



**Fiber**

Yarns or tows consisting of several approximately parallel individual filaments, each filament usually being smaller in diameter than a monofilament. Yarns contain a defined number of filaments, typically three to several hundred; tows contain thousands of filaments whose number is only defined approximately. Both are primarily specified by their linear density measured in "tex", the weight in grams of a 1km length of material.

**Tolerances**

Fiber diameter:	± 25%
Number of strands:	± 10%
Tex number:	± 10%
Length:	+ 5% / -1%



**Film**

A non-metallic sheet material with a thickness < 0.5mm.

**Tolerances**

Thickness:	± 20%
Size (linear dimension):	< 100mm ± 1mm
	≥ 100mm + 2% / -1%



**Flake**

Flat, irregularly shaped pieces of material. A maximum flake size is indicated but individual flakes may vary greatly in size.

**Tolerances**

Dimensions shown are nominal

**Product Descriptions**



**Foam**

A low density, permeable structure of cells and continuous ligaments offering a high surface area to volume ratio, and also a high strength to weight ratio. Owing to the nature of this material, dimensions are nominal.



**Foil**

Thin sheets of pure metal and metal alloys. Due to their fragile nature, some foils are coated on one side with an acrylic or polyester support. Where foils are supported they are indicated in the detailed item description.

**Tolerances**

Thickness: < 0.010mm ± 25%  
 0.01-0.05mm ± 15%  
 > 0.050mm ± 10%  
 Size (linear dimension): < 100mm ± 1mm  
 ≥ 100mm + 2% / -1%



**Granule**

Pellets of an approximately regular shape. Granules may vary in size and, therefore, the dimensions stated are nominal. In addition, the shape of a granule may vary from item to item.

**Tolerances**

Dimensions shown are nominal



**Honeycomb**

A cellular structure similar in appearance to natural honeycomb. Owing to the nature of this material, dimensions are nominal.



**Insulated Wire**

A single or multiple flexible strand of metal or alloy with an insulating sheath.

**Tolerances**

Wire diameter: ± 10%  
 Length: + 5% / -1%  
 Insulation thickness: Nominal values only



**Laminate**

Layers of material which have been bonded together by the use of heat, pressure and, possibly, adhesive.

**Tolerances**

Thickness: ± 10%  
 Size (linear dimension): ≤ 100mm ± 1mm  
 > 100mm + 2% / -1%



**Lump**

A solid piece of material with no defined shape.

**Tolerances**

Dimensions shown are nominal



**Mesh**

Mesh is available as either a woven wire or electroformed product; in all cases, the quoted aperture sizes are nominal. Wire mesh: a material which is woven from metal wires to provide a thin grid with a regular series of holes. Electroformed mesh: a product made by electroplating the mesh geometry through a mask onto a substrate which is subsequently etched away.

**Tolerances**

Thickness: woven: ± 10%  
 electroformed: ± 20%  
 Wire diameter: ± 10%  
 Size (linear dimension): < 100mm ± 1mm  
 ≥ 100mm + 2% / -1%



**Metallized Film**

Film which is coated with a metal. The thickness of the metal is measured and described in terms of the material's specific electrical resistance in ohms per square.

**Tolerances**

Thickness: ± 10%  
 Size (linear dimension): < 100mm ± 1mm  
 ≥ 100mm + 2% / -1%

**Product Descriptions**



**Microfoil**

An extremely thin sheet of metal or alloy mounted on a permanent support. This support **cannot** be removed without destroying the Microfoil.

**Tolerances**

Thickness:  $\pm 30\%$   
 Size:  $\pm 20\%$



**Microleaf**

An extremely thin sheet of metal mounted on a removable support. Microleaf is not available for metals which are too brittle to be free standing.

**Tolerances**

Thickness:  $\pm 30\%$   
 Size:  $\pm 20\%$



**Monofilament**

A single strand of a non-metallic material.

**Tolerances**

Diameter:  $\pm 20\%$   
 Length:  $+ 5\% / -1\%$



**Non-Woven Fabric**

Non-woven fabrics are made by methods other than weaving or knitting, the yarns and fibers being held together, often quite loosely, by means other than geometric interlacing. Due to the open and porous nature of this material, all other dimensions are nominal.

**Tolerances**

Size (linear dimension):  $< 100\text{mm} \quad \pm 5\text{mm}$   
 $\geq 100\text{mm} \quad \pm 5\%$



**Nut**

Generally a flat piece of material with a threaded hole which can be screwed onto a bolt to fasten items together. Nuts typically have a hexagonal external shape. Nuts are available in metric and inch-threaded sizes.

**Tolerances**

See item



**Powder**

Small particles with an approximately defined size range. Those materials described as alloy precursors are not true alloys - they are made by sintering a blend of powders of the component metals to achieve alloying by diffusion. The resultant cake is ground and sieved to the required particle size range. Unless otherwise stated, the particle sizes shown are for guidance only. We do not guarantee either any particular size distribution between the quoted minimum and maximum sizes, or a specific particle shape.

**Tolerances**

Dimensions shown are nominal



**Rod**

A straight length of circular section material.

**Tolerances**

Diameter:	$\leq 10\text{mm}$	$\pm 10\%$
	Polymer	$+ 20\% / -10\%$
	Ceramic	$+ 20\% / -10\%$
$> 10\text{mm}$		$\pm 5\%$
	Ceramic	$+ 20\% / -10\%$
	Polymer	$+ 20\% / -10\%$
Length:	$< 100\text{mm}$	$\pm 1\text{mm}$
	$\geq 100\text{mm}$	$+ 5\% / -1\%$

**Product Descriptions**



**Sheet**

Flat material with a thickness >0.5mm.

**Tolerances**

Thickness:		± 10%
	Ceramic	± 20%
	Composite	± 20%
	Polymer	± 20%
Size (linear dimension):	< 100mm	± 1mm
	≥ 100mm	+ 2% / - 1%



**Single Crystal**

A material grown as a monocrystal, generally to a specific orientation, dimension and surface finish. It may contain a dopant. Single crystals are usually made to order.

**Tolerances**

Orientation:	± 3°
Size:	Sizes shown are nominal



**Sphere**

A regular solid or hollow three-dimensional form in which every cross-section is a circle. Spheres are available with standard or precision tolerances, and can be supplied with different surface finishes depending on the material.

**Tolerances**

Diameter (standard):	± 5%
Diameter (precision):	see item



**Sputtering Target**

A high purity material used as a source for sputtering, a cold vaporization process in which atoms are physically removed from the target surface by ion bombardment.

**Tolerances**

Thickness:	± 0.5mm
Size:	± 0.5mm



**Tube**

A hollow length of material normally circular in section. Most tubes are straight except those made of flexible polymer.

**Tolerances**

Outside diameter:	≤ 2mm	± 0.05mm
	Polymer	± 10%
	Ceramic	± 10%
> 5mm	± 0.1mm	
	Polymer	± 10%
	Ceramic	± 10%
Wall thickness:	> 5mm	± 5%
	Polymer	± 10%
	Ceramic	± 10%
Length:	≤ 2mm	± 10%
	Polymer	± 20%
	Ceramic	± 20%
Length:	< 100mm	± 1mm
	≥ 100mm	+ 5% / - 1%



**Washer**

A thin, flat piece of material with a hole in the middle, used in conjunction with bolts and nuts to distribute the load of a threaded fastener.

**Tolerances**

See item



**Wire**

A single or multiple flexible strand of pure metal or alloy.

**Tolerances**

Wire diameter:	± 10%
Length:	+ 5% / - 1%



## Hazards Information

### HAZARDS

All materials listed in this catalog, whatever the quantity supplied, are sold for research or development purposes. We make no warranty that the materials are fit for a particular purpose. In purchasing materials from this catalog, customers should be aware that there may be hazards associated with their use and in the handling of them. Complete toxicological or hazard investigations are the responsibility of the customer. Ingestion or contact with the human body may be harmful. The responsibility for the safe use of our products rests with the customer. All materials should be handled by qualified personnel familiar with laboratory procedures and who are familiar with the nature of the material and any necessary precautions which should be taken in the handling, use and storage of the products. The customer shall be responsible for the control and use of the products offered in this catalog whether alone or in combination with other articles or substances or in any other manner whatsoever.

### HAZARD SYMBOLS



C

#### Corrosive

Chemicals which may destroy living tissue when in contact with them.



D

#### Dangerous when wet

Chemicals which, in contact with water or damp air, evolve highly flammable or toxic gases and vapours in dangerous quantities.



E

#### Explosive

Chemicals which may react exothermically without atmospheric oxygen, quickly evolving gases, and which under defined test conditions detonate, quickly deflagrate or upon heating explode when partially confined.



F+

#### Extremely Flammable

Chemicals which when finely divided (small particle size) are liable to ignite spontaneously.



Xn

#### Harmful

Chemicals which may cause death or acute or chronic damage to health when inhaled, ingested or absorbed via the skin.



F

#### Highly flammable

Chemicals which will ignite after contact with flame, or which will evolve highly flammable gases in contact with water.



Xi

#### Irritant

Non-corrosive chemicals which, through immediate, prolonged or repeated contact with the skin or mucous membrane may cause inflammation.



R

#### Radioactive

Chemicals which will emit ionising radiation without being subject to irradiation. General precautions for Toxic chemicals apply to those of low activity. For chemicals of medium or high activity special regulations apply.



T

#### Toxic

Chemicals which may cause death or acute or chronic damage to health when inhaled, ingested or absorbed via the skin.



T+

#### Very Toxic

Chemicals which in low quantities cause death or acute or chronic damage to health when inhaled, ingested or absorbed via the skin.

## General Information

### Analyses

#### Typical Analysis :

Where appropriate a typical analysis is given. All figures are parts per million (ppm) by weight unless otherwise stated. It must be emphasised that this data is "typical" and no guarantee is given that the material supplied will conform to these analyses. The compositions shown under alloy headings are generally weight percent. Exceptions are the glassy alloys and the rare earth magnets where the convention of using atomic ratio is followed.

#### Purity

Purities listed are quoted with respect to total metallic impurities. Typical analyses may give additional information about likely non-metallic impurities.

#### High Purity

For materials described in the catalog as High Purity, the actual analysis of metallic impurities will be supplied free of charge. For other items, an actual analysis can be supplied and a charge will be made for the analysis and for the sample used.

If you require an analysis please tell us whether you require analysis of metallic impurities only or metallic and gaseous. Where an analysis is required the shipment of your order may be delayed.

### Supports

Some items from our range of foils need to be supported on one side of the foil to enable both you and us to handle these very delicate materials. Two types of support can be used, the choice being governed by the material. Wherever possible we use a temporary support, a permanent support only being used when the material is brittle (for example Chromium or Manganese).

The temporary support is Acrylic, approximately 0.2mm thick. This may be removed by dissolving in 2-Propanone (Acetone).

Our permanent support is Polyester, thickness 0.125mm, which is hot-press laminated to one face of the foil. It **cannot** be removed without destroying the foil.

Microfoil is mounted on a permanent 3.5µm polyester support. This support **cannot** be removed without destroying the Microfoil.

Microleaf is mounted on a specially treated support which allows separation of the metal film from the support. Full instructions on the method of removal are issued with each Microleaf supplied.

### Light Tight (LT) & Not Light Tested (NLT)

Light tight (LT) foils are supplied without visible pinholes after examination without magnification. Foils 0.025mm or more in thickness are supplied LT unless otherwise stated.

Foils less than 0.025mm thick are normally supplied Not-Light Tested (NLT), and will normally contain pinholes but may occasionally be free from pinholes. Foils less than 0.025mm in thickness can often be supplied LT but may incur additional charges. Please specify if you require LT foils.

### Vacuum tight

Vacuum tight foils show no detectable leakage when tested with a helium mass spectrometer with a sensitivity of  $10^{-9}$  atm-cm<sup>3</sup>.s<sup>-1</sup>.

### Continuous Lengths

If you require material in continuous lengths please tell us when you place your order. Unless otherwise specified, we reserve the right to supply in more than one length.

### Technical Data and Information

All information and technical data are given as a guide only. Although every effort has been made to ensure that the information is correct, no warranty is given as to its completeness or accuracy.

### Tolerances

For details of our standard tolerances, please refer to the Product Description section. In many cases, closer tolerances are available but may be subject to an extra charge. If you have any special requirements it is important that you tell us at the time of ordering. This includes special tolerances, dimensional uniformity or any other special requirement which you may have (for example edge finish, packaging, labelling etc.). Please indicate precisely what is required and we shall do our best to meet your specification.

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## Order information

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### General Information

There are over 70,000 stock packs listed and if you cannot find what you need amongst them, please ask for special sizes, thicknesses, tolerances, dimensions or larger quantities. We are also able to offer many other pure metals, alloys, polymers and ceramics to special order.

### Prices

All the prices listed are total (lot) prices for the sizes and quantities listed.

Prices shown are in US\$ and include free delivery by our standard 48 hour service except for those items marked as "special offer" or dangerous goods with transport restriction. Prices are subject to change without notice and orders will be invoiced at prices ruling on the date of despatch.

### Transport Restriction

Some of the materials supplied by Goodfellow are subject to special transport restrictions. Additional shipment charges may apply which are dependent on destination. Please check the individual item on our website or contact us for details of the charges.

If you intend to have the material transported or sent onwards please ensure that you are aware of the relevant transport restrictions.

### Delivery

Delivery by UPS or Federal Express is included in the prices, although alternative methods may be used depending on the materials ordered.

### Split Shipment

All orders are accepted for one shipment on one date to one address. A charge will be made for split shipments made at the customer's request.

### Special Analysis, Supports or Tolerances

An extra charge is made for non-standard supports, alternative tolerances and certificates of analysis. The analysis is free of charge for items marked "High Purity".

### Cancellations

A charge for cancellation of orders may be made. The amount will depend on the circumstances.

### Express Service

Please inform us if you need to have your goods shipped urgently. An administrative charge will be made for this service, details can be found on our website.

### Shipment

We aim to have all items listed in this catalog in stock in the quantities and sizes listed. We can only undertake to ship an order on a particular date. The date of delivery at the customer's address is subject to the normal variations of the delivery service used.

### Despatch

Orders will normally be shipped within 48 hours of receipt.

### Non-delivery

If we have notified you of the shipment of goods and you have not received delivery within 5 days, please contact us.

### Insurance

All consignments will be insured by us against the usual risks unless we are instructed in writing to the contrary.

### Export Restrictions

A UK Government export licence may be required for some items to some destinations. If the item you require needs a special export licence or an end-use statement we will inform you at the time you order.

### Materials Handling

Many of our materials are extremely delicate and it is essential every care is taken when handling them. Special attention is drawn to the extreme fragility of Microfoil, Microleaf and thinner and finer materials.

All materials are carefully packed to ensure safe transport of goods to your address. We do not accept responsibility for damage caused by mishandling once the outer transit packaging has been removed.

### Terms of payment

Our normal terms of payment are net 30 days from date of invoice. Any alternative terms of payment are to be agreed with us in writing at the time of placing an order. Customers may be asked to pay cash with order or cash against pro-forma

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## Order information

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invoice with their first order. In order to establish a credit account we will require details of your bankers, along with two trade references.

### Credit account

We endeavour to keep our costs down and customers are requested to pay our invoices on time. We reserve the right to delay delivery if there are overdue invoices on the account. Accounts which remain unpaid beyond the due date may incur an interest charge at a rate of 2% per month.

### Credit card payments

We also accept payment using the following credit and charge cards:

Mastercard, VISA and American Express.

### VAT

VAT number for Goodfellow Cambridge: GB 212 8527 79

### UK

VAT will be added to the invoice at the rate ruling at the date of invoice. Where a customer is exempt, VAT will be charged unless we receive a copy of the exemption form at the time the order is placed.

### EU

Customers registered for VAT who provide their local registration number will not be charged UK VAT.

Customers who are exempt from VAT will not be charged UK VAT provided we are given a copy of their exemption form at the time the goods are ordered.

Customers not registered for VAT or who fail to give us their registration number will be charged UK VAT at the current rate.

### Export

All exports to countries outside the EU are zero-rated for UK VAT unless the invoice is being paid from within the EU.

### Return of goods

We will only accept return of goods provided we are contacted BEFORE the goods are returned. When we agree to the return we will issue a Goods Return Number and give instructions for the method of return of the goods. Goods will not be accepted for

return without a valid Goods Return Number. Due to the nature of some of our materials, it is imperative that you check any possible transport restrictions with your proposed freight company.

### Claims

Great care is taken during manufacture and packing and all items are carefully inspected before shipment. Any claim in respect of short delivery, incorrect material or defective quality must be notified to us in writing within three days of delivery. Please retain ALL packaging for our inspection. Our liability for any such claim shall not exceed the cost of replacement of the goods free of charge, or crediting the customer with the invoice value thereof.

### Goods ordered in error

We do not accept responsibility for customers' errors in ordering. The amount of credit for returned goods will be at our discretion. Where we accept returned goods a restocking charge will be made.

### Conditions of sale

All orders, contracts and quotations are subject to our standard terms and conditions of sale.

Information and statements provided are indicative only and do not form part of any offer or contract.

### Exclusions

We supply materials according to our specification. All conditions warranties and representations regarding the quality, fitness for purpose or state, size, shape, capacity or color of goods supplied whether expressed or implied by common law or statute or otherwise are hereby expressly excluded. We shall not be liable for any damage direct or consequential arising from the use of goods supplied by us however such damage is caused, nor for delay in delivery.

### Law

Customers in the USA: Contracts between Goodfellow Corporation and the customer shall be deemed to be subject in all respects to the laws of the Commonwealth of Pennsylvania, or the United States of America.

Customers in France: Contracts between Goodfellow SARL and the customer shall be deemed to be subject in all respects to French law unless otherwise agreed in writing

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## Order information

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Customers in Germany: Contracts between Goodfellow GmbH and the customer shall be deemed to be subject in all respects to German law unless otherwise agreed in writing

Customers in the UK and all other countries: Contracts between Goodfellow Cambridge Limited and the customer shall be deemed to be subject in all respects to English law unless otherwise agreed in writing.

Copies of our General Terms and Conditions are available upon request or can be downloaded from our websites at [www.goodfellow.com](http://www.goodfellow.com) or [www.goodfellowusa.com](http://www.goodfellowusa.com).

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## Company Details

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### Company Structure

The Goodfellow Group consists of five companies:

#### ***Goodfellow Cambridge Limited***

Goodfellow was established in the City of London in 1946. The Company now has subsidiary operations in France, Germany and North America with the Group's research laboratories, workshop facilities & central administration located in Huntingdon, England.

#### ***Goodfellow Corporation***

Established at the same time as our associate company in Germany, Goodfellow Corporation was set up to service the requirements of our customers in the USA.

#### ***Goodfellow GmbH***

Since 1989, this member of the Goodfellow group of companies has been serving the needs of our German speaking customers within Europe.

#### ***Goodfellow SARL***

Goodfellow established an operation in France in 1993 to meet the needs of our French-speaking customers in Europe.

#### ***Goodfellow (Shanghai) Trading Co., Ltd***

Goodfellow established a representative office in Shanghai in 2006, and in 2012 followed this with the creation of a fully-fledged trading company, servicing the research and specialist manufacturing requirements of the Chinese market.

### COMPANY DETAILS

#### **Goodfellow Cambridge Limited**

Ermine Business Park  
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A Pennsylvania corporation  
EIN 23-2557381

#### **Goodfellow SARL**

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Siren : 381486836  
Numéro de TVA Intracommunitaire :  
FR 06 381 486 836

#### **Goodfellow GmbH**

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Registered in Friedberg (Hessen) No. HRB 1309  
Import VAT number DE112610478

#### **Goodfellow (Shanghai) Trading Co., Ltd**

Room 803, Centro Build, No. 568 Hengfeng Road  
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200070  
The People's Republic of China

# Conditions of Sale

## 1 GENERAL

1.1 In these Conditions:

1.1.1 the following expressions shall have the following meanings:-

- "Buyer" the individual firm company or other party from whom an order to supply Goods and/or Services is received by the Seller;
- "Conditions" the standard terms and conditions of sale of the Seller as set out herein and includes any additional terms and conditions of sale agreed in writing by the Seller;
- "Contract" a contract for the Supply of Goods and/or Services by the Seller to the Buyer;
- "Date of Delivery" the date on which delivery of the Goods or Services takes place pursuant to Condition 7;
- "Goods" the goods which the Seller is to supply (or, in relation to Condition 11, the goods in respect of which the Seller is to provide Services) under the Contract and includes any of them or any part of them and where the context so admits includes raw materials, processed materials and/or manufactured products whether processed or manufactured by the Seller or not;
- "Prepayment" a payment to be made by the Buyer pursuant to Condition 6.2 to be used at the Seller's discretion for the purchase of materials and/or towards the costs of labour and other costs relating to the supply of Goods;
- "Recommendations for Use" the recommendations (if any) relating to the storage, handling, application and/or use of the Goods contained in the published literature of the Seller (or, if relevant, a Supplier) or any recommendations made in Writing by an authorised representative of the Seller (or, if relevant, a Supplier);
- "Seller" Goodfellow Cambridge Limited and any subsidiary or holding company or associate (as such terms are defined in the Companies Act 1985 (as amended)) of the said company;
- "Services" the work or services or any of them to be provided by the Seller under the Contract;
- "Supplier" any person, firm or company who or which supplies materials to the Seller which make up the Goods which are to be supplied to the Buyer;

1.1.2 words importing the singular number shall include the plural and vice versa, words importing one gender shall include all genders, and words importing persons shall include bodies corporate, unincorporated associations and partnerships

- 1.2 If satisfactory references and information on the Buyer are not provided within seven days of a request therefore by the Seller, or if, following the provision of such information, the Seller is unable to obtain satisfactory trade indemnity or similar cover in respect of its dealings with the Buyer, the Seller may terminate the Contract and the rights and liabilities of the parties shall be the same as if the Contract had been cancelled in accordance with the provisions of Condition 10.2
- 1.3 The seller reserves the right to assign, sub-contract the Contract or any part thereof. The Buyer shall not be entitled to assign the benefit or burden of the Contract without the consent in writing of the Seller
- 1.4 In relation to all obligations of the Buyer under these Conditions, the time of performance is of the essence
- 1.5 The legal construction of these Conditions shall not be effected by their headings which are for convenience of reference only

## 2 ORDERS

- 2.1 Notwithstanding that the Seller may have given a detailed quotation or estimate either verbally or in writing no order shall be binding on the Seller unless and until it has been acknowledged in writing by the Seller or the Goods are delivered or the Services are provided by the Seller to the Buyer pursuant to the order
- 2.2 In order to avoid duplication of orders the Buyer shall be responsible for ensuring that any confirmation of an order previously placed is prominently marked as being a confirmation and not a new order. The Buyer acknowledges that any order or confirmation of order which is not so marked may be treated and accepted by the Seller as a new order to create a Contract in addition to any Contract arising out of the previously placed order
- 2.3 These Conditions are incorporated in the Contract and together with any matter set out in the Seller's quotation or acceptance/acknowledgement of order contain the entire obligations between the Seller and the Buyer. In the case of any inconsistency between any letter or quotation incorporating or referring to these Conditions and any order, letter or form of contract sent by the Buyer to the Seller, whatever may be their respective dates, the provisions of these Conditions shall prevail. In the event of the Seller entering into the Contract without the Seller having submitted a written quotation or other letter or document incorporating or referring to these Conditions but in circumstances where the Buyer has had prior notice of these Conditions then all Goods or Services supplied shall be subject to these Conditions
- 2.4 No variation of the Contract by the Buyer shall be binding upon the Seller unless made in Writing and signed on behalf of the Seller. In the event of such variation the Buyer shall indemnify and keep indemnified the Seller in full against all loss, which term shall include (but without prejudice to the generality thereof) loss of profit, costs (including the cost of labour and materials), damages, charges and expenses incurred (directly or indirectly) by the Seller as a result of such variation

2.5 Any representations (except fraudulent misrepresentations) or warranties made by or on behalf of the Seller prior to the Contract (whether verbally or in writing) are hereby expressly excluded and shall be of no effect

## 3 DESCRIPTION

- 3.1 Any figures, statements, descriptions, illustrations, photographs, drawings, weights or any other matters contained in the Seller's catalogues, pamphlets, price lists or advertising literature are not guaranteed to be accurate and are intended merely to represent a general picture of the Seller's products and shall not form part of the Contract nor be regarded as a warranty or representation relating to the Goods or Services
- 3.2 The Seller reserves the right to amend the specification of its products and services from time to time so that the descriptions thereof as set out in its catalogues, pamphlets, price lists or advertising literature may not be identical with those set out in the Seller's quotation and the Buyer is advised to check the specification set out in the Seller's quotation before placing an order

## 4 SPECIFICATIONS AND INTELLECTUAL PROPERTY

- 4.1 Where goods are supplied to the Buyer's own specification, or where standard goods of the Seller are altered in accordance with the Buyer's instructions the Buyer warrants and undertakes full responsibility for the suitability and fitness of the specification, pattern or design but also that such specification, pattern or design does not infringe any patent, trade mark, registered design, copyright or any other proprietary right of any third party and the Buyer shall indemnify and keep the Seller indemnified in full against any loss, damage or expense whatsoever (including costs) which the Seller may incur in or arising from the performance of the Contract by reason of any infringement of any such patent, trade mark, registered design, copyright or any other proprietary right
- 4.2 The Seller reserves the right to change the Buyer's specification as required to ensure that the Goods comply with any health, safety or other statutory requirement or provision and no such change by the Seller will constitute a breach of contract or impose upon the Seller any liability whatsoever
- 4.3 Unless otherwise agreed in writing, the Seller will be the sole owner of all inventions, formulations, tools, patterns, designs or other similar items and the copyright in all documents and drawings made or produced by it in preparing a quotation for the Buyer or in the course of work on any Contract with the Buyer

## 5 QUOTATIONS

5.1 The Seller's quotations are provisional in so far as they are subject to alteration by reference to any changes in the price of raw materials, any item to be acquired by the Seller from a third party, rates of wages, other costs of production and any other circumstances beyond the Seller's control taking place between the date of the quotation and the Buyer's placing of an order in respect thereof

## 6 PRICE

- 6.1 The Seller shall be entitled to adjust the Contract price of the Goods or Services whether before or after the making of the Contract in the event of any variation in the cost to the Seller of supplying the same or any part thereof caused by:-
- 6.1.1 any increase in the cost of materials required by the Seller for the completion of the Contract; or
- 6.1.2 any increase in wages or production and manufacturing costs or other overheads; or
- 6.1.3 any other reason whatsoever beyond the control of the Seller including (but without prejudice to the generality of the foregoing) fluctuations in exchange rates between monetary currencies the action of any government or any other authority or any labour problems
- 6.2 In the Seller's absolute discretion, a Prepayment in respect of the Contract may be required to be paid by the Buyer to the Seller on the terms set out in this Condition. The Prepayment shall be applied as follows:-
- 6.2.1 in the event that the Contract is performed in full by both parties the Prepayment shall be retained by the Seller in reduction of the total price payable by the Buyer under the Contract;
- 6.2.2 in the event that the Buyer is either in default of any of its obligations under the Contract or cancels or suspends the Contract in accordance with Condition 10 the Prepayment shall be set off by the Seller against its proper costs losses or damages arising in connection with the default and/or cancellation or suspension
- 6.3 Unless otherwise stated, the price set out in the Seller's quotation includes the cost of packaging, carriage, and (save as provided in Condition 6.4) insurance. In respect of supplies of Goods in the United States of America, Canada and Japan the price also includes import duties and sales taxes (if any). In respect of supplies of Goods in other countries the price does not include import duties or VAT or sales taxes which will be extra charges based on prevailing rates
- 6.4 Where the Buyer requests a particular means of delivery, the price set out in the Seller's quotation does not include insurance, which is to be arranged at the responsibility of the Buyer.

## 7 DELIVERY

- 7.1 Delivery of Goods shall be deemed to be effected by the Seller at the following times:-
- 7.1.1 where Goods are collected by or on behalf of the Buyer by its servants or agents, or where Goods are collected in

## Conditions of Sale

- accordance with a means of delivery specifically requested by the Buyer, when the same are collected;
- 7.1.2 where delivery of the Goods is to be the responsibility of the Seller, when they arrive prior to unloading at the Buyer's premises;
- 7.1.3 where Goods are sold FOB or CIF, when they pass the ship's rail or are loaded onto the aircraft
- 7.2 Delivery of Services shall be deemed to be effected by the Seller at the time of completion by the Seller of the Services
- 7.3 Whilst the Seller will make every reasonable effort to complete the Contract by the date or dates therein specified for delivery of Goods or provision of Services such date or dates shall only constitute the times by which the Seller expects to effect such delivery and if no time is agreed delivery will be within a reasonable time but the performance of the Contract by the Seller shall not be the essence of the Contract, the Seller's failure to so deliver by the due date or dates shall not constitute a breach of Contract and the Seller shall not in any circumstances be responsible for any direct or consequential loss or damage of any kind whatsoever resulting therefrom. The Seller may wholly or partly suspend deliveries of Goods or provision of Services and the Buyer shall accept late delivery of such Goods or Services unless the Buyer has cancelled the Contract in accordance with the provisions of Condition 10.3
- 8 QUANTITIES INSTALMENTS AND STORAGE**
- 8.1 Where Goods are delivered or Services are by instalment each instalment shall be deemed to be sold under a separate Contract and the party in default in respect of any instalment shall be liable accordingly, but no default in respect of any one instalment shall effect due performance of the Contract as regards other instalments
- 8.2 The Seller will endeavour to deliver the quantity of Goods ordered and every delivery shall be deemed to comply with the order. If there is a surplus or shortage of Goods which is no more than 10% of the quantity specified in the order the Buyer shall be deemed to have accepted the Goods and shall pay for the actual quantity delivered
- 8.3 If Goods or Services are to be delivered by instalments, the Seller shall be entitled to invoice each instalment as and when delivery is made and payment for all delivered instalments shall be due notwithstanding the non-delivery of other instalments or other default by the Seller. Failure by the Buyer to make payment by the due date for any one instalment for whatever reason shall entitle the Seller to suspend deliveries of Goods or provision of Services under the Contract but without prejudice to any other right the Seller may have under any of the other provisions of these Conditions
- 8.4 Notwithstanding that risk shall have passed to the Buyer pursuant to Condition 15 the Seller may in its absolute discretion arrange for storage of the Goods either at the request of the Buyer or as a result of the failure by the Buyer to take delivery of the Goods under Condition 7. The Seller may insure the goods whilst in storage and the Buyer shall indemnify and keep indemnified the Seller in full against all costs, losses, damages and expenses whatsoever arising in connection with the storage provided for hereunder and such costs, losses, damages and expenses will be added to and form part of the price of the Goods
- 8.5 Unless otherwise agreed between the Buyer and the Seller, the Seller shall be entitled in its absolute discretion and without giving prior notice to the Buyer at the expiration of 3 months to sell or otherwise dispose of Goods kept in storage as provided in Condition 8.4
- 9 TERMS OF PAYMENT**
- 9.1 Unless otherwise agreed the price shall be due and payable at the Seller's offices 30 days after the date of the Seller's invoice
- 9.2 If the Buyer does not pay the whole or any part of the price on the required day then the Buyer shall pay to the Seller on request interest on the amount outstanding from the required day until the actual date of payment at the rate of 2% p.a. over the base rate of Barclays Bank plc from time to time in force which shall accrue on a daily basis
- 9.3 Condition 12 shall apply in the event of any alleged defect or failure in or of the Goods or Services and the Buyer shall not delay or refuse to make payment in any such event
- 9.4 The Buyer shall not be entitled to withhold payment of any amount due to the Seller by reason of any disputed claim by the Buyer in connection with the Contract nor shall the Buyer be entitled to set off against any amount payable under the Contract to the Seller any amount which is not then due and payable by the Seller or for which the Seller disputes liability
- 9.5 All payments payable to the Seller under the Contract shall become due immediately upon termination of the Contract despite any other provision.
- 10 SUSPENSION AND CANCELLATION**
- 10.1 If the Buyer shall commit any breach of the Contract and fail to remedy the same within 7 days of receiving the Seller's request in writing so to do or any distress or execution is levied upon any goods or property of the Buyer or the Buyer makes any voluntary arrangement with its creditors or becomes subject to an administration order or (being an individual or firm) becomes bankrupt or (being an incorporated company) passes a resolution for winding up (otherwise than for the purpose of amalgamation or reconstruction), or a Court makes an order to that effect, or an encumbrancer takes possession, or an administrative receiver or receiver is appointed, of any of the property or assets of the Buyer, or the Buyer ceases, or threatens to cease, to carry on business or is unable to pay its debts within the meaning of section 123 Insolvency Act, 1986, or the Seller reasonably apprehends that any of the events mentioned above is about to occur in relation to the Buyer and notifies the Buyer accordingly, the Seller may:-
- 10.1.1 stop any Goods in transit and suspend any further deliveries;

and/or

- 10.1.2 suspend work on the Contract; and/or
- 10.1.3 determine the Contract forthwith and if the Goods or Services, or any part of them have been delivered but not paid for, the price shall become immediately due and payable notwithstanding any previous agreement to the contrary but without prejudice to the Seller's right to any unpaid price for Goods or Services delivered under the Contract and to damages for loss (both direct and consequential) suffered in consequence of such determination
- 10.2 If the Buyer requires cancellation of the Contract this will only be accepted at the sole discretion of the Seller and unless otherwise agreed in writing only upon condition that any costs, charges or expenses (both direct and consequential) incurred by the Seller up to the date of cancellation and the value of all loss or damage (both direct and consequential) incurred by the Seller by reason of such cancellation will be reimbursed by the Buyer to the Seller forthwith. Acceptance by the Seller of any cancellation by the Buyer will only be binding upon the Seller if it is made in writing
- 10.3 In the event of the Seller other than in any of the circumstances set out in Condition 10.1 being prevented or hindered from completing the Contract either wholly or in part in accordance with the terms thereof for any reason whatsoever beyond its reasonable control which, for the avoidance of doubt and without prejudice to the generality of the foregoing, shall include governmental action, war, riot, civil commotion, fire, flood, epidemic, labour disputes (including labour disputes involving the work force or any part thereof of the Seller or Supplier), restraints or delays affecting shipping or carriers, licensing, exporting or importing restrictions, currency restrictions and Acts of God then further performance of the Contract shall be suspended for the period during which the Seller is so prevented provided that in the event of the Contract being suspended for a continuous period of more than 3 months then either party may give the other notice in writing to terminate the Contract forthwith and in such circumstances the Buyer shall pay for all Goods or Services supplied to the date of such termination such payment to be made on or before the last day following the month during which termination was effected. The Seller shall be under no liability whatsoever to the Buyer for any direct or consequential loss or damage suffered by the Buyer as a result of the Seller's inability to perform its obligations under the Contract in these circumstances
- 10.4 The Seller's rights contained in Condition 17 (but not the Buyer's rights) shall continue beyond the discharge of the parties' primary obligations under the Contract consequent upon its termination
- 10.5 The termination of the Contract for whatever reason will be without prejudice to the rights and duties of either party accrued prior to termination
- 11 INSPECTION AND CLAIMS FOR DEFECTS**
- 11.1 The Goods are of a highly specialised nature and must be treated with the utmost care. It is essential that the Buyer checks that they correspond in all respects with the Buyer's requirements. Any discrepancies should be notified to the Seller immediately. The Buyer undertakes to ensure that all Goods are unpacked and handled only by persons qualified to deal with such specialised products, to safeguard against injury to the Goods or to the Buyer's personnel
- 11.2 The Buyer shall inspect the Goods and carry out tests to ensure the Goods conform with the description of the Goods or Services in the Buyer's orders within 7 days of Delivery and whether or not the Buyer carries out such obligation to inspect and test no claims for non-delivery, shortages in quantity of units delivered, defective Goods or Services, non-conformity to description or partial loss or damage to Goods will be accepted by the Seller unless:-
- 11.2.1 they are notified in writing by the Buyer to the Seller within 10 days after the Date of Delivery (in the case of partial loss, damage, non-conforming or defective Goods or Services) or 14 days after the date of the invoice (in the case of non-delivery);
- 11.2.2 the Goods in respect of which a claim is made together with all the relevant packing are preserved intact as received for a period of 35 days from notification of any such claim and the Buyer permits the Seller or its servants or agents full and free right of access to inspect the Goods and investigate the claim; and
- 11.2.3 if the Buyer fails to give the appropriate notice as specified in Condition 11.2.1, the Buyer's claim will be deemed to have been waived and will be absolutely barred
- 11.3 It is in all cases the responsibility of the Buyer to ensure by testing or otherwise that the Goods are fit and suitable for the purposes for which the Buyer requires them in the conditions in which they will be used. The Buyer acknowledges that the Seller shall be under no liability of any description to the Buyer if the Goods prove to be unsuitable for whatever reason for application or use notwithstanding that the Seller may, at the request of the Buyer, have given in good faith technical or other advice in relation to the proposed application or use of the Goods and the Buyer shall indemnify and keep indemnified the Seller in full against any and all liability of any kind arising out of or connected with the application or use of the Goods
- 11.4 Section 3 Sale and Supply of Goods Act 1994 shall not apply
- 11.5 The Seller will not accept the return of Goods in any circumstances unless it has first issued a Goods return number and such number is quoted with the returned Goods
- 12 WARRANTY**
- 12.1 In substitution for all and any other rights which the Buyer might or would have had but for these Conditions and subject to Condition 11,



## Conditions of Sale

the Seller shall make good by replacement any failure in the Goods or Services which results from defects in the Seller's materials or workmanship and which appear not later than 2 months after the Date of Delivery and shall replace any Goods or Services which do not conform with the description in the Buyer's order

- 12.2 Notwithstanding the provisions of Condition 12.1, in the case of a claim falling within Condition 12.1, the Seller reserves the right at its sole discretion to credit the Buyer in full the price paid by the Buyer to the Seller
- 12.3 The Seller's liability under this Condition shall automatically cease if:
- 12.3.1 the Buyer has not paid for all Goods or Services supplied under any Contract by the due date or is otherwise in breach of this or any other Contract made with the Seller; or
- 12.3.2 the Seller or its servants or agents are denied full and free right of access to the allegedly defective Goods; or
- 12.3.3 the Buyer has not properly maintained the Goods or has not complied with any Recommendations for Use; or
- 12.3.4 the defect or failure is caused by a breach by the Buyer of its undertakings and warranties contained in Condition 17; or
- 12.3.5 the Buyer has failed to notify the Seller in writing of any defect or suspected defect within 14 days of the same coming to the knowledge of the Buyer
- 12.4 The warranty set out in Condition 12.1 shall be in lieu of any warranties conditions or undertakings whether express or implied by statute, common law or otherwise howsoever which warranties, conditions and undertakings are hereby expressly excluded, except that such exclusions will not apply to any implied condition that the Seller has or will have the right to sell the Goods when the property is to pass
- 12.5 Nothing in these Conditions excludes or limits the liability of the Seller for death or personal injury caused by the Seller's negligence or fraudulent misrepresentation
- 12.6 SUBJECT TO CONDITIONS 12.4 AND 12.5
- 12.6.1 the seller's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation or otherwise, arising in connection with the performance or contemplated performance of the contract shall be limited to the price paid for the goods or services under the contract; and
- 12.6.2 the seller shall not be liable to the buyer for any indirect or consequential loss or damage (whether for loss of profit, loss of business, depletion of goodwill or otherwise), costs, expenses or other claims for consequential compensation whatsoever (however caused) which arise out of or in connection with the contract

### 13 CONSUMER SALES

- 13.1 Where the Goods are sold under a consumer sale (as defined by the Sale of Goods Act 1979) the statutory rights of the Buyer are not affected by these conditions

### 14 TITLE TO GOODS

- 14.1 Full legal and beneficial ownership of the Goods shall be retained by the Seller notwithstanding that the risk in the same shall pass to the Buyer at the time of delivery until the Seller has received payment in full in respect of
- 14.1.1 The Goods; and
- 14.1.2 All other sums which become due and owing by the Buyer to the Seller on any account whatsoever
- 14.2 Until ownership of the Goods has passed to the Buyer the Buyer shall hold the Goods in a fiduciary capacity and as bailee of the Seller and shall at all times take proper care of the same and will not obliterate or obscure any identifying mark or their packaging and will keep the Goods separate from any other goods and in such manner that they may be clearly identified as belonging to the Seller and the Buyer hereby grants to the Seller the right to enter on the Buyer's premises at any time during the continuation of the Contract to check that the Buyer is complying with the obligation contained in this Condition. The Buyer will return the Goods to the Seller if it receives a request whether verbally or in Writing so to do prior to payment in full as aforesaid having been made and the Seller will then repay any part of the purchase price it has already received in respect of the Goods less a reasonable amount in respect of its costs and expenses in connection with the Contract
- 14.3 For the purposes of Condition 14.1, the expression "the Buyer" includes any subsidiary or holding company or associate of the Buyer (as such terms are defined in the Companies Act 1985 (as amended))
- 14.4 The Seller will have the right to maintain an action against the Buyer for the price of the Goods notwithstanding that property in the Goods has not been passed

### 15 RISK AND INSURANCE

- 15.1 The risk in the Goods shall pass to the Buyer at the time of delivery as provided for in Condition 7
- 15.2 Notwithstanding the reservation of title contained in Condition 14, the Buyer shall insure the Goods and/or any products made wholly or partly therefrom for the full amount of the price payable under the Contract with an insurance office of repute from the time of delivery of the Goods until the date title in the Goods passes to the Buyer pursuant to Condition 14.1

### 16 EXPORT TERMS

- 16.1 In these Conditions "Incoterms" means the international rules for the interpretation of trade terms of the International Chamber of Commerce

as in force at the date when the Contract is made. Unless the context otherwise requires, any term or expression which is defined in or given a particular meaning by the provisions of Incoterms has the same meaning in the Contract

- 16.2 Where the Goods are supplied for export from the United Kingdom then unless otherwise agreed in writing between the Buyer and the Seller
- 16.2.1 the provisions of Incoterms shall (subject to any special terms agreed in writing between the Buyer and the Seller) apply but if there is any conflict between the provisions of Incoterms and these Conditions, the latter shall prevail.
- 16.2.2 the Buyer shall be responsible for complying with any legislation or regulations governing the importation of the Goods into the country of destination and (save in respect of the United States of America, Canada and Japan) for the payment of any duties and taxes thereon unless payment for these is included in the Contract
- 16.2.3 the Buyer shall be deemed to have satisfied itself that such Goods comply with the safety regulations of any country or state in which the Goods are to be used outside the United Kingdom and the Buyer shall indemnify and keep indemnified the Seller in full for any loss or damage whatsoever which the Seller may incur if such Goods do not comply with such safety regulations
- 16.3 The Goods shall not be used in any country other than that for which the Seller was aware they were originally ordered without the Seller's consent in writing
- 16.4 The Buyer undertakes not to offer the Goods for resale in any country notified by the Seller at or before the time the Buyer's order is placed, or to sell the Goods to any person if the Buyer knows or has reason to believe that person intends to resell the Goods in any such country

### 17 BUYER'S WARRANTIES

- 17.1 The Buyer warrants to the Seller that:
- 17.1.1 the Buyer will install, operate or otherwise use or store the Goods strictly in accordance with the Recommendations for Use and with all relevant or applicable statutory or other regulations governing the installation, operation, use or storage of the Goods; and
- 17.1.2 any collection vehicle, container, ship or other means of transport provided by the Buyer or any agent of the Buyer will comply with all relevant legislation and regulations relating to health and safety requirements; and
- 17.1.3 the storage and transport facilities and all parts thereof and all equipment used in connection therewith is suitable for storage (both short term and long term) and transport of the Goods and complies with any statute, regulation, bye law or other rule having the force of law and relating to the storage of goods of the nature of the Goods; and
- 17.1.4 the Buyer will ensure that the Goods are stored in conditions appropriate to goods of that nature and will comply with any recommendations as to the storage of Goods notified to it by the Seller from time to time; and
- 17.2 The Buyer shall indemnify and keep indemnified the Seller in full against any claim, loss or damage (including, without limitation, damage to the reputation of the Seller) arising directly or indirectly from any breach of the warranty contained in Condition 17.1

### 18 SEVERANCE

- 18.1 If at any time any one or more of the provisions or part thereof of these Conditions becomes or is invalid, illegal or unenforceable in any respect under any law or is held by a court to be invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions hereof and the remainder of such provision shall not in any way be affected or impaired thereby

### 19 JURISDICTION

- 19.1 These Conditions and each and every Contract made pursuant to them shall be governed by and construed in all respects in accordance with the laws of England and the Seller and the Buyer hereby agree to submit to the non-exclusive jurisdiction of the English Courts

### 20 NOTICES

- 20.1 Any notice required or permitted to be given by either party to the other under these Conditions shall be in writing addressed to that other party at its registered office or principal place of business or such other address as may at the relevant time have been notified pursuant to this provision to the party giving notice
- 20.2 Any notice given pursuant to clause 20.1 shall be deemed to have been served:
- 20.2.1 if delivered by hand, on the first Business Day following delivery;
- 20.2.2 if sent by post, on the third Business Day after posting if the address of the recipient is in the country of despatch, otherwise on the seventh Business Day after posting;
- 20.2.3 if sent by facsimile transmission, on the first Business Day following successful transmission
- 20.3 In proving service it shall be sufficient proof in the case of a notice sent by post, that the envelope containing the same was properly stamped, addressed and placed in the post and, in the case of facsimile transmission, that it was properly addressed and successfully transmitted
- 20.4 In this Condition 20, "Business Day" shall mean any day other than Saturday, Sunday or any other day which is a public holiday in the place at which the notice is left or to which such notice is despatched

### 21 WAIVER

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## Conditions of Sale

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21.1 No waiver by the Seller of any breach of any provision of the Contract by the Buyer shall be considered as a waiver of any subsequent breach

of the same or any other provision and the Seller shall not be prejudiced by any forbearance or indulgence granted by it to the Buyer

# Titanium

## Ti

Titanium was discovered by Rev. William Gregor in 1791 in Creed, Cornwall, England and, independently, by M.H. Klaproth in 1795 in Berlin, Germany.

Titanium is a hard, lustrous, silvery metal which is obtained by magnesium or calcium reduction of the tetrachloride. It is a relatively abundant element, there being 5600 ppm in the earth's crust. It forms a protective oxide coating and, hence, resists corrosion, although powdered metal burns in air. Titanium tends to be inert at low temperatures but will combine with a variety of reagents at elevated temperatures.

Titanium and its alloys are characterized by their lightness, strength and corrosion resistance and are used widely in aerospace applications. In addition, these properties also make the material suitable for medical applications (e.g. replacement hip joints). Titanium dioxide, TiO<sub>2</sub> is used as a white pigment in paints and plastics as it provides great opacity. The same material is also used in the manufacture of heat resisting and durable glass, the TiO<sub>2</sub> replacing certain proportions of the soda. Titanium carbide is used to manufacture cemented carbides.

<b>Atomic Properties</b>		<b>Physical Properties</b>	
Atomic number	22	Boiling point	3287 C
Atomic radius - Goldschmidt	0.147 nm	Density @20C	4.5 g cm <sup>-3</sup>
Atomic weight	47.88 amu	Melting point	1660 C
Crystal structure	Hexagonal close packed	<b>Electrical Properties</b>	
Electronic structure	Ar 3d <sup>2</sup> 4s <sup>2</sup>	Electrical resistivity @20C	54 μOhmcm
Photo-electric work function	4.1 eV	Temperature coefficient @0-100C	0.0038 K <sup>-1</sup>
Thermal neutron absorption cross-section	6.1 Barns	Superconductivity critical temperature	0.40 K
Valences shown	2, 3, 4	<b>Thermal Properties</b>	
Natural isotope distribution		Coefficient of thermal expansion @0-100C	8.9 x10 <sup>-6</sup> K <sup>-1</sup>
	Mass No. %	Latent heat of evaporation	8893 J g <sup>-1</sup>
	46 8.0	Latent heat of fusion	365 J g <sup>-1</sup>
	47 7.5	Specific heat @25C	523 J K <sup>-1</sup> kg <sup>-1</sup>
	48 73.7	Thermal conductivity @0-100C	21.9 W m <sup>-1</sup> K <sup>-1</sup>
	49 5.5	<b>Mechanical Properties</b>	
	50 5.3	Material condition	Annealed Polycrystalline
Ionization potential		Bulk modulus	108.4 GPa
	No. eV	Hardness - Vickers	60
	1 6.82	Izod toughness	61 J m <sup>-1</sup>
	2 13.6	Poisson's ratio	0.361
	3 27.5	Tensile modulus	120.2 GPa
	4 43.3	Tensile strength	230-460 MPa
	5 99.2	Yield strength	140-250 MPa
	6 119		



## Microfoil

CONTRACT COATING of customers' own components or assemblies is available to special order.

<b>TI004500</b>	Thinness.....	<b>0.1μm</b>	Area density.....	<b>42.8μg.cm<sup>-2</sup></b>
	Purity.....	<b>99.6+%</b>	Support.....	<b>Permanent Mylar 3.5μm</b>
<b>Quantity</b>				
<b>Web Code</b>	<b>Disk diam.</b>	<b>1 disk</b>	<b>2disks</b>	<b>5disks</b>
059-252-810	10 mm	USD 381.00	USD 517.00	USD 926.00
825-798-434	25 mm	USD 563.00	USD 790.00	USD 1472.00

Typical Analysis : Starting Material : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.  
 This item is normally made to order for delivery within 4-5 weeks.

<b>TI004600</b>	Thinness.....	<b>0.25μm</b>	Area density.....	<b>112.6μg.cm<sup>-2</sup></b>
	Purity.....	<b>99.6+%</b>	Support.....	<b>Permanent Mylar 3.5μm</b>
<b>Quantity</b>				
<b>Web Code</b>	<b>Disk diam.</b>	<b>1 disk</b>	<b>2disks</b>	<b>5disks</b>
525-512-225	10 mm	USD 422.00	USD 579.00	USD 1049.00
129-297-443	25 mm	USD 631.00	USD 892.00	USD 1677.00

Typical Analysis : Starting Material : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.  
 This item is normally made to order for delivery within 4-5 weeks.

<b>TI004700</b>	Thinness.....	<b>0.5μm</b>	Area density.....	<b>225.4μg.cm<sup>-2</sup></b>
	Purity.....	<b>99.6+%</b>	Support.....	<b>Permanent Mylar 3.5μm</b>
<b>Quantity</b>				
<b>Web Code</b>	<b>Disk diam.</b>	<b>1 disk</b>	<b>2disks</b>	<b>5disks</b>
139-599-398	10 mm	USD 449.00	USD 620.00	USD 1131.00
239-166-185	25 mm	USD 676.00	USD 961.00	USD 1813.00

Typical Analysis : Starting Material : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.  
 This item is normally made to order for delivery within 4-5 weeks.

<b>TI004850</b>	Thinness.....	<b>1.0μm</b>	Area density.....	<b>429μg.cm<sup>-2</sup></b>
	Purity.....	<b>99.6+%</b>	Support.....	<b>Permanent Mylar 3.5μm</b>
<b>Quantity</b>				
<b>Web Code</b>	<b>Disk diam.</b>	<b>1 disk</b>	<b>2disks</b>	<b>5disks</b>
060-822-869	10 mm	USD 517.00	USD 722.00	USD 1336.00
356-832-183	25 mm	USD 790.00	USD 1131.00	USD 2154.00

Typical Analysis : Starting Material : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.  
 This item is normally made to order for delivery within 4-5 weeks.

**Titanium**

**Ti**



**Foil**

<b>TI000205</b>	Thickness ..... <b>0.001mm</b> Temper ..... <b>As rolled</b>	High Purity ..... <b>99.99+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 912-066-045 086-830-273	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 1036.00</td> <td>USD 1424.00</td> <td>USD 2216.00</td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1923.00</td> <td>USD 2679.00</td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 1036.00	USD 1424.00	USD 2216.00	50 x 50 mm	USD 1923.00	USD 2679.00	
	Quantity																	
Size	1pc	2pcs	5pcs															
25 x 25 mm	USD 1036.00	USD 1424.00	USD 2216.00															
50 x 50 mm	USD 1923.00	USD 2679.00																
Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.																		
<b>TI000206</b>	Thickness ..... <b>0.002mm</b> Temper ..... <b>As rolled</b>	High Purity ..... <b>99.99+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 045-468-855 645-780-331	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 942.00</td> <td>USD 1292.00</td> <td>USD 2007.00</td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1736.00</td> <td>USD 2414.00</td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 942.00	USD 1292.00	USD 2007.00	50 x 50 mm	USD 1736.00	USD 2414.00	
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Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.																		
<b>TI000090</b>	Thickness ..... <b>0.002mm</b>	Purity ..... <b>99.6+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 079-450-947 882-226-421	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 654.00</td> <td>USD 871.00</td> <td>USD 1313.00</td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1147.00</td> <td>USD 1567.00</td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 654.00	USD 871.00	USD 1313.00	50 x 50 mm	USD 1147.00	USD 1567.00	
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25 x 25 mm	USD 654.00	USD 871.00	USD 1313.00															
50 x 50 mm	USD 1147.00	USD 1567.00																
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.																		
<b>TI000101</b>	Thickness ..... <b>0.0025mm</b>	Purity ..... <b>99.99+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 802-112-603 453-672-300	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 932.00</td> <td>USD 1155.00</td> <td></td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1400.00</td> <td></td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 932.00	USD 1155.00		50 x 50 mm	USD 1400.00		
	Quantity																	
Size	1pc	2pcs	5pcs															
25 x 25 mm	USD 932.00	USD 1155.00																
50 x 50 mm	USD 1400.00																	
Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.																		
<b>TI000100</b>	Thickness ..... <b>0.0025mm</b> Condition ..... <b>Grade 1 - ASTM B265 Chemistry only</b>	Purity ..... <b>99.6+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 688-203-858 060-778-536	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 629.00</td> <td>USD 835.00</td> <td>USD 1257.00</td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1096.00</td> <td>USD 1496.00</td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 629.00	USD 835.00	USD 1257.00	50 x 50 mm	USD 1096.00	USD 1496.00	
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25 x 25 mm	USD 629.00	USD 835.00	USD 1257.00															
50 x 50 mm	USD 1096.00	USD 1496.00																
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.																		
<b>TI000111</b>	Thickness ..... <b>0.003mm</b>	Purity ..... <b>99.99+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 296-378-383 177-959-864	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 890.00</td> <td>USD 1132.00</td> <td></td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1402.00</td> <td></td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 890.00	USD 1132.00		50 x 50 mm	USD 1402.00		
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Size	1pc	2pcs	5pcs															
25 x 25 mm	USD 890.00	USD 1132.00																
50 x 50 mm	USD 1402.00																	
Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.																		
<b>TI000110</b>	Thickness ..... <b>0.003mm</b>	Purity ..... <b>99.6+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 536-162-812 825-766-602	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 605.00</td> <td>USD 801.00</td> <td>USD 1203.00</td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1049.00</td> <td>USD 1429.00</td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 605.00	USD 801.00	USD 1203.00	50 x 50 mm	USD 1049.00	USD 1429.00	
	Quantity																	
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25 x 25 mm	USD 605.00	USD 801.00	USD 1203.00															
50 x 50 mm	USD 1049.00	USD 1429.00																
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.																		
<b>TI000122</b>	Thickness ..... <b>0.004mm</b> Temper ..... <b>As rolled</b>	Purity ..... <b>99.99+%</b>																
<b>Sizes LT</b> <b>Web Code</b> 203-779-311 228-413-008	<table border="1"> <thead> <tr> <th></th> <th colspan="3">Quantity</th> </tr> <tr> <th>Size</th> <th>1pc</th> <th>2pcs</th> <th>5pcs</th> </tr> </thead> <tbody> <tr> <td>25 x 25 mm</td> <td>USD 978.00</td> <td>USD 1342.00</td> <td></td> </tr> <tr> <td>50 x 50 mm</td> <td>USD 1958.00</td> <td></td> <td></td> </tr> </tbody> </table>			Quantity			Size	1pc	2pcs	5pcs	25 x 25 mm	USD 978.00	USD 1342.00		50 x 50 mm	USD 1958.00		
	Quantity																	
Size	1pc	2pcs	5pcs															
25 x 25 mm	USD 978.00	USD 1342.00																
50 x 50 mm	USD 1958.00																	
Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.																		

**Metal – Titanium**

**Titanium**

**Ti**



**Foil**

**TI000121**

Thickness ..... **0.004mm** Purity..... **99.6+%**  
 Condition..... **Grade 1 - ASTM B265 Chemistry only**

**NLT Sizes**

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
104-119-736	25 x 25 mm	USD 557.00	USD 734.00	USD 1097.00
292-868-505	50 x 50 mm	USD 953.00	USD 1294.00	
224-731-655	100 x 100 mm	USD 2166.00		

**Sizes LT**

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
785-692-968	25 x 25 mm	USD 669.00	USD 881.00	USD 1316.00
002-536-064	50 x 50 mm	USD 1430.00	USD 1941.00	

**Disks**

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
132-291-866	4 mm	USD 573.00	USD 712.00	USD 1035.00
536-487-144	6 mm	USD 685.00	USD 872.00	USD 1292.00
060-894-747	8 mm	USD 798.00	USD 1033.00	USD 1552.00
611-840-001	10 mm	USD 912.00	USD 1196.00	USD 1817.00
480-006-974	15 mm	USD 1191.00	USD 1593.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000208**

Thickness ..... **0.005mm** High Purity ..... **99.99+%**  
 Temper ..... **As rolled**

**NLT Sizes**

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
205-276-680	25 x 25 mm	USD 694.00	USD 960.00	USD 1573.00
055-111-473	50 x 50 mm	USD 1135.00	USD 1584.00	
426-443-033	100 x 100 mm	USD 2018.00		

**Sizes LT**

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
501-822-204	25 x 25 mm	USD 764.00	USD 1056.00	USD 1731.00
224-191-870	50 x 50 mm	USD 1419.00	USD 1980.00	

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI000210**

Thickness ..... **0.005mm** Purity..... **99.6+%**

**NLT Sizes**

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
166-536-961	25 x 25 mm	USD 426.00	USD 527.00	USD 730.00
220-683-347	50 x 50 mm	USD 659.00	USD 855.00	
450-972-306	100 x 100 mm	USD 1485.00		

**Sizes LT**

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
270-344-449	25 x 25 mm	USD 469.00	USD 579.00	USD 803.00

**Disks**

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
408-527-282	4 mm	USD 508.00	USD 617.00	USD 827.00
065-900-770	6 mm	USD 580.00	USD 720.00	USD 992.00
237-599-389	8 mm	USD 652.00	USD 824.00	USD 1160.00
699-918-029	10 mm	USD 725.00	USD 929.00	USD 1332.00
489-758-450	15 mm	USD 904.00	USD 1183.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000140**

Thickness ..... **0.006mm** Purity..... **99.6+%**  
 Condition..... **Grade 1 - ASTM B265 Chemistry only**

**NLT Sizes**

Web Code	Size	Quantity	
		1pc	2pcs
148-886-945	25 x 25 mm	USD 508.00	USD 665.00
129-741-932	50 x 50 mm	USD 855.00	USD 1155.00
517-667-132	100 x 100 mm	USD 2062.00	

**Sizes LT**

Web Code	Size	Quantity	
		1pc	2pcs
410-260-256	25 x 25 mm	USD 559.00	USD 731.00
769-784-123	50 x 50 mm	USD 1069.00	USD 1444.00

**Disks**

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
113-674-130	4 mm	USD 546.00	USD 673.00	USD 974.00
209-268-740	6 mm	USD 644.00	USD 813.00	USD 1200.00
158-597-940	8 mm	USD 743.00	USD 955.00	USD 1429.00
824-740-947	10 mm	USD 843.00	USD 1099.00	USD 1662.00
092-613-455	15 mm	USD 1088.00	USD 1447.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Metal - Titanium**

**Titanium**

**Ti**



**Foil**

**TI000150**

Thickness ..... **0.007mm** Purity..... **99.6+%**  
 Condition..... **Grade 1 - ASTM B265 Chemistry only**

**NLT Sizes**

Web Code	Size	Quantity			
		1pc	2pcs	5pcs	10pcs
855-392-130	25 x 25 mm	USD 505.00	USD 660.00	USD 980.00	USD 1398.00
185-053-464	50 x 50 mm	USD 849.00	USD 1146.00	USD 2543.00	
393-808-679	100 x 100 mm	USD 2027.00	USD 3905.00		
115-593-372	150 x 150 mm	USD 4359.00			

**Sizes LT**

Web Code	Size	Quantity			
		1pc	2pcs	5pcs	10pcs
769-480-263	25 x 25 mm	USD 555.00	USD 726.00	USD 1078.00	USD 1538.00
397-971-951	50 x 50 mm	USD 934.00	USD 1261.00	USD 2797.00	

**Disks**

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
031-461-509	4 mm	USD 544.00	USD 670.00	USD 970.00
932-699-089	6 mm	USD 641.00	USD 810.00	USD 1193.00
587-386-527	8 mm	USD 740.00	USD 950.00	USD 1420.00
423-317-228	10 mm	USD 839.00	USD 1092.00	USD 1651.00
914-657-809	15 mm	USD 1081.00	USD 1437.00	USD 2906.00
332-230-147	25 mm	USD 1657.00		

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000161**

Thickness ..... **0.008mm** Purity..... **99.99+%**

**NLT Sizes**

Web Code	Size	Quantity	
		1pc	2pcs
303-275-550	25 x 25 mm	USD 729.00	USD 960.00
870-768-287	50 x 50 mm	USD 1263.00	

**Sizes LT**

Web Code	Size	Quantity	
		1pc	2pcs
607-998-325	25 x 25 mm	USD 802.00	USD 1056.00
381-165-374	50 x 50 mm	USD 1578.00	

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI000222**

Thickness ..... **0.008mm** Purity..... **99.99+%**

**NLT Sizes**

Web Code	Size	Quantity	
		1pc	2pcs
976-993-696	25 x 25 mm	USD 414.00	USD 494.00
263-530-761	50 x 50 mm	USD 583.00	

**Sizes LT**

Web Code	Size	Quantity	
		1pc	2pcs
101-650-815	25 x 25 mm	USD 456.00	USD 544.00
509-683-013	50 x 50 mm	USD 729.00	

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI000211**

Thickness ..... **0.008mm** Coil width ..... **104mm**  
 Purity..... **99.6+%**

Coil	Width 104mm	Quantity	
Web Code	Length	1 Reel	
021-584-331	0.2 m	USD 1010.00	
659-926-525	0.3 m	USD 1367.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Metal – Titanium**

## Titanium

Ti



### Foil

**TI000160**

Thickness ..... **0.008mm** Purity..... **99.6+%**  
 Condition..... **Grade 1 - ASTM B265 Chemistry only**

#### NLT Sizes

Web Code	Size	Quantity			
		1pc	2pcs	5pcs	10pcs
410-264-638	25 x 25 mm	USD 487.00	USD 634.00	USD 939.00	USD 1359.00
855-629-725	50 x 50 mm	USD 812.00	USD 1094.00	USD 2466.00	
566-804-320	100 x 100 mm	USD 1965.00	USD 3781.00		
406-154-449	150 x 150 mm	USD 4219.00			

#### Sizes LT

Web Code	Size	Quantity			
		1pc	2pcs	5pcs	10pcs
683-083-649	25 x 25 mm	USD 535.00	USD 697.00	USD 1033.00	USD 1495.00
984-569-898	50 x 50 mm	USD 893.00	USD 1204.00	USD 2712.00	

#### Disks

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
890-279-724	4 mm	USD 534.00	USD 656.00	USD 947.00
284-972-801	6 mm	USD 626.00	USD 788.00	USD 1158.00
621-609-045	8 mm	USD 719.00	USD 921.00	USD 1374.00
701-127-200	10 mm	USD 813.00	USD 1055.00	USD 1592.00
640-900-870	15 mm	USD 1043.00	USD 1382.00	USD 2827.00
112-611-681	25 mm	USD 1613.00	USD 2921.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000170**

Thickness ..... **0.009mm** Purity..... **99.6+%**  
 Condition..... **Grade 1 - ASTM B265 Chemistry only**

#### NLT Sizes

Web Code	Size	Quantity			
		1pc	2pcs	5pcs	10pcs
606-259-869	25 x 25 mm	USD 470.00	USD 611.00	USD 903.00	USD 1331.00
470-380-247	50 x 50 mm	USD 779.00	USD 1053.00	USD 2410.00	
132-104-234	100 x 100 mm	USD 1920.00	USD 3692.00		
669-276-069	150 x 150 mm	USD 4119.00			

#### Sizes LT

Web Code	Size	Quantity			
		1pc	2pcs	5pcs	10pcs
921-913-726	25 x 25 mm	USD 517.00	USD 672.00	USD 993.00	USD 1465.00
730-624-021	50 x 50 mm	USD 857.00	USD 1158.00	USD 2651.00	

#### Disks

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
808-704-520	4 mm	USD 524.00	USD 643.00	USD 926.00
088-064-735	6 mm	USD 612.00	USD 768.00	USD 1127.00
008-097-487	8 mm	USD 701.00	USD 895.00	USD 1332.00
012-176-180	10 mm	USD 790.00	USD 1023.00	USD 1546.00
522-019-326	15 mm	USD 1008.00	USD 1333.00	USD 2770.00
252-415-547	25 mm	USD 1582.00	USD 2859.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000212**

Thickness ..... **0.01mm** High Purity ..... **99.99+%**  
 Temper..... **As rolled**

#### NLT Sizes

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
098-397-513	50 x 50 mm	USD 1117.00	USD 1539.00	
493-860-886	100 x 100 mm	USD 2085.00		

#### Sizes LT

Web Code	Size	Quantity		
		1pc	2pcs	5pcs
174-909-779	25 x 25 mm	USD 633.00	USD 854.00	USD 1314.00
258-429-339	50 x 50 mm	USD 1228.00	USD 1693.00	
923-125-799	100 x 100 mm	USD 2606.00		

#### Disks

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
792-053-392	4 mm	USD 687.00	USD 998.00	USD 1279.00
006-670-870	6 mm	USD 811.00	USD 1175.00	USD 1562.00
833-853-998	8 mm	USD 936.00	USD 1353.00	USD 1847.00
231-747-483	10 mm	USD 1061.00	USD 1532.00	USD 2136.00
968-435-058	15 mm	USD 1370.00	USD 1971.00	
054-381-677	25 mm	USD 1992.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

Metal – Titanium

**Titanium**

**Ti**



**Foil**

**TI000213**

Thickness ..... **0.010mm** Purity..... **99.6+%**  
 Condition..... **Grade 1 - ASTM B265 Chemistry only**

**NLT Sizes**

Web Code	Size	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
828-848-647	100 x 100 mm	USD 527.00	USD 671.00	USD 966.00	USD 1311.00	
518-098-674	150 x 150 mm	USD 691.00	USD 903.00	USD 1333.00		
985-450-125	200 x 200 mm	USD 855.00	USD 1135.00			

**Sizes LT**

Web Code	Size	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
373-084-615	25 x 25 mm	USD 281.00	USD 323.00	USD 415.00	USD 533.00	USD 724.00
039-370-796	50 x 50 mm	USD 363.00	USD 439.00	USD 599.00	USD 793.00	USD 1091.00
269-444-548	100 x 100 mm	USD 579.00	USD 738.00	USD 1062.00	USD 1443.00	

**Coil**

Web Code	Length	Quantity
		1 Reel
974-012-368	0.2 m	USD 809.00
829-667-312	0.3 m	USD 937.00
989-971-926	0.5 m	USD 1140.00
766-205-510	1 m	USD 1513.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000215**

Thickness ..... **0.012mm** Purity..... **99.6+%**

**NLT Sizes**

Web Code	Size	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
020-471-715	100 x 100 mm	USD 517.00	USD 658.00	USD 945.00	USD 1282.00	
229-759-260	200 x 200 mm	USD 836.00	USD 1109.00	USD 1658.00		

**Sizes LT**

Web Code	Size	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
042-393-568	25 x 25 mm	USD 278.00	USD 320.00	USD 410.00	USD 526.00	USD 714.00
139-628-099	50 x 50 mm	USD 358.00	USD 432.00	USD 588.00	USD 778.00	USD 1070.00
107-841-890	100 x 100 mm	USD 569.00	USD 724.00	USD 1039.00	USD 1410.00	

**Coil**

Web Code	Length	Quantity
		1 Reel
252-822-899	0.2 m	USD 883.00
602-855-739	0.3 m	USD 1028.00
356-966-276	0.5 m	USD 1257.00
620-776-860	1 m	USD 1678.00

**Disks**

Web Code	Diameter	Quantity		
		10 disks	20 disks	50 disks
597-102-260	4 mm	USD 511.00	USD 632.00	USD 762.00
637-776-627	6 mm	USD 536.00	USD 666.00	USD 817.00
722-082-013	8 mm	USD 560.00	USD 700.00	USD 871.00
260-256-451	10 mm	USD 584.00	USD 734.00	USD 925.00
532-062-205	15 mm	USD 645.00	USD 820.00	USD 1061.00
507-778-596	25 mm	USD 766.00	USD 992.00	USD 1332.00
472-323-015	50 mm	USD 1069.00	USD 1421.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000220**

Thickness ..... **0.0125mm** Purity..... **99.6+%**  
 Temper..... **Annealed**

**NLT Sizes**

Web Code	Size	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
658-526-576	100 x 100 mm	USD 454.00	USD 563.00	USD 782.00	USD 1034.00	
028-348-496	150 x 150 mm	USD 582.00	USD 744.00	USD 1068.00		
999-863-822	279 x 300 mm	USD 938.00	USD 1247.00			

**Sizes LT**

Web Code	Size	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
884-849-128	25 x 25 mm	USD 263.00	USD 292.00	USD 354.00	USD 428.00	USD 541.00
723-150-208	50 x 50 mm	USD 326.00	USD 382.00	USD 496.00	USD 630.00	USD 827.00
881-950-459	100 x 100 mm	USD 500.00	USD 619.00	USD 860.00	USD 1137.00	
265-809-660	150 x 150 mm	USD 698.00	USD 892.00	USD 1281.00		
142-915-249	279 x 300 mm	USD 1172.00	USD 1559.00			

**Coil**

Web Code	Length	Quantity
		1 Reel
046-933-275	0.5 m	USD 1204.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Metal - Titanium**



**Titanium**

**Ti**



**Foil**

**TI000230**

Thickness ..... **0.015mm**

Purity ..... **99.6+%**

**Size**

**Web Code**

603-751-240  
 468-903-772  
 612-965-543  
 382-539-332  
 657-861-588

**Size**

25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 130 x 150 mm  
 266 x 300 mm

		Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
USD 242.00	USD 271.00	USD 331.00	USD 404.00	USD 516.00		
USD 305.00	USD 359.00	USD 471.00	USD 602.00	USD 796.00		
USD 430.00	USD 536.00	USD 751.00	USD 997.00			
USD 529.00	USD 676.00	USD 972.00				
USD 886.00	USD 1181.00					

**Coil**

**Web Code**  
 650-175-936  
 263-144-779

**Width 266mm**

**Length 1 Reel**  
 0.5 m USD 1139.00  
 1 m USD 1517.00

**Quantity**

**Disks**

**Web Code**  
 492-484-908  
 560-623-461  
 077-932-426  
 741-558-443  
 694-807-936  
 850-990-458  
 373-804-051

**Diameter**  
 4 mm  
 6 mm  
 8 mm  
 10 mm  
 15 mm  
 25 mm  
 50 mm

**Quantity**

	10 disks	20 disks	50 disks
USD 373.00	USD 425.00	USD 547.00	
USD 392.00	USD 452.00	USD 590.00	
USD 411.00	USD 479.00	USD 632.00	
USD 430.00	USD 506.00	USD 675.00	
USD 478.00	USD 573.00	USD 781.00	
USD 573.00	USD 707.00	USD 993.00	
USD 810.00	USD 1044.00	USD 1527.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000251**

Thickness ..... **0.02mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

725-505-933  
 013-347-084  
 862-537-128  
 547-313-928  
 151-240-699

**Size**

25 x 25 mm  
 50 x 50 mm  
 95 x 100 mm  
 150 x 150 mm  
 197 x 300 mm

		Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
USD 234.00	USD 264.00	USD 326.00	USD 401.00	USD 516.00		
USD 299.00	USD 355.00	USD 471.00	USD 606.00	USD 805.00		
USD 422.00	USD 529.00	USD 745.00	USD 994.00	USD 1354.00		
USD 558.00	USD 721.00	USD 1049.00	USD 1424.00			
USD 798.00	USD 1062.00					

**Coil**

**Web Code**  
 780-977-641  
 688-247-503  
 030-949-833

**Width 180mm**

**Length 1 Reel**  
 0.5 m USD 994.00  
 1 m USD 1316.00  
 2 m USD 1971.00

**Quantity**

**Disks**

**Web Code**  
 591-051-892  
 881-483-249  
 185-401-434  
 175-177-199  
 897-149-426  
 143-681-926  
 960-248-212

**Diameter**  
 4 mm  
 6 mm  
 8 mm  
 10 mm  
 15 mm  
 25 mm  
 50 mm

**Quantity**

	10 disks	20 disks	50 disks
USD 362.00	USD 415.00	USD 538.00	
USD 382.00	USD 442.00	USD 582.00	
USD 402.00	USD 470.00	USD 626.00	
USD 421.00	USD 498.00	USD 670.00	
USD 470.00	USD 568.00	USD 780.00	
USD 569.00	USD 707.00	USD 1000.00	
USD 815.00	USD 1056.00	USD 1553.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000295**

Thickness ..... **0.025mm**  
 Temper ..... **As rolled**

High Purity ..... **99.99+%**

**Size**

**Web Code**

260-020-112  
 502-513-281  
 814-153-684

**Size**

25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm

**Quantity**

	1pc	2pcs	5pcs
USD 404.00	USD 524.00	USD 771.00	
USD 677.00	USD 994.00		
USD 1844.00			

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**Titanium**

**Ti**



**Foil**

**TI000290**

Thickness ..... **0.025mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Grade 2 - ASTM B265 Chemistry only**

**Size**

**Web Code**

031-029-506  
 878-697-274  
 837-161-390  
 645-165-294  
 530-740-549

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 165.00	USD 187.00	USD 240.00	USD 318.00	USD 416.00
50 x 50 mm	USD 192.00	USD 225.00	USD 301.00	USD 403.00	USD 536.00
100 x 100 mm	USD 246.00	USD 301.00	USD 422.00	USD 574.00	USD 778.00
150 x 150 mm	USD 300.00	USD 378.00	USD 543.00	USD 745.00	
300 x 300 mm	USD 463.00	USD 607.00	USD 905.00		

**Coil**

**Web Code**

541-201-473  
 706-989-091  
 373-635-638

**Width 305mm**

Length	1 Reel
0.5 m	USD 582.00
1 m	USD 763.00
2 m	USD 1114.00

**Disks**

**Web Code**

041-289-593  
 161-195-367  
 149-422-240  
 677-783-752  
 722-970-744  
 371-344-688  
 418-080-124

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 382.00	USD 464.00	USD 703.00
6 mm	USD 390.00	USD 476.00	USD 721.00
8 mm	USD 398.00	USD 487.00	USD 740.00
10 mm	USD 407.00	USD 499.00	USD 758.00
15 mm	USD 427.00	USD 528.00	USD 804.00
25 mm	USD 468.00	USD 586.00	USD 896.00
50 mm	USD 571.00	USD 731.00	USD 1126.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000300**

Thickness ..... **0.03mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

998-215-480  
 776-929-668  
 116-205-498  
 525-680-067  
 710-000-318

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 186.00	USD 198.00	USD 227.00	USD 263.00	USD 324.00
50 x 50 mm	USD 209.00	USD 231.00	USD 279.00	USD 337.00	USD 429.00
100 x 100 mm	USD 256.00	USD 298.00	USD 384.00	USD 486.00	USD 638.00
150 x 150 mm	USD 303.00	USD 364.00	USD 488.00	USD 634.00	USD 848.00
200 x 300 mm	USD 392.00	USD 490.00	USD 687.00		

**Coil**

**Web Code**

780-329-650  
 750-038-818  
 754-861-569

**Width 200mm**

Length	1 Reel
0.5 m	USD 507.00
1 m	USD 630.00
2 m	USD 804.00

**Disks**

**Web Code**

873-554-681  
 194-325-373  
 290-663-064  
 332-886-005  
 610-757-511  
 344-689-593  
 086-195-872

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 305.00	USD 340.00	USD 426.00
6 mm	USD 311.00	USD 349.00	USD 439.00
8 mm	USD 317.00	USD 357.00	USD 452.00
10 mm	USD 323.00	USD 365.00	USD 466.00
15 mm	USD 338.00	USD 386.00	USD 499.00
25 mm	USD 368.00	USD 428.00	USD 565.00
50 mm	USD 442.00	USD 533.00	USD 731.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000315**

Thickness ..... **0.05mm**  
 Temper ..... **As rolled**

High Purity ..... **99.99+%**

**Size**

**Web Code**

136-555-505  
 069-442-058  
 680-253-151

Size	Quantity		
	1pc	2pcs	5pcs
25 x 25 mm	USD 383.00	USD 495.00	USD 725.00
50 x 50 mm	USD 636.00	USD 945.00	
100 x 100 mm	USD 1746.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**Metal – Titanium**

**Titanium**

**Ti**



**Foil**

**TI000310**

Thickness ..... **0.05mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 774-477-060  
 809-628-922  
 203-623-286  
 452-908-860  
 162-476-409

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 148.00	USD 165.00	USD 208.00	USD 268.00	USD 337.00
50 x 50 mm	USD 173.00	USD 201.00	USD 264.00	USD 347.00	USD 449.00
100 x 100 mm	USD 223.00	USD 272.00	USD 376.00	USD 505.00	USD 673.00
150 x 150 mm	USD 273.00	USD 343.00	USD 488.00	USD 664.00	
300 x 300 mm	USD 423.00	USD 555.00	USD 824.00		

**Coil**

**Web Code**  
 446-242-685  
 613-602-427  
 700-305-724

Length	1 Reel
	0.5 m
1 m	USD 720.00
2 m	USD 951.00

**Disks**

**Web Code**  
 085-074-265  
 634-286-980  
 285-865-592  
 733-188-886  
 648-612-419  
 076-552-726  
 569-092-458

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 305.00	USD 347.00	USD 468.00
6 mm	USD 312.00	USD 356.00	USD 482.00
8 mm	USD 318.00	USD 365.00	USD 496.00
10 mm	USD 325.00	USD 374.00	USD 510.00
15 mm	USD 340.00	USD 397.00	USD 546.00
25 mm	USD 372.00	USD 442.00	USD 617.00
50 mm	USD 452.00	USD 554.00	USD 795.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000351**

Thickness ..... **0.075mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Flattened**

**Size**

**Web Code**  
 241-256-776  
 156-724-497  
 025-928-623

Size	Quantity			
	1pc	2pcs	5pcs	10pcs
100 x 100 mm	USD 339.00	USD 415.00	USD 570.00	USD 748.00
150 x 200 mm	USD 468.00	USD 598.00	USD 859.00	USD 1158.00
200 x 300 mm	USD 595.00	USD 778.00	USD 1143.00	

**Disks**

**Web Code**  
 242-222-155  
 735-695-837  
 452-586-774  
 197-150-362  
 671-494-452  
 734-313-015  
 026-127-530

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 316.00	USD 355.00	USD 449.00
6 mm	USD 327.00	USD 371.00	USD 474.00
8 mm	USD 338.00	USD 387.00	USD 500.00
10 mm	USD 350.00	USD 403.00	USD 525.00
15 mm	USD 377.00	USD 442.00	USD 587.00
25 mm	USD 433.00	USD 522.00	USD 713.00
50 mm	USD 574.00	USD 720.00	USD 1028.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000350**

Thickness ..... **0.075mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 123-954-154  
 494-270-281  
 783-783-283  
 972-902-877  
 612-862-167

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 195.00	USD 212.00	USD 248.00	USD 294.00	USD 367.00
50 x 50 mm	USD 228.00	USD 259.00	USD 322.00	USD 399.00	USD 515.00
100 x 100 mm	USD 295.00	USD 353.00	USD 470.00	USD 608.00	USD 812.00
150 x 150 mm	USD 361.00	USD 446.00	USD 619.00	USD 818.00	USD 1108.00
300 x 300 mm	USD 560.00	USD 727.00	USD 1063.00		

**Coil**

**Web Code**  
 243-569-985  
 607-769-501  
 971-192-093

Length	1 Reel
	0.5 m
1 m	USD 942.00
2 m	USD 1247.00

**Disks**

**Web Code**  
 386-192-659  
 274-079-101  
 259-896-320  
 487-045-860  
 880-728-253  
 091-032-385  
 379-046-876

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 310.00	USD 347.00	USD 437.00
6 mm	USD 319.00	USD 359.00	USD 456.00
8 mm	USD 327.00	USD 371.00	USD 474.00
10 mm	USD 335.00	USD 383.00	USD 493.00
15 mm	USD 356.00	USD 413.00	USD 540.00
25 mm	USD 398.00	USD 472.00	USD 634.00
50 mm	USD 503.00	USD 621.00	USD 870.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Metal – Titanium**

**Titanium**

**Ti**



**Foil**

**TI000371**

Thickness ..... **0.10mm** Purity ..... **99.6+%**  
 Temper ..... **Annealed** Condition ..... **Flattened**  
 Condition ..... **Grade 1 - ASTM B265 Chemistry only**

Size	Quantity			
Web Code	1pc	2pcs	5pcs	10pcs
630-171-429	USD 516.00	USD 665.00	USD 965.00	USD 1346.00
041-183-299	USD 662.00	USD 872.00	USD 1331.00	

Disks	Quantity		
Web Code	10 disks	20 disks	50 disks
423-021-686	USD 319.00	USD 360.00	USD 457.00
175-968-623	USD 332.00	USD 378.00	USD 486.00
907-277-026	USD 345.00	USD 397.00	USD 515.00
316-579-676	USD 358.00	USD 415.00	USD 544.00
094-437-742	USD 390.00	USD 461.00	USD 616.00
160-968-338	USD 455.00	USD 552.00	USD 761.00
637-919-830	USD 617.00	USD 782.00	USD 1125.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000370**

Thickness ..... **0.1mm** Purity ..... **99.6+%**  
 Temper ..... **Annealed**

Size	Quantity				
Web Code	1pc	2pcs	5pcs	10pcs	20pcs
380-858-910	USD 203.00	USD 222.00	USD 262.00	USD 312.00	USD 391.00
607-371-481	USD 241.00	USD 275.00	USD 346.00	USD 431.00	USD 561.00
921-437-060	USD 316.00	USD 382.00	USD 516.00	USD 671.00	
179-629-378	USD 392.00	USD 489.00	USD 685.00		
664-077-116	USD 619.00	USD 810.00			

Coil	Quantity	
Web Code	1 Reel	
189-018-411	USD 799.00	
707-882-026	USD 1043.00	

Disks	Quantity		
Web Code	10 disks	20 disks	50 disks
809-251-386	USD 316.00	USD 354.00	USD 445.00
156-416-369	USD 325.00	USD 367.00	USD 467.00
552-049-618	USD 335.00	USD 381.00	USD 488.00
006-211-220	USD 344.00	USD 394.00	USD 510.00
776-410-055	USD 368.00	USD 428.00	USD 563.00
051-251-261	USD 416.00	USD 496.00	USD 670.00
406-410-729	USD 536.00	USD 666.00	USD 940.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000385**

Thickness ..... **0.125mm** High Purity ..... **99.99+%**  
 Temper ..... **As rolled**

Size	Quantity		
Web Code	1pc	2pcs	5pcs
727-305-262	USD 316.00	USD 400.00	USD 644.00
913-150-763	USD 518.00	USD 914.00	
143-849-769	USD 1683.00		

Disks	Quantity		
Web Code	10 disks	20 disks	50 disks
981-214-161	USD 396.00	USD 509.00	USD 667.00
651-770-958	USD 445.00	USD 579.00	USD 781.00
471-373-838	USD 494.00	USD 651.00	USD 974.00
921-732-484	USD 544.00	USD 724.00	USD 1269.00
216-554-361	USD 665.00	USD 1096.00	

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**Metal – Titanium**

**Titanium**

**Ti**



**Foil**

**TI000380**

Thickness ..... **0.125mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

057-906-071  
 238-253-034  
 781-636-016  
 704-503-213  
 062-901-753  
 922-485-882

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 152.00	USD 169.00	USD 210.00	USD 267.00	USD 370.00
50 x 50 mm	USD 175.00	USD 201.00	USD 260.00	USD 339.00	USD 471.00
100 x 100 mm	USD 220.00	USD 265.00	USD 361.00	USD 482.00	USD 674.00
150 x 150 mm	USD 266.00	USD 329.00	USD 463.00	USD 625.00	
200 x 300 mm	USD 351.00	USD 451.00	USD 711.00		
292 x 300 mm	USD 398.00	USD 516.00			

**Coil**

**Web Code**  
 545-948-500  
 862-715-984

**Width 292mm**

Length	1 Reel
0.5 m	USD 469.00
1 m	USD 660.00

**Disks**

**Web Code**  
 557-246-320  
 655-797-546  
 974-690-389  
 836-290-194  
 536-267-545  
 033-446-776  
 180-848-104

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 312.00	USD 390.00	USD 475.00
6 mm	USD 317.00	USD 398.00	USD 488.00
8 mm	USD 323.00	USD 406.00	USD 500.00
10 mm	USD 329.00	USD 414.00	USD 513.00
15 mm	USD 343.00	USD 434.00	USD 545.00
25 mm	USD 372.00	USD 475.00	USD 610.00
50 mm	USD 444.00	USD 576.00	USD 771.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000382**

Thickness ..... **0.140mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

606-012-500  
 010-177-731  
 272-216-225  
 027-035-967  
 379-493-508  
 742-088-872

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 155.00	USD 172.00	USD 214.00	USD 274.00	USD 379.00
50 x 50 mm	USD 179.00	USD 207.00	USD 269.00	USD 352.00	USD 489.00
100 x 100 mm	USD 228.00	USD 277.00	USD 379.00	USD 507.00	USD 710.00
150 x 150 mm	USD 278.00	USD 346.00	USD 490.00	USD 663.00	
160 x 300 mm	USD 346.00	USD 442.00	USD 642.00		
300 x 300 mm	USD 425.00	USD 555.00			

**Coil**

**Web Code**  
 436-693-678  
 751-563-854

**Width 305mm**

Length	1 Reel
0.5 m	USD 508.00
1 m	USD 706.00

**Disks**

**Web Code**  
 028-375-940  
 546-997-443  
 374-685-253  
 835-655-353  
 456-918-924  
 114-862-575  
 357-818-460

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 313.00	USD 391.00	USD 477.00
6 mm	USD 319.00	USD 400.00	USD 491.00
8 mm	USD 325.00	USD 409.00	USD 505.00
10 mm	USD 331.00	USD 418.00	USD 519.00
15 mm	USD 347.00	USD 440.00	USD 554.00
25 mm	USD 378.00	USD 484.00	USD 624.00
50 mm	USD 456.00	USD 595.00	USD 800.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000401**

Thickness ..... **0.2mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Condition ..... **Flattened**

**Size**

**Web Code**

907-888-770  
 204-903-429  
 313-677-415

Size	Quantity			
	1pc	2pcs	5pcs	10pcs
50 x 50 mm	USD 219.00	USD 263.00	USD 358.00	USD 477.00
100 x 100 mm	USD 308.00	USD 388.00	USD 556.00	
200 x 300 mm	USD 565.00	USD 753.00		

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Titanium**

**Ti**



**Foil**

**TI000400**

Thickness ..... **0.2mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

129-380-472  
 580-405-247  
 941-750-285  
 236-895-810  
 973-163-541

**Size**  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 150 x 150 mm  
 300 x 300 mm

		Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 162.00	USD 183.00	USD 232.00	USD 299.00	USD 415.00	
50 x 50 mm	USD 195.00	USD 229.00	USD 305.00	USD 402.00	USD 560.00	
100 x 100 mm	USD 260.00	USD 321.00	USD 450.00	USD 607.00		
150 x 150 mm	USD 325.00	USD 413.00	USD 596.00			
300 x 300 mm	USD 520.00	USD 689.00				

**Coil**

**Web Code**  
 825-843-223  
 228-266-286

**Width 300mm**  
**Length 1 Reel**  
 0.5 m USD 627.00  
 1 m USD 836.00

**Quantity**

**Disks**

**Web Code**  
 986-033-217  
 968-970-654  
 543-435-716  
 178-645-566  
 380-041-064  
 595-064-213  
 299-707-372

**Diameter**  
 4 mm  
 6 mm  
 8 mm  
 10 mm  
 15 mm  
 25 mm  
 50 mm

		Quantity		
		10 disks	20 disks	50 disks
4 mm	USD 317.00	USD 397.00	USD 520.00	
6 mm	USD 325.00	USD 408.00	USD 538.00	
8 mm	USD 333.00	USD 420.00	USD 557.00	
10 mm	USD 341.00	USD 432.00	USD 576.00	
15 mm	USD 362.00	USD 461.00	USD 622.00	
25 mm	USD 403.00	USD 519.00	USD 714.00	
50 mm	USD 507.00	USD 666.00	USD 948.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000410**

Thickness ..... **0.25mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

768-534-698  
 066-835-971  
 354-498-924  
 312-367-578  
 045-940-137

**Size**  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 150 x 150 mm  
 300 x 300 mm

		Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 165.00	USD 187.00	USD 238.00	USD 308.00	USD 427.00	
50 x 50 mm	USD 201.00	USD 237.00	USD 317.00	USD 420.00	USD 585.00	
100 x 100 mm	USD 271.00	USD 337.00	USD 476.00	USD 643.00		
150 x 150 mm	USD 342.00	USD 437.00	USD 634.00			
300 x 300 mm	USD 554.00	USD 737.00				

**Coil**

**Web Code**  
 316-367-513  
 742-519-425

**Width 305mm**  
**Length 1 Reel**  
 0.5 m USD 676.00  
 1 m USD 905.00

**Quantity**

**Disks**

**Web Code**  
 674-850-554  
 356-312-880  
 539-103-561  
 387-945-396  
 493-170-938  
 646-364-761  
 795-591-392

**Diameter**  
 4 mm  
 6 mm  
 8 mm  
 10 mm  
 15 mm  
 25 mm  
 50 mm

		Quantity		
		10 disks	20 disks	50 disks
4 mm	USD 318.00	USD 399.00	USD 523.00	
6 mm	USD 327.00	USD 411.00	USD 543.00	
8 mm	USD 336.00	USD 424.00	USD 563.00	
10 mm	USD 345.00	USD 437.00	USD 584.00	
15 mm	USD 367.00	USD 469.00	USD 634.00	
25 mm	USD 412.00	USD 532.00	USD 735.00	
50 mm	USD 525.00	USD 692.00	USD 989.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000416**

Thickness ..... **0.3mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Condition ..... **Grade 2 - ASTM B265 Chemistry only**

**Size**

**Web Code**

169-498-291  
 235-167-601  
 221-732-416

**Size**  
 100 x 100 mm  
 150 x 150 mm  
 300 x 300 mm

		Quantity		
		1pc	2pcs	5pcs
100 x 100 mm	USD 280.00	USD 350.00	USD 496.00	
150 x 150 mm	USD 356.00	USD 457.00	USD 664.00	
300 x 300 mm	USD 582.00	USD 776.00		

**Coil**

**Web Code**  
 132-825-015  
 554-285-099

**Width 300mm**  
**Length 1 Reel**  
 0.5 m USD 706.00  
 1 m USD 949.00

**Quantity**

**Disks**

**Web Code**  
 408-518-289  
 688-508-383  
 143-762-475  
 787-600-313  
 644-217-040  
 360-282-234  
 548-345-091

**Diameter**  
 4 mm  
 6 mm  
 8 mm  
 10 mm  
 15 mm  
 25 mm  
 50 mm

		Quantity		
		10 disks	20 disks	50 disks
4 mm	USD 319.00	USD 400.00	USD 526.00	
6 mm	USD 329.00	USD 414.00	USD 547.00	
8 mm	USD 338.00	USD 427.00	USD 569.00	
10 mm	USD 348.00	USD 441.00	USD 590.00	
15 mm	USD 372.00	USD 475.00	USD 644.00	
25 mm	USD 419.00	USD 542.00	USD 751.00	
50 mm	USD 539.00	USD 712.00	USD 1021.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Titanium**

**Ti**



**Foil**

**TI000419**

Thickness ..... **0.35mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Platinized on both sides 2 micron thick**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Size</b>
386-456-572	100 x 100 mm
	<b>1pc</b>
	USD 799.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000427**

Thickness ..... **0.45mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Platinized on both sides 2 micron thick**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Size</b>
865-860-030	100 x 100 mm
	<b>1pc</b>
	USD 847.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000423**

Thickness ..... **0.5mm**  
 Condition ..... **Ion Implanted**

Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Size</b>
116-312-044	50 x 50 mm
	<b>1pc</b>
	POA

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.  
 This material has been Ion Implanted with Nitrogen Ions to a dose of  $3 \times 10^{17}$  ions  $cm^{-2}$ .

**TI000425**

Thickness ..... **0.5mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Polished on both sides**

<b>Size</b>	<b>Quantity</b>		
<b>Web Code</b>	<b>Size</b>	<b>1pc</b>	<b>2pcs</b>
772-974-842	100 x 100 mm	USD 292.00	USD 377.00
			USD 570.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000421**

Thickness ..... **0.5mm**  
 Surface treatment ..... **Titanium Nitride coating 2-3 microns**

Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>		
<b>Web Code</b>	<b>Size</b>	<b>1pc</b>	<b>2pcs</b>
541-806-825	25 x 25 mm	USD 235.00	USD 286.00
725-858-944	50 x 50 mm	USD 340.00	USD 434.00
732-369-991	100 x 100 mm	USD 550.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.  
 This item is shown as an example of Titanium Nitride (TiN) coated material. Other items or your own material may also have a coating applied, please ask for more details.

**TI000417**

Thickness ..... **0.5mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Polished on 1 side**

<b>Size</b>	<b>Quantity</b>			
<b>Web Code</b>	<b>Size</b>	<b>1pc</b>	<b>2pcs</b>	<b>5pcs</b>
832-171-022	10 x 10 mm	USD 271.00	USD 337.00	USD 501.00
				USD 880.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI000420**

Thickness ..... **0.5mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>				
<b>Web Code</b>	<b>Size</b>	<b>1pc</b>	<b>2pcs</b>	<b>5pcs</b>	<b>10pcs</b>
395-215-502	25 x 25 mm	USD 156.00	USD 174.00	USD 219.00	USD 281.00
401-947-946	50 x 50 mm	USD 181.00	USD 210.00	USD 275.00	USD 362.00
243-490-913	100 x 100 mm	USD 232.00	USD 282.00	USD 389.00	USD 522.00
436-363-166	150 x 150 mm	USD 283.00	USD 354.00	USD 503.00	
545-396-026	300 x 300 mm	USD 436.00	USD 635.00		

<b>Disks</b>	<b>Quantity</b>		
<b>Web Code</b>	<b>Diameter</b>	<b>10 disks</b>	<b>20 disks</b>
174-503-000	4 mm	USD 344.00	USD 395.00
812-883-333	6 mm	USD 351.00	USD 406.00
610-424-962	8 mm	USD 359.00	USD 417.00
303-115-363	10 mm	USD 367.00	USD 428.00
889-416-404	15 mm	USD 386.00	USD 455.00
177-058-647	25 mm	USD 425.00	USD 510.00
132-334-408	50 mm	USD 522.00	USD 647.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Metal – Titanium**

**Titanium**

**Ti**



**Foil**

**TI000422**

Thickness ..... **0.7mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

205-817-696  
 727-209-309  
 901-170-200  
 646-283-102  
 785-398-996  
 174-873-228

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 168.00	USD 183.00	USD 215.00	USD 256.00	USD 324.00
50 x 50 mm	USD 196.00	USD 223.00	USD 279.00	USD 346.00	USD 451.00
100 x 100 mm	USD 253.00	USD 303.00	USD 406.00	USD 526.00	
150 x 150 mm	USD 310.00	USD 384.00	USD 533.00		
300 x 300 mm	USD 481.00	USD 625.00			
500 x 500 mm	USD 708.00				

**Disks**

**Web Code**

859-151-435  
 393-937-489  
 242-177-694  
 272-211-949  
 026-499-559  
 312-438-349  
 054-791-401

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 295.00	USD 334.00	USD 431.00
6 mm	USD 303.00	USD 346.00	USD 448.00
8 mm	USD 311.00	USD 357.00	USD 466.00
10 mm	USD 319.00	USD 368.00	USD 484.00
15 mm	USD 338.00	USD 396.00	USD 528.00
25 mm	USD 378.00	USD 452.00	USD 617.00
50 mm	USD 477.00	USD 593.00	USD 840.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI000432**

Thickness ..... **1.0mm**  
 Temper ..... **As rolled**

High Purity ..... **99.99+%**

**Size**

**Web Code**

584-866-631  
 108-336-569  
 542-069-398

Size	Quantity		
	1pc	2pcs	5pcs
25 x 25 mm	USD 349.00	USD 465.00	USD 717.00
50 x 50 mm	USD 528.00	USD 772.00	
100 x 100 mm	USD 1292.00		

**Disks**

**Web Code**

758-671-372  
 833-914-083  
 239-257-642  
 907-208-069  
 401-012-081

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 658.00	USD 930.00	USD 1704.00
6 mm	USD 709.00	USD 1003.00	USD 1821.00
8 mm	USD 761.00	USD 1077.00	USD 1941.00
10 mm	USD 813.00	USD 1152.00	USD 2123.00
15 mm	USD 940.00	USD 1359.00	

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI000433**

Thickness ..... **1.0mm**  
 Temper ..... **As rolled**

High Purity ..... **99.999%**

**Size**

**Web Code**

812-737-861  
 592-230-675

Size	Quantity	
	1pc	2pcs
25 x 25 mm	USD 550.00	USD 750.00
50 x 50 mm	USD 1073.00	

**Disks**

**Web Code**

603-234-420  
 404-307-191  
 538-399-744  
 299-968-929

Diameter	Quantity		
	10 disks	20 disks	50 disks
4 mm	USD 773.00	USD 1094.00	USD 1966.00
6 mm	USD 883.00	USD 1252.00	
8 mm	USD 995.00	USD 1413.00	
10 mm	USD 1108.00		

Typical Analysis : Al 2, Cu 1, Fe 3, Si 1, Sn 1

**TI000431**

Thickness ..... **1.0mm**  
 Surface treatment ..... **Titanium Nitride coating 2-3 microns**

Purity ..... **99.6+%**

**Size**

**Web Code**

702-374-695  
 796-826-641  
 603-328-130

Size	Quantity			
	1pc	2pcs	5pcs	10pcs
25 x 25 mm	USD 228.00	USD 276.00	USD 379.00	USD 507.00
50 x 50 mm	USD 326.00	USD 415.00	USD 599.00	
100 x 100 mm	USD 523.00			

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**Metal – Titanium**



**Titanium**

**Ti**



**Foil**

**TI000430**

Thickness ..... **1.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

457-003-322  
 125-412-506  
 676-571-029  
 571-381-273  
 422-657-739  
 832-224-674

**Size**  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 150 x 150 mm  
 300 x 300 mm  
 500 x 500 mm

Quantity					
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 150.00	USD 173.00	USD 234.00	USD 326.00	USD 499.00
50 x 50 mm	USD 171.00	USD 202.00	USD 280.00	USD 390.00	USD 590.00
100 x 100 mm	USD 211.00	USD 260.00	USD 371.00	USD 519.00	
150 x 150 mm	USD 252.00	USD 317.00	USD 462.00		
300 x 300 mm	USD 374.00	USD 547.00			
500 x 500 mm	USD 689.00				

**Disks**

**Web Code**

028-078-493  
 509-804-178  
 725-523-593  
 690-438-003  
 304-758-631  
 094-828-900  
 853-618-903

Quantity			
Diameter	10 disks	20 disks	50 disks
4 mm	USD 395.00	USD 561.00	USD 812.00
6 mm	USD 401.00	USD 569.00	USD 825.00
8 mm	USD 406.00	USD 577.00	USD 837.00
10 mm	USD 412.00	USD 585.00	USD 850.00
15 mm	USD 426.00	USD 605.00	USD 882.00
25 mm	USD 455.00	USD 645.00	USD 946.00
50 mm	USD 526.00	USD 747.00	USD 1108.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI000436**

Thickness ..... **1.20mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Grade 2 - ASTM B265 Chemistry only**

**Size**

**Web Code**

145-934-621  
 463-826-320

**Size**  
 150 x 150 mm  
 300 x 300 mm

Quantity			
	1pc	2pcs	5pcs
150 x 150 mm	USD 354.00	USD 446.00	USD 632.00
300 x 300 mm	USD 569.00	USD 770.00	

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI000437**

Thickness ..... **1.5mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

101-479-356  
 684-924-816  
 615-609-851  
 951-226-388  
 903-294-963

**Size**  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 150 x 150 mm  
 300 x 300 mm

Quantity					
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 176.00	USD 194.00	USD 233.00	USD 282.00	USD 360.00
50 x 50 mm	USD 212.00	USD 246.00	USD 315.00	USD 397.00	USD 523.00
100 x 100 mm	USD 285.00	USD 349.00	USD 478.00	USD 628.00	
150 x 150 mm	USD 358.00	USD 452.00	USD 641.00		
300 x 300 mm	USD 577.00	USD 891.00			

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.  
 We can also offer 99.99% material, prices on request.

**TI000441**

Thickness ..... **2.0mm**  
 Surface treatment ..... **Titanium Nitride coating 2-3 microns**

Purity ..... **99.6+%**

**Size**

**Web Code**

936-788-231  
 098-526-117  
 315-763-502

**Size**  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm

Quantity				
	1pc	2pcs	5pcs	10pcs
25 x 25 mm	USD 239.00	USD 288.00	USD 394.00	USD 525.00
50 x 50 mm	USD 341.00	USD 432.00	USD 622.00	
100 x 100 mm	USD 544.00			

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.  
 This item is shown as an example of Titanium Nitride (TiN) coated material.

**TI000440**

Thickness ..... **2.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

263-376-857  
 922-100-049  
 262-509-593  
 813-694-122  
 711-767-761  
 970-963-485

**Size**  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 150 x 150 mm  
 300 x 300 mm  
 500 x 500 mm

Quantity					
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	USD 178.00	USD 197.00	USD 238.00	USD 289.00	USD 370.00
50 x 50 mm	USD 217.00	USD 252.00	USD 325.00	USD 412.00	USD 544.00
100 x 100 mm	USD 295.00	USD 362.00	USD 499.00	USD 658.00	
150 x 150 mm	USD 373.00	USD 472.00	USD 673.00		
300 x 300 mm	USD 606.00	USD 810.00			
500 x 500 mm	USD 1067.00				

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI000460**

Thickness ..... **3.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**

881-241-821  
 155-226-563  
 403-321-253  
 549-675-408  
 415-152-205

**Size**  
 50 x 50 mm  
 100 x 100 mm  
 150 x 150 mm  
 190 x 300 mm  
 300 x 300 mm

Quantity			
	1pc	2pcs	5pcs
50 x 50 mm	USD 234.00	USD 276.00	USD 362.00
100 x 100 mm	USD 328.00	USD 409.00	USD 572.00
150 x 150 mm	USD 422.00	USD 542.00	
190 x 300 mm	USD 589.00		
300 x 300 mm	USD 704.00		

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**Metal - Titanium**

## Titanium

Ti



### Foil

**TI000500**

Thickness ..... **3.2mm**  
 Temper ..... **As rolled**

High Purity ..... **99.99+%**

**Size**

**Web Code**  
 894-032-736  
 754-091-171  
 261-396-631

Size	Quantity		
	1pc	2pcs	5pcs
25 x 25 mm	USD 363.00	USD 485.00	USD 749.00
50 x 50 mm	USD 557.00	USD 868.00	
100 x 100 mm	USD 1482.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.



### Sheet

**TI003140**

Thickness ..... **4.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Disks**

**Web Code**  
 192-447-187

Diameter	Quantity	
	1 pcs	2 pcs
26 mm	USD POA	USD POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI003150**

Thickness ..... **5.0mm**  
 Purity ..... **99.6+%**

Tolerance ..... **20 %**  
 Temper ..... **Annealed**

**Size**

**Web Code**  
 433-101-802  
 121-072-818

Size	Quantity
	1pc
150 x 150 mm	POA
300 x 300 mm	POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI003151**

Thickness ..... **5.0mm**  
 Purity ..... **99.6+%**

Tolerance ..... **20 %**  
 Temper ..... **Annealed**

**Size**

**Web Code**  
 846-346-453

Size	Quantity			
	1pc	2pcs	5pcs	10pcs
20 x 20 mm	USD 145.00	USD 178.00	USD 262.00	USD 447.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI003200**

Thickness ..... **7.0mm**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 739-589-782  
 448-715-217

Size	Quantity
	1pc
150 x 150 mm	POA
300 x 300 mm	POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI003230**

Thickness ..... **8.0mm**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 089-994-764  
 609-269-915  
 117-989-168  
 322-171-842

Size	Quantity
	1pc
75 x 75 mm	POA
75 x 105 mm	POA
90 x 340 mm	POA
92 x 498 mm	POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI003250**

Thickness ..... **12.0mm**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 089-409-444  
 176-182-493

Size	Quantity
	1pc
150 x 150 mm	POA
300 x 300 mm	POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.



### Sputtering Target

**TI009100**

Thickness ..... **1.0mm**

High Purity ..... **99.99+%**

**Size**

**Web Code**  
 393-206-927

Disk diam.	Quantity
	1disk
33 mm	POA

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.  
 These targets are normally available for immediate shipment from stock. Other sizes are available to special order.

Metal – Titanium

**Titanium**

Ti



**Sputtering Target**

**TI009300**

Thickness ..... **3.0mm** High Purity ..... **99.99+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Disk diam.</b> <b>1disk</b>
877-206-666	25 mm POA
789-984-168	50 mm POA
748-016-513	75 mm POA

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.  
 These targets are normally available for immediate shipment from stock. Other sizes are available to special order.

**TI009301**

Thickness ..... **3.0mm** Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Disk diam.</b> <b>1disk</b>
502-063-393	50 mm POA
757-916-720	75 mm POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.  
 These targets are normally available for immediate shipment from stock. Other sizes are available to special order.

**TI009600**

Thickness ..... **6.0mm** High Purity ..... **99.99+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Disk diam.</b> <b>1disk</b>
388-404-527	25.4 mm POA
327-130-952	50 mm POA
930-533-923	75 mm POA
894-411-415	101.6 mm POA

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.  
 These targets are normally available for immediate shipment from stock. Other sizes are available to special order.

**TI009512**

Thickness ..... **6.0mm** Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Disk diam.</b> <b>1disk</b>
503-269-618	120 mm POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI009515**

Thickness ..... **6.0mm** Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Disk diam.</b> <b>1disk</b>
908-701-507	152.4 mm POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI009520**

Thickness ..... **6.0mm** Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Disk diam.</b> <b>1disk</b>
587-693-758	203.2 mm POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI009700**

Thickness ..... **7.0mm** Purity ..... **99.6+%**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Disk diam.</b> <b>1disk</b>
073-522-547	50 mm POA
190-319-810	75 mm POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.  
 These targets are normally available for immediate shipment from stock. Other sizes are available to special order.



**Mesh**

**TI008710**

Nominal Aperture ..... **0.19mm** Wire diameter ..... **0.23mm**  
 Wires/inch ..... **60x60** Open area ..... **20%**  
 Weave ..... **Twill**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Size</b> <b>1pc</b> <b>2pcs</b> <b>5pcs</b>
113-282-527	50 x 50 mm USD 482.00 USD 642.00 USD 921.00
160-318-438	100 x 100 mm USD 668.00 USD 907.00 USD 1358.00
039-809-321	150 x 150 mm USD 855.00 USD 1171.00

**TI008720**

Nominal Aperture ..... **4.3mm** Wire diameter ..... **1.5mm**  
 Wires/inch ..... **4.4x4.4** Open area ..... **94%**  
 Condition ..... **Diamond pattern** Condition ..... **Platinized**

<b>Size</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Size</b> <b>1pc</b>
293-740-051	100 x 100 mm USD 746.00

**Metal – Titanium**

**Titanium**

**Ti**



**Wire**

<b>TI005100</b>	Diameter . . . . . <b>0.05mm</b> Temper . . . . . <b>Hard</b>	Purity . . . . . <b>99.8%</b>
	<b>Length</b> <b>Web Code</b>	<b>Quantity</b>
	703-333-766	<b>Length 1 Reel</b>
	916-721-398	10 m USD 388.00
	590-169-228	20 m USD 475.00
	771-155-069	50 m USD 647.00
	044-552-997	100 m USD 843.00
		200 m USD 1123.00
Typical Analysis : Al 1, Cr 30, Cu 10, Fe 90, Mg 10, Mn 400, Ni 50, Si 30, V 50, H 80, N 20, O 400.		
<b>TI005108</b>	Diameter . . . . . <b>0.08mm</b> Temper . . . . . <b>As drawn</b>	Purity . . . . . <b>99.6+%</b> Condition . . . . . <b>Grade 1 - ASTM B265 Chemistry only</b>
	<b>Length</b> <b>Web Code</b>	<b>Quantity</b>
	688-190-022	<b>Length 1 Reel</b>
		10 m USD 388.00
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.		
<b>TI005112</b>	Diameter . . . . . <b>0.125mm</b> Temper . . . . . <b>Annealed</b>	Purity . . . . . <b>99.6+%</b> Condition . . . . . <b>Grade 2 - ASTM B348 Chemistry only</b>
	<b>Length</b> <b>Web Code</b>	<b>Quantity</b>
	162-135-533	<b>Length 1 Reel</b>
		10 m USD 254.00
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.		
<b>TI005119</b>	Diameter . . . . . <b>0.20mm</b> Temper . . . . . <b>As drawn</b>	Purity . . . . . <b>99.6+%</b> Condition . . . . . <b>Grade 1 - ASTM B348 Chemistry only</b>
	<b>Length</b> <b>Web Code</b>	<b>Quantity</b>
	109-417-803	<b>Length 1 Reel</b>
		10 m USD 248.00
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000. 10m reels only. Very limited stock available.		
<b>TI005121</b>	Diameter . . . . . <b>0.20mm</b> Temper . . . . . <b>Annealed</b>	Purity . . . . . <b>99.6+%</b>
	<b>Length</b> <b>Web Code</b>	<b>Quantity</b>
	407-756-100	<b>Length 1 Reel</b>
	474-042-012	1 m USD 170.00
	963-914-025	5 m USD 203.00
	782-680-564	25 m USD 276.00
	364-257-070	100 m USD 412.00
	434-034-311	200 m USD 529.00
		500 m USD 1020.00
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.		
<b>TI005120</b>	Diameter . . . . . <b>0.25mm</b> Temper . . . . . <b>As drawn</b>	High Purity . . . . . <b>99.99+%</b>
	<b>Length</b> <b>Web Code</b>	<b>Quantity</b>
	254-793-337	<b>Length 1 Reel</b>
	849-171-880	0.5 m USD 223.00
	146-486-879	1 m USD 278.00
	310-857-604	2 m USD 360.00
		5 m USD 538.00
Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.		
<b>TI005124</b>	Diameter . . . . . <b>0.25mm</b> Temper . . . . . <b>As drawn</b>	Purity . . . . . <b>99.6+%</b> Condition . . . . . <b>Grade 1 - ASTM B348 Chemistry only</b>
	<b>Length</b> <b>Web Code</b>	<b>Quantity</b>
	552-625-721	<b>Length 1 Reel</b>
		10 m USD 240.00
Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000. 10m reels only. Very limited stock available.		

**Metal – Titanium**

## Titanium

Ti



### Wire

**TI005123**

Diameter . . . . . **0.25mm**  
 Temper . . . . . **As drawn**

Purity . . . . . **99.6+%**

**Length**

**Web Code**  
 128-690-626  
 969-449-238  
 557-759-758  
 461-325-340  
 007-612-179  
 510-587-840

Quantity	
Length	1 Reel
1 m	USD 172.00
5 m	USD 206.00
25 m	USD 283.00
100 m	USD 426.00
200 m	USD 548.00
500 m	USD 1112.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI005122**

Diameter . . . . . **0.25mm**  
 Temper . . . . . **Annealed**

Purity . . . . . **99.6+%**  
 Condition . . . . . **Grade 4 - ASTM B348 Chemistry only**

**Length**

**Web Code**  
 782-345-219

Quantity	
Length	1 Reel
1 m	USD 172.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI005128**

Diameter . . . . . **0.5mm**  
 Temper . . . . . **As drawn**

High Purity . . . . . **99.99+%**

**Length**

**Web Code**  
 809-328-225  
 166-027-687  
 753-455-659  
 181-958-579

Quantity	
Length	1 Reel
0.5 m	USD 241.00
1 m	USD 303.00
2 m	USD 396.00
5 m	USD 711.00

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI005127**

Diameter . . . . . **0.5mm**  
 Temper . . . . . **Annealed**

Purity . . . . . **99.975+%**

**Length**

**Web Code**  
 341-440-179  
 680-020-060  
 002-501-645

Quantity	
Length	1 Reel
0.5 m	USD 223.00
1 m	USD 279.00
2 m	USD 373.00

Typical Analysis : Al <10, Ca <5, Cr <10, Cu <5, Fe <160, K <1, Li <1, Mg <10, Mo <10, Na <1, Si <10.

**TI005125**

Diameter . . . . . **0.5mm**  
 Temper . . . . . **As drawn**

Purity . . . . . **99.6+%**  
 Condition . . . . . **Grade 2 - ASTM B348 Chemistry only**

**Length**

**Web Code**  
 068-135-256  
 516-906-634  
 613-334-558  
 666-822-887  
 352-853-849

Quantity	
Length	1 Reel
1 m	USD 168.00
5 m	USD 206.00
25 m	USD 292.00
100 m	USD 451.00
200 m	USD 606.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI005126**

Diameter . . . . . **0.75mm**  
 Temper . . . . . **As drawn**

Purity . . . . . **99.6+%**  
 Condition . . . . . **Grade 2 - ASTM B348 Chemistry only**

**Length**

**Web Code**  
 269-768-530

Quantity	
Length	1 Reel
1 m	USD 179.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI005135**

Diameter . . . . . **1.0mm**  
 Temper . . . . . **As drawn**

High Purity . . . . . **99.99+%**

**Length**

**Web Code**  
 743-899-888  
 987-481-525  
 435-199-458

Quantity	
Length	1 Reel
0.5 m	USD 286.00
1 m	USD 355.00
2 m	USD 458.00

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

Metal – Titanium

## Titanium

Ti



### Wire

**TI005136**

Diameter ..... **1.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.99+%**

**Length**

**Web Code**  
 684-191-326  
 301-401-658  
 042-269-369

Quantity	
Length	1 Reel
0.5 m	USD 286.00
1 m	USD 355.00
2 m	USD 458.00

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI005320**

Diameter ..... **1.0mm**  
 Condition ..... **Straight wire**

Purity ..... **99.6+%**  
 Temper ..... **As drawn**

**Size**

**Web Code**

**Length**

Quantity					
1pc	2pcs	5pcs	10pcs	20pcs	
		3.6g	#1000 mm#		

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI005129**

Diameter ..... **1.0mm**  
 Temper ..... **As drawn**

Purity ..... **99.6+%**  
 Condition ..... **Grade 2 - ASTM B348 Chemistry only**

**Length**

**Web Code**  
 710-202-350

Quantity	
Length	1 Reel
0.5 m	USD 161.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI005130**

Diameter ..... **1.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Grade 2 - ASTM B348 Chemistry only**

**Length**

**Web Code**  
 762-664-231

Quantity	
Length	1 Reel
0.5 m	USD 161.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI005140**

Diameter ..... **1.5mm**  
 Temper ..... **As drawn**

Purity ..... **99.6+%**

**Length**

**Web Code**  
 809-085-444  
 506-434-790  
 941-505-933  
 755-186-249  
 833-122-096

Quantity	
Length	1 Reel
1 m	USD 198.00
5 m	USD 291.00
10 m	USD 361.00
20 m	USD 460.00
50 m	USD 724.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI005160**

Diameter ..... **3.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**  
 Condition ..... **Grade 1 - ASTM B348 Chemistry only**

**Length**

**Web Code**  
 902-253-893

Quantity	
Length	1 Reel
1 m	USD 250.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.



### Rod

**TI007905**

Diameter ..... **1.5mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 726-938-831  
 455-869-852  
 038-382-829  
 341-063-631

Length	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
100 mm	USD 169.00	USD 204.00	USD 250.00	USD 320.00	USD 453.00
200 mm	USD 175.00	USD 213.00	USD 264.00	USD 340.00	USD 481.00
500 mm	USD 187.00	USD 230.00	USD 292.00	USD 380.00	USD 537.00
1000 mm	USD 201.00	USD 250.00	USD 323.00	USD 424.00	USD 599.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

Metal - Titanium

**Titanium**

**Ti**



**Rod**

**TI007911**

Diameter ..... **2mm**  
 Temper ..... **As drawn**

High Purity ..... **99.99+%**

Size Web Code	Length	Quantity			
		1pc	2pcs	5pcs	10pcs
669-911-794	100 mm	USD 220.00	USD 264.00	USD 341.00	USD 521.00
626-767-595	200 mm	USD 256.00	USD 315.00	USD 513.00	USD 889.00
331-228-329	500 mm	USD 328.00	USD 508.00	USD 1065.00	
587-909-642	1000 mm	USD 500.00	USD 876.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007913**

Diameter ..... **2mm**  
 Temper ..... **Annealed**

Purity ..... **99.99+%**

Size Web Code	Length	Quantity			
		1pc	2pcs	5pcs	10pcs
487-942-601	100 mm	USD 238.00	USD 282.00	USD 359.00	USD 540.00
720-919-424	200 mm	USD 274.00	USD 333.00	USD 532.00	USD 907.00
246-190-801	500 mm	USD 346.00	USD 527.00	USD 1083.00	
263-199-777	1000 mm	USD 519.00	USD 895.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007910**

Diameter ..... **2mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Size Web Code	Length	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
613-226-991	100 mm	USD 173.00	USD 210.00	USD 259.00	USD 334.00	USD 471.00
653-367-004	200 mm	USD 181.00	USD 221.00	USD 277.00	USD 359.00	USD 507.00
039-162-907	490 mm	USD 196.00	USD 243.00	USD 312.00	USD 407.00	USD 576.00
860-685-368	1000 mm	USD 214.00	USD 269.00	USD 353.00	USD 465.00	USD 683.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007915**

Diameter ..... **3.0mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Size Web Code	Length	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
993-901-341	100 mm	USD 179.00	USD 218.00	USD 273.00	USD 353.00	USD 498.00
177-055-164	200 mm	USD 189.00	USD 233.00	USD 296.00	USD 386.00	USD 545.00
167-721-605	500 mm	USD 210.00	USD 263.00	USD 343.00	USD 452.00	USD 642.00
548-835-815	1000 mm	USD 234.00	USD 296.00	USD 395.00	USD 529.00	USD 898.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007916**

Diameter ..... **4mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Size Web Code	Length	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
647-843-137	100 mm	USD 189.00	USD 231.00	USD 290.00	USD 373.00	USD 522.00
549-782-494	200 mm	USD 203.00	USD 250.00	USD 320.00	USD 416.00	USD 583.00
814-360-570	500 mm	USD 230.00	USD 288.00	USD 380.00	USD 520.00	USD 877.00
144-236-334	1000 mm	USD 260.00	USD 331.00	USD 467.00	USD 771.00	

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007918**

Diameter ..... **5.0mm**  
 Temper ..... **As drawn**

Purity ..... **99.99+%**

Size Web Code	Length	Quantity	
		1pc	2pcs
428-536-198	50 mm	USD 391.00	USD 491.00
267-928-716	100 mm	USD 467.00	USD 599.00

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007920**

Diameter ..... **5mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Size Web Code	Length	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
585-670-678	100 mm	USD 191.00	USD 233.00	USD 293.00	USD 378.00	USD 528.00
208-829-984	200 mm	USD 205.00	USD 253.00	USD 325.00	USD 422.00	USD 594.00
103-746-780	500 mm	USD 233.00	USD 293.00	USD 387.00	USD 542.00	USD 920.00
968-344-939	1000 mm	USD 264.00	USD 337.00	USD 489.00	USD 814.00	

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**Metal – Titanium**

**Titanium**

**Ti**



**Rod**

**TI007921**

Diameter ..... **6mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Size	Web Code	Length	Quantity			
			1pc	2pcs	5pcs	10pcs
100 mm	043-116-388	USD 212.00	USD 261.00	USD 326.00	USD 417.00	
200 mm	389-540-768	USD 229.00	USD 284.00	USD 364.00	USD 470.00	
500 mm	692-593-155	USD 262.00	USD 332.00	USD 439.00	USD 679.00	
1000 mm	574-141-796	USD 300.00	USD 385.00	USD 626.00		

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007923**

Diameter ..... **6.2mm**  
 Temper ..... **Annealed**

Purity ..... **99.99+%**

Size	Web Code	Length	Quantity	
			1pc	2pcs
154 mm	017-601-271	USD 546.00		
370 mm	571-501-549	USD 894.00		
895 mm	384-667-485	USD 1868.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.  
 Very limited stock available.

**TI007922**

Diameter ..... **6.35mm**  
 Temper ..... **Annealed**

High Purity ..... **99.99+%**

Size	Web Code	Length	Quantity	
			1pc	2pcs
50 mm	664-090-505	USD 400.00	USD 504.00	
100 mm	519-300-427	USD 480.00	USD 617.00	
200 mm	277-294-013	USD 593.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007925**

Diameter ..... **8.0mm**  
 Temper ..... **As drawn**

High Purity ..... **99.99+%**

Size	Web Code	Length	Quantity	
			1pc	2pcs
50 mm	823-918-786	USD 450.00	USD 574.00	
100 mm	405-093-456	USD 550.00	USD 818.00	
200 mm	986-116-236	USD 793.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007931**

Diameter ..... **9.5mm**  
 Temper ..... **Annealed**

High Purity ..... **99.99+%**

Size	Web Code	Length	Quantity		
			1pc	2pcs	5pcs
25 mm	351-300-359	USD 409.00	USD 517.00	USD 761.00	
50 mm	912-539-653	USD 493.00	USD 639.00		
100 mm	918-599-677	USD 615.00	USD 1048.00		
200 mm	824-951-989	USD 1024.00			

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007930**

Diameter ..... **10mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Size	Web Code	Length	Quantity			
			1pc	2pcs	5pcs	10pcs
100 mm	767-723-911	USD 230.00	USD 278.00	USD 353.00	USD 453.00	
200 mm	965-493-289	USD 254.00	USD 311.00	USD 405.00		
500 mm	686-650-782	USD 300.00	USD 376.00			
1000 mm	831-348-743	USD 352.00				

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007938**

Diameter ..... **16mm**  
 Temper ..... **As drawn**

High Purity ..... **99.99+%**

Size	Web Code	Length	Quantity	
			1pc	2pcs
25 mm	501-713-189	USD 454.00	USD 591.00	
50 mm	480-926-876	USD 567.00	USD 956.00	
100 mm	877-169-973	USD 932.00		

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007937**

Diameter ..... **16mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

Size	Web Code	Length	Quantity		
			1pc	2pcs	5pcs
100 mm	390-400-846	USD 259.00	USD 316.00	USD 410.00	
200 mm	800-104-921	USD 290.00	USD 361.00	USD 555.00	
500 mm	013-124-908	USD 352.00	USD 523.00		
1000 mm	640-617-607	USD 496.00			

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**Metal – Titanium**



## Titanium

Ti



### Rod

**TI007941**

Diameter ..... **20mm**  
 Temper ..... **As drawn**

High Purity ..... **99.99+%**

**Size**

**Web Code**  
 417-393-521  
 049-096-533  
 097-147-193

Length	Quantity	
	1pc	2pcs
25 mm	USD 474.00	USD 638.00
50 mm	USD 614.00	USD 1071.00
100 mm	USD 1047.00	

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007940**

Diameter ..... **20mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 650-810-444  
 354-463-169  
 307-897-152  
 487-146-660  
 077-206-463

Length	Quantity		
	1pc	2pcs	5pcs
50 mm	USD 198.00	USD 234.00	POA
100 mm	USD 219.00	USD 265.00	POA
200 mm	USD 250.00	POA	
500 mm	POA		
1000 mm	POA		

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007946**

Diameter ..... **25mm**  
 Temper ..... **As drawn**

High Purity ..... **99.99+%**

**Size**

**Web Code**  
 373-425-482  
 946-302-718

Length	Quantity	
	1pc	2pcs
25 mm	USD 536.00	USD 840.00
50 mm	USD 816.00	

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

**TI007945**

Diameter ..... **25mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 667-385-278  
 570-710-445  
 249-765-258  
 390-711-673  
 894-550-342

Length	Quantity		
	1pc	2pcs	5pcs
50 mm	USD 211.00	USD 253.00	POA
100 mm	USD 238.00	USD 303.00	POA
200 mm	USD 288.00	POA	
500 mm	POA		
1000 mm	POA		

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007947**

Diameter ..... **30mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 483-440-583  
 330-430-696  
 609-494-572  
 897-523-046  
 210-713-265

Length	Quantity		
	1pc	2pcs	5pcs
50 mm	USD 224.00	USD 271.00	POA
100 mm	USD 256.00	USD 363.00	POA
200 mm	USD 348.00	POA	
500 mm	POA		
1000 mm	POA		

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007948**

Diameter ..... **40mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

**Size**

**Web Code**  
 727-887-547  
 177-997-770  
 430-360-174  
 670-459-346  
 336-998-532

Length	Quantity		
	1pc	2pcs	5pcs
50 mm	USD 250.00	USD 341.00	POA
100 mm	USD 326.00	POA	
200 mm	POA		
500 mm	POA		
1000 mm	POA		

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007955**

Diameter ..... **50mm**

High Purity ..... **99.99+%**

**Size**

**Web Code**  
 311-277-120  
 909-639-289

Length	Quantity
	1pc
10 mm	USD 601.00
25 mm	USD 1034.00

Typical Analysis : Al <3, Ca <2, Cr <6, Cu <10, Fe <10, Mg <1, Mn <1, Nb <5, Ni <3, S <1, Si <5, V <3, Zn <1, Zr <3.

Metal – Titanium

## Titanium

### Ti



## Rod

**TI007950**

Diameter ..... **50mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

### Size

**Web Code**  
 368-631-967  
 893-334-663  
 666-829-969  
 353-747-982  
 218-490-266  
 642-046-246

Length	1pc	2pcs	5pcs
25 mm	USD 248.00	USD 314.00	POA
50 mm	USD 296.00	POA	POA
100 mm	POA	POA	POA
200 mm	POA	POA	POA
500 mm	POA	POA	POA
1000 mm	POA	POA	POA

Quantity		
1pc	2pcs	5pcs
USD 248.00	USD 314.00	POA
USD 296.00	POA	POA
POA	POA	POA
POA	POA	POA
POA	POA	POA
POA	POA	POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI007975**

Diameter ..... **75mm**  
 Temper ..... **Annealed**

Purity ..... **99.6+%**

### Size

**Web Code**  
 045-504-645  
 010-155-025  
 289-420-615  
 957-338-168  
 423-492-152  
 299-047-015

Length	1pc	2pcs
25 mm	USD 290.00	POA
50 mm	POA	POA
100 mm	POA	POA
200 mm	POA	POA
500 mm	POA	POA
1000 mm	POA	POA

Quantity	
1pc	2pcs
USD 290.00	POA
POA	POA
POA	POA
POA	POA
POA	POA
POA	POA

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.



## Bar

**TI008003**

Side Length ..... **10mm**  
 Purity ..... **99.6+%**

Side Length (of longer side) **12mm**

### Size

**Web Code**  
 024-847-271  
 871-756-044  
 655-568-722  
 289-180-194

Length	1pc	2pcs	5pcs	10pcs
100 mm	USD 116.00	USD 140.00	USD 193.00	USD 322.00
200 mm	USD 138.00	USD 171.00	USD 318.00	
500 mm	USD 188.00	USD 316.00		
1000 mm	USD 313.00	USD 566.00		

Quantity				
1pc	2pcs	5pcs	10pcs	
USD 116.00	USD 140.00	USD 193.00	USD 322.00	
USD 138.00	USD 171.00	USD 318.00		
USD 188.00	USD 316.00			
USD 313.00	USD 566.00			

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

**TI008010**

Side Length ..... **50mm**  
 Purity ..... **99.6+%**

Side Length (of longer side) **50mm**

### Size

**Web Code**  
 943-781-460

Length	1pc
100 mm	POA

Quantity	
1pc	
POA	

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.



## Tube

**TI007050**

Outside Diameter ..... **0.51mm**  
 Inside Diameter ..... **0.35mm**  
 Temper ..... **Annealed**

Wall Thickness ..... **0.08mm**  
 Purity ..... **99.6+%**

### Size

**Web Code**  
 139-002-057  
 375-258-559  
 907-315-054

Length	1pc	2pcs	5pcs
100 mm	USD 455.00	USD 563.00	USD 996.00
200 mm	USD 547.00	USD 839.00	
500 mm	USD 971.00		

Quantity		
1pc	2pcs	5pcs
USD 455.00	USD 563.00	USD 996.00
USD 547.00	USD 839.00	
USD 971.00		

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007060**

Outside Diameter ..... **0.81mm**  
 Inside Diameter ..... **0.61mm**  
 Temper ..... **As drawn**

Wall Thickness ..... **0.1mm**  
 Purity ..... **99.6+%**

### Size

**Web Code**  
 212-007-468  
 084-327-266  
 627-380-069  
 600-924-567

Length	1pc	2pcs	5pcs
100 mm	USD 431.00	USD 530.00	USD 848.00
200 mm	USD 514.00	USD 720.00	USD 1440.00
500 mm	USD 823.00	USD 1431.00	
1000 mm	USD 1414.00		

Quantity		
1pc	2pcs	5pcs
USD 431.00	USD 530.00	USD 848.00
USD 514.00	USD 720.00	USD 1440.00
USD 823.00	USD 1431.00	
USD 1414.00		

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Titanium**

**Ti**



**Tube**

**TI007068**

Outside Diameter..... **1.00mm**  
 Inside Diameter..... **0.36mm**  
 Temper..... **Hard**

Wall Thickness..... **0.32mm**  
 Purity..... **99.6+%**  
 Condition..... **Grade 2 - ASTM B338 Chemistry only**

Size	Quantity				
Web Code	Length	10pcs	20pcs	50pcs	100pcs
307-126-652	20 mm	USD 414.00	USD 591.00	USD 1129.00	USD 2025.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007070**

Outside Diameter..... **1.05mm**  
 Inside Diameter..... **0.75mm**  
 Temper..... **Annealed**

Wall Thickness..... **0.15mm**  
 Purity..... **99.6+%**  
 Condition..... **Grade 2 - ASTM B338 Chemistry only**

Size	Quantity		
Web Code	Length	1pc	5pcs
414-378-307	100 mm	USD 431.00	USD 848.00
797-294-422	200 mm	USD 514.00	USD 1440.00
661-800-346	500 mm	USD 823.00	USD 1431.00
328-012-513	1000 mm	USD 1414.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007075**

Outside Diameter..... **1.5mm**  
 Inside Diameter..... **1.15mm**  
 Temper..... **Hard**

Wall Thickness..... **0.175mm**  
 Purity..... **99.6+%**

Size	Quantity		
Web Code	Length	1pc	5pcs
772-144-387	230 mm	USD 435.00	USD 743.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007085**

Outside Diameter..... **1.6mm**  
 Inside Diameter..... **0.6mm**  
 Temper..... **Annealed**

Wall Thickness..... **0.5mm**  
 Purity..... **99.6+%**

Size	Quantity		
Web Code	Length	1pc	5pcs
550-158-262	100 mm	USD 277.00	USD 574.00
054-267-481	200 mm	USD 331.00	USD 982.00
934-343-170	500 mm	USD 556.00	USD 978.00
272-244-568	1000 mm	USD 965.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007080**

Outside Diameter..... **1.6mm**  
 Inside Diameter..... **1.2mm**  
 Temper..... **Hard**

Wall Thickness..... **0.2mm**  
 Purity..... **99.6+%**  
 Condition..... **Grade 2 - ASTM B338 Chemistry only**

Size	Quantity		
Web Code	Length	1pc	5pcs
656-944-268	100 mm	USD 277.00	USD 574.00
492-647-132	200 mm	USD 331.00	USD 982.00
863-991-063	500 mm	USD 556.00	USD 978.00
054-380-668	1000 mm	USD 965.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007101**

Outside Diameter..... **2.03mm**  
 Inside Diameter..... **1.55mm**  
 Temper..... **Annealed**

Wall Thickness..... **0.24mm**  
 Purity..... **99.6+%**

Size	Quantity		
Web Code	Length	1pc	5pcs
139-154-472	100 mm	USD 246.00	USD 397.00
322-700-154	200 mm	USD 286.00	USD 629.00
295-841-870	500 mm	USD 379.00	USD 624.00
686-703-660	1220 mm	USD 713.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007100**

Outside Diameter..... **2.03mm**  
 Inside Diameter..... **1.63mm**  
 Temper..... **Annealed**

Wall Thickness..... **0.2mm**  
 Purity..... **99.6+%**

Size	Quantity		
Web Code	Length	1pc	5pcs
725-038-271	100 mm	USD 260.00	USD 471.00
629-775-405	200 mm	USD 306.00	USD 778.00
721-931-142	500 mm	USD 454.00	USD 773.00
173-953-754	1000 mm	USD 760.00	

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Metal – Titanium**

**Titanium**

**Ti**



**Tube**

<b>TI007126</b>	Outside Diameter.....	<b>2.65mm</b>	Wall Thickness.....	<b>0.1mm</b>
	Inside Diameter.....	<b>2.45mm</b>	Purity.....	<b>99.6+%</b>
	Temper.....	<b>Hard</b>		
	<b>Size</b>		<b>Quantity</b>	
	<b>Web Code</b>		<b>Length</b>	<b>10pcs</b> <b>25pcs</b> <b>50pcs</b> <b>100pcs</b>
	117-672-939		4 mm	USD 241.00   USD 305.00   USD 390.00   USD 544.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

<b>TI007210</b>	Outside Diameter.....	<b>3.0mm</b>	Wall Thickness.....	<b>0.75mm</b>
	Inside Diameter.....	<b>1.5mm</b>	Purity.....	<b>99.6+%</b>
	Temper.....	<b>Annealed</b>		
	<b>Size</b>		<b>Quantity</b>	
	<b>Web Code</b>		<b>Length</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b> <b>10pcs</b>
	832-381-277		100 mm	USD 229.00   USD 276.00   USD 369.00   USD 581.00
	047-658-559		200 mm	USD 263.00   USD 324.00   USD 573.00
	957-319-600		500 mm	USD 351.00   USD 568.00
	664-952-794		1000 mm	USD 555.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

<b>TI007250</b>	Outside Diameter.....	<b>4.25mm</b>	Wall Thickness.....	<b>0.25mm</b>
	Inside Diameter.....	<b>3.75mm</b>	Purity.....	<b>99.6+%</b>
	Temper.....	<b>Annealed</b>		
	<b>Size</b>		<b>Quantity</b>	
	<b>Web Code</b>		<b>Length</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b> <b>10pcs</b>
	119-099-329		100 mm	USD 222.00   USD 265.00   USD 331.00   USD 439.00
	887-420-548		200 mm	USD 252.00   USD 309.00   USD 431.00   USD 705.00
	927-568-528		500 mm	USD 314.00   USD 426.00
	946-070-401		1000 mm	USD 413.00   USD 692.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

<b>TI007295</b>	Outside Diameter.....	<b>6.1mm</b>	Wall Thickness.....	<b>0.5mm</b>
	Inside Diameter.....	<b>5.1mm</b>	Purity.....	<b>99.6+%</b>
	Temper.....	<b>Annealed</b>		
	<b>Size</b>		<b>Quantity</b>	
	<b>Web Code</b>		<b>Length</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b> <b>10pcs</b>
	481-675-901		100 mm	USD 251.00   USD 306.00   USD 416.00   USD 668.00
	356-826-007		200 mm	USD 292.00   USD 363.00   USD 659.00   USD 1155.00
	504-026-630		500 mm	USD 397.00   USD 654.00
	206-109-979		1000 mm	USD 640.00   USD 1141.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

<b>TI007350</b>	Outside Diameter.....	<b>6.35mm</b>	Wall Thickness.....	<b>0.89mm</b>
	Inside Diameter.....	<b>4.57mm</b>	Purity.....	<b>99.6+%</b>
	Temper.....	<b>Annealed</b>		
	<b>Size</b>		<b>Quantity</b>	
	<b>Web Code</b>		<b>Length</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b> <b>10pcs</b>
	739-151-280		100 mm	USD 245.00   USD 297.00   USD 379.00   USD 590.00
	393-908-800		200 mm	USD 282.00   USD 350.00   USD 580.00
	238-601-445		500 mm	USD 358.00   USD 575.00
	825-177-227		1000 mm	USD 560.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

<b>TI007300</b>	Outside Diameter.....	<b>6.35mm</b>	Wall Thickness.....	<b>0.41mm</b>
	Inside Diameter.....	<b>5.53mm</b>	Purity.....	<b>99.6+%</b>
	Temper.....	<b>Annealed</b>	Condition.....	<b>Grade 2 - ASTM B338 Chemistry only</b>
	<b>Size</b>		<b>Quantity</b>	
	<b>Web Code</b>		<b>Length</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b> <b>10pcs</b>
	258-804-851		100 mm	USD 251.00   USD 306.00   USD 416.00   USD 668.00
	350-610-838		200 mm	USD 292.00   USD 363.00   USD 659.00
	826-351-383		500 mm	USD 397.00   USD 654.00
	293-913-295		1000 mm	USD 640.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

<b>TI007370</b>	Outside Diameter.....	<b>7.0mm</b>	Wall Thickness.....	<b>1.0mm</b>
	Inside Diameter.....	<b>5mm</b>	Purity.....	<b>99.6+%</b>
	Temper.....	<b>Annealed</b>		
	<b>Size</b>		<b>Quantity</b>	
	<b>Web Code</b>		<b>Length</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b> <b>10pcs</b>
	223-418-007		100 mm	USD 245.00   USD 297.00   USD 379.00   USD 590.00
	106-208-414		200 mm	USD 282.00   USD 350.00   USD 580.00
	648-580-126		500 mm	USD 358.00   USD 575.00
	036-921-236		1000 mm	USD 560.00

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**Metal – Titanium**

## Titanium

Ti



### Tube

**TI007401**

Outside Diameter . . . . . **9.5mm**  
 Inside Diameter . . . . . **8.2mm**  
 Temper . . . . . **Annealed**

Wall Thickness . . . . . **0.65mm**  
 Purity . . . . . **99.6+%**  
 Condition . . . . . **Lightly Oxidized surface**

**Size**

**Web Code**

060-031-005  
 635-270-033  
 520-055-962  
 854-966-646

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	USD 206.00	USD 250.00	USD 294.00	USD 347.00
200 mm	USD 226.00	USD 278.00	USD 338.00	USD 475.00
500 mm	USD 265.00	USD 334.00	USD 537.00	
1000 mm	USD 310.00	USD 462.00		

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007461**

Outside Diameter . . . . . **10mm**  
 Inside Diameter . . . . . **8mm**  
 Temper . . . . . **Annealed**

Wall Thickness . . . . . **1.0mm**  
 Purity . . . . . **99.6+%**  
 Condition . . . . . **Grade 2 - ASTM B338 Chemistry only**

**Size**

**Web Code**

026-656-727  
 886-397-128  
 640-012-142  
 429-596-619

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	USD 230.00	USD 275.00	USD 344.00	USD 478.00
200 mm	USD 261.00	USD 320.00	USD 469.00	
500 mm	USD 324.00	USD 464.00		
1000 mm	USD 450.00			

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007460**

Outside Diameter . . . . . **10.3mm**  
 Inside Diameter . . . . . **8.7mm**  
 Temper . . . . . **Annealed**

Wall Thickness . . . . . **0.8mm**  
 Purity . . . . . **99.6+%**  
 Condition . . . . . **Grade 2 - ASTM B338 Chemistry only**

**Size**

**Web Code**

284-117-036  
 514-633-570  
 329-199-253  
 149-909-352

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	USD 230.00	USD 275.00	USD 344.00	USD 478.00
200 mm	USD 261.00	USD 320.00	USD 469.00	
500 mm	USD 324.00	USD 464.00		
1000 mm	USD 450.00			

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007500**

Outside Diameter . . . . . **12.7mm**  
 Inside Diameter . . . . . **10.9mm**  
 Temper . . . . . **Annealed**

Wall Thickness . . . . . **0.9mm**  
 Purity . . . . . **99.6+%**

**Size**

**Web Code**

738-669-986  
 333-737-954  
 717-241-244  
 655-150-249

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	USD 233.00	USD 281.00	USD 352.00	USD 507.00
200 mm	USD 267.00	USD 328.00	USD 499.00	USD 833.00
500 mm	USD 332.00	USD 493.00		
1000 mm	USD 479.00	USD 819.00		

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.

**TI007550**

Outside Diameter . . . . . **25.4mm**  
 Inside Diameter . . . . . **23.62mm**  
 Temper . . . . . **Annealed**

Wall Thickness . . . . . **0.89mm**  
 Purity . . . . . **99.6+%**

**Size**

**Web Code**

893-777-018  
 722-128-135  
 266-023-212  
 252-905-815

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	USD 247.00	USD 297.00	USD 371.00	USD 535.00
200 mm	USD 281.00	USD 345.00	USD 525.00	USD 872.00
500 mm	USD 348.00	USD 519.00		
1000 mm	USD 502.00	USD 855.00		

Typical Analysis : Al 300, Ca 20, Cr 50, Cu 5, Fe 1500, Mn 100, Ni 50, Si 300, Sn 200, C 300, H 60, N 150, O 2000.



### Powder

**TI006030**

Max. Particle size . . . . . **45micron**  
 Condition . . . . . **Grade 1**  
 Condition . . . . . **Spherical**

Purity . . . . . **99.5%**  
 Condition . . . . . **Gas atomized**



**Web Code**  
 350-340-381

Quantity	
Weight	1 Pot
50 g	USD 382.00

Typical Analysis : C <100, Chlorides 1700, Fe 200, N <100, O 1000.

May be suitable for additive manufacturing research and development purposes.

Shipping Restriction. Additional shipment charges apply which are dependent on destination. Please check the individual item on our website or contact us for further details.

Metal – Titanium

## Titanium

Ti



### Powder

**TI006021**

Max. Particle size ..... **45micron** Purity..... **99.5%**  
 Condition..... **Grade 2** Condition..... **Gas atomized**  
 Condition..... **Spherical**



<b>Web Code</b>	<b>Quantity</b>	<b>Weight</b>	<b>1 Pot</b>
145-365-376		50 g	USD 382.00

Typical Analysis : C < 100, Chlorides 1700, Fe 200, N < 100, O 1000.

May be suitable for additive manufacturing research and development purposes.

Shipping Restriction. Additional shipment charges apply which are dependent on destination. Please check the individual item on our website or contact us for further details.

**TI006022**

Max. Particle size ..... **75micron** Purity..... **99.5%**



<b>Web Code</b>	<b>Quantity</b>	<b>Weight</b>	<b>1 Pot</b>
780-284-214		50 g	USD 315.00
815-389-828		100 g	USD 403.00
563-440-572		200 g	USD 490.00
310-743-087		500 g	USD 817.00

Typical Analysis : C < 100, Chlorides 1700, Fe 200, N < 100, O 1000.

Shipping Restriction. Additional shipment charges apply which are dependent on destination. Please check the individual item on our website or contact us for further details.

**TI006075**

Max. Particle size ..... **106micron** Purity..... **99.5%**  
 Condition..... **Grade 1** Condition..... **Gas atomized**  
 Condition..... **Spherical**



<b>Web Code</b>	<b>Quantity</b>	<b>Weight</b>	<b>1 Pot</b>
357-953-023		50 g	USD 354.00

Typical Analysis : C < 100, Chlorides 1700, Fe 200, N < 100, O 1000.

May be suitable for additive manufacturing research and development purposes.

Shipping Restriction. Additional shipment charges apply which are dependent on destination. Please check the individual item on our website or contact us for further details.

**TI006076**

Max. Particle size ..... **106micron** Purity..... **99.5%**  
 Condition..... **Grade 2** Condition..... **Gas atomized**  
 Condition..... **Spherical**



<b>Web Code</b>	<b>Quantity</b>	<b>Weight</b>	<b>1 Pot</b>
679-009-014		50 g	USD 354.00

Typical Analysis : C < 100, Chlorides 1700, Fe 200, N < 100, O 1000.

May be suitable for additive manufacturing research and development purposes.

Shipping Restriction. Additional shipment charges apply which are dependent on destination. Please check the individual item on our website or contact us for further details.

**TI006020**

Max. Particle size ..... **150micron** Purity..... **99.5%**



<b>Web Code</b>	<b>Quantity</b>	<b>Weight</b>	<b>1 Pot</b>
051-375-012		50 g	USD 250.00
421-878-116		100 g	USD 296.00
201-125-457		200 g	USD 362.00
734-771-099		500 g	USD 495.00
846-380-654		1000 g	USD 842.00

Typical Analysis : C < 100, Chlorides 1700, Fe 200, N < 100, O 1000.

Shipping Restriction. Additional shipment charges apply which are dependent on destination. Please check the individual item on our website or contact us for further details.



### Lump

**TI006104**

Max. Lump size ..... **4mm** Purity..... **99.6+%**

<b>Web Code</b>	<b>Quantity</b>	<b>Weight</b>	<b>1 Pot</b>
744-070-240		20 g	USD 215.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.

Metal – Titanium

## Titanium

Ti



### Lump

**TI006101**

Max. Lump size ..... **4mm**  
 Condition..... **Pellets**

High Purity ..... **99.99+%**

**Web Code**

693-862-822  
 230-788-207  
 691-854-254

**Quantity**

**Weight**  
 20 g  
 50 g  
 100 g

**1 Pot**

USD 303.00  
 USD 481.00  
 USD 814.00

Typical Analysis : Al <3, Ca <2, Cr <2, Cu <1, Fe <10, Mn <1, Nb <5, Ni <3, Si <5, V <3, Zn <1, Zr <3.  
 Nominally 3mm diameter x 3mm length pellets. Please ask for prices for larger quantities.

**TI006102**

Max. Lump size ..... **6mm**  
 Condition..... **Pellets**

High Purity ..... **99.99+%**

**Web Code**

466-661-763  
 036-450-754  
 259-017-715

**Quantity**

**Weight**  
 20 g  
 50 g  
 100 g

**1 Pot**

USD 290.00  
 USD 428.00  
 USD 708.00

Typical Analysis : Al <3, Ca <2, Cr <2, Cu <1, Fe <10, Mn <1, Nb <5, Ni <3, Si <5, V <3, Zn <1, Zr <3.  
 Nominally 4.7mm diameter x 4.7mm length pellets. Please ask for prices for larger quantities.

**TI006111**

Max. Lump size ..... **6mm**  
 Condition..... **Pellets**

High Purity ..... **99.999%**

**Web Code**

797-622-142  
 421-821-863  
 217-107-759

**Quantity**

**Weight**  
 20 g  
 50 g  
 100 g

**1 Pot**

USD 357.00  
 USD 606.00  
 USD 1042.00

Typical Analysis : Al 2, Cu 1, Fe 3, Si 1, Sn 1  
 Nominally 4.7mm diameter x 4.7mm length pellets. Please ask for prices for larger quantities.

**TI006100**

Max. Lump size ..... **10mm**  
 Condition..... **Pellets**

High Purity ..... **99.99+%**

**Web Code**

128-330-856  
 041-351-482  
 168-929-050

**Quantity**

**Weight**  
 20 g  
 50 g  
 100 g

**1 Pot**

USD 255.00  
 USD 367.00  
 USD 586.00

Typical Analysis : Al <3, Ca <2, Cr <2, Cu <1, Fe <10, Mn <1, Nb <5, Ni <3, Si <5, V <3, Zn <1, Zr <3.  
 Pellets - nominal size 9.5mm diameter x 9.5mm length Please ask for prices for larger quantities.

**TI006110**

Max. Lump size ..... **10mm**  
 Condition..... **Pellets**

High Purity ..... **99.999%**

**Web Code**

609-177-118  
 147-144-895  
 393-112-098

**Quantity**

**Weight**  
 20 g  
 50 g  
 100 g

**1 Pot**

USD 347.00  
 USD 562.00  
 USD 955.00

Typical Analysis : Al 2, Cu 1, Fe 3, Si 1, Sn 1  
 Pellets - nominal size 9.5mm diameter x 9.5mm length Please ask for prices for larger quantities.



### Sphere

**TI006830**

Diameter ..... **3mm**

Purity..... **99.6+%**

**Quantity**

**Web Code**  
 220-739-924  
 757-094-570  
 347-398-370

**Spheres**

50 pcs  
 100 pcs  
 200 pcs

**Quantity**

**1 Pot**  
 USD 245.00  
 USD 407.00  
 USD 720.00

Typical Analysis : Al 500, Co 2, Cr 500, Cu 200, Fe 300, Mg 20, Mn 500, Ni 500, Si 200, Sn 200, Ta 10, V 500.



### Single Crystal

**TI002122**

Oriented ..... **(0001)**  
 Condition..... **Unpolished**

Thickness ..... **1mm**

**Web Code**  
 366-248-096

**Quantity**

**Size**  
 3x5

**1pc**  
 USD POA

Metal – Titanium

**Titanium**

**Ti**



**Single Crystal**

**TI002120**

Oriented ..... **(0001)**  
 Diameter ..... **5mm**

Thickness ..... **1mm**  
 Condition ..... **Unpolished**

**Quantity**

**Web Code**  
 769-085-275

**1pc**  
 USD POA

**TI002121**

Oriented ..... **(0001)**  
 Diameter ..... **8mm**

Thickness ..... **1mm**  
 Condition ..... **Unpolished**

**Quantity**

**Web Code**  
 690-308-068

**1pc**  
 USD POA

**Metal – Titanium**



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