

# 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 Copper/Beryllium ( Cu98/Be 2 )

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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 Catalogue 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 Catalogue at [www.goodfellow.com](http://www.goodfellow.com).

### Materials

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

Goodfellow supplies virtually all of the pure metals from Aluminium 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 Catalogue 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**

Ceramics: ANSI B18.6.7M-1985



**Chopped Fibre**

Fibres cut into short lengths called cut, staple or chopped fibre.

**Tolerances**

Fibre 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%



**Fibre**

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**

Fibre 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%

**Product Descriptions**



**Metallised 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:  $\pm 10\%$   
 Size (linear dimension): < 100mm  $\pm 1\text{mm}$   
 $\geq 100\text{mm}$   $+2\% / -1\%$



**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 fibres 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. conventional textile fabrics. Due to the open and porous nature of this material, all other dimensions are nominal.

**Tolerances**

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



**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**

Ceramics: ANSI B18.2.4.1M-1979  
 (R1995)



**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

**Product Descriptions**



**Rod**

A straight length of circular section material.

**Tolerances**

Diameter:	≤ 10mm	± 10%
	Polymer	+ 20%/-10%
	Ceramic	+ 20%/-10%
> 10mm	± 5%	
	Ceramic	+ 20%/-10%
	Polymer	+ 20%/-10%
Length:	< 100mm	± 1mm
	≥ 100mm	+ 5% / -1%



**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 vapourisation 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%
> 5mm	± 5%	
	Polymer	± 10%
	Ceramic	± 10%
Wall thickness:		± 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**

Ceramics:	see item
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## Product Descriptions

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### Wire

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

#### Tolerances

Wire diameter:  $\pm 10\%$   
Length:  $+ 5\% / -1\%$

## Hazards Information

### HAZARDS

All materials listed in this catalogue, 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 catalogue, 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 catalogue 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 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 are subject to change without notice.

Prices shown include delivery except for those items marked as "special offer" or dangerous goods with transport restriction. They do not include value added tax, any import duties or local taxes.

### 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

#### 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

An administration charge of £10 will be made for any order received for which same day shipment within the UK is requested.

### Shipment

We aim to have all items listed in this catalogue in stock in the quantities and sizes listed. We can only undertake to despatch 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 despatched within 48 hours of receipt.

### Non delivery

If we have notified you of despatch of goods and you have not received delivery within 7 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 invoice with their first order. In order to establish a credit account we will require details of your bankers, along with two trade references.

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## Order information

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### 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, American Express, DELTA and Switch.

### VAT

VAT number: 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 colour 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

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

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## Order information

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

#### **Goodfellow GmbH**

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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

## Copper/Beryllium

### Cu98/Be 2

**Common Brand Names :** Brush 190<sup>®</sup>, Mallory<sup>®</sup>, Berylco<sup>®</sup>

Best mechanical properties of any Copper alloy which improve at sub-zero temperatures as low as -200C. Hardened by heat treatment this alloy machines best in the quarter hard cold work condition. Uses include springs of all kinds where high strength and corrosion resistance are important, resistance welding electrodes, dies and high strength, corrosion resistant tubing.

**Physical Properties**

Density 8.25 g cm<sup>-3</sup>  
 Melting point 860-1000 C

**Thermal Properties**

Coefficient of thermal expansion @25-300C 17.0 x10<sup>-6</sup> K<sup>-1</sup>  
 Thermal conductivity @23C 60-120 W m<sup>-1</sup> K<sup>-1</sup>

**Electrical Properties**

Electrical resistivity 5.4-11.5 μOhmcm  
 Temperature coefficient 0.0010-0.0018 K<sup>-1</sup>

**Mechanical Properties**

Elongation at break < 50 %  
 Hardness - Brinell 100-360  
 Modulus of elasticity 120-160 GPa  
 Tensile strength 500-1300 MPa



## Foil

To precipitation harden: heat to 315C for 2 hours or 350C for 15-30 minutes and air-cool.

**CU070200** Thickness ..... 0.004mm

Temper ..... As rolled

Size	Web Code	Quantity				
		1pc	2pcs	3pcs	5pcs	10pcs
25 x 25 mm	123-844-022	YEN 39200	YEN 46200	YEN 51500	YEN 60500	YEN 76500
50 x 50 mm	480-501-531	YEN 55500	YEN 69000	YEN 80000	YEN 97000	YEN 128000
100 x 100 mm	062-699-351	YEN 88000	YEN 115000	YEN 136000	YEN 170000	YEN 305000

Typical Analysis : Not applicable

**CU070225** Thickness ..... 0.005mm

Temper ..... As rolled

Size	Web Code	Quantity		
		1pc	2pcs	5pcs
25 x 25 mm	108-117-640	YEN 37600	YEN 47200	YEN 66000
50 x 50 mm	514-710-868	YEN 52000	YEN 67500	YEN 98500
100 x 100 mm	338-855-247	YEN 81500	YEN 109000	YEN 88000

**Coil**

Web Code	Length	Quantity
		1 Reel
356-903-281	0.2 m	YEN 106000
612-909-076	0.5 m	YEN 154000
613-625-692	1 m	YEN 223000

**Discs**

Web Code	Diameter	Quantity		
		10 discs	20 discs	50 discs
901-432-769	4 mm	YEN 70500	YEN 95000	YEN 165000
679-095-515	6 mm	YEN 75000	YEN 101000	YEN 175000
886-943-199	8 mm	YEN 79500	YEN 108000	YEN 185000
867-889-405	10 mm	YEN 84000	YEN 114000	YEN 194000
486-177-580	15 mm	YEN 95000	YEN 129000	YEN 219000
772-188-250	25 mm	YEN 117000	YEN 161000	YEN 269000
523-526-707	50 mm	YEN 172000	YEN 239000	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070230** Thickness ..... 0.0065mm

Temper ..... As rolled

NLT Sizes	Web Code	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
90 x 150 mm	956-582-167	YEN 60500	YEN 79000			

**Sizes LT**

Web Code	Size	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
500-095-650	25 x 25 mm	YEN 28200	YEN 33600	YEN 46000	YEN 63000	YEN 81500
866-595-104	50 x 50 mm	YEN 37000	YEN 46000	YEN 66000	YEN 91000	
026-212-259	90 x 100 mm	YEN 53000	YEN 68500	YEN 101000		
676-849-777	90 x 150 mm	YEN 63500	YEN 83000			

**Coil**

Web Code	Length	Quantity
		1 Reel
352-067-471	0.2 m	YEN 68500
008-428-573	0.5 m	YEN 96000
053-571-564	1 m	YEN 148000

**Discs**

Web Code	Diameter	Quantity		
		10 discs	20 discs	50 discs
055-866-446	4 mm	YEN 57500	YEN 68000	YEN 97500
983-309-139	6 mm	YEN 60000	YEN 72000	YEN 103000
913-643-953	8 mm	YEN 63000	YEN 75500	YEN 110000
205-495-834	10 mm	YEN 65500	YEN 79500	YEN 116000
686-976-243	15 mm	YEN 72500	YEN 89000	YEN 131000
872-028-963	25 mm	YEN 86000	YEN 108000	YEN 161000
003-620-239	50 mm	YEN 119000		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

## Copper/Beryllium

### Cu98/Be 2



## Foil

**CU070250**

Thickness ..... **0.0076mm**

Temper ..... **As rolled**

#### Size

**Web Code**  
 452-533-359  
 566-663-796  
 832-974-255

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 27800	YEN 32000	YEN 40600	YEN 50500	YEN 65500
50 x 50 mm	YEN 37200	YEN 45400	YEN 62000	YEN 80500	
89 x 100 mm	YEN 54000	YEN 69500	YEN 99500		

#### Discs

**Web Code**  
 121-776-934  
 222-115-471  
 764-436-225  
 554-534-173  
 316-766-323  
 595-792-962  
 474-117-261

Diameter	Quantity		
	10 discs	20 discs	50 discs
4 mm	YEN 39800	YEN 45200	YEN 57500
6 mm	YEN 42800	YEN 49400	YEN 64000
8 mm	YEN 45600	YEN 53500	YEN 70500
10 mm	YEN 48600	YEN 57500	YEN 77000
15 mm	YEN 56000	YEN 67500	YEN 93000
25 mm	YEN 70000	YEN 88000	YEN 126000
50 mm	YEN 106000	YEN 140000	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070260**

Thickness ..... **0.01mm**

Temper ..... **As rolled**

#### Size

**Web Code**  
 335-327-250  
 313-159-355  
 330-360-491  
 409-646-762

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 23000	YEN 25600	YEN 31000	YEN 37400	YEN 47200
50 x 50 mm	YEN 28600	YEN 33600	YEN 43400	YEN 55000	YEN 72000
88 x 100 mm	YEN 38400	YEN 47400	YEN 65500	YEN 86000	
150 x 176 mm	YEN 53500	YEN 69000	YEN 99500		

#### Coil

**Web Code**  
 479-953-742  
 994-213-537  
 276-697-742

Length	1 Reel
	0.2 m
0.5 m	YEN 87500
1 m	YEN 115000

#### Discs

**Web Code**  
 401-904-207  
 238-037-036  
 754-635-110  
 329-390-623  
 173-825-737  
 728-215-053  
 026-876-436

Diameter	Quantity		
	10 discs	20 discs	50 discs
4 mm	YEN 35800	YEN 40200	YEN 50500
6 mm	YEN 37400	YEN 42600	YEN 54500
8 mm	YEN 39200	YEN 45000	YEN 58000
10 mm	YEN 40800	YEN 47400	YEN 62000
15 mm	YEN 45000	YEN 53500	YEN 71500
25 mm	YEN 53500	YEN 65500	YEN 90500
50 mm	YEN 74500	YEN 95500	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070276**

Thickness ..... **0.02mm**

Temper ..... **Half hard**

#### Size

**Web Code**  
 601-379-178  
 596-628-620  
 983-758-225  
 026-249-705

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 17200	YEN 18700	YEN 22000	YEN 26200	YEN 32600
50 x 50 mm	YEN 20200	YEN 23000	YEN 29000	YEN 36000	YEN 46600
100 x 100 mm	YEN 26400	YEN 31800	YEN 42800	YEN 55500	YEN 74500
200 x 200 mm	YEN 38800	YEN 49400	YEN 70500	YEN 95000	

#### Coil

**Web Code**  
 622-037-776  
 202-198-791  
 189-293-464

Length	1 Reel
	0.5 m
1 m	YEN 73500
2 m	YEN 96500

#### Discs

**Web Code**  
 551-291-035  
 590-789-641  
 665-170-503  
 141-841-987  
 166-438-861  
 947-209-678  
 909-163-865

Diameter	Quantity		
	10 discs	20 discs	50 discs
4 mm	YEN 28800	YEN 32400	YEN 41600
6 mm	YEN 29600	YEN 33800	YEN 43600
8 mm	YEN 30600	YEN 35200	YEN 45800
10 mm	YEN 31600	YEN 36400	YEN 48000
15 mm	YEN 33800	YEN 39800	YEN 53000
25 mm	YEN 38600	YEN 46400	YEN 63500
50 mm	YEN 50500	YEN 63000	YEN 90000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

Alloy - Copper/Beryllium

**Copper/Beryllium**

**Cu98/Be 2**



**Foil**

**CU070275**

Thickness ..... 0.02mm

Temper ..... As rolled

**Size**

**Web Code**

158-506-382  
 813-296-873  
 662-102-186  
 762-767-942  
 345-992-462

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

		Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs	
YEN 17200	YEN 18700	YEN 22000	YEN 26200	YEN 32600	YEN 46600	
YEN 20200	YEN 23000	YEN 29000	YEN 36000	YEN 46600	YEN 66600	
YEN 26400	YEN 31800	YEN 42800	YEN 55500	YEN 74500		
YEN 32600	YEN 40600	YEN 56500	YEN 75000			
YEN 44400	YEN 57500	YEN 83000				

**Coil**

**Web Code**

131-323-473  
 415-430-185  
 928-767-327

**Width 200mm**

**Length**  
 0.5 m  
 1 m  
 2 m

		Quantity
	1 Reel	
YEN 57500	YEN 73500	YEN 96500

**Discs**

**Web Code**

989-562-212  
 695-284-265  
 910-535-472  
 816-933-116  
 116-647-163  
 580-888-741  
 611-099-730

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

		Quantity		
	10 discs	20 discs	50 discs	
YEN 28800	YEN 32400	YEN 41600	YEN 43600	
YEN 29600	YEN 33800	YEN 43600	YEN 45800	
YEN 30600	YEN 35200	YEN 45800	YEN 48000	
YEN 31600	YEN 36400	YEN 48000	YEN 53000	
YEN 33800	YEN 39800	YEN 53000	YEN 63500	
YEN 38600	YEN 46400	YEN 63500	YEN 90000	
YEN 50500	YEN 63000	YEN 90000		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070280**

Thickness ..... 0.025mm

Temper ..... As rolled

Condition ..... Surface oxide

**Size**

**Web Code**

387-470-767  
 433-849-452  
 231-175-215  
 896-909-458

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

		Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs	
YEN 15000	YEN 16300	YEN 19200	YEN 22800	YEN 28600	YEN 40200	
YEN 17600	YEN 19900	YEN 25000	YEN 31000	YEN 40200	YEN 63000	
YEN 22800	YEN 27200	YEN 36400	YEN 47200	YEN 63000		
YEN 27800	YEN 34400	YEN 47800	YEN 63500			

**Coil**

**Web Code**

113-685-931  
 210-743-969  
 342-999-732  
 874-971-847

**Width 150mm**

**Length**  
 0.2 m  
 0.5 m  
 1 m  
 2 m

		Quantity
	1 Reel	
YEN 34200	YEN 44600	YEN 56000
YEN 56000	YEN 73000	

**Discs**

**Web Code**

435-648-664  
 456-078-441  
 009-809-399  
 226-171-769  
 271-463-149  
 932-890-455  
 611-302-816

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

		Quantity		
	10 discs	20 discs	50 discs	
YEN 26400	YEN 30000	YEN 38800	YEN 42400	
YEN 27200	YEN 31200	YEN 40600	YEN 44200	
YEN 28000	YEN 32200	YEN 42400	YEN 44200	
YEN 28800	YEN 33400	YEN 44200	YEN 48400	
YEN 30800	YEN 36200	YEN 48400	YEN 57000	
YEN 34600	YEN 41600	YEN 57000	YEN 79000	
YEN 44400	YEN 55500	YEN 79000		

**CU070281**

Thickness ..... 0.025mm

Temper ..... As rolled

**Size**

**Web Code**

360-589-891  
 058-331-005  
 808-792-041  
 158-703-261

**Size**  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 200 x 200 mm

		Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs	
YEN 15000	YEN 16300	YEN 19200	YEN 22800	YEN 28600	YEN 40200	
YEN 17600	YEN 19900	YEN 25000	YEN 31000	YEN 40200	YEN 63000	
YEN 22800	YEN 27200	YEN 36400	YEN 47200	YEN 63000		
YEN 33000	YEN 41800	YEN 59500	YEN 79500			

**Coil**

**Web Code**

129-351-902  
 808-808-807  
 836-070-718  
 561-531-018

**Width 200mm**

**Length**  
 0.2 m  
 0.5 m  
 1 m  
 2 m

		Quantity
	1 Reel	
YEN 37000	YEN 49000	YEN 62500
YEN 62500	YEN 81500	

**Discs**

**Web Code**

009-144-975  
 240-154-626  
 388-294-267  
 665-669-754  
 729-910-420  
 476-070-606  
 264-768-367

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

		Quantity		
	10 discs	20 discs	50 discs	
YEN 26400	YEN 30000	YEN 38800	YEN 40600	
YEN 27200	YEN 31200	YEN 40600	YEN 42400	
YEN 28000	YEN 32200	YEN 42400	YEN 44200	
YEN 28800	YEN 33400	YEN 44200	YEN 48400	
YEN 30800	YEN 36200	YEN 48400	YEN 57000	
YEN 34600	YEN 41600	YEN 57000	YEN 79000	
YEN 44400	YEN 55500	YEN 79000		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

## Copper/Beryllium

### Cu98/Be 2



## Foil

**CU070301**

Thickness ..... 0.05mm

Temper ..... Quarter hard

#### Size

**Web Code**  
 715-917-113  
 456-247-539  
 946-655-943

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
60 x 60 mm	YEN 15700	YEN 17600	YEN 21800	YEN 26800	YEN 34600
95 x 100 mm	YEN 18200	YEN 21200	YEN 27400	YEN 34800	YEN 46000
190 x 200 mm	YEN 24800	YEN 30600	YEN 42200	YEN 64000	

#### Coil

**Web Code**  
 215-470-433  
 340-284-346  
 767-220-371

Length	Quantity	
	1 Reel	
0.5 m	YEN 36600	
1 m	YEN 45200	
2 m	YEN 66000	

#### Discs

**Web Code**  
 621-330-617  
 489-973-661  
 698-953-557  
 682-054-381  
 720-689-021  
 646-294-674  
 930-599-945

Diameter	Quantity		
	10 discs	20 discs	50 discs
4 mm	YEN 23400	YEN 26200	YEN 33200
6 mm	YEN 23800	YEN 26800	YEN 34200
8 mm	YEN 24200	YEN 27400	YEN 35200
10 mm	YEN 24600	YEN 28000	YEN 36200
15 mm	YEN 25800	YEN 29600	YEN 38600
25 mm	YEN 27800	YEN 32600	YEN 43400
50 mm	YEN 33400	YEN 40400	YEN 55500

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070300**

Thickness ..... 0.05mm

Temper ..... Half hard

#### Size

**Web Code**  
 412-862-364  
 607-796-387  
 974-544-703  
 818-095-890

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 13300	YEN 14200	YEN 16400	YEN 19200	YEN 24000
50 x 50 mm	YEN 15000	YEN 16600	YEN 20200	YEN 24600	YEN 31600
100 x 100 mm	YEN 18400	YEN 21400	YEN 27800	YEN 35400	
150 x 150 mm	YEN 21800	YEN 26200	YEN 35400	YEN 46200	

#### Coil

**Web Code**  
 261-978-140  
 747-264-773

Length	Quantity	
	1 Reel	
0.5 m	YEN 41600	
1 m	YEN 54000	

#### Discs

**Web Code**  
 715-733-404  
 466-680-330  
 335-043-975  
 880-498-308  
 062-288-065  
 786-004-839  
 250-600-925

Diameter	Quantity		
	10 discs	20 discs	50 discs
4 mm	YEN 23400	YEN 26200	YEN 33200
6 mm	YEN 23800	YEN 26800	YEN 34200
8 mm	YEN 24200	YEN 27400	YEN 35200
10 mm	YEN 24600	YEN 28000	YEN 36200
15 mm	YEN 25800	YEN 29600	YEN 38600
25 mm	YEN 27800	YEN 32600	YEN 43400
50 mm	YEN 33400	YEN 40400	YEN 55500

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070330**

Thickness ..... 0.075mm

Temper ..... Half hard

#### Size

**Web Code**  
 325-113-054  
 639-127-428  
 890-927-057  
 365-886-172

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 12500	YEN 13200	YEN 14700	YEN 16800	YEN 20600
50 x 50 mm	YEN 13500	YEN 14500	YEN 16800	YEN 19800	YEN 24800
100 x 100 mm	YEN 15400	YEN 17200	YEN 21000	YEN 25800	YEN 33400
150 x 150 mm	YEN 17300	YEN 19900	YEN 25400	YEN 31800	YEN 41800

#### Coil

**Web Code**  
 735-770-987  
 971-371-536  
 421-441-842  
 680-232-891

Length	Quantity	
	1 Reel	
1 m	YEN 30400	
2 m	YEN 36600	
5 m	YEN 49000	
10 m	YEN 80500	

#### Discs

**Web Code**  
 637-522-054  
 690-253-165  
 281-646-961  
 205-866-635  
 733-333-793  
 666-717-365  
 339-666-361

Diameter	Quantity		
	10 discs	20 discs	50 discs
4 mm	YEN 23000	YEN 25600	YEN 32400
6 mm	YEN 23200	YEN 26000	YEN 32800
8 mm	YEN 23400	YEN 26400	YEN 33400
10 mm	YEN 23800	YEN 26600	YEN 34000
15 mm	YEN 24400	YEN 27600	YEN 35400
25 mm	YEN 25600	YEN 29200	YEN 38000
50 mm	YEN 28600	YEN 33600	YEN 44800

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

## Copper/Beryllium

### Cu98/Be 2



## Foil

**CU070342**

Thickness ..... **0.1mm**  
 Temper ..... **Half hard**

Coil width ..... **10mm**

### Coil

#### Web Code

744-095-651  
 572-788-967  
 190-918-422  
 767-835-284  
 599-462-611

### Width 10mm

#### Length

**1 Reel**  
 0.5 m YEN 17900  
 1 m YEN 18800  
 2 m YEN 20200  
 5 m YEN 23200  
 10 m YEN 26600

### Quantity

**CU070340**

Thickness ..... **0.1mm**

Temper ..... **Half hard**

### Size

#### Web Code

458-290-756  
 286-345-089  
 793-136-214  
 142-032-915  
 872-429-798

### 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
YEN 12400	YEN 13000	YEN 14400	YEN 16400	YEN 19900		
YEN 13200	YEN 14100	YEN 16200	YEN 18900	YEN 23600		
YEN 14800	YEN 16400	YEN 19800	YEN 24000	YEN 30800		
YEN 16400	YEN 18700	YEN 23400	YEN 29200	YEN 38000		
YEN 21200	YEN 25400	YEN 34200				

### Coil

#### Web Code

433-294-274  
 754-120-432  
 265-062-341

### Width 305mm

#### Length

**1 Reel**  
 0.5 m YEN 28200  
 1 m YEN 33400  
 2 m YEN 41800

### Quantity

### Discs

#### Web Code

721-540-980  
 192-620-118  
 077-516-958  
 689-613-032  
 201-627-759  
 203-463-428  
 432-926-392

### Diameter

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

		Quantity		
		10 discs	20 discs	50 discs
YEN 23000	YEN 25600	YEN 32200	YEN 32200	YEN 32200
YEN 23200	YEN 25800	YEN 32600	YEN 32600	YEN 32600
YEN 23400	YEN 26200	YEN 33200	YEN 33200	YEN 33200
YEN 23600	YEN 26400	YEN 33600	YEN 33600	YEN 33600
YEN 24000	YEN 27200	YEN 34800	YEN 34800	YEN 34800
YEN 25000	YEN 28600	YEN 37000	YEN 37000	YEN 37000
YEN 27600	YEN 32200	YEN 42800	YEN 42800	YEN 42800

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070350**

Thickness ..... **0.125mm**

Temper ..... **Half hard**

### Size

#### Web Code

115-795-538  
 474-449-809  
 306-227-003  
 278-381-430  
 773-531-842

### 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
YEN 12600	YEN 13300	YEN 14900	YEN 17100	YEN 21000		
YEN 13700	YEN 14800	YEN 17300	YEN 20400	YEN 25600		
YEN 15800	YEN 17800	YEN 22000	YEN 27000	YEN 35000		
YEN 17900	YEN 20800	YEN 26600	YEN 33600			
YEN 24200	YEN 29600	YEN 40600				

### Coil

#### Web Code

661-945-892  
 797-679-279  
 709-901-289

### Width 305mm

#### Length

**1 Reel**  
 0.5 m YEN 32000  
 1 m YEN 38800  
 2 m YEN 48400

### Quantity

### Discs

#### Web Code

875-446-048  
 430-762-021  
 845-250-153  
 656-268-585  
 033-564-899  
 195-600-237  
 450-030-910

### Diameter

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

		Quantity		
		10 discs	20 discs	50 discs
YEN 23000	YEN 25800	YEN 32400	YEN 32400	YEN 32400
YEN 23200	YEN 26200	YEN 33000	YEN 33000	YEN 33000
YEN 23600	YEN 26400	YEN 33600	YEN 33600	YEN 33600
YEN 23800	YEN 26800	YEN 34200	YEN 34200	YEN 34200
YEN 24400	YEN 27800	YEN 35800	YEN 35800	YEN 35800
YEN 25800	YEN 29600	YEN 38800	YEN 38800	YEN 38800
YEN 29200	YEN 34400	YEN 46200	YEN 46200	YEN 46200

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070361**

Thickness ..... **0.15mm**

Coil width ..... **.3mm**

### Coil

#### Web Code

038-461-244  
 089-189-946  
 950-355-291  
 235-403-967  
 799-142-683

### Width 0.3mm

#### Length

**1 Reel**  
 0.5 m YEN 17400  
 1 m YEN 20000  
 2 m YEN 23600  
 5 m YEN 31000  
 10 m YEN 49600

### Quantity

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.



## Copper/Beryllium

### Cu98/Be 2



## Foil

**CU070360**

Thickness ..... 0.15mm

Temper ..... Half hard

#### Size

##### Web Code

253-873-537  
 734-194-535  
 774-318-664  
 789-825-322  
 214-238-666

**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
YEN	12500	YEN 13100	YEN 14600	YEN 16700	YEN 20400	
YEN	13400	YEN 14400	YEN 16700	YEN 19600	YEN 24400	
YEN	15200	YEN 17000	YEN 20800	YEN 25400	YEN 32600	
YEN	17100	YEN 19600	YEN 24800	YEN 31200		
YEN	22600	YEN 27400	YEN 37200			

#### Coil

##### Web Code

867-286-304  
 728-168-136  
 021-020-274

Width 305mm

**Length**  
 0.5 m  
 1 m  
 2 m

		Quantity
		1 Reel
YEN	29800	YEN 35800
YEN	49200	

#### Discs

##### Web Code

255-331-986  
 916-495-370  
 561-916-641  
 239-580-290  
 947-530-648  
 441-329-146  
 166-148-516

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

		Quantity		
		10 discs	20 discs	50 discs
YEN	23000	YEN 25600	YEN 32400	
YEN	23200	YEN 26000	YEN 32800	
YEN	23400	YEN 26200	YEN 33400	
YEN	23600	YEN 26600	YEN 33800	
YEN	24200	YEN 27400	YEN 35200	
YEN	25400	YEN 29000	YEN 37800	
YEN	28200	YEN 33200	YEN 44200	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070380**

Thickness ..... 0.2mm

Temper ..... Annealed

#### Size

##### Web Code

768-565-415  
 070-680-456  
 835-061-369  
 382-666-452

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

		Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
YEN	12500	YEN 13100	YEN 14600	YEN 16700	YEN 20400	
YEN	13400	YEN 14400	YEN 16700	YEN 19700	YEN 24600	
YEN	15300	YEN 17100	YEN 20800	YEN 25400	YEN 32800	
YEN	17100	YEN 19700	YEN 25000	YEN 31400	YEN 43600	

#### Coil

##### Web Code

972-240-157  
 833-302-878  
 162-859-459  
 357-427-534

Width 216mm

**Length**  
 0.5 m  
 1 m  
 2 m  
 5 m

		Quantity
		1 Reel
YEN	27600	YEN 32800
YEN	42000	YEN 81500

#### Discs

##### Web Code

805-538-095  
 692-260-168  
 532-522-871  
 565-356-669  
 669-583-076  
 697-875-247  
 234-412-171

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

		Quantity		
		10 discs	20 discs	50 discs
YEN	23000	YEN 25600	YEN 32400	
YEN	23200	YEN 26000	YEN 32800	
YEN	23400	YEN 26400	YEN 33400	
YEN	23600	YEN 26600	YEN 34000	
YEN	24200	YEN 27400	YEN 35200	
YEN	25400	YEN 29200	YEN 37800	
YEN	28400	YEN 33200	YEN 44400	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070381**

Thickness ..... 0.2mm

Temper ..... Half hard

#### Size

##### Web Code

791-181-749  
 956-528-724  
 170-256-127  
 657-802-753  
 574-844-576

**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
YEN	12500	YEN 13100	YEN 14600	YEN 16700	YEN 20400	
YEN	13400	YEN 14400	YEN 16700	YEN 19700	YEN 24600	
YEN	15300	YEN 17100	YEN 20800	YEN 25400	YEN 32800	
YEN	17100	YEN 19700	YEN 25000	YEN 31400		
YEN	22600	YEN 27400	YEN 40000			

#### Coil

##### Web Code

195-752-436  
 723-724-506  
 207-618-595

Width 305mm

**Length**  
 0.5 m  
 1 m  
 2 m

		Quantity
		1 Reel
YEN	30000	YEN 36000
YEN	53000	

#### Discs

##### Web Code

740-166-265  
 325-141-955  
 203-231-125  
 622-722-894  
 899-927-040  
 735-644-765  
 230-997-883

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

		Quantity		
		10 discs	20 discs	50 discs
YEN	23000	YEN 25600	YEN 32400	
YEN	23200	YEN 26000	YEN 32800	
YEN	23400	YEN 26400	YEN 33400	
YEN	23600	YEN 26600	YEN 34000	
YEN	24200	YEN 27400	YEN 35200	
YEN	25400	YEN 29200	YEN 37800	
YEN	28400	YEN 33200	YEN 44400	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

## Copper/Beryllium

### Cu98/Be 2



## Foil

**CU070450**

Thickness ..... 0.25mm

Temper ..... Annealed

#### Size

##### Web Code

301-520-676  
 690-083-628  
 260-457-486  
 557-185-560

Size  
 25 x 25 mm  
 50 x 50 mm  
 100 x 100 mm  
 150 x 150 mm

		Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs	
YEN 12600	YEN 13200	YEN 14800	YEN 16900	YEN 20600	YEN 20600	
YEN 13500	YEN 14600	YEN 16900	YEN 20000	YEN 25000	YEN 25000	
YEN 15500	YEN 17300	YEN 21200	YEN 26000	YEN 36600	YEN 36600	
YEN 17400	YEN 20000	YEN 25600	YEN 36600			

#### Coil

##### Web Code

975-797-933  
 648-197-945  
 024-741-422

Width 170mm

##### Length

0.5 m YEN 26800  
 1 m YEN 32800  
 2 m YEN 50000

#### Quantity

#### Discs

##### Web Code

875-903-579  
 487-937-758  
 992-218-780  
 027-341-741  
 417-715-053  
 214-377-820  
 797-231-871

##### Diameter

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

		Quantity			
	10 discs	20 discs	50 discs	100 discs	
YEN 23000	YEN 25600	YEN 32400	YEN 43400		
YEN 23200	YEN 26000	YEN 33000	YEN 44200		
YEN 23400	YEN 26400	YEN 33400	YEN 45000		
YEN 23800	YEN 26800	YEN 34000	YEN 45600		
YEN 24400	YEN 27600	YEN 35400	YEN 47600		
YEN 25600	YEN 29400	YEN 38200	YEN 51500		
YEN 28600	YEN 33800	YEN 45200			

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070451**

Thickness ..... 0.25mm

Temper ..... Half hard

#### Size

##### Web Code

504-972-960  
 390-423-016  
 120-434-717  
 176-444-392  
 884-897-152

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	
YEN 12600	YEN 13200	YEN 14800	YEN 16900	YEN 20600	YEN 20600	
YEN 13500	YEN 14600	YEN 16900	YEN 20000	YEN 25000	YEN 25000	
YEN 15500	YEN 17300	YEN 21200	YEN 26000	YEN 36600	YEN 36600	
YEN 17400	YEN 20000	YEN 25600	YEN 36600			
YEN 23200	YEN 30000	YEN 58000				

#### Coil

##### Web Code

362-121-388  
 066-489-708

Width 300mm

##### Length

0.5 m YEN 30800  
 1 m YEN 46000

#### Quantity

#### Discs

##### Web Code

075-995-946  
 817-873-156  
 498-813-036  
 787-951-182  
 334-373-698  
 809-556-255  
 850-923-747

##### Diameter

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

		Quantity			
	10 discs	20 discs	50 discs	100 discs	
YEN 23000	YEN 25600	YEN 32400	YEN 43400		
YEN 23200	YEN 26000	YEN 33000	YEN 44200		
YEN 23400	YEN 26400	YEN 33400	YEN 44800		
YEN 23800	YEN 26800	YEN 34000	YEN 45600		
YEN 24400	YEN 27600	YEN 35400	YEN 47600		
YEN 25600	YEN 29400	YEN 38200	YEN 51500		
YEN 28600	YEN 33800	YEN 45200			

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070458**

Thickness ..... 0.30mm  
 Temper ..... Half hard

Coil width ..... 15.5mm

#### Coil

##### Web Code

323-280-080  
 269-276-806  
 157-595-687  
 539-046-520

Width 15.5mm

##### Length

0.5 m YEN 19300  
 1 m YEN 20800  
 2 m YEN 23200  
 5 m YEN 27600

#### Quantity

**CU070475**

Thickness ..... 0.38mm

Temper ..... Annealed

#### Size

##### Web Code

653-977-181  
 747-149-685  
 155-726-398  
 130-616-858

Size  
 25 x 25 mm  
 50 x 50 mm  
 89 x 89 mm  
 178 x 178 mm

		Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs	
YEN 12800	YEN 13500	YEN 15300	YEN 17600	YEN 21600	YEN 21600	
YEN 14000	YEN 15200	YEN 17900	YEN 21400	YEN 27000	YEN 27000	
YEN 15800	YEN 17900	YEN 22200	YEN 27200	YEN 40600	YEN 40600	
YEN 20000	YEN 23800	YEN 37000	YEN 62500			

#### Coil

##### Web Code

669-113-282  
 595-350-962

Width 178mm

##### Length

0.5 m YEN 29800  
 1 m YEN 43000

#### Quantity

#### Discs

##### Web Code

223-999-151  
 999-889-462  
 986-186-647  
 273-328-161  
 166-019-034  
 752-382-746  
 047-848-019

##### Diameter

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

		Quantity			
	10 discs	20 discs	50 discs	100 discs	
YEN 23200	YEN 25800	YEN 32600	YEN 43600		
YEN 23400	YEN 26200	YEN 33400	YEN 44600		
YEN 23800	YEN 26800	YEN 34000	YEN 45600		
YEN 24000	YEN 27200	YEN 34600	YEN 46600		
YEN 24800	YEN 28200	YEN 36400	YEN 49000		
YEN 26200	YEN 30400	YEN 39800	YEN 54000		
YEN 30200	YEN 35800	YEN 51000			

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**Copper/Beryllium**

**Cu98/Be 2**



**Foil**

**CU070500**

Thickness ..... **0.45mm**

Temper ..... **Annealed**

**Size**

**Web Code**  
 981-012-454  
 626-558-247

Size	Quantity
25 x 25 mm	YEN 12800
50 x 50 mm	YEN 14000

**Discs**

**Web Code**  
 915-896-642  
 203-269-249

Diameter	Quantity					
	1 discs	2 discs	3 discs	5 discs	10 discs	20 discs
5 mm	YEN 21400	YEN 21800	YEN 22200	YEN 23000		
10 mm	YEN 21800	YEN 22200	YEN 22800	YEN 23600	YEN 25600	

Typical Analysis : Not applicable

**CU070501**

Thickness ..... **0.5mm**

Temper ..... **Half hard**

**Size**

**Web Code**  
 621-663-488  
 020-714-938  
 555-239-210  
 883-337-807  
 568-525-678

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 12900	YEN 13600	YEN 15400	YEN 17900	YEN 22000
50 x 50 mm	YEN 14100	YEN 15400	YEN 18300	YEN 21800	YEN 27800
100 x 100 mm	YEN 16700	YEN 19000	YEN 24000	YEN 31200	
150 x 150 mm	YEN 19200	YEN 22600	YEN 32200		
300 x 300 mm	YEN 27200	YEN 43200			

**Coil**

**Web Code**  
 884-525-131  
 001-348-627

Width 305mm	Quantity	
	Length	1 Reel
	0.5 m	YEN 42000
	1 m	YEN 68500

**Discs**

**Web Code**  
 532-920-564  
 516-474-186  
 053-325-756  
 644-854-906  
 154-044-424  
 636-306-820  
 841-571-409

Diameter	Quantity		
	10 discs	20 discs	50 discs
4 mm	YEN 24600	YEN 28000	YEN 36200
6 mm	YEN 25000	YEN 28400	YEN 37000
8 mm	YEN 25400	YEN 29000	YEN 37800
10 mm	YEN 25800	YEN 29600	YEN 38800
15 mm	YEN 26800	YEN 31000	YEN 41000
25 mm	YEN 28600	YEN 33600	YEN 45200
50 mm	YEN 33600	YEN 40600	YEN 61000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070525**

Thickness ..... **0.75mm**

Temper ..... **Half hard**

**Size**

**Web Code**  
 172-064-770  
 508-095-078  
 511-885-537  
 985-697-718  
 459-148-236

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 12500	YEN 13300	YEN 15200	YEN 17700	YEN 22000
50 x 50 mm	YEN 13900	YEN 15200	YEN 18200	YEN 22000	YEN 28000
100 x 100 mm	YEN 16600	YEN 19100	YEN 24200	YEN 33200	YEN 55500
150 x 150 mm	YEN 19300	YEN 23000	YEN 34400	YEN 58000	
300 x 300 mm	YEN 29000	YEN 47000			

**Coil**

**Web Code**  
 793-434-886  
 212-218-403

Width 305mm	Quantity	
	Length	1 Reel
	0.5 m	YEN 45200
	1 m	YEN 75500

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070550**

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

Temper ..... **Annealed**

**Size**

**Web Code**  
 476-845-264  
 605-650-911  
 706-368-665  
 472-177-084

Size	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
25 x 25 mm	YEN 12600	YEN 13500	YEN 15400	YEN 18000	YEN 22400
50 x 50 mm	YEN 14100	YEN 15500	YEN 18700	YEN 22600	YEN 29000
100 x 100 mm	YEN 17000	YEN 19700	YEN 25200	YEN 36400	
200 x 200 mm	YEN 22800	YEN 29800	YEN 58000		

**Coil**

**Web Code**  
 962-007-592  
 009-383-704

Width 215mm	Quantity	
	Length	1 Reel
	0.5 m	YEN 39800
	1 m	YEN 64500

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU070576**

Thickness ..... **2.0mm**

Temper ..... **Half hard**

**Size**

**Web Code**  
 637-181-739  
 443-814-263  
 435-993-476  
 763-774-370

Size	Quantity		
	1pc	2pcs	5pcs
46 x 50 mm	YEN 17800	YEN 22000	YEN 29200
46 x 100 mm	YEN 19400	YEN 24400	
46 x 250 mm	YEN 22600	YEN 32200	
46 x 505 mm	YEN 29600		

**Alloy – Copper/Beryllium**

## Copper/Beryllium

### Cu98/Be 2



## Foil

<b>CU070575</b>	Thickness . . . . . <b>2.0mm</b>	Temper . . . . . <b>1/4 Hard</b>
<b>Size</b>	<b>Quantity</b>	
<b>Web Code</b>	<b>Size</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b>
777-887-609	92 x 100 mm	YEN 21800    YEN 27600    YEN 43000
875-852-720	92 x 200 mm	YEN 25000    YEN 34800
830-280-893	92 x 400 mm	YEN 32000    YEN 53000
660-747-220	92 x 994 mm	YEN 59000

<b>CU070600</b>	Thickness . . . . . <b>3.0mm</b>	Temper . . . . . <b>Annealed</b>
<b>Size</b>	<b>Quantity</b>	
<b>Web Code</b>	<b>Size</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b>
931-096-866	50 x 50 mm	YEN 19500    YEN 24600    YEN 33000
432-912-345	100 x 100 mm	YEN 25200    YEN 35200    YEN 67000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

<b>CU070601</b>	Thickness . . . . . <b>3.0mm</b>	Temper . . . . . <b>1/4 Hard</b>
<b>Size</b>	<b>Quantity</b>	
<b>Web Code</b>	<b>Size</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b>
517-387-893	90 x 90 mm	YEN 24000    YEN 31600    YEN 58000
581-087-431	180 x 180 mm	YEN 44200    YEN 77500

<b>Coil</b>	<b>Width 180mm</b>	<b>Quantity</b>
<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
753-815-327	0.5 m	YEN 95500

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

<b>CU070650</b>	Thickness . . . . . <b>6.35mm</b>	Temper . . . . . <b>Hard</b>
<b>Size</b>	<b>Quantity</b>	
<b>Web Code</b>	<b>Size</b>	<b>1pc</b> <b>2pcs</b> <b>5pcs</b>
376-631-399	50 x 50 mm	YEN 20200    YEN 24600    YEN 36400
647-384-806	100 x 100 mm	YEN 27800    YEN 44200

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.



## Wire

<b>CU075110</b>	Diameter . . . . . <b>0.025mm</b>	Temper . . . . . <b>Hard</b>
<b>Length</b>	<b>Quantity</b>	
<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
345-956-807	10 m	YEN 12200
702-473-471	20 m	YEN 14800
394-068-666	50 m	YEN 20200
258-583-898	100 m	YEN 26800
373-007-660	500 m	YEN 48000
768-437-276	1000 m	YEN 64000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

<b>CU075111</b>	Diameter . . . . . <b>0.030mm</b>	Temper . . . . . <b>Hard</b>
<b>Length</b>	<b>Quantity</b>	
<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
535-859-272	10 m	YEN 12000
325-160-414	20 m	YEN 14400
290-512-212	50 m	YEN 19600
651-977-833	100 m	YEN 26000
562-821-042	500 m	YEN 46000
451-499-462	1000 m	YEN 61500

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

<b>CU075113</b>	Diameter . . . . . <b>0.035mm</b>	Temper . . . . . <b>Hard</b>
<b>Length</b>	<b>Quantity</b>	
<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
779-501-870	10 m	YEN 12700

Alloy – Copper/Beryllium

## Copper/Beryllium

### Cu98/Be 2



## Wire

**CU075115** Diameter ..... **0.05mm** Temper ..... **Hard**

### Length

#### Web Code

625-951-310  
 243-916-837  
 489-605-029  
 200-626-398  
 078-293-652  
 786-708-958  
 338-622-040

Length	Quantity	1 Reel
50 m	YEN	15500
100 m	YEN	17100
250 m	YEN	20800
500 m	YEN	25600
1000 m	YEN	33600
2000 m	YEN	40800
5000 m	YEN	57000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075117** Diameter ..... **0.05mm** Temper ..... **Hard**

Condition ..... **Gold plated wire**

### Length

#### Web Code

673-025-254  
 025-135-842  
 084-877-260  
 983-524-013  
 859-942-850

Length	Quantity	1 Reel
1 m	YEN	17000
5 m	YEN	23000
10 m	YEN	27600
20 m	YEN	34000
50 m	YEN	46800

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075118** Diameter ..... **0.075mm** Temper ..... **Hard**

### Length

#### Web Code

327-756-668  
 969-575-562  
 196-940-985  
 617-624-394  
 203-041-002  
 380-131-518  
 516-444-603

Length	Quantity	1 Reel
50 m	YEN	16000
100 m	YEN	17800
250 m	YEN	21800
500 m	YEN	27000
1000 m	YEN	35800
2000 m	YEN	43800
5000 m	YEN	67000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075116** Diameter ..... **0.08mm** Temper ..... **Hard**

### Length

#### Web Code

096-245-627

Length	Quantity	1 Reel
25 m	YEN	16700

**CU075119** Diameter ..... **0.1mm** Temper ..... **Hard**

### Length

#### Web Code

423-251-634  
 722-533-684  
 911-372-698  
 660-064-804  
 032-126-488  
 465-040-873  
 977-099-903

Length	Quantity	1 Reel
50 m	YEN	16300
100 m	YEN	18300
250 m	YEN	22600
500 m	YEN	28200
1000 m	YEN	37400
2000 m	YEN	46000
5000 m	YEN	75500

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075120** Diameter ..... **0.125mm** Temper ..... **Hard**

### Length

#### Web Code

555-577-604  
 447-211-090  
 901-386-638  
 673-328-764  
 166-099-562

Length	Quantity	1 Reel
10 m	YEN	12900
20 m	YEN	13600
100 m	YEN	16800
500 m	YEN	25800
1000 m	YEN	34400

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075121** Diameter ..... **0.125mm** Temper ..... **Hard**

Condition ..... **Gold plated wire**

### Length

#### Web Code

724-388-808  
 122-301-988  
 953-812-195  
 388-389-652  
 405-193-130

Length	Quantity	1 Reel
1 m	YEN	20600
2 m	YEN	24000
5 m	YEN	31000
10 m	YEN	38800
20 m	YEN	49800

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

Alloy – Copper/Beryllium

## Copper/Beryllium

### Cu98/Be 2



## Wire

**CU075131**

Diameter ..... **0.25mm**  
 Temper ..... **Hard**

Condition ..... **Straight wire**

Size Web Code	Length	Quantity			
		1pc	2pcs	5pcs	10pcs
				0.4040g	#1000 mm#

**CU075130**

Diameter ..... **0.25mm**

Temper ..... **Hard**

Length Web Code	Quantity	
	Length	1 Reel
141-678-187	5 m	YEN 12700
709-774-609	25 m	YEN 15100
721-830-903	50 m	YEN 17000
228-874-674	100 m	YEN 19800
609-332-032	500 m	YEN 33000
166-501-540	1000 m	YEN 45600

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075133**

Diameter ..... **0.25mm**  
 Condition ..... **Gold plated wire**

Temper ..... **Hard**

Length Web Code	Quantity	
	Length	1 Reel
787-643-059	1 m	YEN 27600
115-017-053	2 m	YEN 34000
443-478-889	5 m	YEN 46800
966-196-298	10 m	YEN 61000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075132**

Diameter ..... **0.30mm**

Temper ..... **Annealed**

Length Web Code	Quantity	
	Length	1 Reel
620-530-512	5 m	YEN 12700
867-900-881	25 m	YEN 15100
695-086-826	50 m	YEN 17000
100-956-344	100 m	YEN 19800
002-526-381	500 m	YEN 33000
300-347-741	1000 m	YEN 45600

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075319**

Diameter ..... **0.5mm**  
 Temper ..... **Hard**

Condition ..... **Straight wire**

Size Web Code	Length	Quantity				
		10pcs	20pcs	50pcs	100pcs	200pcs
				0.1131g	#70 mm#	

**CU075320**

Diameter ..... **0.5mm**  
 Temper ..... **Hard**

Condition ..... **Straight wire**

Size Web Code	Length	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
				1.6g	#1000 mm#	

**CU075140**

Diameter ..... **0.5mm**

Temper ..... **Hard**

Length Web Code	Quantity	
	Length	1 Reel
585-972-173	2 m	YEN 12300
246-515-038	10 m	YEN 14600
814-375-759	20 m	YEN 16300
796-972-557	50 m	YEN 19900
621-567-180	100 m	YEN 24000
695-896-923	500 m	YEN 56000
987-112-532	1000 m	YEN 102000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

**CU075340**

Diameter ..... **1.0mm**  
 Temper ..... **Hard**

Condition ..... **Straight wire**

Size Web Code	Length	Quantity				
		1pc	2pcs	5pcs	10pcs	20pcs
				6.5g	#1000 mm#	

## Copper/Beryllium

### Cu98/Be 2



#### Wire

<b>CU075150</b>	Diameter ..... <b>1.0mm</b>	Temper ..... <b>Hard</b>	
	<b>Length</b>	<b>Quantity</b>	
	<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
	633-182-259	1 m	YEN 12900
	147-776-464	5 m	YEN 15900
	056-508-932	10 m	YEN 18200
	472-058-395	25 m	YEN 22800
	007-294-806	50 m	YEN 28000
	911-861-518	100 m	YEN 41400

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.

<b>CU075160</b>	Diameter ..... <b>1.63mm</b>	Temper ..... <b>Hard</b>	
	<b>Length</b>	<b>Quantity</b>	
	<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
	836-709-251	0.5 m	YEN 13100
	588-660-031	1 m	YEN 14200
	582-506-393	2 m	YEN 15700
	813-293-517	5 m	YEN 18900
	661-699-858	10 m	YEN 22400
	712-476-524	20 m	YEN 30000

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.



#### Insulated Wire

<b>CU075820</b>	Conductor diameter ..... <b>0.025mm</b>	Insulation thickness ..... <b>0.004mm</b>	
	Insulation ..... <b>Polyimide</b>	Temper ..... <b>Hard</b>	
	<b>Length</b>	<b>Quantity</b>	
	<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
	836-479-528	10 m	YEN 12800
	978-306-691	20 m	YEN 15500
	602-143-629	50 m	YEN 21400
	179-473-238	100 m	YEN 28600
	777-852-730	200 m	YEN 36200
	299-122-496	500 m	YEN 52000

<b>CU075830</b>	Conductor diameter ..... <b>0.075mm</b>	Insulation thickness ..... <b>0.008mm</b>	
	Insulation ..... <b>Polyimide</b>	Temper ..... <b>Hard</b>	
	<b>Length</b>	<b>Quantity</b>	
	<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
	627-310-983	10 m	YEN 14100
	983-787-350	20 m	YEN 17400
	553-053-348	50 m	YEN 24400
	049-848-253	100 m	YEN 32600
	704-442-454	200 m	YEN 42200

<b>CU075835</b>	Conductor diameter ..... <b>0.1mm</b>	Insulation thickness ..... <b>0.01mm</b>	
	Insulation ..... <b>Polyimide</b>	Temper ..... <b>Hard</b>	
	<b>Length</b>	<b>Quantity</b>	
	<b>Web Code</b>	<b>Length</b>	<b>1 Reel</b>
	108-832-357	10 m	YEN 15100
	849-334-563	20 m	YEN 18800
	166-615-619	50 m	YEN 26400
	842-025-565	100 m	YEN 35800
	153-295-728	200 m	YEN 46400



#### Rod

<b>CU077903</b>	Diameter ..... <b>1.8mm</b>	Temper ..... <b>Half hard</b>					
	Condition ..... <b>Centreless ground</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>	<b>20pcs</b>
	795-232-084	100 mm	YEN 12800	YEN 14800	YEN 17700	YEN 21000	YEN 26000
	272-800-099	200 mm	YEN 14100	YEN 16700	YEN 20600	YEN 25200	
	565-764-038	500 mm	YEN 16800	YEN 20400			
	921-475-864	1000 mm	YEN 19800				

May contain lead as a free machining additive.

## Copper/Beryllium

### Cu98/Be 2



## Rod

**CU077905**

Diameter ..... **2.0mm**

Temper ..... **Half hard**

**Size**

**Web Code**

195-052-020  
 027-871-503  
 930-157-948  
 223-946-177

Length	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
100 mm	YEN 12400	YEN 14300	YEN 16900	YEN 19900	YEN 24200
200 mm	YEN 13600	YEN 16000	YEN 19500	YEN 23600	YEN 29600
500 mm	YEN 16000	YEN 19300	YEN 24800	YEN 31000	
1000 mm	YEN 18600	YEN 23000	YEN 30600		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077910**

Diameter ..... **3.2mm**

Temper ..... **Half hard**

**Size**

**Web Code**

445-721-926  
 715-241-332  
 405-168-375  
 646-045-727

Length	Quantity				
	1pc	2pcs	5pcs	10pcs	20pcs
100 mm	YEN 12600	YEN 14500	YEN 17100	YEN 20200	YEN 24800
200 mm	YEN 13800	YEN 16200	YEN 19900	YEN 24200	YEN 30400
500 mm	YEN 16200	YEN 19700	YEN 25400	YEN 32000	
1000 mm	YEN 19000	YEN 23600	YEN 31600		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077915**

Diameter ..... **4.0mm**

Temper ..... **Hard**

**Size**

**Web Code**

847-640-101  
 811-004-154  
 335-706-373  
 423-244-651

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	YEN 14600	YEN 17700	YEN 22800	YEN 29400
200 mm	YEN 16300	YEN 20200	YEN 26800	YEN 35000
500 mm	YEN 19800	YEN 25200		
1000 mm	YEN 23800	YEN 30600		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077920**

Diameter ..... **4.8mm**

Temper ..... **Hard**

**Size**

**Web Code**

123-885-527  
 401-456-883  
 634-221-643  
 764-847-282

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	YEN 15200	YEN 18500	YEN 24000	YEN 31200
200 mm	YEN 17200	YEN 21400	YEN 28600	YEN 37400
500 mm	YEN 21200	YEN 27000		
1000 mm	YEN 25600	YEN 33200		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077925**

Diameter ..... **6.35mm**

Temper ..... **Hard**

**Size**

**Web Code**

046-759-348  
 359-216-404  
 061-581-457  
 451-350-421

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	YEN 16300	YEN 20200	YEN 25800	YEN 32400
200 mm	YEN 18800	YEN 23600	YEN 31200	YEN 40200
500 mm	YEN 23800	YEN 30600	YEN 45000	
1000 mm	YEN 29400	YEN 38600		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077930**

Diameter ..... **9.5mm**

Temper ..... **As drawn**

**Size**

**Web Code**

499-448-206  
 066-701-880  
 804-531-909  
 778-193-947

Length	Quantity			
	1pc	2pcs	5pcs	10pcs
100 mm	YEN 18000	YEN 22800	YEN 28200	YEN 34400
200 mm	YEN 20600	YEN 26200	YEN 33800	YEN 49800
500 mm	YEN 25600	YEN 33400	YEN 57500	
1000 mm	YEN 31200	YEN 48600		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077940**

Diameter ..... **12.7mm**

Temper ..... **Hard**

**Size**

**Web Code**

921-387-223  
 103-814-969  
 399-661-370  
 339-872-809

Length	Quantity		
	1pc	2pcs	5pcs
100 mm	YEN 19500	YEN 24800	YEN 31400
200 mm	YEN 22600	YEN 29200	YEN 43000
500 mm	YEN 29000	YEN 42600	
1000 mm	YEN 40400		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

Alloy – Copper/Beryllium



## Copper/Beryllium

### Cu98/Be 2



## Rod

**CU077950**

Diameter ..... 20mm

Temper ..... Hard

**Size**

**Web Code**  
 576-026-732  
 807-003-644  
 637-427-097  
 965-738-422

Length	Quantity		
	1pc	2pcs	5pcs
50 mm	YEN 17600	YEN 21400	YEN 32600
100 mm	YEN 20400	YEN 27000	YEN 51500
200 mm	YEN 26000	YEN 42200	
500 mm	YEN 48800		

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077955**

Diameter ..... 25mm

Temper ..... Hard

**Size**

**Web Code**  
 216-635-251  
 855-708-031  
 059-529-339

Length	Quantity	
	1pc	2pcs
50 mm	YEN 18700	YEN 23000
100 mm	YEN 22000	YEN 32000
200 mm	YEN 31000	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077960**

Diameter ..... 31.75mm

Temper ..... Hard

**Size**

**Web Code**  
 772-375-789  
 806-311-326  
 917-361-305

Length	Quantity	
	1pc	2pcs
50 mm	YEN 20800	YEN 28200
100 mm	YEN 27200	YEN 44800
200 mm	YEN 43800	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

**CU077980**

Diameter ..... 50.8mm

Temper ..... Hard

**Size**

**Web Code**  
 939-066-475  
 778-724-721  
 626-319-856

Length	Quantity	
	1pc	2pcs
25 mm	YEN 21800	YEN 31600
50 mm	YEN 30400	YEN 51500
100 mm	YEN 50500	

Typical Analysis : Be 1.7 - 1.9%, Ni + Co 500 - 4000, total impurities 5000, Cu balance.  
 May contain lead as a free machining additive.

Alloy – Copper/Beryllium

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