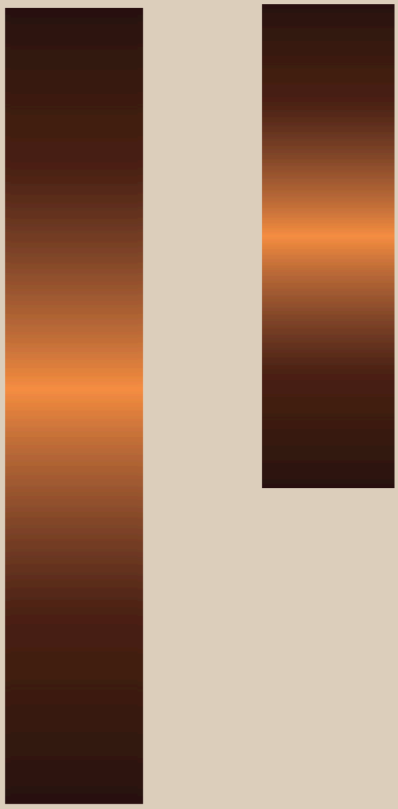
PIONEER METALS

PRODUCT CATALOGUE

COPPER - BRASS - BRONZE - NICHE COPPER ALLOYS



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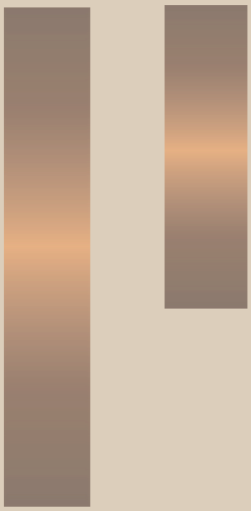
ABOUT US

Established in 2016, Pioneer Metals specializes in the beneficiation of copper and copper-based alloys, serving a diverse range of industries including construction, electrical and renewable energy, automotive, industrial manufacturing, consumer goods and packaging.

We pride ourselves on our ability to meet the rigorous demands of niche suppliers and clients across these sectors while upholding environmentally responsible practices. Our goal is to become a leading force in the domestic copper industry by advancing sustainable manufacturing and recycling methods.

Our product offering includes a wide range of high-quality copper materials, such as semi-finished copper, copper alloys, brass and bronze. Through the use of advanced extrusion technologies, we ensure consistent precision and excellence in every product we deliver.

At Pioneer Metals, customer satisfaction is at the heart of our operations. We are committed to building long-term partnerships by consistently exceeding expectations in quality, service and innovation.



PRODUCTS

Pioneer Metals produces semi-finished products made from copper, copper-based alloys, brass and bronze.

These products - cast as billets, rods and hollows; are supplied to downstream extrusion and forging companies, who transform them into finished items such as tubing, flat bars, wire and fittings.

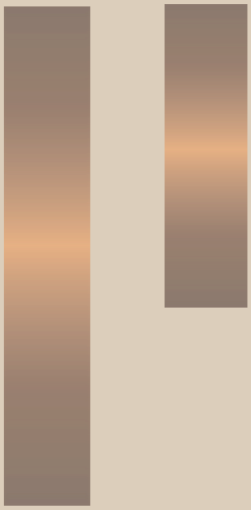
Copper is essential to building a more sustainable future.

Pioneer Metals is committed to shaping a better future by promoting environmental sustainability through its copper products.

Where precision meets purpose - copper crafted in balance with nature.

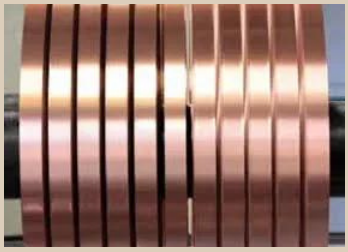
At Pioneer Metals, we honour the enduring legacy of copper and its alloys. Our mission goes beyond extraction and craftsmanship - we are focused on building a sustainable future through responsible innovation.

WE ARE DEDICATED TO PROVIDING EXCEPTIONAL QUALITY PRODUCTS!



NICHE COPPER ALLOY

Sulphur Copper



C14700 is a high conductivity copper with added sulphur to provide free-machining characteristics. Sulphur bearing copper has excellent machinability.

Size Range: Billets - Dia. 4" to 8"

Chemical Composition

Element				
	Cu	S	P	Others
Min (%)	99.9	0.20	0.002	90 IACS
Max (%)		0.50	0.005	95 IACS

Application: Welding torches, furnaces brazed components, terminal connectors, switches components, motor components, rivets and gas welding nozzles.

Tellurium Copper

C14500 tellurium copper alloy material as a high-grade high conductivity free cutting copper alloy material, mainly has the following application fields: high-grade electronic and electrical components, such as avionics connector, new energy vehicle connector, solar power station connector, etc.; All kinds of vehicles and machinery need arc - resistant and ablative switches.

Size Range: Billets - Dia. 4" to 8"

Element			
	Cu	P	Te
Min (%)	99.9	0.004	0.40
Max (%)		0.012	0.70

Please note that products are subject to availability and order quantity.

COPPER

OFC Copper

Oxygen-free copper (OFC) copper is a group of wrought high-conductivity copper alloys that have been electrolytically refined to reduce the level of oxygen to 0.001% or below.

Size Range: 8mm, 12.5mm, 16mm, 20mm

Chemical Composition

Element										
	Cu	Pb	Zn	Fe	P	Ag	As	O	Sb	Te
Min (%)	99.99									
Max (%)		0.0005	0.0001	0.0010	0.0003	0.0025	0.0005	0.0005	0.0004	0.0002

1) This is a high conductivity copper which has, in the annealed condition a minimum conductivity of 100% IACS except for Alloy C10100 which has a minimum conductivity of 101% IACS. (2) Cu is determined by the difference between the impurity total and 100 %. For alloy C10100 the Cu value is exclusive of Ag. (3) The following additional impurity maximum limits shall apply: Bi 1ppm (0.0001%); Cd 1ppm (0.0001%); Mn 0.5ppm (0.00005%); Ni 10ppm (0.0010%); Se 3ppm (0.0003%); S 15ppm (0.0015%); Sn 2ppm (0.0002).

ETP Copper

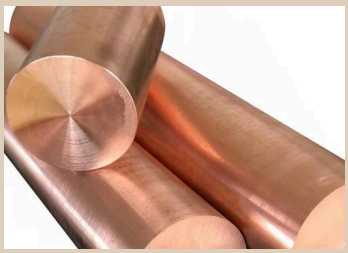
Electrolytic-Tough-Pitch (ETP) is the most common copper alloy. It is used universally for electrical applications due to its minimum conductivity and 100% IACS (International Annealed Copper Standard) rating.

Size Range: 8mm, 12.5mm, 16mm, 20mm

Element			
	Cu	O2	Others
Min (%)	99.99	150 PPM	94 IACS
Max (%)		400 PPM	96 IACS

Application: Switchgears, transformers, electrical cables and electrical appliances.

DHP Copper

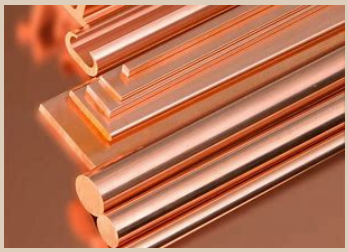


We have made our mark in the industry as a distinct and dynamic supplier in the market by providing a high-quality array of Deoxidized High Phosphorus (DHP) copper. Our offered copper is ideal for various engineering needs.

Element		
	Cu	P
Min (%)	99.90	0.015
Max (%)		0.040

Application: Distiller tubes, plumbing, switch gears, transformers, electrical, air conditioning, pre-refrigeration tubes, electrical motors, heat exchange shells and condenser tubes.

Copper Busbars

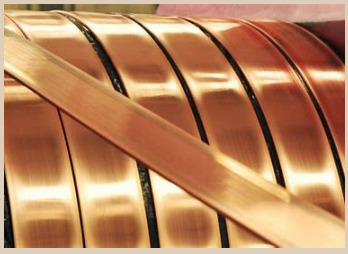


Busbars, often referred to as "busbar systems", are conductive bars made of copper that can be either exposed or housed within an enclosure. These systems can feature multiple joints to achieve the necessary length and configuration, along with one or more connection points designed to link to the desired equipment.

SIZE RANGE:
Width 20mm - 170mm
Thickness 2mm - 20mm
Length Up to 6m
Coil weight 50kg - 200kg

Application: Electric power distribution, inside switchgear and panel boards.

Copper Strips & Coils



Our premium copper strips and coils are manufactured from high-quality copper to ensure superior conductivity and durability. These products are available in various thicknesses and widths to meet specific requirements. With excellent resistance to corrosion and a high level of malleability, our copper strips and coils are designed for optimal performance and longevity.

SIZE RANGE:
Width 20mm - 170mm
Thickness 2mm - 20mm
Length Up to 6m
Coil weight 50kg - 200kg

Application: Heat-sinks, heat exchangers, condensers, lightning conductors, switchgear, wiring looms, connectors, submersible pumps.

BRASS

63/35 Brass

Brass The 65/35 yellow brass wire mesh is the most widely utilised brass alloy in the industrial wire cloth sector. This brass has a higher zinc percentage, which makes it stronger and more ductile; 65/35 yellow brass is stronger. 65/35 yellow brass wire cloth is a commonly used brass alloy for cold forming.

Size Range: Billets - Dia. 4" to 8"

Chemical Composition

Element				
	Cu	Zn	Pb	Fe
Min (%)	64.0	Rem		
Max (%)	68.5	Rem	0.15	00.05

Application : Aerospace, architectural, artistic, chemical, fireplace screens, infill panels, marine settings, oil strainers, plumbing screen, power plants, RF amplification and soffit screen.

70/30 Brass

Cartridge Brass, also known as 70/30, is copper alloyed with zinc. C260 is a yellow brass with fair to excellent corrosion resistance. Excellent cold workability and good hot formability.

Size Range: Billets - Dia. 4" to 8"

Element				
	Cu	Zn	Pb	Fe
Min (%)	69	Rem		
Max (%)	71	Rem	0.07	00.05

Application: Architectural, electrical, consumer construction, plumbing industries, bathroom fixtures, watch parts, terminal connectors, decorative hardware, radiator cores and pump cylinders.

Admiralty Brass

This product is sometimes referred to as Arsenical Brass. It is copper alloyed with tin and zinc. Brass C443 has good corrosion resistance and excellent heat transfer characteristics. This type of brass has found use in fresh, brackish and saltwater applications, as well as oil and gas systems where there are corrosive resistant tubes.

Size Range: Billets - Dia. 4" to 8"

Element						
	Cu	Zn	Pb	Sn	Fe	As
Min (%)	70.0	Rem		0.8		0.02
Max (%)	73.0	Rem	0.07	1.2	0.06	0.05

Application : Heat exchangers, condensers, bourdon tubes, distiller tubes, evaporator tube, welding rods, valve stems, balls, heat exchanger tube, aircraft turn buckle, bearings and pressure vessels.

Red Brass C230

Red brass has an excellent resistance to dezincification and season cracking. Red brass is commonly specified for underground service lines, and it offers the greatest corrosion resistance when used in potable water applications

Size Range: Billets - Dia. 4" to 8"

Element				
	Cu	Pb	Zn	Fe
Min (%)	84.0			
Max (%)	86.0	0.05	Rem	0.05

(1) Cu + Sum of Named Elements 99.8% min.

Application: Pickling crates, radiator cores, heat exchangers, etching parts, weather strip trim, sockets, screw shells, conduit rotor bars, AC motors, fasteners eyelets, heat exchanger shells and flexible metal hoses .

BRASS

Leaded Brass

Dezincification Brass (DZR) CW602N is essentially a leaded arsenical brass with a duplex structure. As its name suggests it was originally developed to provide good resistance to dezincification type corrosion which is experienced by normal hot working brasses.

Chemical Composition

Element				
	Cu	**Pb**	**Zn**	**Fe**
Min (%)	84.0			
Max (%)	86.0	0.05	Rem	0.05

(1) Cu + Sum of Named Elements 99.8% min.

Size Range: Billets - Dia. 4" to 8"

Application : Plumbers brass goods and plumbing fittings.

Binary Brasses

Binary Brass is a series of binary alloys between copper and zinc, with an upper zinc content of about 40%.

Size Range: Billets - Dia. 4" to 8"

BRONZE

Phosphor Bronze C544 (PB1)

This bronze alloy contains a mixture of copper, tin and phosphorus. It has superb spring qualities, high fatigue resistance, excellent formability and high corrosion resistance. It is used for electrical products.

SIZE RANGE:
Solids Up to Dia 200mm
Hallows OD - 200mm
Flats/Square From 10mm - 200mm
Wall thickness - Various

Chemical Composition

Element									
	Sn	Zn	Pb	P	Ni	Al	Fe	Si	Total Imp
Min (%)	10			0.5					
Max (%)		0.05	0.25		0.1	0.01	0.1	0.02	0.6

Application : Springs, bolts, ship propellers, dental bridges and guitar strings

B14 Bronze

The B14 alloy is a very hard, tough bronze with good sliding properties and excellent corrosion resistance. Withstands great efforts, impacts, wear, abrasion, fatigue and high temperature; resistant to high hydraulic pressures, good anti-friction quality.

SIZE RANGE:
Solids Up to Dia 200mm
Hallows OD - 200mm
Flats/Square From 10mm - 200mm
Wall thickness - Various

Element												
	Sn	Zn	Pb	Ni	Mn	P	Sb	Al	Fe	Si	S	Total Imp
Min (%)	7.5	3	3									
Max (%)	9	5	5	2		0.1		0.01	0.4			

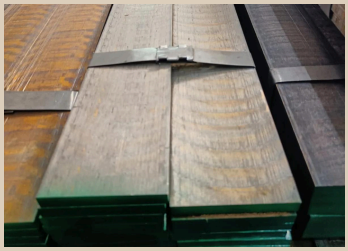
Leaded Bronze

High leaded tin bronzes alloys are free cutting and retain favorable thermal conductivity and good lubricity due to the lead content.

SIZE RANGE:
Solids Up to Dia 200mm
Hallows OD - 200mm
Flats/Square From 10mm - 200mm
Wall thickness - Various

Element								
	Cu	Zn	Pb	Sn	Ni	Fe	Al	Others
Min (%)	Rem	4.0	4.0	4.0				
Max (%)	Rem	6.0	6.0	6.0	2.0	0.35	0.01	0.8

Tin Bronze C932



SAE 660 Bronze, also known as C93200, is a high-leaded, tin-bearing bronze.
It is one of the most commonly used alloys in the bronze range, owing to its versatility as a medium-range bronze that may be employed in a variety of applications. This bronze possesses high hardness, strength, and wear resistance, as well as excellent machining and anti-friction capabilities.
SAE 660 will not be de-zincified and has a reasonable resistance to seawater and brine.

SIZE RANGE:
Solids Up to Dia 200mm
Hallows OD - 200mm
Flats/Square From 10mm - 200mm
Wall thickness - Various

Element											
	Cu	Pb	Sn	Zn	Fe	P	Ni	Al	S	Sb	Si
Min (%)	81.0	6.0	6.3	1.0							
Max (%)	85.0	8.0	7.5	4.0	0.20	0.15	1.0	0.005	0.08	0.35	0.005

(1) Cu + Sum of Named Elements 99.0% min. (2) In determining Cu min., Cu may be calculated as Cu + Ni. (3) For continuous castings P shall be 1.5% max. (4) Ni value includes Co.

Application: Pump and valve components, bearings and bushings.

BRONZE

LG2 Bronze

LG2 Bronze is one of the most used grades of bronze in the industry. It has medium strength, excellent machining properties, and is suitable for bearings, gears and other components used in relatively light duty applications. LG2 is often referred to as a gunmetal

SIZE RANGE:
Solids Up to Dia 200mm
Hallows OD - 200mm
Flats/Square From 10mm - 200mm
Wall thickness - Various

Chemical Composition

Element								
	Sn	Zn	Pb	Ni	Mn	P	Sb	Al
Min (%)	4	4	4					
Max (%)	6	6	6	2	0.01	0.5	0.02	0.8

Application : Pipes, taps, corks, other hydraulic fittings, pressure and light bearings.

RG7 Bronze

(CC 493K) is a tin bronze product and one of the most commonly available bronze alloys due to the materials excellent all-round capabilities. Offering good dry running characteristics and pressure-tightness, RG7 is easy to machine and finds use in the production of slide bearings and bearing bushings.

SIZE RANGE:
Solids Up to Dia 200mm
Hallows OD - 200mm
Flats/Square From 10mm - 200mm
Wall thickness - Various

Element												
	Sn	Zn	Pb	Ni	Mn	P	Sb	Al	Fe	Si	S	Total Imp
Min (%)	6	2	5									
Max (%)	8	5	8	2	0.2	0.05	0.2	0.01	0.2	0.01	0.01	

Application : Slide bearings, sliding parts and bearing bushes.

RG5 Bronze

Tin Bronzes - RG5. It is an alloy of tin bronze, also known as red bronze or lead bronze. It offers good workability and good resistance to corrosion.

SIZE RANGE:
Solids Up to Dia 200mm
Hallows OD - 200mm
Flats/Square From 10mm - 200mm
Wall thickness - Various

Element												
	Sn	Zn	Pb	Ni	Mn	P	Sb	Al	Fe	Si	S	Total Imp
Min (%)	4	4	4									
Max (%)	6	6	6	2		0.1		0.01	0.4			