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HIGH PERFORMANCE COPPER ALLOY

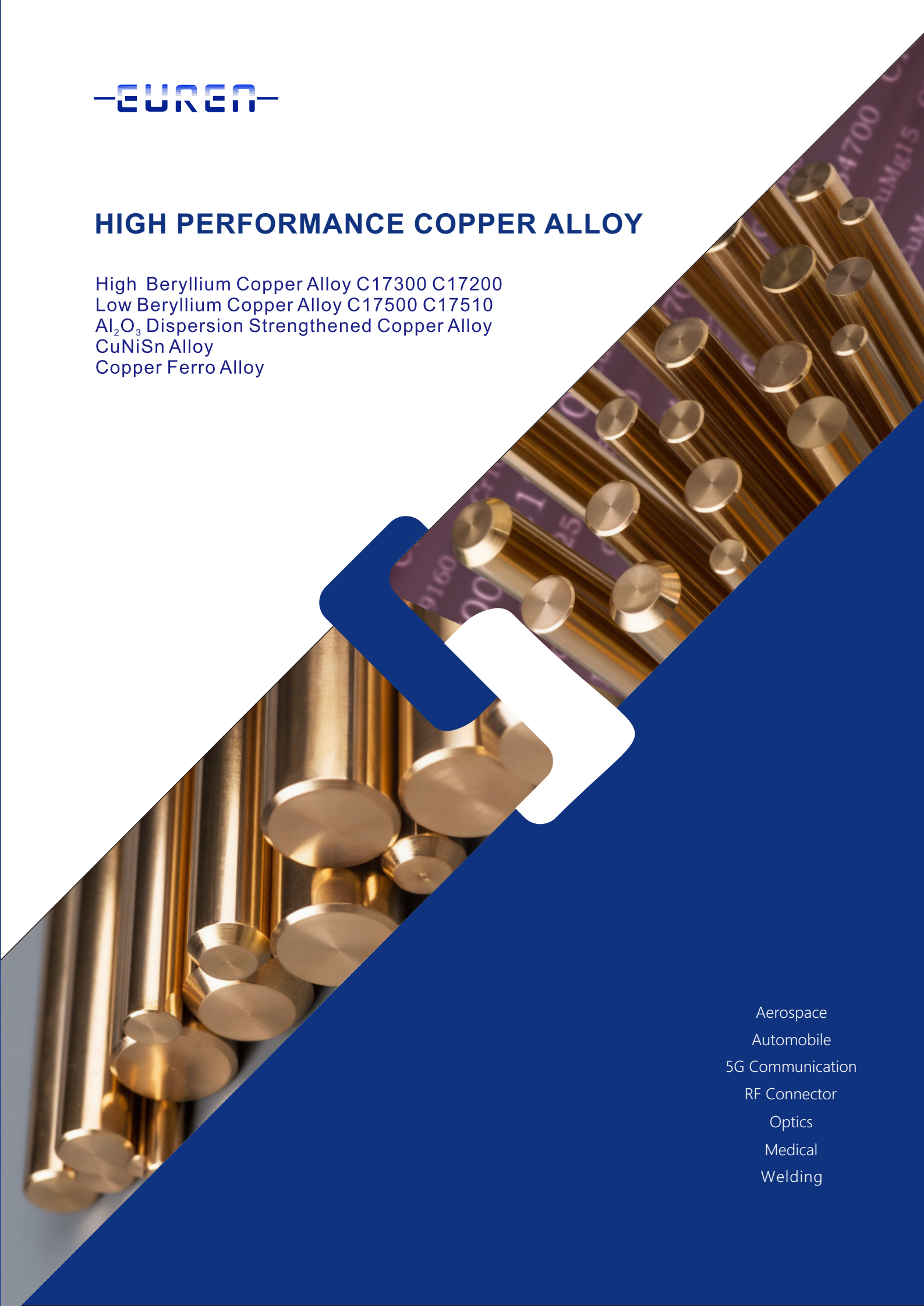
High Beryllium Copper Alloy C17300 C17200

Low Beryllium Copper Alloy C17500 C17510

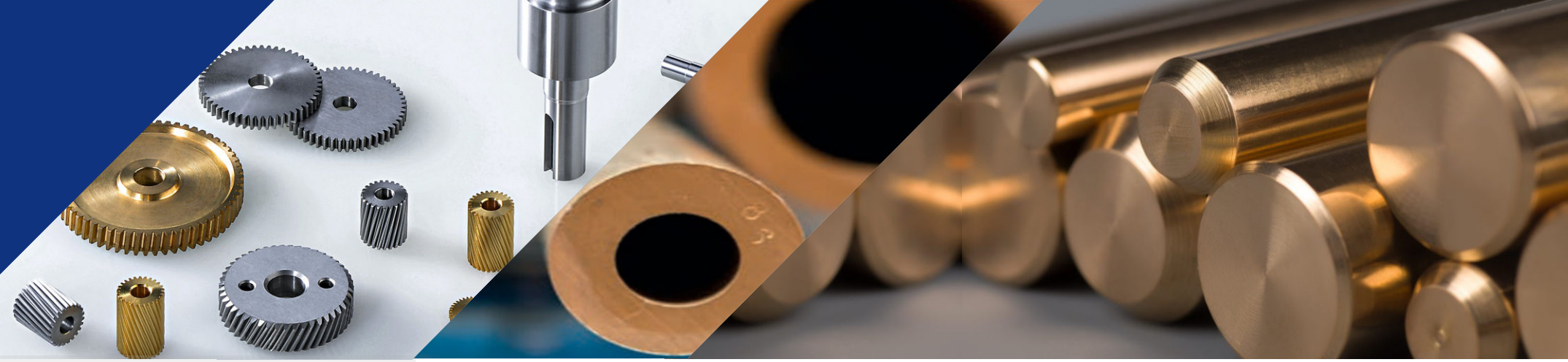
Al₂O₃ Dispersion Strengthened Copper Alloy

CuNiSn Alloy

Copper Ferro Alloy



Aerospace
Automobile
5G Communication
RF Connector
Optics
Medical
Welding



High Performance Copper Alloy Supplier

High-performance copper alloy materials have the characteristics of high strength, high electrical conductivity, high temperature resistance, corrosion resistance and fatigue resistance.

We provide you with the best beryllium copper alloy and related copper alloy products, and bring you the best after-sales service.

High Wear Resistance

Self-lubrication

Easy Cutting Performance

Non-magnetic

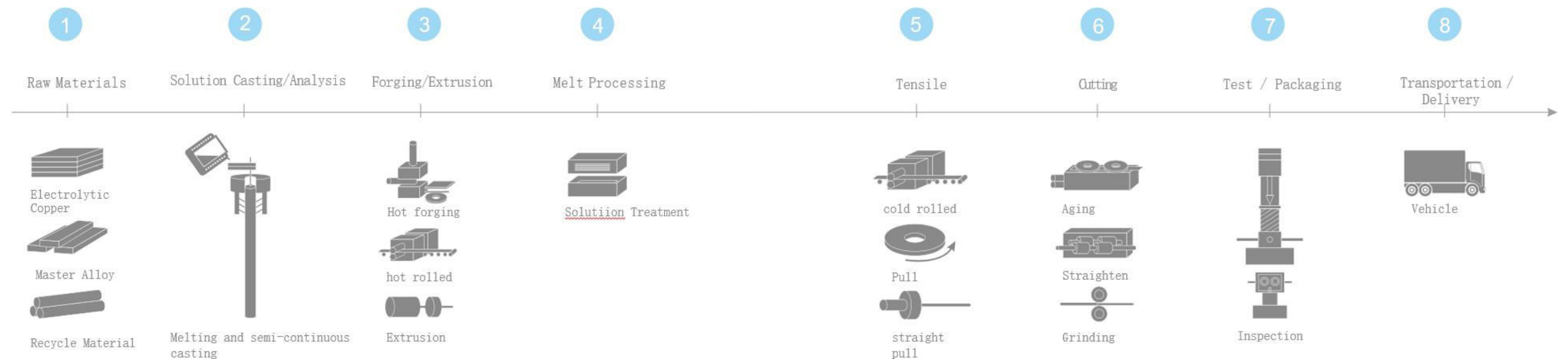
Products List

	Specification	Standard			Type	Size (mm)
		UNS (ASTM)	EN Number	ISO Symbole		
1	High Beryllium Copper Alloy	C17300 SM173	CW102C	CuBe2Pb CuBe2Te	Rod/Wire	1-20
2	High Precision Beryllium Copper Wire	C17200	CW101C	CuBe2	Wire	ø0.03-0.5mm
3	Low Beryllium Copper Alloy	C17500 C17510	CW104C CW110C	CuCo2Be CuNi2Be	Rod/Wire	1-20
4	Al ₂ O ₃ Dispersion-Strengthened Copper	C15715 C15725 C15760			Rod/Wire/Sheet	1-20
5	CuNiSn	C72700 C72900		Cu9Ni6Sn Cu5Ni8Sn	Rod/Wire	1-20
6	Copper Ferro Alloy				Rod/Wire	1-20
7	CuNiPb	C19160			Rod/Wire	1-20
8	Silicon Bronze Alloy			QSi1-3	Rod/Wire	1-20

Customized according to customer requirements

Rigorous process creates excellence

Rigorous Process





Easy-Cutting Beryllium Copper Alloy (CuBe2Pb C17300) Rod and Wire



C17300
CM173
C17200

Chemical Composition of C17300 / CM173

Model	Be	Ni+Co	Ni+Co+Fe	Pb	Te	Cu
C17300	1.8-2.0	≥0.20	≤0.6	0.2-0.6	0	Remnant
CM173	1.8-2.0	≥0.20	≤0.6	0.2-0.6	0.2-0.4	

Physical And Mechanical Properties of C17300 / CM173

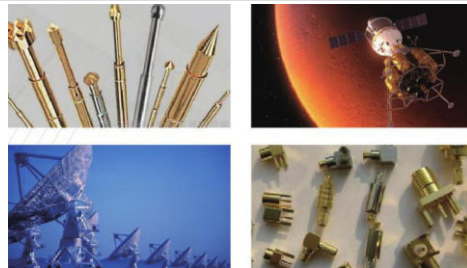
State (according to ASTM)	Heat Treatment (°C)	Diameter (mm)	Tensile Strength(MPa)	Yield Strength(MPa)	Elongation 4xD(%)	Hardness		Electrical Conductivity (IACS,%)
						HV0.5	HRB or HRC	
TB00	775°C~800°C	All	410-590	> 140	> 20	159-162	B45-B85	15-19
TD04	775°C~800°C Solution+Cold Process Hardening	8-20	620-860	> 520	> 8	175-257	B88-B102	15-19
		0.6-8	620-900	> 520	> 8	175-260	B88-B103	
TH04	315°Cx1~2hr	8-20	1140-1380	> 930	> 20	345-406	C27-C44	23-28
		0.6-8	1210-1450	> 1000	> 4	354-415	C38-C45	

Cutting Performance

C17300 Equivalent to 65% of the machinability of brass C3600
CM173 Equivalent to 85% of the machinability of brass C3600

Application Fields of C17300 / CM173

Coaxial Connector, Probe, Photomultiplier Tube
Communication, Aerospace



High Precision Beryllium Copper Wire (CuBe2 C17200)

The surface of the wire is smooth, clean, free from cracks, peels, punctures, rough draws, folds and inclusions.

The wire fracture is dense, without shrinkage, pores, delamination and inclusions

It can meet the requirements of winding and rewinding, continuously production and zinc plated. The diameter of the loop does not change after continuous rewinding, and there will be no bending, corrugation and wrinkling of the wire.



Chemical Composition of High Precision Beryllium Copper Wire

Model	Be	Ni+Co	Ni+Co+Fe	Ni+Co+Fe+Be+Cu
C17200	1.8-2.0	≥0.20	≤0.6	≥99.5

Physical Properties of High Precision Beryllium Copper Wire

Diameter	Tensile Strength(MPa)
≤φ0.20 mm	784-1078
> φ0.20 mm	686-980

Dimension and Allowable Deviation of High Precision Beryllium Copper Wire

Size	φ0.03-φ0.09	φ0.10-φ0.29	φ0.30-φ1.0
Allowable Deviation	-0.003	-0.005	-0.01
Roundness	The diameter shall not exceed the allowable deviation range		

Application of High Precision Beryllium Copper Wire

It is mainly used for wire spring, twist-pin, fuzz button, spring finger, and other high-end connector products.



Al₂O₃ Dispersion Strengthened Copper Alloy (C15715 C15725 C15760) Rod, Wire and Sheet

Al₂O₃ dispersion strengthened copper alloy has excellent resistance to high temperature softening in addition to good electrical and thermal conductivity. It is one of the best among all high-conductivity and high-temperature copper alloys. A roll of finished product weighs 150kg

Copper Cobalt Beryllium Alloy (CuCo2Be C17500) Rod and Wire

C17500 Beryllium Cobalt Copper has excellent cold workability and good hot workability

Copper Nickel Cobalt Beryllium Alloy (CuNi2Be C17510) Rod and Wire

Primarily utilized in applications that require high thermal or electric conductivity. The alloy offers good strength and hardness characteristics coupled with conductivity in the range of 45-60 percent of copper with ultimate tensile and hardness properties approaching 140 ksi and RB 100 respectively.

C17500
C17510

Chemical Composition of C17500 / C17510

Model	Be	Co	Ni	Fe	Al	Si	Cu
C17500	0.4-0.7	2.4-2.7	-	≤0.1	≤0.20	≤0.20	Remnant
C17510	0.2-0.6	≤0.3	1.4-2.2				

Physical And Mechanical Properties of C17500 / C17510

State		Performance		
Standard Code	Category	Tensile Strength(MPa)	Hardness(HRB)	Electrical Conductivity(IACS,%)
TB00	Solid Solution Treatment(A)	240-380	Min50	20
TD04	Solid Solution Treatment & Cold Process Hardening State(H)	450-550	60-80	20
After Heat Treatment of Deposit				
TF00	Heat Treatment of Deposit(AT)	690-895	92-100	45
TH04	Hardening & Deposit Heat Treatment of Settlement(HT)	760-965	95-102	48

Application Fields of C17500

fuse clips, fasteners, spring switches, relay parts.

Application Fields of C17510

welding, new-energy automobile charging pile and communication industry

Chemical Composition of Al₂O₃ Dispersion Strengthened Copper Rod And Wire

Model	Cu+Ag	Al ^a	O ^b
C15715	≥99.62	0.13-0.17	0.12-0.19
C15725	≥99.43	0.23-0.27	0.20-0.28
C15760	≥98.77	0.58-0.62	0.52-0.59

Physical And Mechanical Properties of Al₂O₃ Dispersion Strengthened Copper Rod And Wire

Model	State	Tensile Strength Rm(MPa)	Specific Plastic Extending Strength Rp0.2(MPa)	Elongation After Fracture A%	Rockwell Hardness HRB	Electrical Conductivity(IACS,%)
C15715	H04	≥427	≥407	≥21	≥63	≥92
C15725	H04	≥483	≥448	≥17	≥77	≥89
C15760	H04	≥552	≥517	≥15	≥83	≥78



Application Fields of Al₂O₃ Dispersion Strengthened Copper Alloy

resistance welding electrode head, electrode caps, welding wheels, electrode arms, contact tips for cutting and gas shielding welding, vacuum switches, electrical connectors, electronics and communications, automobiles, molds, welding industry-seam welding wheel





Copper Alloy Cu9Ni6Sn (C72700)

C72700 is a new-generation copper alloy material, which has the following characteristics: high strength, good elasticity, and good plastic formability of cold pressing, forging, broaching, It can be welded without softening (tempered strengthening), high conductivity, high temperature resistance, corrosion resistance, smooth wear resistance. The design of alloy not only considers the above factors, but also fully considers environmental protection. The product does not contain beryllium, cadmium, and titanium.

C72700
C72900

Chemical Composition of C72700

Model	Ni	Sn	Mn	Pb	Zn	Fe	P	Impurities	Cu
C72700	8.5-9.5	5.5-6.5	0.05-0.3	≤0.03	≤0.15	≤0.05	≤0.05	≤0.5	Remnant

Physical Properties of C72700

Density	8.9	(g/cm ³)
Melting Point	968-1078	(°C)
Thermal Expansion Coefficient	17.25	(X10 ⁻⁶ /°C) 20-200°C
Elastic Modulus	120	(GPa)
Electrical Resistivity at 20°C		μΩ*cm
Quench	≤19.5	
Precipitation Hardening	≤15	
Electrical Conductivity(IACS,%)		(% IACS)
Precipitation hardening (3 hours)	≥12	
Torsional Modulus	50	(GPa)
Thermal Conductivity at 20°C	53.6	(W/m.K)
Bending Fatigue Strength	450	(MPa)
	Number of cycles : 10 ⁸	

Application of C72700

Substituting beryllium copper alloy
It is used for glasses, electricians, electromechanical, electronics, connectors, automobiles, household appliances, spectade industry, turning parts



Copper Alloy Cu5Ni8Sn (C72900)

Achieve a combination of high rigidity and high strength. It can not only withstand dynamic impact loads but also meet the most stringent requirements of static structural load and pressure. The thermal stress relaxation resistance is significantly better than beryllium copper alloy

Excellent performance of anti-wear bearing and the valuable performance of natural self-lubrication. it is a necessary material for the landing gear bearing of large aircraft, and is also the preferred friction component of oil well connecting rod and high temperature and high alternating load material

- Equivalent to easy cutting brass alloy, it is very easy to process into complex components.
- Suitable for all kinds of acidic environment or salt water, high temperature corrosion resistance.
- Good welding performance.
- The electrical stability is significantly better than beryllium copper alloy. It does not generate magnetism and is a suitable material for high-temperature connectors and RF connectors.
- Non-toxic and harmless, environment-friendly materials.

Chemical Composition of C72900

Model	Ni	Sn	Other Alloy Elements	Impurities	Cu
C72900	14.5-15.5	7.5-8.8	0.2-0.6	≤0.15	Remnant

Physical Properties of C72900

Elastic Modulus	Poisson's Ratio	Electrical Conductivity	Thermal Conductivity	Thermal Expansion Coefficient	Density	Permeability
21×10 ⁶ psi	0.33	< 7% IACS	22 Btu/ft/hr/°F	9.1×10 ⁻⁶ in/in/°F	0.325 lb/in ³	< 1.001
144kN/mm ²		< 4 MS/m	38 W/M/°C	16.4×10 ⁻⁶ m/m/°C	9.00 g/cm ³	

Minimum Mechanical Properties of C72900

State	Diameter		Yield Strength 0.2%		Ultimate Tensile Strength		Elongation	Hardness	Average CVN Impact Toughness		
	inch	mm	ksi	N/mm ²	ksi	N/mm ²			ft-lbs	J	
Rod	TS 95	0.75-3.25	19-82	95	655	106	730	18	93 HRB	30*	40*
		3.26-6.00	83-152.4	95	655	105	725	18	93 HRB	30*	40*
	TS 120U	0.75-1.59	19-40.9	110	755	120	825	15	24	15	20
		1.6-3.25	41-82	110	755	120	825	15	24	12	16
	TS 130	0.75-6.00	19-152.4	130	895	140	965	10	24		
		0.25	< 6.35	150	1035	160	1100	5	32		
Wire	TS 160U	0.26-0.4	6.35-10	150	1035	160	1100	7	32		
		0.41-0.75	10.1-19	150	1035	165	1140	7	36		
	TS 160U	0.76-1.6	19.1-41	150	1035	165	1140	5	34	-	-
		1.61-3.25	41.1-82	150	1035	160	1100	3	34		
Wire	TS 160U	3.26-6.00	83-152.4	148	1020	160	1100	3	32		
		< 0.25	< 6.35	150	1035	160	1100	5	32		
		0.26-0.4	6.35-10	150	1035	160	1100	7	32		

Application of C72900

It is mainly used for Sucker rod coupling, MWD equipment, shaft sleeve and gasket in petroleum industry, Aircraft landing gear shaft sleeve and bearing, Pressure vessel seals, Slide guide, high temperature resistant and corrosion resistant connectors etc.





Silicon Bronze Alloy (QSi1-3)

It is silicon bronze containing manganese and nickel. It has high strength, very good wear resistance, can be strengthened by heat treatment, and its strength and hardness are greatly improved after quenching and tempering. It has high corrosion resistance in the atmosphere, fresh water and sea water, and has good weldability and machinability.

Chemical Composition of QSi1-3

Model	Si	Fe	Ni	Zn	Pb	Mn	Sn	Al	Cu
QSi1-3	0.6-1.10	0.1	2.4-3.4	0.2	0.15	0.1-0.4	0.1	0.02	Remnant

Physical Properties of QSi1-3

Model	Tensile Strength MPa	Elongation %	Hardness HBS
QSi1-3	> 490	> 10%	170-240

Application of QSi1-3

QSi1-3 is used to manufacture friction parts (such as engine exhaust and intake valve guide sleeves) and structural parts that work in corrosive media under working conditions with poor lubrication and low unit pressure.

Copper Ferro Alloy

Copper ferro alloy has the same electrical conductivity, thermal conductivity, ductility, elasticity and other wear resistance, tensile strength, hardness, and magnetic properties as iron. The alloy ratio of copper and iron can be freely adjusted as needed. The ratio of copper can be from 10% to 90%.

1. Application of copper ferro alloy

Copper ferro alloy is mainly used in RF shielding net, connectors, mold and so on.

2. Products of Copper Ferro Alloy

Copper ferro alloy rod, wire, tube.



CuNiPb C19160

C19160 is a kind of precipitation strengthening alloy. Through solid solution and aging at a certain temperature, the dispersion distribution of phosphorus and nickel compounds will be precipitated in the material matrix. The precipitation of the compounds improves the strength and conductivity of the alloy. Then through cold deformation with a certain processing rate, the tensile strength of the material can reach up to 700MPa, and the material has good electroplating performance and corrosion resistance.

Physical properties of C19160

Density	8.86g/cm ³
Thermal expansion coefficient	17.7×10 ⁻⁶ /k
Thermal conductivity	210W/(m·K)
Conductivity	> 50%IACS
Elastic Modulus	120GPa

Mechanical properties of C19160

State	size	Tensile strength	Yield strength	Elongation	Conductivity	Hardness
		MPa	MPa	%	%IACS	HV0.2
TB00	≤40	220-360	46-72	38-45	30	-
TH	≤10	490-550	410-490	15-20	60-51	-
	10-30	490-550	410-490	15-20	60-51	-
	30-40	440-470	220-350	20-27	51-61	-
TL	≤5.0	≥620	-	≥5	≥50	≥165
	5-6	≥590	-	≥5	≥50	≥165
	6-9.5	≥570	-	≥5	≥50	≥165
	≥9.5	≥550	-	≥5	≥50	≥165



Application of C19160

C19160 is mainly used in pins, sockets and conductive spring contacts with high strength and elasticity.