

## 使命愿景 MISSION & VISION

创造客户价值，打造百年企业，  
成为行业标杆，为现代工业文明做贡献。

CREATE CUSTOMER VALUE

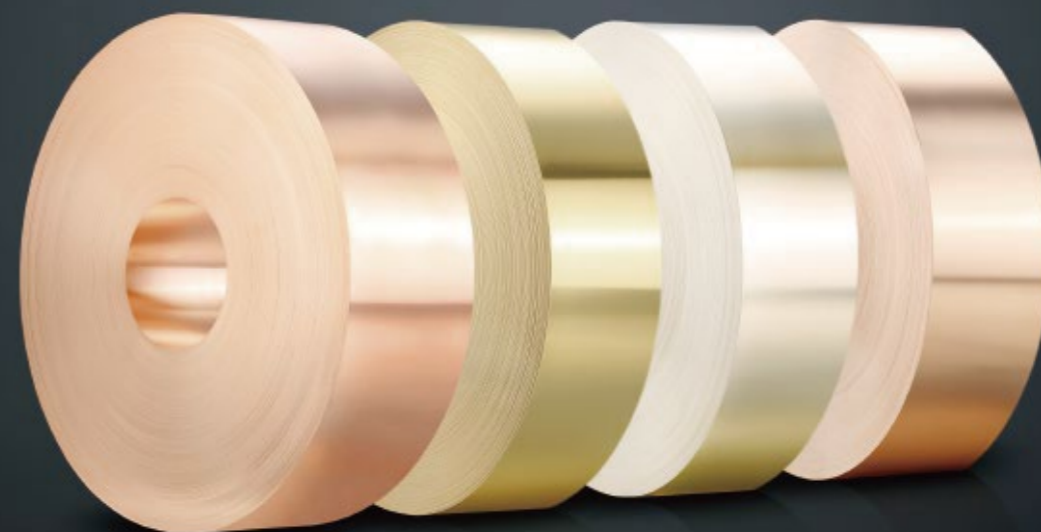
BUILD A CENTURY-OLD COMPANY

BECOME THE INDUSTRY BENCHMARK

CONTRIBUTE TO MODERN INDUSTRIAL CIVILIZATION



STOCK CODE  
股票代码  
601609



## 铜及铜合金带材

COPPER STRIPS AND COPPER ALLOYS



宁波金田铜业（集团）股份有限公司  
NINGBO JINTIAN COPPER(GROUP) CO.,LTD.  
浙江省宁波市江北区慈城城西路1号  
No.1 Chengxi West Road,Cicheng,Ningbo,Zhejiang  
0574-83005999      www.jtcopper.com



金田铜业官网  
WEBSITE



金田铜业官微  
WECHAT

金田铜带事业部  
JINTIAN COPPER STRIP DIVISION

# COMPANY PROFILE

公司简介 | 股票代码 601609

宁波金田铜业（集团）股份有限公司  
NINGBO JINTIAN COPPER(GROUP) CO.,LTD.



1986  
始建于



94  
中国制造业第94位



1400+亿  
2023年销售额



191万吨  
年产量



8000+  
企业员工



8大  
生产基地



800+  
科研人员



300+  
专利认证

公司创建于1986年，专注铜加工产业38年，是全球领先的铜合金及先进材料制造企业。主要产品有铜管、棒、线、板、带、排、电磁线、阀门、磁性材料及黄铜、青铜、紫铜、白铜等高端合金。致力于为新能源汽车、风力发电、光伏能源、电力电气、轨道交通、消费电子等产业发展提供全球一流的产品和服务。

公司立足宁波，放眼世界，在全球有八大生产基地，25家分子公司，8000余名员工。在美国、德国、泰国、日本、韩国等地设立分支机构，业务遍及100多个国家和地区，是众多世界知名企业的长期合作伙伴。

2023年，铜加工产销量达191万吨，营收总额1400+亿元，位列中国制造业500强第94位。

Jintian founded in 1986 and focus on copper processing industry for 38 years, which is a global leader in the manufacturing of copper alloys and advanced materials. Our main products include copper tube, rod, wire, plate, strip, busbar, electromagnetic wire, valve, magnetic materials and highend alloys such as brass, bronze, copper and nickel silver. We are committed to providing global first-class products and services for the development of new energy vehicles, wind power generation, photovoltaic energy, electric power, rail transit, consumer electronics and other industries.

Jintian based in Ningbo, has eight production bases, 25 subsidiaries and more than 8,000 employees in the world. We have set up subsidiaries in USA, Germany, Thailand, Japan, Korea, etc. Our business covers more than 100 countries and regions, and we are the long-term partner of many world famous enterprises.

In 2023, copper processing sales reached 1.91 million tons, the total revenue is reaching RMB 1400+ billion, and ranked 94 in Chinese top 500 manufacturing industries.





金田高精度铜带事业部成立于1993年  
系宁波金田铜业（集团）股份有限公司铜带材生产经营主体  
拥有国际一流的高精度铜带生产车间和智能化生产装备

Jintian Copper Strip Division, established in 1993, is the operation unit of Ningbo Jintian Copper (Group) Co., Ltd. that produces copper strips. Jintian Copper Strip has first-class high-precision copper strip production workshops and intelligent production equipment.

金田铜带专注于各种高精度铜带材的研发与生产，位列中国铜带材企业前列。金田铜带产品高精度锡磷青铜带、紫铜带、黄铜带和锌白铜带，符合欧盟 ROHS 指令要求，主要应用于电子、电气、通讯、网络、机械五金、建筑和家电等行业，远销韩国、日本、香港、欧美以及东南亚等国家和地区。引进德国、日本、美国等国家先进的制造设备和检测仪器，建成了多条现代化水平连铸和半连铸生产线，全面通过

Jintian Copper Strip focuses on the development and production of various high-precision copper strips, ranking in the forefront of China's copper strip enterprises. Jintian

ISO 9001:2015 质量管理体系、ISO 14001:2015 环境管理体系及 ISO 45001:2018 职业健康安全管理体系认证。

30 多年的发展与沉淀，金田铜带已成为国内先进的铜带材深精加工制造基地，随着 650 项目的投产，我们将重点布局 5G、新能源汽车、通讯、消费电子、高端医疗设备等应用领域，为客户提供性能更稳定的高强、高导精密铜合金带材。

Copper Strip products high-precision tin-phosphorus bronze strip, copper strip, brass strip and zinc white copper strip, in line with the EU ROHS directive require-

ments, mainly used in electronics, electrical, communication, network, mechanical hardware, construction and home appliances and other industries, exported to South Korea, Japan, Hong Kong, Europe and America and Southeast Asia and other countries and regions. With the introduction of advanced manufacturing equipment and testing instruments from Germany, Japan, the United States and other countries, a number of modern level continuous casting and semi-continuous casting production lines have been built, and they have passed ISO 9001:2015 quality management system, ISO 14001:2015 environmental man-

agement system and ISO 45001:2018 occupational health and safety management system certifications.

After more than 30 years of development and precipitation, Jintian copper strip has become an advanced deep finishing manufacturing base of copper strip in China. With the production of 650 project, we will focus on the deployment of 5G, new energy vehicles, communications, consumer electronics, high-end medical equipment and other application fields, to provide customers with more stable performance of high-strength, high-conductivity precision copper alloy strip.

# ENTERPRISE'S HONOR

## 相关认证

# RELATED CERTIFICATIONS

## 荣誉证书



ISO 9001



ISO 14001



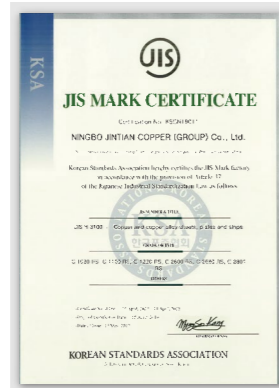
ISO 45001



IATF 16949



UL



JIS



欧标 EN



CNAS



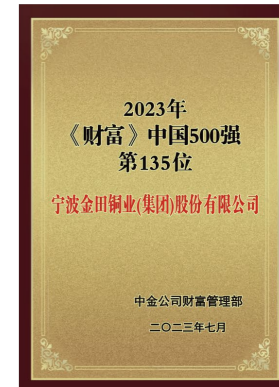
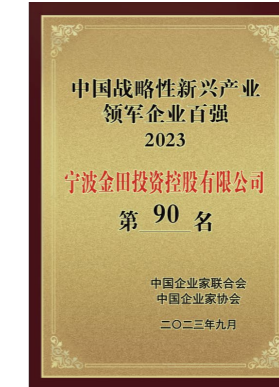
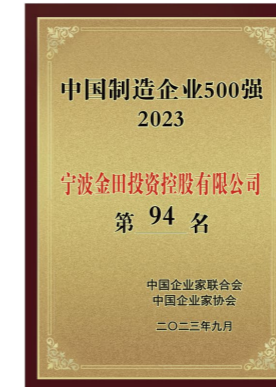
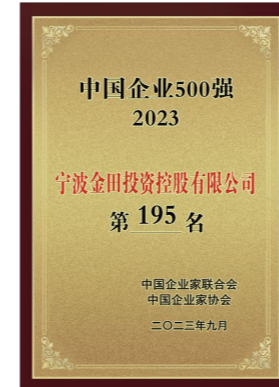
CMS



GRS



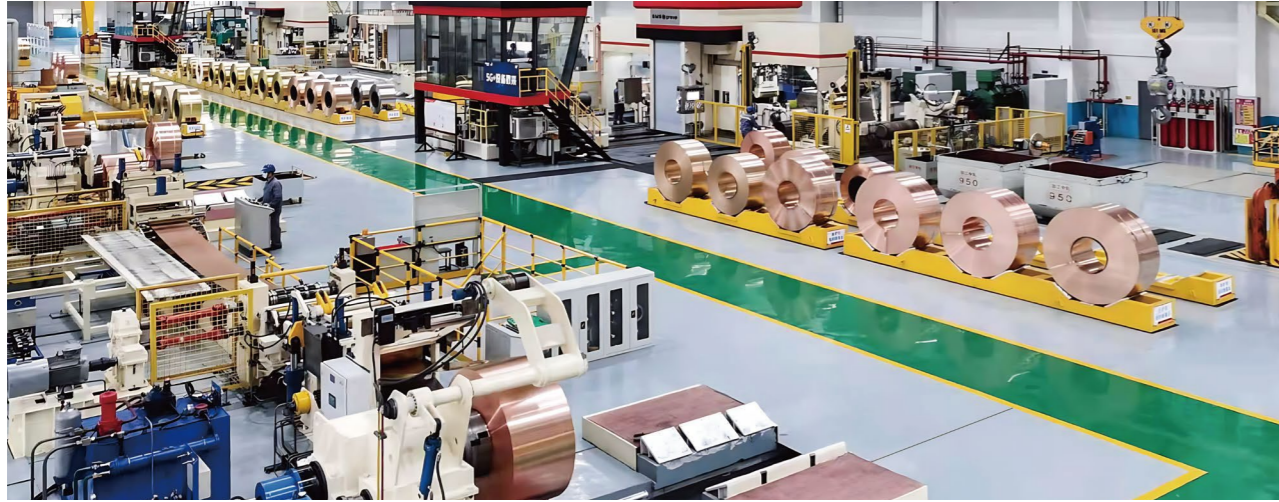
SCS



营造国际品牌 构筑百年企业  
Create an international brand  
Construct a centenary enterprise

# PRODUCTION EQUIPMENT

## 生产设备



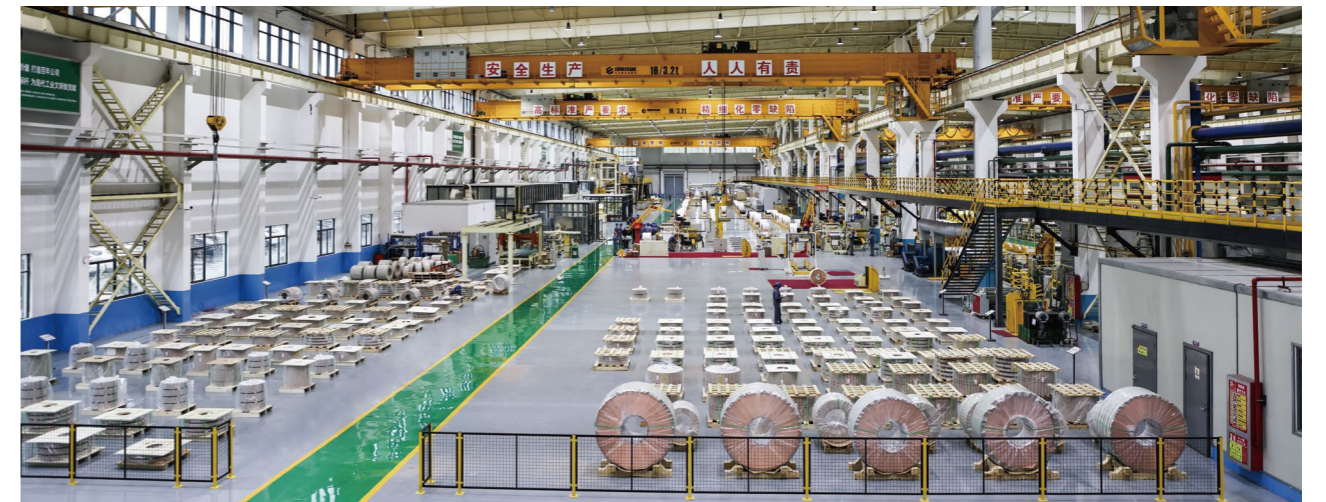
金田铜带拥有高精度、高效率的现代化进口专业生产设备，  
从国外引进了完善的生产体系，  
生产制造能力处于世界同行领先水平



走精益生产之路 尽全力消除浪费  
Process efficiently and precisely to eliminate waste



Jintian Copper Strip branch have imported high-precision and highly effective professional and modern production equipment with a complete production system from abroad. The production and manufacturing capabilities are at the leading level among peers in the world



# TECHNOLOGY

## R&D

## 技术研发



- 中国有色金属工业科技进步一等奖2项  
2 First-class Awards for China Nonferrous Metal Industry Science & Technology Progress
- 发明专利226项  
226 Invention Patents
- 承担国家科技支撑计划项目、国家重点研发计划项目和国家火炬计划项目24项  
Undertaken 24 of the National Science and Technology Plan Program, National Key R&D Program and China Torch Program
- 主持（参与）国家、行业标准制修订47项  
Participated in 47 Projects of National & Industry Standards Revision
- 获得省、市和行业科技进步奖30项  
Won 30 Provincial, Municipal and Industrial Science and Technology Progress Awards

以科技创新为主线，公司先后设立了“国家级企业技术中心”、“国家级博士后科研工作站”、“企业院士工作站”及国家实验室认可检测中心；以“全球科技人才为我所用”的理念，聘用德国、日本、韩国等国际高端技术人才和持续深化与中南大学、大连理工大学、中科院宁波材料所、浙江大学等国内著名科研机构的合作；坚持“创新产品、精准开发”的道路，导入并持续优化 IPD(集成产品开发)流程，建立了以市场为导向、产学研用紧密融合的企业技术创新体系。

With scientific and technological innovation as the main line, Jintian has set up "National Enterprise Technology Center", "National Postdoctoral Research Station", "Enterprise Academician Workstation" and National Laboratory accredited testing center. With the concept of "global scientific and technological talents contribute to our company", we employ international high-end technical talents from Germany, Japan and Korea, and continue to deepen cooperation with famous domestic scientific research institutions such as CSU, DUT, ZJU and Ningbo Material Institute of CAS. We insist on the road of "innovative products and precisedevelopment", introduce and continuously optimize the IPD (Integrated Product Development) process, and established a market-oriented enterprise technology innovation system with close integration of production, academia, research and application.

# LEAN

## PRODUCTION

## 精益生产



- 全价值流诊断  
Total value Stream Diagnosis
- 全员提案改善  
All Employee Proposal Improvement
- QC改善小组活动  
QC Improvement Team Activity
- TPM自主保全  
TPM Autonomous Maintenance
- 六西格玛管理体系  
Six Sigma Management System
- TQM全面质量管理  
TQM Total Quality Management

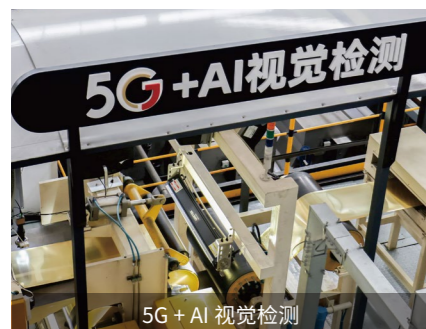
围绕“精益到底，智能为先”的生产理念，全面推行精细化管理，引进多名世界 500 强企业资深外籍专家，借力国内一流咨询机构，通过推行精益六西格玛、QC 活动、全员提案改善等，持续优化工业布局、促进产销协同、提升设备效能、改善员工作业，形成了具有金田特色的精益创新体系，使公司在产品质量、生产成本、劳动效率、现场管理等方面确立了行业领先优势。

Jintian Copper relies on the production concept of "lean to the end, intelligence first" and comprehensive implementation of lean management. With the help of several senior foreign experts from Fortune 500 companies and the use of domestic first-class consulting institutions, as well as through the implementation of lean six sigma, QC activities and employee proposals, Jintian Copper continues to optimize its industrial layout, promote the coordination of production and sales, improve the efficiency of equipment and improve the work of employees. This forms a lean innovation system with characteristics unique to Jintian. These efforts have enabled the company to establish industry-leading advantages in product quality, production costs, labor efficiency and on-site management.

公司坚持将智能化作为企业转型的重要抓手，成立智能制造研究院，先后与 BCG、IBM、HP、SAP、Honeywell 等国际一流咨询与服务公司合作，以提升企业核心竞争力为目标，依托工业设计理念，以精益体系为基础，深度运用自动化、信息化、数字化、智能化等技术，实现数据驱动的行业智能制造新模式。

Jintian Copper insists on taking intelligence as an important grasp of corporate transformation, establishes the Intelligent Manufacturing Research Institute, and cooperates with BCG, IBM, HP, SAP, Honeywell and other international first-class consulting and service companies. With the goal of improving the core competitiveness of corporates, relying on the concept of industrial design, lean system as the basis, in-depth use of automation, information technology, digitalization, intelligence and other technologies to achieve a new mode of data-driven industry intelligent manufacturing.

- **CRM客户关系管理系统**  
Supplier Relationship Management System (SRM)
- **ERP企业资源计划系统**  
Enterprise Resource Planning (ERP)
- **SRM供应商系统**  
Supplier Relationship Management System (SRM)
- **MES生产制造执行系统**  
Manufacturing Execution System (MES)
- **OMS质量管理体系**  
Quality Management System(QMS)
- **EMS能源管理系统**  
Energy Management System (EMS)
- **SCADA数据采集与监视控制系统**  
Supervisory Control and Data Acquisition (SCADA)
- **WMS仓储管理系统**  
Warehouse Management System(WMS)



5G + AI 视觉检测

5G + AI VISION INSPECTION



MINO多辊可逆全自动精轧机

MINO MULT-HIGH REVERSIBLE FULL  
AUTOMATIC PRECISION MILL



Southwire连铸连轧

SOUTHWIRE CONTINUOUS  
CASTING AND ROLLING



生产大数据中心

PRODUCTION DATA CENTER



新能源电磁扁线生产线

ENAMELED FLAT WIRE PRODUCTION  
LINE FOR EV INDUSTRY



UIvac熔炼炉

UIVAC SMELTING FURNACE



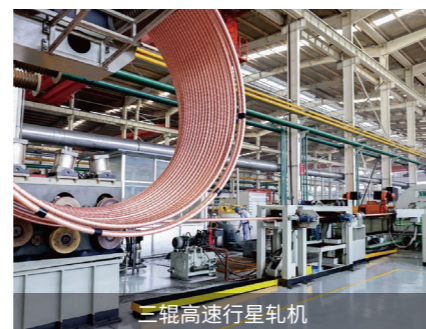
AGV智能搬运

INTELLIGENT AGV HANDLING



SMS反向挤压生产线

SMS INDIRECTLY EXTRUSION PRESS  
PRODUCTION LINE



三辊高速行星轧机

HIGH-SPEED PLANETARY  
MILLING MACHINERY



无人化自动包装线

UNMANNED AUTOMATIC PACKAGING LINE



WSP气垫式连续高温退火炉

WSP AIR CUSHION CONTINUOUS HIGH  
TEMPERATURE ANNEALING FURNACE



HYDROMECH高速锻压冲床

HIGH-SPEED FORGING PRESS EQUIPMENT

金田铜带配备了完善的检测实验设备  
确保产品质量的可靠性  
Jintian Copper Strip is equipped with a complete testing  
equipment system to ensure product quality.



- 直读光谱仪 (美国)  
Direct Reading Spectrometer (USA)

- ICP光谱仪 (法国)  
ICP Spectrometer (France)
- X-ray Fluorescence Spectrometer (USA)

- X射线荧光能谱仪 (美国)  
X-ray Fluorescence Spectrometer (USA)

- 布、洛、维氏硬度计  
Brinell, Rockwell, Vickers Hardness Tester

- 电子万能试验机  
Electronic Universal Testing Machine

- 金相显微镜 (德国)  
Microscope (Germany)

- 扫描电镜  
Scanning Electron Microscope





# C5071

## 产品目录 Product Catalog

分类/Sort	金田 JT Jin Tian	国标 GB Chinese Standard	德标 DIN German Standard	欧标 EN European Standard	美标 ASTM American Standard	日标 JIS Japanese Standard	
青铜 Bronze	C5071	QSn2-0.1	CuSn2Ni0.3P	CuSn2Ni0.3P	/	C50710	C5071
	C5111	QSn4-0.1	CuSn4	CuSn4	CW450K	C51100	C5111
	C5191	QSn6.5-0.1	CuSn6	CuSn6	CW452K	C51900	C5191
	C5210	QSn8-0.3	CuSn8	CuSn8	CW453K	C52100	C5210
黄铜 Brass	C2801	H62	CuZn40	CuZn40	CW509L	C28000	C2801
	C2680	H65	CuZn36	CuZn36	CW507L	C26800	C2680
	C2600	H70	CuZn30	CuZn30	CW505L	C26000	C2600
紫铜 Red Copper	C1020	TU1	OF-Cu	Cu-OF	CW008A	C10200	C1020
	C1100	T2	SE-Cu	Cu-ETP	CW004A	C11000	C1100
	C1220	TP2	SF-Cu	Cu-DHP	CW024A	C12200	C1220
高铜合金 High Copper Alloy	C19210	TFe0.1	CuFe0.1P	CuFe0.1P	/	C19210	C1921
	C1940	TFe2.5		CuFe2P	/	C19400	C1940
	C14415	TSn0.12		CuSn0.15	/	C14415	C1441

## 牌号 Alloy Designation

国标 GB	QSn2-0.1
欧标 EN	CuSn2Ni0.3P
美标 ASTM	C50710
日本 JIS	C5071

## 化学成分 Chemical Composition

铜 (Cu)	Rem.
锡 (Sn)	1.7-2.3%
磷 (P)	≤0.15%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	很好 Excellent

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度 $R_m$ /MP a Tensile strength	屈服强度 $R_{p0.2}$ /MP a Yield strength	硬度HV Hardness	延伸率 $A_{50\%}$ Elongation
H02	410-510	/	125-165	≥10
H04	490-590	/	150-185	≥5
H06	540-630	/	150-205	≥2
H08	610-705	/	≥185	/

## 合金特点 Alloy Characteristics

良好的冷加工性能、良好的电镀、热浸镀及焊接性能，高强度、高弹性，耐海水及工业气氛腐蚀  
Excellent cold workability, electroplating, hot dip plating and welding performance;  
high strength, elasticity and resistance to seawater and process atmosphere corrosion.

## 物理性能 Physical Properties

密度 Density	8.88	g/cm <sup>3</sup>
导热率 Thermal conductivity	100	W/(m.k)
导电率 Electrical conductivity	25	%ACS
弹性模量 Modulus of elasticity	124	GPa
热膨胀系数 Coefficient of thermal expansion	17.6	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.34	/
比热 Specific heat	0.375	J/(g.k)

## 弯曲性能 Bendability

状态 Temper	90° R/T	
	GW	BW
H02	0.5	1
H04	1	1.5

材料厚度 Material thickness ≤ 0.6mm

# C5111

## 牌号 Alloy Designation

国标 GB	QSn4-0.3
欧标 EN	CuSn4
美标 ASTM	C51100
日本 JIS	C5111

## 化学成分 Chemical Composition

铜 (Cu)	R em.
锡 (Sn)	3.5-4.9%
磷 (P)	0.03-0.35%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	良好 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度 $R_m$ /MP a Tensile strength	屈服强度 $R_{p0.2}$ /MP a Yield strength	硬度HV Hardness	延伸率 $A_{50}$ % Elongation
H01	345-440	≥280	80-150	≥25
H02	410-510	≥350	120-180	≥12
H04	490-590	≥450	150-200	≥7
H06	570-660	≥530	170-220	≥3

## 合金特点 Alloy Characteristics

良好的冷加工性能、良好的电镀、热浸镀及焊接性能，高强度、高弹性，耐海水及工业气氛腐蚀  
Excellent cold workability, electroplating, hot dip plating and welding performance;  
high strength, elasticity and resistance to seawater and process atmosphere corrosion.

## 物理性能 Physical Properties

密度 Density	8.86	g/cm <sup>3</sup>
导热率 Thermal conductivity	100	W/(M.K)
导电率 Electrical conductivity	21	%IACS
弹性模量 Modulus of elasticity	120	GPa
热膨胀系数 Coefficient of thermal expansion	17.6	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.34	/
比热 Specific heat	0.375	J/(g·k)

## 弯曲性能 Bendability

状态 Temper	90° R/T	
	GW	BW
H01	0	0
H02	0	0
H04	0	0
H06	0.5	1.5

材料厚度 Material thickness ≤ 0.6mm

此此物性表仅提供常规信息进行参考，除非证明表内含有故意信息误导和重大过失，否则不得据此提出任何索赔。表内数据是我们所知理论范围参考值，与实测值可能略有差异，具体按照与客户双方商讨确认的规格执行。

general information for reference. Unless it is proved that the table contains intentional misleading information and gross negligence, no claim shall be made based on it. The data in the sheet are reference values within the theoretical range according to experiences, and may be slightly different from the actual measured values. The specific specifications are implemented in accordance with the specifications discussed and confirmed with the customer.

# C5191

## 牌号 Alloy Designation

国标 GB	QSn6.5-0.1
欧标 EN	CuSn6
美标 ASTM	C51900
日本 JIS	C5191

## 化学成分 Chemical Composition

铜 (Cu)	Rem.
锡 (Sn)	5.0-7.0%
磷 (P)	0.03-0.35%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	良好 Good
热加工 Hot-workability	有限 Limited

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度 $R_m$ /MP a Tensile strength	屈服强度 $R_{p0.2}$ /MP a Yield strength	硬度HV Hardness	延伸率 $A_{50}$ % Elongation
H01	390-510	≥350	100-160	≥35
H02	490-610	≥430	150-200	≥20
H04	590-690	≥520	180-230	≥8
H06	630-720	≥585	200-245	≥5

## 合金特点 Alloy Characteristics

良好的冷加工性能、良好的电镀、热浸镀及焊接性能，高强度、高弹性，耐海水及工业气氛腐蚀  
Excellent cold workability, electroplating, hot dip plating and welding performance;  
high strength, elasticity and resistance to seawater and process atmosphere corrosion.

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# C5210

## 牌号 Alloy Designation

国标 GB	QSn8-0.3
欧标 EN	CuSn8
美标 ASTM	C52100
日本 JIS	C5212

## 化学成分 Chemical Composition

铜 (Cu)	Rem.
锡 (Sn)	7.0-9.0%
磷 (P)	0.03-0.35%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	良好 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MPa Tensile strength	屈服强度R <sub>p0.2</sub> /MPa Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
H02	490-610	≥350	150-205	≥30
H04	590-705	≥530	180-235	≥12
H06	685-785	≥600	210-250	≥5
H08	≥735	≥660	≥230	/

## 合金特点 Alloy Characteristics

良好的冷加工性能、良好的电镀、热浸镀及焊接性能，高强度、高弹性，耐海水及工业气氛腐蚀  
Excellent cold workability, electroplating, hot dip plating and welding performance;  
high strength, elasticity and resistance to seawater and process atmosphere corrosion.

## 物理性能 Physical Properties

密度 Density	8.8	g/cm <sup>3</sup>
导热率 Thermal conductivity	65	W/(M.K)
导电率 Electrical conductivity	12	%IACS
弹性模量 Modulus of elasticity	107	GPa
热膨胀系数 Coefficient of thermal expansion	18.2	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.34	/
比热 Specific heat	0.377	J/(g·k)

## 弯曲性能 Bendability

状态 Temper	90° R/T	
	GW	BW
H02	0	0
H04	0.5	1
H06	15	2.5
H08	2	3.5

材料厚度 Material thickness ≤ 0.6mm

# C2801

## 牌号 Alloy Designation

国标 GB	H62
欧标 EN	CuZn40
美标 ASTM	C28000
日本 JIS	C2801

## 化学成分 Chemical Composition

铜 (Cu)	59-62%
锌 (Zn)	Rem.
铅 (Pb)	<0.1%

## 弯曲性能 Bendability

状态 Temper	90° R/T		180° R/T	
	GW	BW	GW	BW
O60	0	0		
H02	0	0.5		
H04	0	0.5		
H06	/	/		

材料厚度 Material thickness ≤ 0.5mm

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MPa Tensile strength	屈服强度R <sub>p0.2</sub> /MPa Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O60	≥290	/	≤95	≥35
H02	410-470	/	110-130	≥20
H04	470-530	/	145-165	≥10
H06	520-580	/	165-180	≥4
H08	≥570	/	≥185	/

## 合金特点 Alloy Characteristics

色泽均匀，良好的加工性、延展性及深冲性，易于电镀，良好的耐蚀性，焊接性佳  
Uniform color, excellent processability and elongation, excellent deep drawing capabilities; easy to electroplate; excellent corrosion resistance and weldability.

## 物理性能 Physical Properties

密度 Density	8.43	g/cm <sup>3</sup>
导电率 Electrical conductivity	23	%IACS
弹性模量 Modulus of elasticity	105	GPa
热膨胀系数 Coefficient of thermal expansion	20.6	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.34	/
比热 Specific heat	0.377	J/(g·k)

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	良好 Good
耐腐蚀 Corrosion resistance	一般 General

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# C2680

## 牌号 Alloy Designation

国标 GB	H65
欧标 EN	CuZn36
美标 ASTM	C27000
日本 JIS	C2680

## 化学成分 Chemical Composition

铜 (Cu)	63.0-68.5%
锌 (Zn)	Rem.
铅 (Pb)	<0.09%

## 弯曲性能 Bendability

状态 Temper	180° R/T	180° R/T
	GW	BW
H01	0	0
H02	0	0.5
H04	0	0.5
H06	/	/

材料厚度 Material thickness ≤ 0.5mm

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MP a Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O60	320-390	/	70-90	≥45
H01	350-440	/	90-120	≥30
H02	410-480	/	110-140	≥25
H04	460-530	/	130-160	≥13
H06	520-600	/	150-180	≥5
H08	580	/	/	≥1

## 合金特点 Alloy Characteristics

色泽均匀, 良好的加工性、延展性及深冲性, 易于电镀, 良好的耐蚀性, 焊接性佳  
Uniform color,excellent processability and elongation,excellent deep drawing capabilities;easy to electroplate ;excellent corrosion resistance and weldability.

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## 物理性能 Physical Properties

密度 Density	8.47	g/cm <sup>3</sup>
导电率 Electrical conductivity	25	%IACS
弹性模量 Modulus of elasticity	103	GPa
热膨胀系数 Coefficient of thermal expansion	20.3	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.34	/
比热 Specific heat	0.377	J/(g•k)

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	好 Good
耐腐蚀 Corrosion resistance	好 Good

## 牌号 Alloy Designation

国标 GB	H70
欧标 EN	CuZn30
美标 ASTM	C26000
日本 JIS	C2600

## 化学成分 Chemical Composition

铜 (Cu)	68.5-71.5%
锌 (Zn)	Rem.
铅 (Pb)	<0.05%

## 弯曲性能 Bendability

状态 Temper	180° R/T	180° R/T
	GW	BW
O60	0	0
H01	0	0
H02	0	0.5
H04	0	0.5

材料厚度 Material thickness ≤ 0.5mm

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MP a Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O60	340-390	/	75-90	≥45
H02	415-455	/	110-130	≥35
H04	560-510	/	140-160	≥13
H06	525-580	/	170-185	≥4
H08	≥570	/	≥180	/

## 合金特点 Alloy Characteristics

色泽均匀, 良好的加工性、延展性及深冲性, 易于电镀, 良好的耐蚀性, 焊接性佳  
Uniform color,excellent processability and elongation,excellent deep drawing capabilities;easy to electroplate ;excellent corrosion resistance and weldability.

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# C2600

## 物理性能 Physical Properties

密度 Density	8.53	g/cm <sup>3</sup>
导电率 Electrical conductivity	26	%IACS
弹性模量 Modulus of elasticity	110	GPa
热膨胀系数 Coefficient of thermal expansion	20	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.34	/
比热 Specific heat	0.377	J/(g•k)

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	好 Good
耐腐蚀 Corrosion resistance	好 Good

# C1020

## 牌号 Alloy Designation

国标 GB	TU1
欧标 EN	Cu-OF
美标 ASTM	C10200
日本 JIS	C1020

## 化学成分 Chemical Composition

铜+银 (Cu+Ag)	≥99.97%
氧 (O)	≤0.002%
铁 (Fe)	≤0.004%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	好 Good
耐腐蚀 Corrosion resistance	好 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MP a Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O60	≥195	≤140	≤70	≥35
H01	230-285	≥150	60-95	≥25
H02	245-310	≥250	80-105	≥10
H04	290-360	≥250	90-115	≥4
H06	≥360	≥320	≥110	≥1

## 合金特点 Alloy Characteristics

具有优异的导热导电性能，冷热加工性能优异、可以进行焊接和钎焊、耐腐蚀性能良好  
Has excellent thermal and electrical conductivity,excellent hot and cold processing performance,can be welded and brazed,and has good corrosion resistance.

## 物理性能 Physical Properties

密度 Density	8.9	g/cm <sup>3</sup>
导热率 Thermal conductivity	390	W/(m.k)
导电率 Electrical conductivity	≥98.5	%IACS
弹性模量 Modulus of elasticity	117	GPa
热膨胀系数 Coefficient of thermal expansion	18	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.33	/
比热 Specific heat	0.385	J/(g.k)

## 弯曲性能 Bendability

状态 Temper	90° R/T		180° R/T	
	GW	BW	GW	BW
O60	0	0	0	0
H01	0	0	0	0
H02	0	0.5	0.5	0.5
H04	0.5	0.5	1	1
H06	.50	0.5	1	
材料厚度 Material thickness	≤ 0.6mm			

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# C1100

## 牌号 Alloy Designation

国标 GB	T2
欧标 EN	Cu-ETP
美标 ASTM	C11000
日本 JIS	C1100

## 化学成分 Chemical Composition

铜+银 (Cu+Ag)	≥99.90%
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## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	好 Good
耐腐蚀 Corrosion resistance	好 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MP a Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O60	≥195	≤140	≤70	≥35
H01	230-285	≥150	60-95	≥25
H02	245-310	≥250	80-105	≥10
H04	290-360	≥250	90-115	≥4
H06	≥360	≥320	≥110	≥1

## 合金特点 Alloy Characteristics

具有优异的导热导电性能，冷热加工性能优异、可以进行焊接和钎焊、耐腐蚀性能良好  
Has excellent thermal and electrical conductivity,excellent hot and cold processing performance,can be welded and brazed,and has good corrosion resistance.

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# C1220

## 牌号 Alloy Designation

国标 GB	TP <sub>2</sub>
欧标 EN	Cu-DHP
美标 ASTM	C12200
日本 JIS	C1220

## 化学成分 Chemical Composition

铜+银 (Cu+Ag)	≥99.9%
磷 (P)	0.015-0.04%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	好 Good
耐腐蚀 Corrosion resistance	好 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MP a Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O60	≥195	≤140	≤70	≥30
H01	215-285	≥150	60-95	≥25
H02	235-315	≥180	80-105	≥8
H04	290-380	≥250	90-125	≥3

## 合金特点 Alloy Characteristics

具有优异的导热导电性能, 冷热加工性能优异、可以进行焊接和钎焊、耐腐蚀性能良好  
Has excellent thermal and electrical conductivity,excellent hot and cold processing performance,can be welded and brazed,and has good corrosion resistance.

## 物理性能 Physical Properties

密度 Density	8.9	g/cm <sup>3</sup>
导热率 Thermal conductivity	340	W/(m.k)
导电率 Electrical conductivity	80	%IACS
弹性模量 Modulus of elasticity	126	GPa
热膨胀系数 Coefficient of thermal expansion	17.4	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.32	/
比热 Specific heat	0.385	J/(g.k)

## 弯曲性能 Bendability

状态 Temper	180° R/T	
	GW	BW
O60	0	0
H01	0.5	0.5
H02	1	1
H04	2	2
材料厚度 Material thickness	≤ 0.6mm	

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# C1921

## 牌号 Alloy Designation

国标 GB	TFe0.1
欧标 EN	CuFe0.1P
美标 ASTM	C19210
日本 JIS	C1921

## 化学成分 Chemical Composition

铜 (Cu)	Rem.
铁 (Fe)	0.05-0.15%
磷 (P)	0.015-0.04%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	很好 Excellent
切削性能 Machinability	一般 General
电镀性能 Electric plating property	很好 Excellent
热浸镀锡 Hot dip tin plating property	很好 Excellent
焊接 Weldability	好 Good
耐腐蚀 Corrosion resistance	好 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MP a Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
H02	355-420	≥300	110-130	≥5
H04	390-460	≥350	120-135	≥3
H06	420-485	≥400	125-145	≥1.5
H08	435-495	≥420	130-150	≥1

## 合金特点 Alloy Characteristics

具有优良的导热导电性能, 具有中等强度和良好的折弯性能、良好的耐腐蚀性和电镀性能, 对应力腐蚀开裂不敏感  
Has excellent thermal and electrical conductivity, has moderate strength and good bending performance, good corrosion resistance and electroplating performance,not sensitive to stress corrosion cracking.

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# C1940

## 牌号 Alloy Designation

国标 GB	TFe2.5
欧标 EN	CuFe2P
美标 ASTM	C19400
日本 JIS	C1940

## 化学成分 Chemical Composition

铜 (Cu)	Rem.
铁 (Fe)	2.1-2.6%
锌 (Zn)	0.05-0.2%
磷 (P)	0.015-0.15%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	好 Good
切削性能 Machinability	一般 General
电镀性能 Electric plating property	好 Good
热浸镀锡 Hot dip tin plating property	很好 Excellent
电阻焊 Resistance welding	一般 General
软钎焊性 Soft brazing	优良 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MPa Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O	≥310	≥160	85-110	≥25
1/2H	370-430	≥280	115-135	≥6
H	420-470	≥380	125-145	≥3
EH	450-510	≥440	130-150	≥2
SH	480-530	≥450	140-160	≥2

## 合金特点 Alloy Characteristics

本合金属于CuFeP系合金，通过加工硬化和固溶强化获得优良的综合性能；具有优良的导电、导热性能；中等强度及良好的折弯性能；且有优良的电镀、焊接性能。This alloy belongs to CuFeP series alloy, which obtains excellent synthesis through work hardening and solid solution strengthening Performance; Excellent electrical and thermal conductivity; Medium strength and good bending performance; And have Excellent electroplating and welding properties

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## 物理性能 Physical Properties

密度 Density	8.9	g/cm <sup>3</sup>
导电率 Electrical conductivity	60	%IACS
弹性模量 Modulus of elasticity	121	GPa
比热 Specific heat	0.385	J/(g•k)
热膨胀系数 Coefficient of thermal expansion	17.1	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.33	/

## 弯曲性能 Bendability

状态 Temper	90°R/T		180°R/T	
	GW	BW	GW	BW
O	0	0	0.5	0.5
1/2H	0.5	0.5	1	1
H	0.5	1	1.5	1.5
EH	1	1.5	1.5	2
SH	1.5	2	3	4

材料厚度 Material thickness ≤ 0.8mm 折弯宽度 Bending width 10 mm

## 牌号 Alloy Designation

国标 GB	TSn0.12
欧标 EN	CuSn0.15
美标 ASTM	C14415
日本 JIS	C1441

## 化学成分 Chemical Composition

铜 (Cu)	≥99.96%
锡 (Sn)	0.1-0.15%

## 加工性能 Fabrication Properties

冷加工 Cold-workability	好 Good
切削性能 Machinability	一般 General
电镀性能 Electric plating property	好 Good
热浸镀锡 Hot dip tin plating property	很好 Excellent
电阻焊 Resistance welding	好 Good
软钎焊性 Soft brazing	好 Good

## 机械性能 Mechanical Properties

状态 Temper	抗拉强度R <sub>m</sub> /MP a Tensile strength	屈服强度R <sub>p0.2</sub> /MP a Yield strength	硬度HV Hardness	延伸率A <sub>50</sub> % Elongation
O	250-320	/	60-90	≥9
1/2H	300-360	≥230	80-110	≥5
H	350-430	≥300	100-130	≥3
EH	410-480	≥350	120-150	≥2

## 合金特点 Alloy Characteristics

本合金属于CuSn系合金，具备良好的导电性能及抗高温能力，强度中等，抗腐蚀性能较好。This alloy belongs to CuSn series alloy, has good electrical conductivity and High temperature resistance, medium strength, good corrosion resistance.

此此物性表仅提供常规信息进行参考，除非证明表内含有故意信息误导和重大过失，否则不得据此提出任何索赔。表内数据是我们所知理论范围参考值，与实测值可能略有差异，具体按照与客户双方商讨确认的规格执行。  
general information for reference. Unless it is proved that the table contains intentional misleading information and gross negligence, no claim shall be made based on it. The data in the sheet are reference values within the theoretical range according to experiences, and may be slightly different from the actual measured values. The specific specifications are implemented in accordance with the specifications discussed and confirmed with the customer.

# C1441

## 物理性能 Physical Properties

密度 Density	8.91	g/cm <sup>3</sup>
导电率 Electrical conductivity	85	%IACS
弹性模量 Modulus of elasticity	126	GPa
热膨胀系数 Coefficient of thermal expansion	17.7	10 <sup>-6</sup> /K
泊松比 Poisson's ratio	0.34	/
比热 Specific heat	0.383	J/(g•k)

## 弯曲性能 Bendability

状态 Temper	90°R/T		180°R/T	
	GW	BW	GW	BW
O	0	0.5	0.5	1
1/2H	0.5	0.5	1	1.5
H	1	1.5	2	3
EH	2	3	3	5

材料厚度 Material thickness ≤ 0.8mm 折弯宽度 Bending width 10 mm

