



C23000 STANDARDS & USES

Some of the following data is available from the copper data center at copper.org. The information below is also from that website as well as public knowledge about this alloy.

Chemical Composition			
Cu	Fe	Pb	Other Named Elements
84.0 – 86.0	.05	.05	-

Physical Properties

	US Customary	Metric
Melting Point - Liquidus	1880 F	1027 C
Melting Point - Solidus	1810 F	988 C
Density	0.316 lb/in ³ at 68 F	8.75 gm/cm ³ @ 20 C
Specific Gravity	8.75	8.75
Electrical Resistivity	28.0 ohms-cmil/ft @ 68 F	4.65 microhm-cm @ 20 C
Electrical Conductivity	37 %IACS @ 68 F	0.216 MegaSiemens/cm @ 20 C
Thermal Conductivity	92.0 Btu · ft/(hr · ft ² ·°F)at 68F	159.2 W/m · °K at 20 C
Coefficient of Thermal Expansion	10.4 · 10 ⁻⁶ per °F (68-572 F)	18.7 · 10 ⁻⁶ per °C (20-300 C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68 F	377.1 J/kg · °K at 293 K
Modulus of Elasticity in Tension	17000 ksi	117000 MPa
Modulus of Rigidity	6400 ksi	44130 MPa

Fabrication Properties

Joining Technique	Suitability
Soldering	Excellent
Brazing	Excellent
Oxyacetylene Welding	Good
Gas Shielded Arc Welding	Good
Coated Metal Arc Welding	Not Recommended
Spot Weld	Fair
Seam Weld	Not Recommended
Butt Weld	Good
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Good
Machinability Rating	30

Typical Uses

INDUSTRY	APPLICATION
Architecture	<ul style="list-style-type: none"> • Etching Parts • Trim • Weather Strips
Electrical	<ul style="list-style-type: none"> • Conduit • Rotor bars, AC Motors • Screw Shells • Sockets
Fasteners	<ul style="list-style-type: none"> • Eyelets • Fasteners
Builders Hardware	<ul style="list-style-type: none"> • Kick Plates
Plumbing	<ul style="list-style-type: none"> • Fittings • J-Bends • Pipe • Pipe Nipples • Pipe Service Lines • Pump Lines • Service Lines • Traps
Industrial	<ul style="list-style-type: none"> • Condenser Tubes • Fire Extinguishers • Flexible Metal Hose • Heat Exchanger Shells • Heat Exchangers

	<ul style="list-style-type: none"> • Pickling Crates • Pump Cylinder Lines • Radiator Cores • Tags • Tubing Heat Exchangers • Tubing for Instrumentation
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Applicable Specifications

Product	Specification
Bar	ASTM B36
Fittings	ASME B16.29, B16.22
Nipples	ASTM B687
Pipe	ASME SB43 ASTM B698, B43
Plate	ASTM B36
Sheet	ASTM B36 SAE J461, J463
Strip	ASTM B888, B36 SAE J463, J461
Tube	ASTM B569, B698
Tube, Condenser	ASME SB111, ASTM B111
Tube, Finned	ASME SB359, ASTM B359
Tube, Seamless	AMS 4553, ASME SB135, ASTM B135 FEDERAL WW-T-791, MILITARY MIL-T-20168, SAE J461, J463
Tube, U-Bend	ASME SB395, ASTM B395
Tube, Welded	ASME SB543, ASTM B587, B543
Wire	ASTM B134