



TECHNICAL DATA SHEET

PRODUCT: COPPER ALLOY UNS-C16200

PRODUCT BASIC INFORMATION:

Alloy:	UNS-C16200	Cadmium Copper
Form:	--	
Temper:		--
Dimension:	--	
Surface Finish:	--	
Similar Alloys:	UNS C16500 - UNS C18200 - UNS C14181 - UNS C14300 - UNS C50100 – EN CR022A	
Application:	General Use	

CHEMICAL COMPOSITION:

Element		Percentage (%)
Aluminum	(Al)	--
Silicon	(Si)	--
Iron	(Fe)	0.02 max
Copper	(Cu)	98.78 - 99.3
Manganese	(Mn)	--
Magnesium	(Mg)	--
Lead	(Pb)	--
Zinc	(Zn)	--
Titanium	(Ti)	--
Cadmium	(Cd)	1.2 max
Remainder Total		--

MECHANICAL PROPERTIES:

Properties	Metric	Imperial
Tensile strength	415 MPa	60200 psi
Tensile Strength, Yield	310 MPa	45000 psi
Elongation	5%	5%
Elastic modulus	115 GPa	16700 ksi
Shear Modulus	43 GPa	6235 ksi
Fatigue Strength	100 to 210 MPa	14503 – 30457 psi

PHYSICAL DATA :

	Metric Units	Imperial Unit
Melting Point (Liquidus)	1076 °C	1969 °F
Melting Point (Solidus)	1030 °C	1890 °F
Density	8.89 g/cc @ 20°C	0.321 lb/in ³ @ 68°F
Specific Gravity	8.89	8.89
Coefficient of Thermal Expansion	--	9.4 µin/in°F
Thermal Conductivity	360 W/mK @ 20°C	2500 BTU-in/hr-ft ² -°F
Thermal Capacity (Specific Heat):	0.380 J/g-°C	0.0908 BTU/lb-°F
Electrical Conductivity	90%	IACS
Electrical Resistivity:	0.00000192 Ω.cm @ 20°C	--
Modulus of Elasticity (tension)	115 GPa @ 20°C	16700 ksi
Modulus of Rigidity (torsion)	44.1 GPa @ 20°C	6400 ksi
Poisson's Ratio	--	--

PROCESSING PROPERTIES:

	METRIC	ENGLISH
Annealing Temperature:	425 - 750 °C	797 - 1380 °F
Hot-Working Temperature:	750 - 875 °C	1380 - 1610 °F
Recrystallization Temperature:	--	--

DESCRIPTIVE PROPERTIESD:

	METRIC	ENGLISH
Velocity of Sound:	--	--

OTHER PROPERTIES:

Typical Applications	Mostly used for trolley wire, occasionally specified for machined products. C16200 is used for RWMA Class I applications. Electrical and electronic conductors – Waveguides - Cavity resonators - Superconductor matrixes - Vacuum tube and solid-state devices - Glass-to-metal seals – Multicore cable.
Machinability	The machinability rating of this alloy is 20. (Where Alloy 360 FC Brass is 100).
Weldability	The preferred welding methods for Copper UNS C16200 are soldering, brazing, oxyacetylene welding, gas-shielded arc welding and butt welding. Coated metal arc welding, spot welding and seam welding are not recommended for this alloy.
Heat Treatment	---
Hot Working	This alloy's capacity for being hot formed is rated as "good".
Cold Working	The capacity for cold working this alloy is rated as "excellent".
Annealing	The annealing temperature for this alloy is between 800 and 1450 F.
Forging	The hot forgeability rating of this alloy is unknown. (Forging brass=100). The recommended hot working temperature for this alloy is between 1425 and 1600 F.
Hardening	--

Product

Specification

Bar	SAE - J461 - WROUGHT AND CAST COPPER ALLOYS
	SAE - J463 - WROUGHT COPPER AND COPPER ALLOYS
Forgings	SAE - J463 - WROUGHT COPPER AND COPPER ALLOYS
	SAE - J461 - WROUGHT AND CAST COPPER ALLOYS
Rod	SAE - J463 - WROUGHT COPPER AND COPPER ALLOYS
	SAE - J461 - WROUGHT AND CAST COPPER ALLOYS
Wire	ASTM - B105 - HARD-DRAWN COPPER ALLOY WIRES FOR ELECTRICAL CONDUCTORS
	MILITARY - MIL-W-82598 - WIRE, COPPER-CADMIUM ALLOY
	ASTM – B624 - HIGH-STRENGTH, HIGH-CONDUCTIVITY COPPER ALLOY WIRE FOR ELECTRONIC APPLICATIONS

APPLICATIONS

Principal Design Features High Copper Alloy, Cadmium Copper. Moderate strength, good wear resistance.

PACKAGING, HANDING & STORAGE:

Package:	Packed in waterproof Kraft, fastened by steel straps on wood pallets, suitable for handling, loading and unloading from the trunks or containers, suitable for export ocean forwarding.
Handling:	Prevent the goods hurting the people who are moving, loading, unloading, especially pay attention to the rolling and dropping for the coils.
Storage:	Stored in indoor area on plain floor, free away from moisture, water, snow, animal oils and dye wastes, avoid storing with acid or basic chemical goods.

