

# COPPER BERYLLIUM (C17200)

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## TYPICAL USES

C17200 Beryllium Copper is an excellent material for a number of applications. C172 has excellent bearing properties with extremely high compressive strengths. C17200 also has significant non corrosive properties when exposed to harsh conditions. This alloy also has great galling resistance. C17200 has a relative magnetic permeability very close to 1.00, making it transparent to the effect of magnetic fields. This alloy is non sparking.



### CONTACT US

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## TYPICAL USES

Product Category	Product	Reason
Electrical	Connectors	Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, High Strength, Solderability, Resistance to Stress Relaxation
	Electronic Equipment Components	Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, High Strength, Resistance to Stress Relaxation
	Fuse Clips	Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, High Strength
	Relay Parts	Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, High Strength
	Switch Parts	Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, High Strength, Resistance to Stress Relaxation
Fasteners	Fasteners	Corrosion Resistance, High Strength, Resistance to Stress Relaxation
	Lock Washers	Corrosion Resistance, High Strength, Resistance to Stress Relaxation
	Retaining Rings	Corrosion Resistance, High Strength, Resistance to Stress Relaxation
	Roll Pins	Corrosion Resistance, High Strength
Industrial	Bellows	Formability, Ductility, High Strength, Resistance to Stress Relaxation
	Bourdon Tubing	Formability, Ductility, High Strength, Resistance to Stress Relaxation
	Diaphragms	Formability, Ductility, High Strength, Resistance to Stress Relaxation
	Electrodes for Welding	Electrical Conductivity, Thermal Conductivity, High Strength
	Forgings	Corrosion Resistance, Formability, High Strength
	Machined Components	Corrosion Resistance, High Strength, Resistance to Stress Relaxation
	Plastic Mold Components	Thermal Conductivity, Wear Resistance, High Strength
	Pump Parts	Thermal Conductivity, Wear Resistance, High Strength
	Rolling Mill Parts	Corrosion Resistance, Wear Resistance, High Strength, Retains Strength at High Temperature, Resistance to Stress Relaxation
	Spline Shafts	Corrosion Resistance, High Strength
	Springs	Corrosion Resistance, High Strength, Resistance to Stress Relaxation
	Steel Mold Components	Thermal Conductivity, High Strength
	Valves	Corrosion Resistance, Wear Resistance, High Strength
	Welding Equipment	Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, Creep Resistant, Wear Resistance, Very High Strength, Resistance to Thermal Softening
	Other	Continuous Casting, Permanent Brass
Non-Sparking Tools		Energy Damping, Impact Resistant, Non-Magnetic, High Strength, Non-Sparking

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## MECHANICAL PROPERTIES

Form	Temper Code	Tensile Strength (ksi)	YS-0.2% Offset (ksi)	Elongation (%)	Rockwell B scale	Rockwell C scale	Rockwell 30T scale	Fatigue Strength** (ksi)	Section Size (in)
Flat Products	TH02	182 Typ	160 Typ	4 Typ		39 Typ		42 Typ	0.188
	TH01	172 Typ	150 Typ	5 Typ		37 Typ		40 Typ	0.188
	TH04	190 Typ	170 Typ	3 Typ		40 Typ		43 Typ	0.188
	TM00	105 Typ	80 Typ	20 Typ		20 Typ			0.188
	TM02	128 Typ	105 Typ	15 Typ		27 Typ			0.188
	TM01	115 Typ	90 Typ	18 Typ		23 Typ			0.188
	TM04	142 Typ	122 Typ	12 Typ		32 Typ			0.188
	TM06	168 Typ	148 Typ	6 Typ		36 Typ			0.188
	TF00	165 Typ	145 Typ	7 Typ				36 Typ	0.188
	TB00	70 Typ	32 Typ	45 Typ	60 Typ		58 Typ		0.188
	TD02	92 Typ	82 Typ	15 Typ	92 Typ		77 Typ		0.188
	TD01	80 Typ	70 Typ	25 Typ	80 Typ		70 Typ		0.188
	TD04	110 Typ	104 Typ	5 Typ	99 Typ		81 Typ		0.188
Rod	TH04	178 Typ				36 Typ			<1
		183 Typ				37 Typ			1
		188 Typ				38 Typ			0.375
	TD04	105 Typ			95 Typ				1
		112 Typ			95 Typ				0.375
		100 Typ			95 Typ				<1
Shapes	TB00								
	TD04								

\* Measured at room temperature, 68°F (20°C).  
 \*\* Fatigue Strength: 100 x 10<sup>6</sup> cycles, unless indicated as [N] x 10<sup>6</sup>.

## CHEMICAL PROPERTIES

Elements					
	Cu(1,2)	Al	Be	Co(3)	Si
Min (%)			1.6	0.2	
Max (%)	Rem	0.2	1.85		0.2

(1) Cu + Sum of Named Elements 99.5% min.  
 (2) Cu value includes Ag.  
 (3) Ni value includes Co.

## FABRICATION PROPERTIES

Technique	Suitability
Soldering	Good
Brazing	Good
Oxyacetylene Welding	Not Recommended
Gas Shielded Arc Welding	Good
Coated Metal Arc Welding	Good
Spot Weld	Good
Seam Weld	Fair
Butt Weld	Fair
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Good
Machinability Rating	20

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