IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C17200

C17200 is manufactured to provide a combination of high strength and hardness properties coupled with superior thermal properties. This range of properties makes C17200 the premier material for copper alloy molds and a wide range of other applications from oil and gas to aerospace.

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Beryllium	Cobalt	Nickel	Co + Ni	Co + Ni + Fe	Copper
C17200	1.80 – 2.00	-	0.20 min	0.20 min	0.60 max	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)	Heat Capacity (J/gK)
8.36	131	17.5	130	870-980	0.44

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C17200 Plate	A(TB00)	All sizes	414-587	138-276	20 min.	B45-85	17 min.
C17200 Plate	AT(TF00)	All sizes	1140-1380	966-1208	4 min.	C36-42	22 min.
C17200 Rounds	A(TB00)	All sizes	414-587	138-276	20 min.	B45-85	17 min.
C17200 Rounds	AT(TF00)		1140-1380	900-1208	4 min.	C36-42	22 min.

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 25 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.

IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C17200 Low Hard

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Beryllium	Cobalt	Nickel	Co + Ni	Co + Ni + Fe	Copper
C17200	1.80 – 2.00	-	0.20 min	0.20 min	0.60 max	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)	Heat Capacity (J/gK)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C17200 Plate	AT(TF00)	All sizes					
C17200 Rounds	AT(TF00)						

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 25 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.

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IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C17500

C17500 is manufactured to provide a good strength with even better thermal conductivity than C17200. This alloy offers conductivity of 45 to 60 percent of pure copper while providing significant strength and hardness properties. This alloy is often used in the resistance welding industry.

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Beryllium	Cobalt	Nickel	Co + Ni	Co + Ni + Fe	Copper
C17500	1.40 – 0.70	2.40-2.70	-	-	-	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C17500 Plate	A(TB00)	All sizes					
C172500 Plate	AT(TF00)	All sizes					
C17500 Rounds	A(TB00)	All sizes					
C17500 Rounds	AT(TF00)	All sizes					

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 25 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.

IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C17510

C17510 is manufactured to provide a good strength with even better thermal conductivity than C17200. This alloy offers conductivity of 45 to 60 percent of pure copper while providing significant strength and hardness properties. This alloy is often used in the resistance welding industry.

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Beryllium	Cobalt	Nickel	Co + Ni	Co + Ni + Fe	Copper
C17510	0.20 – 0.60	-	1.40 – 2.20	-	-	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C17510 Plate	A(TB00)	All sizes					
C172510 Plate	AT(TF00)	All sizes					
C17510 Rounds	A(TB00)	All sizes					
C17510 Rounds	AT(TF00)	All sizes					

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 25 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.

IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C18150 Chrome Copper

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Chromium	Zirconium	Nickel	Aluminum	Zinc	Copper
C18150	0.50 – 1.50	0.05 - 0.25	-	-	-	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C18150 Plate	TL06	All sizes					
C18150 Rounds	TL06	All sizes					

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 100 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.

IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C18200 Chrome Copper

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Chromium	Zirconium	Iron	Lead	Silicon	Copper
C18200	0.60 – 1.20	-	0.10 max	0.05 max	0.10	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C18200 Plate	TF00	All sizes					
C18200 Rounds	TF00	All sizes					

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 100 to 450mm, standard mill lengths..

Rings: To 1.4 meters O.D.

IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C61400 Aluminum Bronze

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Aluminum	Lead	Iron	Manganese	Phosphorus	Copper
C61400	6.00-8.00	0.01 max	1.50-3.50	1.00 max	0.015 max	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C61400 Bar	All	All sizes					
C61400 Rounds	All	All sizes					

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 100 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.

IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C62400 Aluminum Bronze

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Aluminum	Tin	Iron	Manganese	Silicon	Copper
C62400	10.00-11.50	0.20 max	2.00-4.50	0.30 max	0.25 max	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C62400 Bar	M30	All sizes					
C62400 Rounds	M30	All sizes					

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 100 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.

IBC Advanced Alloys - Copper Alloys

Product Data Sheet - C62500 Aluminum Bronze

Chemical Composition (Weight Percent)

METRIC

DELIVERING SOLUTIONS

Alloy	Aluminum	Zinc	Iron	Manganese	Silicon	Copper
C62500	12.50-13.50	-	3.50-5.50	2.00 max	-	Balance

Physical and Chemical Properties

DELIVERING SOLUTIONS

Density (g/cm^3)	Elastic Modulus (GPa)	Coefficient of Thermal Expansion (m/m/°C)	Thermal Conductivity (W/mK)	Melting Temperature (°C)

Typical Mechanical Properties

DELIVERING SOLUTIONS

Alloy	Temper	Thickness	Tensile Strength (MPa)	0.2% Offset Yield (MPa)	Elongation (%)	Hardness (HRc or HRb)	Electrical Conductivity (% IACS)
C62500 Bar	M30	All sizes					
C62500 Rounds	M30	All sizes					

Forms Available:

Plate: Thickness 25 to 450mm, width 910mm max. x standard mill lengths up to 3 meters.

Rounds: Diameter 100 to 450mm, standard mill lengths.

Rings: To 1.4 meters O.D.