C24000

Extruded and drawn	
Product description	Low brass 80%
Tempers	H01 quarter hard, H02 half hard, H04 hard
Solids	3/8" to 2 1/2" O.D.
Hex	3/8" to 2" O.D.
Standard lengths	144"

Typical uses

Architecture

Medallions, ornamental components, spandrels

Builders Hardware

Decorative panels

Consumer

Clock dials, musical instrument parts, plaques

Electrical

Battery caps, rotor bars (AC motors)

Industrial

Flexible hose, flexible hose bellows, pump lines, welding wire

Other

Tokens

Similiar or equivalent specification

CDA	ASTM	SAE	AMS	Federal	Military	Other
C24000	B927 B927M					

Chemical composition

Cu (%)	Pb (%)	Zn (%)	Fe (%)
78.50-81.50	0.05	Remain	0.05

Chemical composition according to ASTM B927/B927M-23

Note: Cu + sum of named elements, 99.8% min. Single values represent maximums.

Machinability

Copper alloy UNS no.	Machinability rating	Density (lb/in^3 at 68 $^\circ$F)
C24000	30	0.313

Mechanical properties

Mechanical properties according to ASTM B927/B927M-23
C24000
H01 quarter hard

Size range under ½" diameter rod

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
47	325	25	170	18	55	

Size range ½" diameter rod to 1" inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
45	310	20	140	20	55	

Size range over 1" diameter rod

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
43	295	18	125	22	55	

C24000 continued

C24000
H02 half hard

Size range under ½" diameter rod

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
53	365	33	230	10	70	

Size range ½" diameter rod to 1" inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
48	330	30	205	13	70	

Size range over 1" diameter rod

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
43	295	28	195	15	70	

C24000 continued

C24000
H04 hard

Size range under ½" diameter rod

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
68	470	45	310	8	82	

Size range ½" diameter rod to 1" inclusive

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
65	450	40	275	10	82	

Size range over 1" to 2" diameter rod

Tensile strength, min		Yield strength, at 0.5% extension under load, min		Elongation, 4x diameter or 4x thickness, min	Rockwell "B" hardness	Remarks
ksi	MPa	ksi	MPa	%	typical HRB	
60	415	35	240	12	82	

Physical properties

	US customary	Metric
Melting point – liquidus	1830 °F	999 °C
Melting point – solidus	1770 °F	966 °C
Density	0.313 lb/in³ at 68 °F	8.67 gm/cm³ at 20 °C
Specific gravity	8.67	8.67
Electrical conductivity	32% IACS at 68 °F	0.186 MegaSiemens/cm at 20 °C
Thermal conductivity	81 Btu/sq ft/ft hr/ °F at 68 °F	140.3 W/m at 20 °C
Coefficient of thermal expansion 68-572	10.6 · 10^{-6} per °F (68-572 °F)	18.4 · 10^{-6} per °C (20-300 °C)
Specific heat capacity	0.09 Btu/lb/ °F at 68 °F	377.1 J/kg at 20 °C
Modulas of elasticity in tension	16000 ksi	110317 MPa
Modulas of rigidity	6000 ksi	41369 MPa

Physical properties provided by CDA

Fabrication properties

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	Fair
Machinability rating	30

Fabrication properties provided by CDA

Thermal properties

Treatment	Minimum*	Maximum*
Annealing	800	1300
Hot treatment	1500	1650

Thermal properties provided by CDA

**Temperature is measured in Fahrenheit.*

Common fabrication processes

Blanking, drawing, etching, forming and bending, heading and upsetting, piercing and punching, roll threading and knurling, shearing, spinning, squeezing and swaging, stamping

Common fabrication processes provided by CDA