C85400

Material Notes: Casting methods recommended for this alloy: Centrifugal, Continuous, Permanent Mold, Plaster, and Sand.

Applications: General purpose yellow casting alloy not subject to high internal pressure. Furniture hardware, ornamental castings, radiator fittings, ship trimmings, cocks, battery clamps, valves and fittings.

Classified under: Yellow brasses and leaded yellow brasses. ASTM B584; formerly ASTM B146-6B

As cast values below are for sand casting. Alloy does not respond to heat treating.

Key Words: Leaded yellow brass, No. 1 yellow brass, 67-1-3-29, CA 854, ASTM B30 (CA854), ASTM B271, ASTM B584; ASTM B146-6B, SAE J462, Ingot code no. 400, FED QQ-C-390, MIL-C-15345 (Alloy 23)

Physical Properties	Metric	English	Comments
Density	8.45 g/cc	0.305 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	50	50	
Tensile Strength, Ultimate	235 MPa	34100 psi	
Tensile Strength, Yield	83.0 MPa @Strain 0.500 %	12000 psi @Strain 0.500 %	
Elongation at Break	35 %	35 %	In 50 mm
Machinability	80 %	80 %	UNS C36000 (free-cutting brass) = 100%

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.000008796 ohm-cm @Temperature 20.0 °C	0.000008796 ohm-cm @Temperature 68.0 °F	Calculated from 19.6% IACS
Magnetic Permeability	1.0	1.0	

Thermal Properties	Metric	English	Comments
CTE, linear	20.2 µm/m-°C @Temperature 20.0 - 100 °C	11.2 µin/in-°F @Temperature 68.0 - 212 °F	
Specific Heat Capacity	0.380 J/g-°C	0.0908 BTU/lb-°F	
Thermal Conductivity	88.0 W/m-K @Temperature 20.0 °C	611 BTU-in/hr-ft²-°F @Temperature 68.0 °F	
Melting Point	925 - 940 °C	1700 - 1720 °F	

Solidus	925 °C	1700 °F
Liquidus	940 °C	1720 °F

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.35 %	<= 0.35 %	
Copper, Cu	65 - 70 %	65 - 70 %	
Iron, Fe	<= 0.70 %	<= 0.70 %	
Lead, Pb	1.5 - 3.5 %	1.5 - 3.5 %	
Nickel, Ni	<= 1.0 %	<= 1.0 %	
Silicon, Si	<= 0.050 %	<= 0.050 %	
Tin, Sn	0.50 - 1.5 %	0.50 - 1.5 %	
Zinc, Zn	24 - 32 %	24 - 32 %	