C85700

Material Notes: Casting methods recommended for this alloy: Centrifugal, Investment, Plaster, and Sand.

Applications: Bushings, hardware fittings, ornamental castings.

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

Typical data for sand castings or centrifugal castings, separately cast test bars. Alloy does not respond to heat treating

Key Words: Leaded naval brass, leaded yellow brass, 63-1-1-35, CA 857, ASTM B30 (CA857), ASTM B271, ASTM B584; ASTM B146-6C, SAE J462, Ingot code no. 406, FED QQ-C-390, MIL-C-15345 (Alloy 3)

Physical Properties	Metric	English	Comments
Density	8.41 g/cc	0.304 lb/in³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	75	75	
Tensile Strength, Ultimate	345 MPa	50000 psi	
Tensile Strength, Yield	125 MPa @Strain 0.500 %	18100 psi @Strain 0.500 %	
Elongation at Break	40 %	40 %	in 50 mm
Modulus of Elasticity	97.0 GPa	14100 ksi	
Machinability	80 %	80 %	UNS C36000 (free-cutting brass) = 100%

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000078368 ohm-cm @Temperature 20.0 °C	0.0000078368 ohm-cm @Temperature 68.0 °F	Calculated from 22% IACS
Magnetic Permeability	1.0	1.0	

Thermal Properties	Metric	English	Comments
CTE, linear	22.0 µm/m-°C @Temperature 20.0 - 260 °C	12.2 µin/in-°F @Temperature 68.0 - 500 °F	
Specific Heat Capacity	0.376 J/g-°C	0.0899 BTU/lb-°F	
Thermal Conductivity	83.9 W/m-K @Temperature 20.0 °C	582 BTU-in/hr-ft²-°F @Temperature 68.0 °F	

Melting Point	903 - 920 °C	1660 - 1690 °F
Liquidus	920 °C	1690 °F

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.55 %	<= 0.55 %	
Copper, Cu	58 - 64 %	58 - 64 %	
Iron, Fe	<= 0.70 %	<= 0.70 %	
Lead, Pb	0.80 - 1.5 %	0.80 - 1.5 %	
Nickel, Ni	<= 1.0 %	<= 1.0 %	
Silicon, Si	<= 0.050 %	<= 0.050 %	
Tin, Sn	0.50 - 1.5 %	0.50 - 1.5 %	
Zinc, Zn	32 - 40 %	32 - 40 %	