



Rheocast™ Company

Brass and Aluminum Die Casting Specialists

C87800 BRASS ALLOY PROPERTIES

Chemical Properties

| Elements | Cu | Al | Sb | As | Fe | Pb | Mg | Mn | Ni ⁽¹⁾ | P | Si | S | Sn | Zn |
|----------|-------|------|------|------|------|------|------|------|-------------------|------|------|------|------|-------|
| %Min. | 80.00 | - | - | - | - | - | - | - | - | - | 3.80 | - | - | 12.00 |
| %Max. | - | 0.15 | 0.05 | 0.05 | 0.15 | 0.15 | 0.01 | 0.15 | 0.20 | 0.01 | 4.20 | 0.05 | 0.25 | 16.00 |
| %Nominal | 82.00 | - | - | - | - | - | - | - | - | - | 4.00 | - | - | 14.00 |

⁽¹⁾ Ni value includes Co

Note: Cu + Sum of Named Elements: 99.5% Min.

Applicable Specifications

| | |
|----------|----------------|
| Die Cast | ASTM B176 |
| Products | SAE J461, J462 |
| Ingot | ASTM B30 |

Fabrication Properties

| Joining Technique | Suitability |
|--------------------------|-----------------|
| Soldering | Not Recommended |
| Brazing | Fair |
| Oxyacetylene Welding | Not Recommended |
| Gas Shielded Arc Welding | Not Recommended |
| Coated Metal Arc Welding | Not Recommended |
| Machinability Rating | 40 |

Mechanical Properties

| As Cast | Temper | Temp | Tensile Strength | Yield Strength (0.2% offset) | EI % | Rockwell Hardness B |
|---------|--------|------|------------------|------------------------------|------|---------------------|
| | | °F | ksi | ksi | | |
| | | °C | MPa | MPa | | |
| S-Max | M04 | 68 | - | - | - | 90 |
| S-Max | | 20 | - | - | - | 90 |
| S-Min | M04 | 68 | - | - | - | - |
| S-Min | | 20 | - | - | - | - |
| Typical | M04 | 68 | 85 | 50 | 25 | 85 |
| Typical | | 20 | 586 | 345 | 25 | 85 |

Physical Properties

| | |
|----------------------------------|---|
| Specific Gravity | 8.3 |
| Density | 0.3 lb/in ³ at 68°F |
| Melting Point - Solidus | 1,510°F |
| Melting Point - Liquidus | 1,680°F |
| Electrical Resistivity | 154.2 ohms/cmil/ft at 68°F |
| Electrical Conductivity | 6% IACS at 68°F |
| Thermal Conductivity | 16.0 Btu/ft/(hr/ft ² /°F) at 68°F |
| Coefficient of Thermal Expansion | 10.9 x 10 ⁻⁶ per °F (68°F - 572°F) |
| Specific Heat Capacity | 0.09 Btu/lb/°F at 68°F |
| Modulus of Elasticity in Tension | 20,000 ksi |

Typical Uses

| |
|--|
| Builders Hardware |
| Brackets |
| Fasteners |
| Clamps, Hexagonal Nuts |
| Hardware |
| General Hardware, Marine Hardware, Plumbing Parts |
| Industrial |
| Corrosion Resistant Components, Pump Impellers, Lever Arms, Brush Holders, Valve Parts, Tools, Gears |
| High-Strength, Thin-Walled Die Castings |

Tempers Most Commonly Used: No information available

Division of the Fall River Group, Inc.

N114 W19250 Clinton Drive / Germantown, WI 53022

Ph: (262) 251-4942 / Fax: (262) 251-0544

www.rheocast.com

ISO 9001 Registered

Sources: ASTM, SAE, Copper Development Association

Updated: 09/22/08