



C68800

Chemical Composition

(%max., unless shown as range or min.)

| | Cu ⁽¹⁾ | Al ⁽²⁾ | Co | Fe | Pb | Zn ⁽³⁾ |
|------------------|-------------------|-------------------|---------|-----|------|-------------------|
| Min./Max. | Rem. | 3.0-3.8 | .25-.55 | 0.2 | 0.05 | 21.3-24.1 |
| Nominal | 73.5 | 3.4 | 0.4 | - | - | 22.7 |

(1) Cu value includes Ag.

(2) Al + Zn, 25.1 – 27.1%.

(3) Al + Zn, 25.1 – 27.1%.

Note: Cu + Sum of Named Elements, 99.5% min.

Applicable Specifications

| Product | Specification |
|-------------|-----------------|
| Bar, Rolled | ASTM B592 |
| Plate | ASTM B592 |
| Sheet | ASTM B592 |
| Strip | ASTM B888, B592 |

Common Fabrication Processes

Blanking, Drawing, Forming and Bending, Shearing and Stamping

Millard Wire & Specialty Strip Co.

449 Warwick Industrial Drive • Warwick, RI 02886

Phone: (401) 737-9330 • Fax: (401) 737-9340



Fabrication Properties

| Joining Technique | Suitability |
|--------------------------------|-------------|
| Soldering | Fair |
| Brazing | Fair |
| Spot Weld | Good |
| Seam Weld | Good |
| Butt Weld | Good |
| Capacity for Being Cold Worked | Excellent |
| Capacity for Being Hot Formed | Excellent |

Thermal Properties

| Treatment | Temp./Time – US | Temp./Time – SI |
|----------------------|-----------------|-----------------|
| Stress Temperature | | |
| Solution Minimum | | |
| Solution Maximum | | |
| Solution Time | | |
| Solution Medium | None | |
| Precipitation Value | | |
| Precipitation Time | | |
| Precipitation Medium | None | |
| Annealing Minimum | 750 | 399 |
| Annealing Maximum | 1100 | 594 |
| Annealing Time | | |
| Hot Works Minimum | | |
| Hot Works Maximum | | |



C68800 Specification Sheet

Mechanical Properties (Measured at Room Temperature, 68°F (20°C))

| Temper | Section Size | Cold Work | Typ/Min | Temp | Tensile Strength | Yield Strength (0.5% ext. under load) | Yield Strength (0.2% offset) | Yield Strength (0.05% offset) | EI | Rockwell Hardness | | | | Vickers Hardness | Brinell Hardness | | | Shear Strength | Fatigue Strength | Izod Impact Strength |
|----------------------|--------------|-----------|---------|------|------------------|---------------------------------------|------------------------------|-------------------------------|----|-------------------|------------|---|----|------------------|------------------|-----|-----|----------------|------------------|----------------------|
| | in. mm. | | | | % | F C | ksi MPa | ksi MPa | | ksi MPa | ksi MPa | % | B | C | F | 30T | 500 | 500 | 3000 | ksi MPa |
| Flat Products | | | | | | | | | | | | | | | | | | | | |
| OS015 | 0.04 | 0 | TYP | 68 | 82 | 54 | 55 | - | 36 | 81 | - | - | 71 | - | - | - | - | - | 0 | |
| | 1 | | | 20 | 565 | 372 | 379 | - | 36 | 81 | - | - | 71 | - | - | - | - | - | 0 | |
| H02 | 0.04 | 0 | TYP | 68 | 93 | - | 75 | - | 20 | 90 | - | - | 78 | - | - | - | - | - | 0 | |
| | 1 | | | 20 | 641 | - | 517 | - | 20 | 90 | - | - | 78 | - | - | - | - | - | 0 | |
| H06 | 0.04 | 0 | TYP | 68 | 117 | - | 105 | - | 3 | 97 | - | - | 83 | - | - | - | - | - | 0 | |
| | 1 | | | 20 | 807 | - | 724 | - | 3 | 97 | - | - | 83 | - | - | - | - | - | 0 | |
| H04 | 0.04 | 0 | TYP | 68 | 109 | - | 97 | - | 6 | 96 | - | - | 82 | - | - | - | - | - | 0 | |
| | 1 | | | 20 | 752 | - | 669 | - | 6 | 96 | - | - | 82 | - | - | - | - | - | 0 | |
| H08 | 0.04 | 0 | TYP | 68 | 122 | - | 110 | - | 2 | 98 | - | - | 83 | - | - | - | - | 37 | 0 | |
| | 1 | | | 20 | 841 | - | 758 | - | 2 | 98 | - | - | 83 | - | - | - | - | 252 | 0 | |
| H10 | 0.04 | 0 | TYP | 68 | 129 | - | 114 | - | 2 | 99 | - | - | 83 | - | - | - | - | - | 0 | |
| | 1 | | | 20 | 889 | - | 786 | - | 2 | 99 | - | - | 83 | - | - | - | - | - | 0 | |

*Fatigue Strength: 100 x 10⁶ cycles, unless indicated as [N]X 10⁶.

Physical Properties

| Property | US Customary | Metric |
|----------------------------------|--|---|
| Melting Point - Liquidus | 1765 F | 963 C |
| Melting Point - Solidus | 1740 F | 949 C |
| Density | 0.296 lb/in ³ at 68 F | 8.19 gm/cm ³ @ 20 C |
| Specific Gravity | 8.2 | 8.2 |
| Electrical Resistivity | 58 ohms-cmil/ft @ 68 F | 9.64 microhm-cm @ 20 C |
| Electrical Conductivity | 18 %IACS @ 68 F | 0.105 MegaSiemens/cm @ 20 C |
| Thermal Conductivity | 23 Btu · ft/(hr · ft ² · °F) at 68F | 39.8 W/m · °K at 20 C |
| Coefficient of Thermal Expansion | 10.10 · 10 ⁻⁶ per °F (68-572 F) | 18.2 · 10 ⁻⁶ per °C (20-300 C) |
| Specific Heat Capacity | 0.090 Btu/lb/°F at 68 F | 377.1 J/kg · °K at 293 K |
| Modulus of Elasticity in Tension | 16800 ksi | 116000 MPa |

Tempers Most Commonly Used

| Flat Products | |
|---------------|--------------------------------|
| STRIP, ROLLED | H02, H04, H06, H08, H10, OS015 |



Typical Uses

Electrical

Electrical Connectors, Electronic Connectors, Contacts, Relays, Connectors, Springs, Switches, Terminals, Plug Receptacles

Industrial

Drawn Parts

Casting Characteristics

No casting characteristics for this alloy.