

COPPER NICKEL-TIN BRONZE (C72900)

TYPICAL USES

Hardiall is used in aircrafts in various components thanks to its outstanding physical and mechanical properties, matching the stringent needs of the aircraft and aerospace industries. Because of these same characteristics, C729 is in high demand for the oil and gas industry, and others as well.



CONTACT US

360 Sheldon Drive
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519-622-7900
barstock@bearingbronze.com

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COPPER NICKEL-TIN BRONZE (C72900)

TYPICAL USES

| Product Category | Product | Reason |
|------------------|----------------------|---|
| Electrical | Connectors | Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, Resistant to Oxidation, Formability, High Modulus of Elasticity, Very High Strength, Resistance to Stress Relaxation |
| | Contacts | Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, Resistant to Oxidation, Formability, High Modulus of Elasticity, Very High Strength, Resistance to Stress Relaxation |
| | Controls | Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, High Strength |
| | Miniaturized Sockets | Corrosion Resistance, Formability, High Modulus of Elasticity, Very High Strength |
| | Relay Elements | Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, Resistant to Oxidation, Formability, High Modulus of Elasticity, Very High Strength, Resistance to Stress Relaxation |
| | Switches | Electrical Conductivity, Thermal Conductivity, Corrosion Resistance, High Strength |
| Industrial | Springs | Corrosion Resistance, Resistant to Oxidation, Formability, High Modulus of Elasticity, Very High Strength, Resistance to Stress Relaxation |
| | Wire | Corrosion Resistance, Resistant to Oxidation, Formability, High Modulus of Elasticity, Very High Strength |

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MECHANICAL PROPERTIES

| Form | Temper Code | Tensile Strength (ksi) | YS-0.2% Offset (ksi) | YS-0.5% Ext (ksi) | YS-0.05% Offset | Elongation (%) |
|-------|-------------|------------------------|----------------------|-------------------|----------------------|----------------|
| Strip | TS02 | 145 Min for Standard | | | 125 Min for Standard | 3 Typ |
| | TS01 | 130 Min for Standard | | | 105 Min for Standard | 4 Typ |
| | TS03 | 155 Min for Standard | | | 135 Min for Standard | 2 Typ |
| | TS04 | 165 Min for Standard | | | 145 Min for Standard | 2 Typ |
| | TM02 | 105 Min for Standard | 90 Min for Standard | | 80 Min for Standard | 15 Typ |
| | TM00 | 95 Min for Standard | 75 Min for Standard | | 70 Min for Standard | 22 Typ |
| | TM04 | 115 Min for Standard | 105 Min for Standard | | 95 Min for Standard | 10 Typ |
| | TM08 | 150 Min for Standard | 140 Min for Standard | | 125 Min for Standard | 2 Typ |
| | TM06 | 130 Min for Standard | 120 Min for Standard | | 105 Min for Standard | 6 Typ |
| | TB00 | 64 Min for Standard | | | 24 Min for Standard | 32 Typ |
| | TD02 | 85 Min for Standard | | | | 8 Typ |
| | TD01 | 75 Min for Standard | | | 50 Min for Standard | 18 Typ |
| | TD03 | 95 Min for Standard | | | 80 Min for Standard | 3 Typ |
| | TD04 | 100 Min for Standard | | | 85 Min for Standard | |
| | TX00 | 120 Min for Standard | | | 95 Min for Standard | 6 Typ |

* Measured at room temperature, 68°F (20°C).

CHEMICAL PROPERTIES

| Elements | | | | | | | | | |
|----------|-------|------|-----|-----|-------|------|------|-----|-----|
| Cu(1,2) | Pb(3) | Sn | Zn | Fe | Ni(4) | Mg | Mn | Nb | |
| Min (%) | | | 7.5 | | | 14.5 | | | |
| Max (%) | Rem | 0.02 | 8.5 | 0.5 | 0.5 | 15.5 | 0.15 | 0.3 | 0.1 |

(1) Cu + Sum of Named Elements 99.7% min.
 (2) Cu value includes Ag.
 (3) 0.005% Pb max. for hot rolling.
 (4) Ni value includes Co.

FABRICATION PROPERTIES

| Machining Technique | Suitability |
|--------------------------------|-------------|
| Soldering | Excellent |
| Brazing | Excellent |
| Oxyacetylene Welding | Good |
| Gas Shielded Arc Welding | Excellent |
| Coated Metal Arc Welding | Excellent |
| Spot Weld | Excellent |
| Seam Weld | Excellent |
| Butt Weld | Excellent |
| Capacity for Being Cold Worked | Excellent |
| Capacity for Being Hot Formed | Good |

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