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**PRODUCT DATA  
SHEET**

**Arsenical Aluminium Brass**  
76/22/2 Aluminium Brass, Arsenical  
UNS C68700

**Copper  
Alloys**

**Chemical Composition**

(% maximum, unless shown as range or minimum)

	Copper <sup>(1)</sup>	Aluminium	Arsenic	Iron	Lead	Zinc
Minimum / Maximum	76.0 - 79.0	1.8 - 2.5	0.02 - 0.06	0.06	0.07	Remainder.
Nominal	77.5%	2.0%	0.04%	-	-	20.5%

(1) Copper value includes silver

Note: Copper + sum of named elements, 99.5% minimum

**Applicable Specifications**

Product	Specification	
Tube, Condenser	ASME SB111	ASTM B111
Tube, Finned	ASME SB359	ASTM B359
Tube, U-Bend	ASME SB395	ASTM B395
Tube, Welded	ASME SB543	ASTM B543

**Common Fabrication Processes**

Forming, bending and expansion

**Fabrication Properties**

Joining Technique	Suitability
Soldering	Fair
Brazing	Good
Oxyacetylene Welding	Fair
Gas Shielded Arc Welding	Fair
Coated Metal Arc Welding	Not Recommended
Spot Weld	Good
Seam Weld	Fair
Butt Weld	Good
Capacity for Being Cold Worked	Excellent
Capacity for Being Hot Formed	Fair
Machinability Rating	30%

**Mechanical Properties at room temperature, 20° C**

	Temper	Tensile Strength	Yield Strength (0.5% extension under load)	Elongation	Rockwell Hardness			
		MPa	MPa	%	B	C	F	30T
Typical	OS025	414	186	55	-	-	77	-
ASTM B111 (minima)	OS62 (annealed)	345	125					

**Physical Properties**

	US Customary	Metric
Melting Point - Liquidus	1780°F	971°C
Melting Point - Solidus	1710°F	932°C
Density	0.301 lb/in <sup>3</sup> at 68°F	8.33 gm/cm <sup>3</sup> @ 20°C
Specific Gravity	8.33	8.33
Electrical Resistivity	45.1 ohms-cmil/ft @ 68°F	7.5 microhm-cm @ 20°C
Electrical Conductivity	23 %IACS @ 68°F	0.135 MegaSiemens/cm @ 20°C
Thermal Conductivity	58.0 Btu · ft/(hr · ft <sup>2</sup> · °F) at 68°F	100.4 W/m · °K at 20°C
Coefficient of Thermal Expansion	10.3 · 10 <sup>-6</sup> per °F (68-572°F)	18.5 · 10 <sup>-6</sup> per °C (20-300°C)
Specific Heat Capacity	0.09 Btu/lb/°F at 68°F	377.1 J/kg · °K at 293°K
Modulus of Elasticity in Tension	16,000 ksi	110,000 MPa
Modulus of Rigidity	6,000 ksi	41,370 MPa

**Typical Uses**

**Industrial**

Condenser Tube, Evaporator Tubes, Heat Exchanger Tubes, Distiller Tubes, Ferrules

**Fabrication Properties**

Property	Rating
Capacity for being cold worked	Excellent
Capacity for being hot formed	Fair
Hot working temperature	750 – 875°C
Annealing temperature	425 – 600°C
Machinability rating	30% of free cutting brass

Joining technique	Rating
Soldering	Fair
Brazing	Good
Oxyacteylene welding	Fair
MIG/TIG arc welding	Fair
Coated metal arc welding	NR*
Spot welding	Good
Seam welding	Fair
Butt welding	Good

\* NR = Not recommended