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**PRODUCT DATA
SHEET**

70/30 Arsenical Brass
Alloy 259
UNS C26130

Copper Alloys

Composition, AS1572-1998

Copper		Lead	Iron	Zinc	Arsenic	
Min	Max	Max	Max	Max	Min	Max
69.0	71.0	0.05	0.05	Remainder	0.02	0.06

**Equivalent Alloy
Specifications**

Specification	Designation
UNS	C26130
ISO	CuZn30As
BSI	CZ126
JIS	-C 4430

Specification	Product Form
AS1567	Wrought bars & sections
AS1569	Seamless tubes for heat exchangers
AS1572	Seamless tubes for engineering purposes

**Australian
Product
Specifications**

**Mechanical
Properties**

	Units	Annealed	Quarter hard	Half	Hard	Hard
		O	¼H	½ H		H
AS1572, Seamless tubes for engineering purposes	Tensile Strength, minimum	MPa	280 - 350	320	-	400
	Elongation, minimum	%	40	35	-	-
	Hardness	HV	80 maximum	80 - 105	95 - 130	150 minimum

Available Forms Austral Wright Metals can supply this alloy as tube and fittings.

General Description 70/30 arsenical brass is used for heat exchangers, plumbing tube and fittings, drain & vent pipes and other applications requiring excellent corrosion resistance in waters.

The alloy is the most common brass, 70/30 brass (C26000), with the addition of a trace quantity of arsenic as a corrosion inhibitor. Mechanical properties are unaffected by the arsenic addition, but corrosion resistance is greatly improved. The alloy is sometimes referred to as 'DR' or dezincification resistant brass.

The alloy consists of the face centred cubic alpha phase, and has the optimum combination of strength and ductility in the copper-zinc series.

C26130 has the distinctive clear bright yellow colour normally associated with 'brass'.

PHYSICAL PROPERTIES

Property	Metric Units	Imperial Units
Melting Point (Liquidus)	965°C	1770°F
Melting Point (Solidus) (eutectic)	910°C	1670°F
Density	8.55 gm/cm ³ @ 20°C	0.310 lb/in ³ @ 68°F
Specific Gravity	8.55	8.55
Coefficient of Thermal Expansion	20.0 x 10 ⁻⁶ /°K (20 - 300°C)	11.0 x 10 ⁻⁵ /°F (68 - 572°F)
Thermal Conductivity	120 W/m.°K @ 20°C	70 BTU/ft ² /hr/°F @ 68°F
Thermal Capacity (Specific Heat)	375 J/kg.°K @ 20°C	0.09 BTU/lb/°F @ 68°F
Electrical Resistivity (Annealed)	6.2 microhm.cm @ 20°C	37 ohms (circ mil/ft) @ 68°F
Electrical Conductivity (Annealed)	0.161 microhm ⁻¹ .cm ⁻¹ @ 20°C	28% IACS
Temperature Coefficient of Electrical Resistance (Annealed)	0.0015 / °C @ 0 - 100°C	0.0008 / °F @ 32 - 212 °F
Modulus of Elasticity (tension)	110 GPa @ 20°C	16.0 x 10 ⁶ psi @ 68°F
Modulus of Rigidity (torsion)	40 GPa @ 20°C	6.0 x 10 ⁶ psi @ 68°F
Poisson's Ratio	0.33	0.33

FABRICATING PROPERTIES

Cold Working Capacity	Excellent
Hot Working Capacity	Fair
Hot Working Temperature	725 - 850°C
Annealing Temperature	375 - 650°C
Stress Relieving Temperature	250 - 300°C
Machinability Rating	30% of free cutting brass (C36000)
Polishing/Electroplating Finish	Excellent

JOINING PROPERTIES

Soldering	Excellent
Brazing	Excellent
Oxy-Acetylene Welding	Good
Gas Shielded Arc Welding (GTAW/TIG, GMAW/MIG)	Fair
Coated Metal Arc Welding (Manual electrodes)	Not recommended
Resistance Welding	- Spot Good - Seam Good

Corrosion Resistance

C26130 has good corrosion resistance to weathering and very good resistance to many chemicals. It is suitable for use with most waters, and can be used underground because it resists soil corrosion. It can be used for all potable waters, many industrial and mine waters, seawater and brackish water. The minor arsenic addition acts as a very capable corrosion inhibitor, giving substantially better corrosion performance in waters than uninhibited 70/30 brass.

C26130 should not be used in contact with ammonia or ammonia compounds, as it may suffer stress corrosion cracking. Beware of corrosion inhibitors in piping systems containing carbon steels, which should be checked for compatibility with C26130.

Please consult Austral Wright Metals for advice on your specific application.

Phase Diagram & Mechanical Properties of the Brasses

