

Sales Offices	Phone	Fax
Adelaide	08 8345 1033	08 8345 1044
Brisbane	07 3722 0800	07 3277 6799
Melbourne	03 9409 8500	03 9408 3946
Sydney	02 9827 0790	02 9757 4486
Perth	08 9258 2600	08 9358 6206

PRODUCT DATA SHEET

Beryllium Copper Alloy B14 UNS C17510

Copper Alloys

Chemical Composition

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

	Copper ⁽¹⁾	Aluminium	Beryllium	Cobalt	Iron	Nickel	Silicon
Minimum/ Maximum	Rem.	0.20	0.2 - 0.6	0.3	0.10	1.4 - 2.2	0.20
Nominal	97.8	-	0.4	-	-	1.8	-

(1) Copper value includes silver.

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

Applicable Specifications

Product	Specification
Bar	ASTM B441
Bar, Rolled	ASTM B534
Plate	ASTM B534
Rod	ASTM B441 SAE J461, J463
Shapes	SAE J461, J463
Sheet	ASTM B534
Strip	ASTM B534 MILITARY MIL-C-81021 SAE J461, J463
Tube	SAE J461, J463

Common Fabrication Processes

Blanking, Drilling, Forming and Bending, Tapping, Turning

Fabrication Properties

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

Typical Mechanical Properties

(measured at room temperature, 20°C (68°F))

Temper	Section Size	Temp	Tensile Strength	Yield Strength (0.5% ext. under load)	Yield Strength (0.2% offset)	Elongation	Rockwell Hardness			Vickers Hardness	Fatigue Strength x10 ⁵ cycles	
							B	C	F 30T			
	mm	C	MPa	MPa	MPa	%					MPa	
Flat Products												
TB00	0.0	20	310	172	-	28	32	-	-	36	(78)	-
TD02	0.0	20	469	414	-	8	70	-	-	64	(126)	-
TD04	0.0	20	538	483	-	5	83	-	-	72	(160)	-
TF00	0.0	20	758	621	-	12	96	-	-	80	(220)	-
TH02	0.0	20	793	745	-	8	98	-	-	81	(234)	241
TH04	0.0	20	793	758	-	8	98	-	-	81	(234)	-
Forgings												
TB00	0.0	20	293	-	138	-	50	-	-	-	(95)	-
TF00	102	20	794	-	620	-	92	-	-	-	(198)	-
Rod												
TB00	0.0	20	310	172	-	28	35	-	-	-	(80)	-
TD04	0.0	20	496	448	-	12	68	-	-	-	(122)	-
TF00	0.0	20	758	621	-	18	96	-	-	-	(220)	-
TH04	0.0	20	793	758	-	14	98	-	-	-	(234)	-

Physical Properties

	US Customary	Metric
Melting Point - Liquidus	1955°F	1068°C
Melting Point - Solidus	1885°F	1029°C
Density	0.317 lb/in ³ at 68°F	8.77 gm/cm ³ @ 20°C
Specific Gravity	8.77	8.77
Electrical Resistivity	22.8 ohms-cmil/ft @ 68°F	3.79 microhm-cm @ 20°C
Electrical Conductivity*	48 %IACS @ 68°F	0.281 MegaSiemens/cm @ 20°C
Electrical Conductivity	45 %IACS @ 68°F	0.263 MegaSiemens/cm @ 20°C
Thermal Conductivity	120.0 Btu · ft/(hr · ft ² · °F) at 68°F	207.7 W/m · °K at 20°C
Coefficient of Thermal Expansion	9.8 · 10 ⁻⁶ per °F (68-392 F)	17.6 · 10 ⁻⁶ per °C (20-200°C)
Specific Heat Capacity	0.1 Btu/lb/°F at 68 F	419.0 J/kg · °K at 293°K
Modulus of Elasticity in Tension	19,200 ksi	132,400 MPa
Modulus of Rigidity	7,500 ksi	51,710 MPa

*Cold worked and precipitation hardened condition.

Tempers Most Commonly Used

Flat Products	
BAR, DRAWN	H04, TB00, TF00
BAR, ROLLED	H04, TB00, TF00
PLATE	TB00
STRIP, ROLLED	H02, H04, TB00, TF00

Other	
ROD	H04, TB00, TF00
SHAPES	H02, TB00
TUBE	TB00, TF00

Typical Uses

Electrical: Instrument parts, connectors, heavy duty, relay parts, conductors, fuse clips, switch parts

Fasteners: Fasteners

Industrial: Springs, die casting plunger tips, thermal transfer plates, high flux electromagnets, welding equipment