

HM Wire International, Inc.

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Alloy 314 Commercial Bronze

Description: Alloy 314 finds use in hardware applications, electrical applications, as well as fasteners and industrial applications. Uses include various electrical connectors, screws and nuts, pickling crates, fixtures and racks. It is also common in screw machine applications.

Nominal Composition:	Cu	Pb	Fe	Ni	Zv	Sum of all named elements = 99.6%
	87.5 90.5	1.3 - 2.5	0.10 max	0.7 max	Balance	

Mechanical Properties (Minimum Tensile Properties)

Temper HO2 half hard

Nominal Diameter Inches/Millimeters	Tensile Strength		Yield Strength*		Elongation** %
	ksi	MPa	ksi	MPa	
1/2' and under / 12 mm	50	345	30	205	7
Over 1/2 to 1" / 12-25 mm incl	45	310	27	185	10
Over 1.00" / 25 mm	40	275	25	170	12

Temper HO4 hard

Nominal Diameter Inches/Millimeters	Tensile Strength		Yield Strength*		Elongation** %
	ksi	MPa	ksi	MPa	
2" and under / 50 mm	53	365	40	275	6

Physical Properties

Property	English	Metric
Melting Point - Liquidus	1900° F	1038° C
Melting Point - Solidus	1850° F	1010° C
Density	0.319 lb/in ³ at 68° F	8.83 gm/cm ³ @ 20° C
Specific Gravity	8.83	8.83
Electrical Resistivity (Annealed)	24.70 ohms-cmil/ft @ 68° F	4.11 microhm-cm @ 20° C
Electrical Conductivity (Annealed)	42% IACS @ 68° F	0.246 MegaSiemens/cm @ 20° C
Thermal Conductivity	104 Btu · ft/(hr · ft ² ·°F) @ 68° F	180.0 W/m·°K @20° C
Coefficient of Thermal Expansion	10.2 · 10 ⁻⁶ per °F (68-572° F)	18.4 ·10-6 per °C (20-300° C)
Specific Heat Capacity	0.090 Btu/lb/°F @ 68° F	377.1 J/kg · °K @293° K
Modulus of elasticity in tension	17,000 ksi	117,000 MPa

*To be used as a guideline only.

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