

MoldMAX XL[®] Alloy

Materion Performance Alloys' MoldMAX XL Alloy is a high strength copper mold alloy with good thermal conductivity. The alloy contains no beryllium and is available in sections as large as 12" thick. The alloy's hardness is comparable with AISI P-20 tool steel, but its thermal conductivity is two to three times higher. MoldMAX XL Alloy is used as injection mold cores and cavities. The alloy provides excellent toughness, wear resistance and surface finish. MoldMAX XL Alloy typically machines faster than tool steels, and with appropriate machine tools, metal removal rates several times higher can be obtained.

CHEMICAL COMPOSITION (weight percent)

Alloy	Nickel	Tin	Copper
MoldMAX XL Alloy	8.5 – 9.5	5.5 – 6.5	Balance

PHYSICAL PROPERTIES

Elastic Modulus	Melting Point (Solidus)	Density	Thermal Expansion	Thermal Conductivity (100 °C)	Heat Capacity (100 °C)
17,000 ksi 120 GPa	~1695 °F ~925 °C	0.322 lb/in ³ 8.90 g/cm ³	9.0x10 ⁻⁶ in/in °F 16.2 x 10 ⁻⁶ °C ⁻¹	40 BTU/hr ft °F 70 W/m °C	0.093 BTU/lb °F 0.39 J/g °C

TYPICAL MECHANICAL PROPERTIES*

0.2% Offset Yield Strength (nominal)	Ultimate Tensile Strength	Fatigue Strength 10 ⁷ Cycles (R=-1)	Elongation	Impact Strength	Hardness
105 ksi 720 MPa	115 ksi 790 MPa	35 ksi 240 MPa	6%	15 ft ·lb 20 J	30 HRC

*Properties may vary by shape and thickness.

FORMS AVAILABLE

Rounds, square and rectangular bars, plate and forged rings.

RELATED INFORMATION

Additional technical information on MoldMAX[®] products can be obtained by visiting www.MoldMax.com or by calling 800-375-4205 (USA). For pricing and availability in North America, contact the sales location listed

For sales locations outside North America visit:

North American Service Centers – Sales Inquiries

For bar, tube, plate/sheet >0.060” (1.5 mm) thick
and rod >0.5” (12.7 mm) diameter:

Warren, MI

TOLL FREE: 800-521-8800

LOCAL: +(1) 586-772-2700

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