



IBC Advanced Alloys - Copper Alloys

Product Data Sheet – Thermal-Mould™ Super

Thermal Mould™ Super is manufactured to provide a combination of high strength and hardness properties coupled with superior thermal properties. This range of properties makes Thermal-Mould™ Super the premier material for copper alloy molds and a wide range of other applications from oil and gas to aerospace.

Chemical Composition (Weight Percent Nominal)

Alloy	Nickel	Silicon	Chromium	Copper
Super	7	2	1	Balance

Physical and Chemical Properties

Density lb/in ³	Elastic Modulus (10 ⁶ psi)	Coefficient of Thermal Expansion (in./in./°F)	Thermal Conductivity (btu/ft.hr.°F)	Melting Temperature °F
0.314	18.5	9.7 x 10 ⁻⁶	90	1800

Typical Mechanical Properties

Alloy	Temper	Thickness	Tensile Strength ksi	0.2% Offset Yield ksi	Elongation	Hardness HRC or HRb
Plate	Heat Treated	All sizes	110 - 125	90 - 105	5 - 7%	26 - 30 HRC
Round bars	Heat Treated	All sizes	110 - 125	90 - 105	5 - 7%	26 - 30 HRC

Forms Available:

Plate: Thickness 1.00 to 10.00 inches, width 24 inches max. x standard mill lengths up to 60 inches.

Rounds: Diameter 1.00 to 12.00 inches, standard mill lengths

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