



Rheocast™ Company

Brass and Aluminum Die Casting Specialists

A380 ALUMINUM ALLOY PROPERTIES

Chemical Properties

Elements	Al	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Sn	Ti	Trace
%Min.	-	7.5	-	3.00	-	-	-	-	-	-	-	-
%Max.	-	9.5	1.00	4.00	0.50	0.30	-	0.50	2.90	0.35	-	0.50
%Nominal Balance	-	8.5	-	3.50	-	-	-	-	-	-	-	-

Fabrication Properties (1 = Most Desirable, 5 = Least Desirable)

Resistance to Hot Cracking	2	Physical Properties	
Pressure Tightness	2	Specific Gravity	2.71
Die-Filling Capacity	2	Density	0.098 lb/in ³ at 68°F
Anti-Soldering to Die	1	Melting Point - Solidus	1,000°F
Corrosion Resistance	4	Melting Point - Liquidus	1,100°F
Machining Ease and Quality	3	Electrical Conductivity	23% IACS at 68°F
Polishing Ease and Quality	3	Thermal Conductivity	55.6 Btu/ft/(hr/ft ² /F) at 68°F
Electroplating Ease and Quality	1	Coefficient of Thermal Expansion	12.1 x 10 ⁻⁶ per °F (68°F - 572°F)
Anodizing (Appearance)	3	Specific Heat Capacity	0.23 Btu/lb/F at 68°F
Chemical Oxide Protective Coating	4		
Strength at Elevated Temperature*	3		

* Based on Tensile and Yield at Temperatures Up To 500°F (260°C)

Mechanical Properties

Sand Cast	As Temp	Tensile Strength	Yield Strength (0.2% offset)	EI % in 2 inches	Brinell Hardness 500 10mm Ball	Fatigue Strength*	Shear Strength	Young's Modulus
	°F	MPa	MPa			ksi	MPa	MPa
S-Max	77	-	-	-	-	-	-	-
S-Max	25	330	165	-	-	-	-	80
S-Min	77	-	-	3.0	-	-	-	-
S-Min	25	-	-	3.0	-	-	-	70
Typical	77	47	23	3.5	80	20	27	10.3
Typical	25	320	160	3.5	80	140	190	71

* Rotary Bend, 5x10⁶ Cycles

Typical Uses

Consumer	Tools, Frames, Brackets
Builders Hardware	Enclosures, Tools
General Hardware	General Hardware
Industrial	Handles, Knobs, Press Frames
	Pump Fixtures, Levers, Housings, Valve Bodies, Fittings, Covers
	High-Strength, Thin Walled Die Castings

Tempers Most Commonly Used: No information available

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www.rheocast.com ISO 9001 Registered

Sources: ASTM B85-92a, ASM, SAE, NADCA, E-Funda

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