

## ALUMINUM-SILICON-MAGNESIUM A357.0

ANSI AA NUMBER	A357.0		
Common Name (Not recommended)			
UNS Designation	A13570		
<b>COMPOSITION PERCENT</b>	<b>Min</b>		<b>Max</b>
Silicon (Si)	6.5		7.5
Iron (Fe)			0.2
Copper (Cu)			0.2
Manganese (Mn)			0.1
Magnesium (Mg)	0.4		0.7
Chromium (Cr)			
Nickel (Ni)			
Zinc (Zn)			0.1
Titanium (Ti)	0.04		0.2
Tin (Sn)			
Beryllium (Be)	0.04		0.07
Silver (Ag)			
Other (Total)			0.15
<b>NEAREST APPLICABLE CASTING STANDARDS</b>			
ASTM (B Series)	B26		
AMS			
Federal (QQ-C- Series)	601e		
Military (Mil-C- Series)	21180c		
<b>TYPICAL PROPERTIES</b>	<b>T6</b>		
Tensile Strength (ksi)	46		
Yield Strength (.5% extension under load) (ksi)	36		
Elongation (2 inch gauge length) (%)	3		
Compressive Yield Strength (ksi)	35		
Hardness (Brinell) (HB @ 500kg)	85		
Shear Strength (ksi)	40		
Endurance Limit (K ksi)	12		
Modulus of Elasticity (K ksi)			
Density (lb/cu.in. @ 68F)	.097		
Electrical Conductivity (% IACS @ 68F)	39		
Thermal Conductivity (cal/sec/sq cm/cm/C @ 25C)	0.36		
Coefficient of Thermal Expansion (per F @ 68-212F)	11.9		
Coefficient of Thermal Expansion (per F @ 68-572F)	12.9		
Melting Range (Liquidus-Solidus)(F)	1035-1135		
Resistance to Hot Cracking	E		
Pressure Tightness	E		
Fluidity	E		
Solidification Shrinkage Tendency	E		
Strength at Elevated Temperatures	VG		
Corrosion Resistance	VG		
Machinability	F		
Polishing	G		
Gas Welding	E		
Arc Welding	E		
Brazing	No		
Normally Heat Treated	Yes		
Anodizing Appearance	Gray		
Electroplating			
<b>Applications:</b>	Rear axle housings, engine parts, impellers, aircraft fittings, water jackets, crank cases, electric motor parts, engine blocks, jet engine compressor cases, transmission cases, flywheel housings, airframe castings, missile components, light pole bases.		

Always use the design principles outlined on page two of this information sheet or at our website.

Consult your foundry early in the design process.

We routinely pour and inventory this alloy.



St. Paul  
Brass and Aluminum  
Foundry

954 Minnehaha Ave West, St. Paul, MN 55104 (651) 488-5567 Fax: (651) 488-0908

[www.spba.net](http://www.spba.net)

[sales@spba.net](mailto:sales@spba.net)