

# ALUMINUM-MAGNESIUM

ANSI AA NUMBER	514.0			NR*	535.0		
Common Name (Not recommended)	214				Almag 35		
UNS Designation	A05140				A05350		
<b>COMPOSITION PERCENT</b>	<b>Min</b>	<b>Max</b>			<b>Min</b>	<b>Max</b>	
Silicon (Si)		0.35				0.15	
Iron (Fe)		0.50				0.15	
Copper (Cu)		0.15				0.05	
Manganese (Mn)		0.35			0.10	0.25	
Magnesium (Mg)	3.50	4.50			6.20	7.50	
Chromium (Cr)							
Nickel (Ni)							
Zinc (Zn)		0.15			0.10	0.25	
Titanium (Ti)		0.25					
Other (Total)		0.15				0.15	
<b>NEAREST APPLICABLE CASTING STANDARDS</b>							
ASTM (B Series)	B26				B26		
AMS							
Federal (QQ-C- Series)	601e				601e		
Military (Mil-C- Series)	21180c				21180c		
<b>TYPICAL PROPERTIES</b>	<b>F</b>				<b>F</b>		
Tensile Strength (ksi)	25				40		
Yield Strength (.5% extension under load) (ksi)	12				21		
Elongation (2 inch gauge length) (%)	9				13		
Compressive Yield Strength (ksi)	12				24		
Hardness (Brinell) (HB @ 500kg)	50				70		
Shear Strength (ksi)	20				28		
Endurance Limit (K ksi)	7				10		
Modulus of Elasticity (K ksi)	10.3				10.3		
Density (lb/cu.in. @ 68F)	.096				.095		
Electrical Conductivity (% IACS @ 68F)	35				23		
Thermal Conductivity (cal/sec/sq cm/cm/C @ 25C)	0.33				0.23		
Coefficient of Thermal Expansion (per F @ 68-212F)	13.4				13.1		
Coefficient of Thermal Expansion (per F @ 68-572F)	14.5				14.8		
Melting Range (Liquidus-Solidus)(F)	1110-1185				1020-1165		
Resistance to Hot Cracking	F				F		
Pressure Tightness	P				F		
Fluidity	F				VG		
Solidification Shrinkage Tendency	P				F		
Strength at Elevated Temperatures	G				F		
Corrosion Resistance	E				E		
Machinability	E				E		
Polishing	E				E		
Gas Welding	VG				G		
Arc Welding	VG				G		
Brazing	No				No		
Normally Heat Treated	No				No		
Anodizing Appearance	Natural Aluminum				Many Colors		
Electroplating	P				VG		
<b>Applications:</b>	535.0 makes an excellent replacement for gray and malleable iron to reduce weight without sacrificing strength. It also exceptionally dimensionally stable. Shock resistant applications, brackets, C-clamps, machined parts needing strength, impellers, optical equipment, instruments, computing devices, levers, aircraft fittings, high fatigue applications.						

\* Not Recommended



All mechanical properties listed are typical and not minimums. Always consult applicable specs and use good engineering judgment. Consult your foundry early in the design process.

**St. Paul Brass and Aluminum Foundry**

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