

## Aluminum-Magnesium Alloy 535.0 Sand Castings

### Chemical Composition and Physical Properties

#### Chemical Composition Limits per ASTM B 26-98

<b>Si</b>	<b>Fe</b>	<b>Cu</b>	<b>Mn</b>	<b>Mg</b>	<b>Ti</b>	<b>Other</b>	<b>Al</b>
0.15	0.15	0.05	0.10-0.25	6.2-7.5	0.01-0.25	0.15	Remainder

#### Typical Mechanical Properties

Temper	<b>Ultimate Strength</b>	<b>Yield Strength</b>	<b>Elongation</b>	<b>Shear Strength</b>	<b>Compressive Yield Strength</b>	<b>Brinell Hardness</b>	<b>Endurance Limit</b>
	(ksi)	(ksi)	(% in 2 in.)	(ksi)	(ksi)		(ksi)
F	40	20	13	27.45	23.5	70	10
	(35 min.)	(18 min.)	(9 min.)			(70 min.)	ASTM B26-98

- Thermal Conductivity (@ 77F, SI units): 0.24 cal/cm\*s\*K
- Heat Treatment – Achieves its physical and mechanical properties as-cast (F). This eliminates the time and cost of heat treating.
- Machinability – Excellent machinability as-cast, excellent surface finish, and high dimensional stability.
- Corrosion Resistance – Highest of any cast alloy. It can be anodized for additional corrosion protection to a 0.7 mil thickness (215R1).
- Finishing – Produces an excellent surface finish by burnishing or polishing. Anodizes well to a clear-satin finish due to the minimal amount of silicon in the alloy.
- Weldability – It can be welded by any of the inert gas processes, T.I.G. or M.I.G., using filler rod of 5356 or 5183.