



## Aluminum Alloy AlSi10Mg

**Description:** AlSi10Mg is a typical casting alloy with good casting properties and is typically used for cast parts with thin walls and complex geometry. It offers good strength, hardness, and dynamic properties and is therefore also used for parts subject to high loads.

**Applications:** - Parts that require a combination of good thermal properties and low weight

Silicon (Si) = 9.00 – 11.00%	Zinc (Zn) = max 0.10%
Iron (Fe) = max 0.40%	Lead (Pb) = max 0.05%
Copper (Cu) = max 0.03%	Tin (Sn) = max 0.05%
Manganese (Mn) = max 0.45%	Titanium (Ti) = max 0.15%
Magnesium (Mg) = 0.25 – 0.45%	Other elements = 0.15%
Nickel (Ni) = max 0.05%	Aluminum (Al) = Balance

**Stress Relief (SR):** Stress relieve at 570°F +/- 15°F for 2 hours  
Follow by air cool

**Heat Treatment:** Solution heat treat at 985°F +/- 15°F for 5 hours +/- 15 minutes. Follow by water quench.  
Aging heat treat at 320°F +/- 15°F for 12 hours +/- 15 minutes. Follow by air cool.

**Hot Isostatic Pressing (HIP):** OPTIONAL, but recommended

		3DMT MATERIAL DATA	
	Typical Casting (T6)	MLS (Stress Relief)	MLS (HIP + T6)
<b>0.02% Yield (ksi)</b>	26.1 – 31.0	<b>25.5</b>	<b>41.0</b>
<b>Ultimate Tensile (ksi)</b>	31.9 – 37.7	<b>38.2</b>	<b>49.4</b>
<b>Elongation (%)</b>	1 - 2	<b>14.9</b>	<b>6.9</b>
<b>Hardness (HB)</b>	41 – 56	<b>30</b>	<b>59.9</b>

The data above is general information that may vary from machine to machine and supplier to supplier.