

## ALUMINUM COMMON GRADE 6061 WITH T8 TEMPER

Physical Properties	Metric	English
Density	2.70 g/cc	0.0975 lb/in <sup>3</sup>
Mechanical Properties	Metric	English
Hardness, Brinell	120	120
Hardness, Knoop	150	150
Hardness, Vickers	136	136
Ultimate Tensile Strength	>=310 MPa	>=45000 psi
Tensile Yield Strength	>=276 MPa	>=40000 psi
Elongation at Break	8.00%	8.00%
Modulus of Elasticity	69.0 GPa	10000 ksi
Poissons Ratio	0.33	0.33
Fatigue Strength		
Machinability	50.00%	50.00%
Shear Modulus	26.0 GPa	3770 ksi
Shear Strength	185 MPa	26800 psi
Electrical Properties	Metric	English
Electrical Resistivity	0.00000370 ohm-cm	0.00000370 ohm-cm
Thermal Properties	Metric	English
CTE, linear 68 <sup>o</sup> F	23.6 $\mu\text{m}/\text{m}\cdot\text{C}$	13.1 $\mu\text{in}/\text{in}\cdot\text{F}$
CTE, linear 250 <sup>o</sup> C	25.2 $\mu\text{m}/\text{m}\cdot\text{C}$	14.0 $\mu\text{in}/\text{in}\cdot\text{F}$
Specific Heat Capacity	0.896 J/g $\cdot\text{C}$	0.214 BTU/lb $\cdot\text{F}$
Thermal Conductivity	170 W/m-K	1180 BTU-in/hr-ft <sup>2</sup> $\cdot\text{F}$
Melting Point	582 - 651.7 $\text{C}$	1080 - 1205 $\text{F}$
Solidus	582 $\text{C}$	1080 $\text{F}$
Liquidus	651.7 $\text{C}$	1205 $\text{F}$
Processing Properties	Metric	English
Solution Temperature	529 $\text{C}$	985 $\text{F}$
Aging Temperature	160 $\text{C}$	320 $\text{F}$
Material Components	Metric	English
Aluminum, Al	95.8 - 98.6 %	95.8 - 98.6 %
Chromium, Cr	0.0400 - 0.350 %	0.0400 - 0.350 %
Copper, Cu	0.150 - 0.400 %	0.150 - 0.400 %
Iron, Fe	<= 0.700 %	<= 0.700 %
Magnesium, Mg	0.800 - 1.20 %	0.800 - 1.20 %
Manganese, Mn	<= 0.150 %	<= 0.150 %
Other, each	<= 0.0500 %	<= 0.0500 %
Other, total	<= 0.150 %	<= 0.150 %
Silicon, Si	0.400 - 0.800 %	0.400 - 0.800 %
Titanium, Ti	<= 0.150 %	<= 0.150 %
Zinc, Zn	<= 0.250 %	<= 0.250 %

Alliance LLC 6061-T8

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