



Aluminum 5056-0

Categories:	Metal; Nonferrous Metal; Aluminum Alloy; 5000 Series Aluminum		
Material Notes:	Data points with the AA note have been provided by the Aluminum Association, Inc. and are NOT FOR DESIGN.		
Composition Notes:	Composition information provided by the Aluminum Association and is not for design.		
Key Words:	UNS A95056; ISO AIMg5; ISO AIMg5Cr; Aluminum 5060-O; AA5056-O		
Physical Properties	Metric	English	Comments
Density	2.64 g/cc	0.0954 lb. / in ³	AA; Typical
Mechanical Properties	Metric	English	Comments
Hardness, Brinell	65	65	AA; Typical; 500 g load; 10 mm ball
Hardness, Knoop	88	88	Converted from Brinell Hardness Value
Hardness, Vickers	75	75	Converted from Brinell Hardness Value
Ultimate Tensile Strength	290 MPa	42000 psi	AA; Typical
Tensile Yield Strength	152 MPa	22000 psi	AA; Typical
Elongation at Break	35.00% @ diameter 12.7 mm	35.00% @ diameter 0.500 in	AA; Typical
Modulus of Elasticity	71.0 GPa	10300 ksi	AA; Typical; Average of tension and compression. Compression modulus is about 2% greater than tensile modulus.
Poissons Ratio	0.33	0.33	Estimated from trends in similar AL alloys.
Fatigue Strength	138 MPa @# of cycles 5.00e+8	20000 psi @# of cycles 5.00e+8	Completely reversed stress; RR Moore machine/specimen
Shear Modulus	25.9 GPa	3760 ksi	
Shear Strength	179 MPa	26000 psi	AA; Typical
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000598 ohm-cm @ Temp 20.0° C	0.0000598 ohm-cm @ Temp 68.0° F	AA; Typical
Thermal Properties	Metric	English	Comments
CTE, linear	24.1 µm/m-°C @Temp 20.0 -100 ° C	13.4 µin/in-°F @ Temp 68.0 - 212 ° F	AA; Typical; Average over range
	26.1 µm/m-°C @Temp 20.0 - 300 ° C	14.5 µin/in-°F @ Temp 68.0 - 572 ° F	Average
Specific Heat Capacity	0.904 J/g-°C	0.216 BTU /lb-°F	
Thermal Conductivity	117 W/m-K	810 BTU-in/hr-ft ² -°F	AA; Typical at 77° F
Melting Point	568.3 - 638 °C	1055 - 1180 °F	AA; Typical range based on typical composition for wrought products 1/4 inch thickness or greater
Solidus	568.3 °C	1055 °F	AA; Typical
Liquidus	638 °C	1180°F	AA; Typical
Processing Properties	Metric	English	Comments
Annealing Temperature	413 ° C	775 ° F	Holding at temperature not required
Hot- working Temperature	316 - 482 ° C	600 - 900 ° F	
Material Components Properties	Metric	English	Comments
Aluminum, Al	>= 92.9 - 95.4 %	>= 92.9 - 95.4 %	As remainder
Chromium, Cr	<= 0.050 - 0.20 %	<= 0.050 - 0.20 %	
Copper, Cu	<= 0.10 %	<= 0.10 %	
Iron, Fe	<= 0.40 %	<= 0.40 %	
Magnesium, Mg	4.50 - 5.60 %	4.50 - 5.60 %	
Manganese, Mn	0.050 - 0.20 %	0.050 - 0.20 %	
Other, each	<= 0.050 %	<= 0.050 %	
Other, total	<= 0.15 %	<= 0.15 %	
Silicon, Si	<= 0.30 %	<= 0.30 %	
Zinc, Zn	<= 0.10 %	<= 0.10 %	