MatWeb, The Online Materials Database

Aluminum 6005-T5

Subcategory: 6000 Series Aluminum Alloy; Aluminum Alloy; Metal; Nonferrous Metal
Close Analogs:
Composition Notes:
Aluminum content reported is calculated as remainder.
Composition information provided by the Aluminum Association and is not for design.
Key Words: UNS A96005; ISO AlSiMg; Aluminium 6005-T5; AA6005-T5

Component	Wt. %	Component	Wt. %	Component	Wt. %
Al	97.5 - 99	Mg	0.4 - 0.6	Si	0.6 - 0.9
Cr	Max 0.1	Mn	Max 0.1	Ti	Max 0.1
Cu	Max 0.1	Other, each	Max 0.05	Zn	Max 0.1
Fe	Max 0.35	Other, total	Max 0.15		

Material Notes:

Data points with the AA note have been provided by the Aluminum Association, Inc. and are NOT FOR DESIGN.

Physical Properties	Metric	English	Comments
Density	2.7 g/cc	0.0975 lb/in³	AA; Typical
Mechanical Properties			
Hardness, Brinell	95	95	500 kg load with 10 mm ball
Hardness, Knoop	120	120	Converted from Brinell Hardness Value
Hardness, Rockwell A	39.8	39.8	Converted from Brinell Hardness Value
Hardness, Rockwell B	60	60	Converted from Brinell Hardness Value
Hardness, Vickers	107	107	Converted from Brinell Hardness Value
Tensile Strength, Ultimate	260 MPa	37700 psi	
Tensile Strength, Yield	240 MPa	34800 psi	
Elongation at Break	8 %	8 %	In 5 cm; Sample 1.6 mm thick
Modulus of Elasticity	69 GPa	10000 ksi	Average of Tension and Compression. In Aluminum alloys, the compressive modulus is typically 2% greater than the tensile modulus
Poisson's Ratio	0.33	0.33	Estimated from trends in similar Al alloys.
Fatigue Strength	100 MPa	14500 psi	500,000,000 Cycles
Shear Modulus	26 GPa	3770 ksi	Estimated from similar Al alloys.
Shear Strength	205 MPa	29700 psi	

Electrical Properties

Electrical Resistivity	3.49e-006 ohm-cm	3.49e-006 ohm-cm	AA; Typical at 68°F

Thermal Properties

CTE, linear 68°F	23.4 µm/m-°C	13 µin/in-°F	AA; Typical; Average over 68-212°F range.
CTE, linear 250°C	25 µm/m-°C	13.9 µin/in-°F	Estimated from trends in similar Al alloys. 20-300°C.
Specific Heat Capacity	0.89 J/g-°C	0.213 BTU/lb-°F	Estimated from trends in similar Al alloys.
Thermal Conductivity	189 W/m-K	1310 BTU-in/hr-ft²-°F	AA; Typical at 77°F
Melting Point	607 - 654 °C	1125 - 1210 °F	AA; Typical range based on typical composition for wrought products 1/4 inch thickness or greater; Eutectic melting can be completely eliminated by homogenization.
Solidus	607 °C	1125 °F	AA; Typical
Liquidus	654 °C	1210 °F	AA; Typical

Processing Properties

Annealing Temperature	414 °C	778 °F	hold at temperature for 2 to 3 hr
Solution Temperature	546 °C	1015 °F	
Aging Temperature	174 °C	346 °F	hold at temperature for 8 hr

References are available for this material.