

Aluminum 713.0-T5, Sand Cast

Categories: [Metal](#); [Nonferrous Metal](#); [Aluminum Alloy](#); [Aluminum Casting Alloy](#)

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: Aluminium 713.0-T5; UNS A07130; AA713.0-T5

Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	2.81 g/cc	0.102 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Brinell	60.0 - 90.0	60.0 - 90.0	AA; Typical; 500 g load; 10 mm ball
Hardness, Knoop	98	98	Estimated from Brinell Hardness.
Hardness, Vickers	85	85	Estimated from Brinell Hardness.
Tensile Strength, Ultimate	>= 221 MPa	>= 32000 psi	AA
Tensile Strength, Yield	>= 152 MPa	>= 22000 psi	AA; 0.2% Offset
Elongation at Break	>= 3.00 %	>= 3.00 %	AA; in 2 in. (50 mm) or 4D
Modulus of Elasticity	71.0 GPa	10300 ksi	In tension for aluminum 770.0
Poissons Ratio	0.330	0.330	Estimated from aluminum 770.0
Charpy Impact	3.40 J	2.51 ft-lb	V-notch
Charpy Impact, Unnotched	16.3 J	12.0 ft-lb	
Fatigue Strength	60.0 MPa @# of Cycles 5.00e+8	8700 psi @# of Cycles 5.00e+8	Notch Status unknown, R.R. Moore Test
Machinability	90 %	90 %	0-100 Scale (100=best)
Shear Modulus	26.5 GPa	3840 ksi	Estimated from aluminum 770.0
Shear Strength	180 MPa	26100 psi	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000570 ohm-cm	0.00000570 ohm-cm	

Thermal Properties	Metric	English	Comments
Heat of Fusion	389 J/g	167 BTU/lb	Typical for cast aluminum
CTE, linear 	24.1 µm/m-°C @Temperature 20.0 - 100 °C	13.4 µin/in-°F @Temperature 68.0 - 212 °F	
	26.3 µm/m-°C @Temperature 20.0 - 300 °C	14.6 µin/in-°F @Temperature 68.0 - 572 °F	
Specific Heat Capacity	0.963 J/g-°C	0.230 BTU/lb-°F	Typical for cast aluminum
Thermal Conductivity	121 W/m-K	840 BTU-in/hr-ft ² -°F	
Melting Point	593 - 638 °C	1100 - 1180 °F	
Solidus	593 °C	1100 °F	
Liquidus	638 °C	1180 °F	

Processing Properties	Metric	English	Comments
Melt Temperature	593 - 640.6 °C	1100 - 1185 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	87.5 - 92.4 %	87.5 - 92.4 %	As remainder
Chromium, Cr	<= 0.35 %	<= 0.35 %	
Copper, Cu	0.40 - 1.0 %	0.40 - 1.0 %	
Iron, Fe	<= 1.10 %	<= 1.10 %	
Magnesium, Mg	0.20 - 0.50 %	0.20 - 0.50 %	
Manganese, Mn	<= 0.60 %	<= 0.60 %	
Nickel, Ni	<= 0.15 %	<= 0.15 %	
Other, each	<= 0.10 %	<= 0.10 %	
Other, total	<= 0.25 %	<= 0.25 %	
Silicon, Si	<= 0.25 %	<= 0.25 %	
Titanium, Ti	<= 0.25 %	<= 0.25 %	
Zinc, Zn	7.0 - 8.0 %	7.0 - 8.0 %	

[References](#) for this datasheet.

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. We also ask that you refer to MatWeb's disclaimer and terms of use regarding this information. [Click here](#) to view all the property values for this datasheet as they were originally entered into MatWeb.

