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## Aluminum 5052-H32

**Subcategory:** 5000 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 A95052; ISO AIMg2.5; Aluminium 5052-H32; AA5052-H32

Component	Wt. %	Component	Wt. %	Component	Wt. %
Al	95.7 - 97.7	Mg	2.2 - 2.8	Other, total	Max 0.15
Cr	0.15 - 0.35	Mn	Max 0.1	Si	Max 0.25
Cu	Max 0.1	Other, each	Max 0.05	Zn	Max 0.1
Fe	Max 0.4				

### 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	<u>2.68 g/cc</u>	0.0968 lb/in <sup>3</sup>	AA; T

### Mechanical Properties

Hardness, Brinell	60	60	AA; Typical; 500 g load; 10 m
Hardness, Knoop	83	83	Converted from Brinell Hardness
Hardness, Vickers	68	68	Converted from Brinell Hardness
Ultimate Tensile Strength	<u>228 MPa</u>	33000 psi	AA; T

Tensile Yield Strength	<u>193 MPa</u>	28000 psi	AA; T
Elongation at Break	<u>12 %</u>	12 %	AA; Typical; 1/16 in. (1.6 mm) Thick
Elongation at Break	<u>18 %</u>	18 %	AA; Typical; 1/2 in. (12.7 mm) Dia
Modulus of Elasticity	<u>70.3 GPa</u>	10200 ksi	AA; Typical; Average of tension and compression Compression modulus is about 2% greater than tension modulus
Poisson's Ratio	0.33	0.33	
Fatigue Strength	<u>117 MPa</u>	17000 psi	AA; 500,000,000 cycles completely reversed stress Moore machine/spe
Shear Modulus	<u>25.9 GPa</u>	3760 ksi	
Shear Strength	<u>138 MPa</u>	20000 psi	AA; T

### Electrical Properties

Electrical Resistivity	<u>4.99e-006 ohm-cm</u>	4.99e-006 ohm-cm	AA; Typical a
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### Thermal Properties

CTE, linear 68°F	<u>23.8 µm/m-°C</u>	13.2 µin/in-°F	AA; Typical; Average over 68-212°F
CTE, linear 250°C	<u>25.7 µm/m-°C</u>	14.3 µin/in-°F	Average over the range 20-
Specific Heat Capacity	<u>0.88 J/g-°C</u>	0.21 BTU/lb-°F	Estimated from trends in similar Al
Thermal Conductivity	<u>138 W/m-K</u>	960 BTU-in/hr-ft <sup>2</sup> -°F	AA; Typical a
Melting Point	607 - 649 °C	1125 - 1200 °F	AA; Typical range based on typical composition wrought products 1/4 inch thickness or g
Solidus	<u>607 °C</u>	1125 °F	AA; T
Liquidus	<u>649 °C</u>	1200 °F	AA; T

### Processing Properties

Annealing Temperature	<u>343 °C</u>	650 °F	holding at temperature not re
Hot-Working Temperature	260 - 510 °C	500 - 950 °F	

### 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. If you require more precise data for scientific or engineering calculations you 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.