

## Aluminum 5052-H32

Density	<u>2.68 g/cc</u>	0.0968 lb/in <sup>3</sup>	AA; Typical
Hardness, Brinell	60	60	AA; Typical; 500 g load; 10 mm ball
Hardness, Knoop	83	83	Converted from Brinell Hardness Value
Hardness, Vickers	68	68	Converted from Brinell Hardness Value
Ultimate Tensile Strength	<u>228 MPa</u>	33000 psi	AA; Typical
Tensile Yield Strength	<u>193 MPa</u>	28000 psi	AA; Typical
Elongation at Break	<u>12 %</u>	12 %	AA; Typical; 1/16 in. (1.6 mm) Thickness
Elongation at Break	<u>18 %</u>	18 %	AA; Typical; 1/2 in. (12.7 mm) Diameter
Modulus of Elasticity	<u>70.3 GPa</u>	10200 ksi	AA; Typical; Average of tension and compression. Compression modulus is about 2% greater than tensile modulus.
Poisson's Ratio	0.33	0.33	
Fatigue Strength	<u>117 MPa</u>	17000 psi	AA; 500,000,000 cycles completely reversed stress; RR Moore machine/specimen
Shear Modulus	<u>25.9 GPa</u>	3760 ksi	
Shear Strength	<u>138 MPa</u>	20000 psi	AA; Typical

Electrical Resistivity	<u>4.99e-006 ohm-cm</u>	4.99e-006 ohm-cm	AA; Typical at 68°F
------------------------	-------------------------	------------------	---------------------

CTE, linear 68°F	<u>23.8 μm/m-°C</u>	13.2 μin/in-°F	AA; Typical; Average over 68-212°F range.
CTE, linear 250°C	<u>25.7 μm/m-°C</u>	14.3 μin/in-°F	Average over the range 20-300°C
Specific Heat Capacity	<u>0.88 J/g-°C</u>	0.21 BTU/lb-°F	Estimated from trends in similar Al alloys.

Thermal Conductivity	<u>138 W/m-K</u>	960 BTU-in/hr-ft <sup>2</sup> -°F	AA; Typical at 77°F
Melting Point	607 - 649 °C	1125 - 1200 °F	AA; Typical range based on typical composition for wrought products 1/4 inch thickness or greater
Solidus	<u>607 °C</u>	1125 °F	AA; Typical
Liquidus	<u>649 °C</u>	1200 °F	AA; Typical

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