



ASM Aerospace Specification Metals Inc.



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## Aluminum 5052-H19 Foil

**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 AlMg2.5; Aluminium 5052-H19 Foil; AA5052-H19 Foil

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; Typical

### Mechanical Properties

Hardness, Brinell	88	88	500 kg load with 10 mm ball. Calculated value.
Hardness, Knoop	111	111	
Hardness, Rockwell A	37	37	Converted from Brinell Hardness Value
Hardness, Rockwell B	54	54	Converted from Brinell Hardness Value
Hardness, Vickers	99	99	Converted from Brinell Hardness Value
Tensile Strength, Ultimate	<u>330 MPa</u>	47900 psi	
Tensile Strength, Yield	<u>325 MPa</u>	47100 psi	
Elongation at Break	<u>4 %</u>	4 %	Foil

Modulus of Elasticity	<u>70 GPa</u>	10200 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	
Shear Modulus	<u>25.9 GPa</u>	3760 ksi	
Shear Strength	<u>200 MPa</u>	29000 psi	Calculated value.

### Electrical Properties

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

### Processing Properties

Annealing Temperature	<u>343 °C</u>	650 °F	holding at temperature not required
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. 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.