

Aluminum 5052 H32 Fact Sheet

Aluminum 5052-H32

Subcategories: Aluminum Alloy; 5000 Series Aluminum Alloy

Close Analogs:

Key Words: UNS A95052; ISO AlMg2.5; Aluminium 5052-H32; AA5052-H32

Component	Weight %					
Al	95.7-97.7					
Cr	0.15-0.35					
Cu	Max 0.10					
Fe	Max 0.40					
Mg	2.2-2.8					
Mn	Max 0.10					
Other, each	Max 0.05					
Other, total	Max 0.15					
Si	Max 0.25					
Zn	Max 0.10					
Physical Properties	Metric	English	Comments	Cold Head	Hot Forge	Wire Form
Density	2.68 g/cc	0.0968 lb/in ³	AA; Typical			
Mechanical Properties	Metric	English	Comments	Cold Head	Hot Forge	Wire Form
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			
Tensile Strength, Ultimate	228 MPa	33000 psi	AA; Typical			

Tensile Strength, Yield	193 MPa	28000 psi	AA; Typical			
Elongation at Break	12%	12%	AA; Typical			
	@Thickness 1.59 mm	@Thickness 0.0625 in				
	18%	18%	AA; Typical			
	@Diameter 12.7 mm	@Diameter 0.500 in				
Modulus of Elasticity	70.3 GPa	10200 ksi	AA; Typical; Average of tension and compression. Compression modulus is about 2% greater than tensile modulus.			
Poissons Ratio	0.33	0.33				
Fatigue Strength	117 MPa	17000 psi	completely reversed stress; RR Moore machine/specimen			
	@# of Cycles 5.00e+8	@# of Cycles 5.00e+8				
Shear Modulus	25.9 GPa	3760 ksi				
Shear Strength	138 MPa	20000 psi	AA; Typical			
Electrical Properties	Metric	English	Comments	Cold Head	Hot Forge	Wire Form
Electrical Resistivity	0.00000499 ohm-cm	0.00000499 ohm-cm	AA; Typical			
	@Temperature 20.0 Â°C	@Temperature 68.0 Â°F				
Thermal Properties	Metric	English	Comments	Cold Head	Hot Forge	Wire Form
CTE, linear	22.1 Âµm/m-Â°C	12.3 Âµin/in-Â°F				
	@Temperature - 50.0 â€" 20.0 Â°C	@Temperature - 58.0 â€" 68.0 Â°F				
	23.8 Âµm/m-Â°C	13.2 Âµin/in-Â°F	AA; Typical; average over range			
	@Temperature 20.0 â€" 100 Â°C	@Temperature 68.0 â€" 212 Â°F				
	24.8 Âµm/m-Â°C	13.8 Âµin/in-Â°F				
	@Temperature 20.0 â€" 200 Â°C	@Temperature 68.0 â€" 392 Â°F				
	25.7 Âµm/m-Â°C	14.3 Âµin/in-Â°F				
	@Temperature 20.0 â€" 300 Â°C	@Temperature 68.0 â€" 572 Â°F				

Specific Heat Capacity	0.880 J/g-°C	0.210 BTU/lb-°F	Estimated from trends in similar Al alloys.
Thermal Conductivity	138 W/m-K	960 BTU-in/hr-ft ² -°F	AA; Typical at 77°F
Melting Point	607.2 °C – 649 °C	1125 °F – 1200 °F	AA; Typical range based on typical composition for wrought products 1/4 inch thickness or greater
Solidus	607.2 °C	1125 °F	AA; Typical
Liquidus	649 °C	1200 °F	AA; Typical