

materials.

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5454 H111 Aluminum Sheet

Properties

General

Property	Temperature	Value
Density	23.0 °C	2.69 - 2.7 g/cm³

Mechanical

Property	Temperature	Value	Comment
Compressive modulus	23.0 °C	71 MPa	
Elastic modulus	23.0 °C	70 - 71 GPa	
Elongation	23.0 °C	14 - 15 %	
Elongation A100	23.0 °C	10 %	
Elongation A50	23.0 °C	12 - 14 %	
Hardness, Brinell	23.0 °C	70 [-]	500 kg load, 10 mm ball
Plane-Strain Fracture Toughnes	23.0 °C	22 - 35 MPa·√m	Typical for Wrought 5000 Series Aluminium
Poisson's ratio	23.0 °C	0.33 [-]	Typical for Wrought 5000

Shear modulus	23.0 °C	26 - 26.5 GPa	Typical for Wrought 5000 Series Aluminium
Shear strength	23.0 °C	159 MPa	
Tensile strength	23.0 °C	230 - 260 MPa	
Yield strength	23.0 °C	140 MPa	
Yield strength Rp0.2	23.0 °C	130 - 180 MPa	

Thermal

Property	Temperature	Value	Comment
Coefficient of thermal expansion	23.0 °C	2.4E-5 1/K	
Max service temperature		150 °C	Typical for Wrought 5000 Series Aluminium
Melting point		600 °C	
Specific heat capacity	23.0 °C	900 J/(kg·K)	
Thermal conductivity	23.0 °C	130 W/(m·K)	

Electrical

Property	Temperature	Value	Comment
Electrical conductivity	23.0 °C	1.80E+7 - 3.10E+7 S/m	Typical for Wrought 5000 Series Aluminium
Electrical resistivity	23.0 °C	3.3E-8 - 5E-8 Ω·m	Typical for Wrought 5000 Series Aluminium

Chemical properties

Property	Value	Comment
Aluminium	94.5 - 97.1 %	
Chromium	0.05 - 0.2 %	
Copper	0 - 0.1 %	
Iron	0 - 0.4 %	
Magnesium	2.4 - 3 %	
Manganese	0.5 - 1 %	
Other	0 - 0.15 %	each 0.05, total 0.15, Rest Al
Silicon	0 - 0.25 %	
Titanium	0 - 0.2 %	
Zinc	0 - 0.25 %	

Technological properties

Property	
Brazing	general: no brazing is known or developed
Corrosion properties	Stress corrosion cracking: no damage during operation and laboratory tests, general: very good, without protection in industrial or seawater atmosphere
General machinability	General: poor (O, H32, H111), sufficient (H34)
Workability	general (condition): good (O), acceptable (H32, H34, H111)