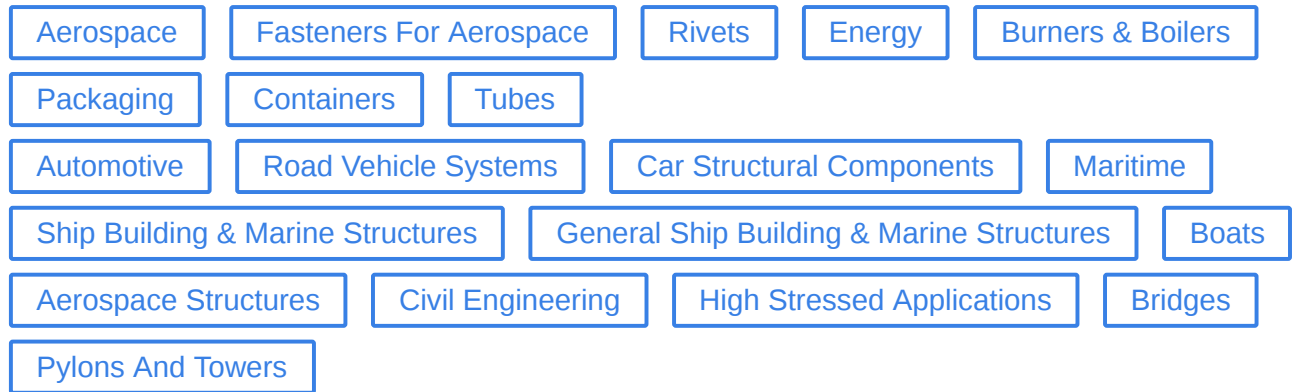


6061 T6 Aluminum Coil

All metrics apply to room temperature unless otherwise stated. SI units used unless otherwise stated.

Equivalent standards are similar to one or more standards provided by the supplier. Some equivalent standards may be stricter whereas others may be outside the bounds of the original standard.

Applications



Do you need materials?

contact [henan lichen aluminum co.,ltd](#)

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Properties

General

Property	Temperature	Value
Density	23.0 °C	2.7 g/cm³

Mechanical

Property	Temperature	Value	Comment
Bending Fatigue Strength	23.0 °C	95 MPa	
Compressive modulus	23.0 °C	69.7 MPa	
Elastic modulus	23.0 °C	69 - 70 GPa	
Elongation	-195.0 °C	22 %	Elongation in 50 mm
	-80.0 °C	18 %	Elongation in 50 mm
	0.0 °C	17 %	Elongation in 50 mm
	23.0 °C	9.4 %	Elongation in 50 mm
	24.0 °C	17 %	Elongation in 50 mm
	100.0 °C	18 %	Elongation in 50 mm
	150.0 °C	20 %	Elongation in 50 mm
	205.0 °C	28 %	Elongation in 50 mm
	260.0 °C	60 %	Elongation in 50 mm
	315.0 °C	85 %	Elongation in 50 mm
	370.0 °C	95 %	Elongation in 50 mm
Elongation A100	23.0 °C	4 - 15 %	
Elongation A50	23.0 °C	4 - 12 %	
Hardness, Brinell	23.0 °C	95 [-]	500 kg load, 10 mm ball
Plane-Strain Fracture Toughnes	23.0 °C	22 - 35 MPa-√m	Typical for Wrought 6000 Series Aluminium
Poisson's ratio	23.0 °C	0.33 [-]	Typical for Wrought 6000

Shear modulus	23.0 °C	26 - 26.5 GPa	Typical for Wrought 6000 Series Aluminium
Shear strength	23.0 °C	207 MPa	
Tensile strength	-195.0 °C	415 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
	-80.0 °C	338 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
	0.0 °C	325 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
	23.0 °C	255 - 310 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
	24.0 °C	310 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
	100.0 °C	290 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
	150.0 °C	235 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
	205.0 °C	130 MPa	up to 10000 h at

temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

260.0 °C

[52 MPa](#)

up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

315.0 °C

[32 MPa](#)

up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

370.0 °C

[21 MPa](#)

up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

Yield strength

23.0 °C

[270 MPa](#)

**Yield strength
Rp0.2**

-196.0 °C

[324 MPa](#)

up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

-80.0 °C

[290 MPa](#)

up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

-28.0 °C

[283 MPa](#)

up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

23.0 °C

[230 - 275 MPa](#)

up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

24.0 °C

[276 MPa](#)

up to 10000 h at temperature, at 35

		MPa/min to yield strength and then at strain rate of 5%/min to fracture
100.0 °C	262 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
149.0 °C	214 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
204.0 °C	103 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
260.0 °C	34 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
316.0 °C	19 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture
371.0 °C	12 MPa	up to 10000 h at temperature, at 35 MPa/min to yield strength and then at strain rate of 5%/min to fracture

Thermal

Property	Temperature	Value	Comment
Coefficient of thermal expansion	20.0 °C	2.36E-5 1/K	derived value between 20°C and the mentioned temperature

	23.0 °C	2.4E-5 1/K	derived value between 20°C and the mentioned temperature
	100.0 °C	2.36E-5 1/K	derived value between 20°C and the mentioned temperature
	200.0 °C	2.43E-5 1/K	derived value between 20°C and the mentioned temperature
	300.0 °C	2.54E-5 1/K	derived value between 20°C and the mentioned temperature
Melting point		580 - 650 °C	
Specific heat capacity	23.0 °C	900 J/(kg·K)	derived value for 23-100°C
	100.0 °C	960 J/(kg·K)	derived value for 23-100°C
Thermal conductivity	23.0 °C	155 - 180 W/(m·K)	derived value
	25.0 °C	154.9 W/(m·K)	derived value

Electrical

Property	Temperature	Value	Comment
Electrical conductivity	23.0 °C	2.30E+7 - 2.70E+7 S/m	Typical/derived value
Electrical resistivity	23.0 °C	3.7E-8 - 4.35E-8 Ω·m	Typical value
Specific Electrical conductivity		43 % IACS	Typical value

Chemical properties

Property	Value	Comment
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Aluminium	95.9 - 98.6 %	Balance
Chromium	0.04 - 0.35 %	
Copper	0.15 - 0.4 %	
Iron	0 - 0.7 %	
Magnesium	0.8 - 1.2 %	
Manganese	0 - 0.15 %	
Other	0 - 0.15 %	each 0.05, total 0.15, Rest Al, Total
Silicon	0.4 - 0.8 %	
Titanium	0 - 0.15 %	
Zinc	0 - 0.25 %	

Technological properties

Property	
Application areas	Heavy duty structures (Rail coaches, Truck frames, Ship building, Bridges and Military bridges, Aerospace applications including helicopter rotor), Skins (Tube, Pylons and Towers, Transport, Boilermaking, Motorboats, Rivets).
Brazing	general: possible with commercial processes and methods
Corrosion properties	Stress corrosion cracking: no damage during operation and laboratory tests (O, T6, T651, T652, T6510, T6511), no damage during operation, limited damage during laboratory tests (T4, T451, T4510, T4511), general: good, without protection in industrial or seawater atmosphere
General machinability	General: poor (O), sufficient (T4, T451, T4510, T4511, T6, T651, T652, T6510, T6511)
Soldering general	Good
Welding	Gas: Good; Arc: Very Good; Resistance: Good
Workability	general (condition): good (O), acceptable (T4, T451, T4510, T4511), poor(T6, T651, T652, T6510, T6511)

