

materials.

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3105 O Aluminum Sheet

Properties

General

Property	Temperature	Value
Density	23.0 °C	2.72 - 2.8 g/cm³

Mechanical

Property	Temperature	Value	Comment
Elastic modulus	23.0 °C	69 GPa	
Elongation	23.0 °C	21 - 24 %	
Elongation A50	23.0 °C	16 - 24 %	
Plane-Strain Fracture Toughnes	23.0 °C	22 - 35 MPa·√m	Typical for Wrought 3000 Series Aluminium
Poisson's ratio	23.0 °C	0.33 [-]	Typical for Wrought 3000 Series Aluminium
Shear modulus	23.0 °C	25 GPa	
Shear strength	23.0 °C	83 MPa	
Tensile strength	23.0 °C	95 - 145 MPa	

Yield strength	23.0 °C	48 MPa
Yield strength Rp0.2	23.0 °C	35 - 55 MPa

Thermal

Property	Temperature	Value
Coefficient of thermal expansion	20.0 °C	2.36E-5 1/K
	23.0 °C	2.4E-5 1/K
	100.0 °C	2.36E-5 1/K
Melting point		635 - 655 °C
Specific heat capacity	23.0 °C	900 J/(kg·K)
Thermal conductivity	23.0 °C	170 - 172 W/(m·K)

Electrical

Property	Temperature	Value	Comment
Electrical conductivity	23.0 °C	2.60E+7 S/m	Typical/derived value
Electrical resistivity	23.0 °C	3.85E-8 Ω·m	
Specific Electrical conductivity		45 % IACS	Typical value

Chemical properties

Property	Value	Comment
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Aluminium	96 - 99.5 %	
Chromium	0 - 0.2 %	
Copper	0 - 0.3 %	
Iron	0 - 0.7 %	
Magnesium	0.2 - 0.8 %	
Manganese	0.3 - 0.8 %	
Other	0 - 0.15 %	each 0.05, total 0.15, Rest Al
Silicon	0 - 0.6 %	
Titanium	0 - 0.1 %	
Zinc	0 - 0.4 %	

Technological properties

Property	
Brazing	general: possible with commercial processes and methods
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: not suitable (O, H12), poor (H14, H25, H16, H18)
Workability	general (condition): good (O), acceptable (H12, H14, H25), poor(H16, H18)