

# 2011 Aluminium

## Technical Datasheet



Service. Quality. Value.

### Free Machining Aluminium Alloy

#### Applications

- Machine parts
- Automotive components
- Weaponry & munitions
- Fasteners / Fittings

#### Product Description

Alloy 2011 is known as a free machining alloy or 'FMA' - this means that the material has excellent machinability and is suitable for use on automatic lathes. The alloy displays poor corrosion resistance and therefore anodising will be required for additional surface protection. Whilst weldability is also very poor, 2011 aluminium is a highly versatile aluminium. With excellent machinability the material can be used to produce highly complex and detailed parts.

#### Availability

Bar

#### Key features:

- Excellent machinability
- Can be used to produce highly complex, detailed parts
- Material suitable for automatic lathes
- Poor corrosion resistance

#### Related Material Specifications

- AlCu6BiPb
- A92011
- 3.1655
- FC1
- CB60
- AlCuBiPb

#### Corrosion Resistance

Poor

#### Weldability

Extremely poor. As 2011 aluminium is used predominantly in machined parts, welding is seldom necessary.

#### Chemical Composition (weight %)

Weight (%)	Si	Fe	Cu	Pb	Bi	Zn	Al	Other
min.			5.0	0.2	0.2	0.3	Bal	
max.	0.4	0.7	6.0	0.6	0.6	0.3	Bal	0.15

#### Physical Properties

Melting Point	535°C
Density	2.82 Kg/m <sup>3</sup>
Thermal conductivity	138 W/m.K
Thermal expansion coefficient	23 x 10 <sup>-6</sup>
Modulus of elasticity	71 GPa

#### Mechanical Properties

Temper	Proof Stress (MPa)	Tensile Strength (MPa)	Shear Strength (MPa)	Elongation A5 (%)	Elongation A50 (%)	Hardness Brinell HB	Hardness Vickers HB	Fatigue Endur. Limit (MPa)
T3	290	365	220	15	15	95	100	250
T4	270	350	210	18	18	90	95	250
T6	300	395	235	12	12	110	115	250
T8	315	420	250	13	12	115	120	250

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#### Quality & Testing:



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