

SPECIFICATIONS

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| Commercial | 2014A T651 |
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A high strength 4 to 5% Copper alloy produced in extruded bar and profile form, in the fully heat-treated condition (solution heat-treated & artificially aged). Normally stocked in the T651 condition (stress relieved by controlled stretching) Except for sizes under 10mm diameter and over 203.2mm diameter. (T6 only). Over 203.2mm diameter is manufactured to chemical composition Only.

Machinability of aluminium alloy 2014A is very good. Typical applications of aluminium alloy 2014A are high strength components especially for use in the aerospace and defence industries.

CHEMICAL COMPOSITION

BS EN 573-3:2009
Alloy 2014

| Element | % Present |
|------------------------------|-----------|
| Copper (Cu) | 3.9 - 5 |
| Manganese (Mn) | 0.4 - 1.2 |
| Silicon (Si) | 0.5 - 0.9 |
| Magnesium (Mg) | 0.2 - 0.8 |
| Iron (Fe) | 0.5 max |
| Zinc (Zn) | 0.25 max |
| Titanium + Zirconium (Ti+Zr) | 0.2 max |
| Titanium (Ti) | 0.15 max |
| Others (Total) | 0.15 max |
| Chromium (Cr) | 0.1 max |
| Nickel (Ni) | 0.1 max |
| Other (Each) | 0.05 max |
| Aluminium (Al) | Balance |

TEMPER TYPES

This datasheet relates to temper T651. The most common temper for aluminium alloy 2014A are:

- T6 - Solution heat treated and artificially aged
- T3 - Solution heat treated, cold worked and naturally aged
- T6511 - Solution heat treated and stress-relieved by stretching then artificially aged with minor straightening after aging
- T651 - Solution heat treated, stress relieved by stretching then artificially aged

SUPPLIED FORMS

Round Bar is stocked in the range 1/2inch to 10inch diameter.

Plate is stocked in thicknesses 1/2inch to 4 inch.

- Bar
- Plate

GENERIC PHYSICAL PROPERTIES

| Property | Value |
|------------------------|------------------------------|
| Density | 2.82 g/cm ³ |
| Modulus of Elasticity | 71 GPa |
| Electrical Resistivity | 0.045 x10 ⁻⁶ Ω .m |
| Thermal Conductivity | 138 W/m.K |
| Thermal Expansion | 23 x10 ⁻⁶ /K |
| Melting Point | 535 °C |

MECHANICAL PROPERTIES

BS EN 485-2:2008
Sheet
0.4mm to 6mm

| Property | Value |
|------------------|-------------|
| Tensile Strength | 440 Min MPa |
| Proof Stress | 390 Min MPa |
| Hardness Brinell | 133 HB |

Properties above are for material in the T651 condition.

BS EN 485-2:2008
Plate
6mm to 12.5mm

| Property | Value |
|-------------------|-------------|
| Proof Stress | 395 Min MPa |
| Tensile Strength | 450 Min MPa |
| Elongation A50 mm | 7 Min % |
| Hardness Brinell | 135 HB |

Properties above are for material in the T651 condition.

Aluminium Alloy

2014A T651 Sheet and Plate

BS EN 485-2:2008
Plate
12.5mm to 40mm

| Property | Value |
|------------------|-------------|
| Proof Stress | 400 Min MPa |
| Tensile Strength | 460 Min MPa |
| Hardness Brinell | 138 HB |
| Elongation A | 6 Min % |

Properties above are for material in the T651 condition.

BS EN 485-2:2008
Plate
40mm to 60mm

| Property | Value |
|------------------|-------------|
| Proof Stress | 390 Min MPa |
| Tensile Strength | 450 Min MPa |
| Hardness Brinell | 135 HB |
| Elongation A | 5 Min % |

Properties above are for material in the T651 condition.

BS EN 485-2:2008
Plate
60mm to 80mm

| Property | Value |
|------------------|-------------|
| Proof Stress | 380 Min MPa |
| Tensile Strength | 435 Min MPa |
| Hardness Brinell | 131 HB |
| Elongation A | 4 Min % |

Properties above are for material in the T651 condition.

CORROSION RESISTANCE

Resistance to atmospheric attack:

Poor, especially when exposed to water or salt Environments.

To protect against atmospheric corrosion in storage, lightly coat with Lanolin based protective Oil.

For further information, please contact Sales Dept

WELDABILITY

Brazing & Soldering - Not recommended

Oxygen - Not recommended

Inert Gas - Not recommended

Resistance, Spot, Beam - Excellent

SURFACE TREATMENT

Anodising

- Protective - Fair
- Bright - Unsuitable
- Hard - Good
- Colour - Fair (Dark colour only)

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Plating

- Very Good

CONTACT

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REVISION HISTORY

Datasheet Updated 09 July 2021

DISCLAIMER

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