3003 Aluminium

Smiths High Performance

Excellent Thermal Conductivity

3003 offers improved mechanical properties compared to 1000 series aluminium, especially at higher temperatures.

In the motorsport sector, 3003 finds typical use in heating and cooling systems due to the alloy's excellent thermal conductivity.

The alloy benefits from good resistance to atmospheric corrosion while providing medium strength. The mechanical properties of the alloy are particularly good at elevated temperatures when compared to 1000 series alloys. The aluminium-manganese-based alloy boasts good weldability and cold formability and is, commercially, one of the most popular on the market. The material cannot be heat-treated and must be cold-worked to increase hardenability.

Motorsport Applications:

While popular in various engineering markets, specific motorsport applications include heating and cooling systems, oil pans, radiators, air ducts and intake manifolds.

Forming is achieved via typical cold-forming and hot-forming methods, and the material offers high workability, while weldability is also good. The product is ideal for applications requiring medium strength and hardness with good welding capabilities.

Product Benefits:

- Impressive thermal conductivity
- Good weldability and cold formability
- High workability
- Medium strength
- Good atmospheric corrosion resistance

Applications:

- Heating & cooling systems
- Oil Pans
- Tanks and brackets
- Radiators and air ducting
- Intake manifolds

About Smiths High Performance

Smiths High Performance is a leading stockholder and supplier of high-performance engineering materials. We are material supply chain partners supporting **high-technology market sectors**.

SCAN ME

Further technical data available on the reverse of this Datasheet

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* Chemical Composition (weight, %)

	Al	Si	Fe	Cu	Mn	Zn	Others (each)	Others (total)
Min:	Bal			0.05	1.00			
Max:	Bal	0.60	0.70	0.20	1.50	0.10	0.05	0.15

* Properties as per ASTM B209M (plate, sheet & coil)

* Mechanical Properties

Temper:	Tensile Strength (MPa)	Yield Strength 0.2% Proof (MPa)
3003-O	95 - 130	35 min
3003-H12	115 - 155	85 min
3003-H14	135 - 180	115 min
3003-H16	165 - 205	145 min
3003-H18	185 min	165 min

* Properties as per ASTM B209M (plate, sheet & coil)

Physical Properties

Density	2730 kg/m^3
Thermal Expansion	23.2 µm/m/°C (200-100 °C)
Modulus of Elasticity	69 GPa
Thermal Conductivity	193 W/m.K (@ 25 °C)

...where performance matters...

When you purchase high-performance materials from **Smiths High Performance**, you will join some of the biggest and best global engineering companies. We are a Tier 1 supply chain partner to the world's leading motorsport companies. Our unique business structure and ethos allow us to offer services otherwise unavailable in this market sector.

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