

### Magnesium High Strength Casting Alloy

#### Typical Applications

- Missiles
- Power transmissions
- Aircraft engines
- Motorsport
- Helicopter rotor heads
- Engine casings
- Racing wheels
- Gear box casings

#### Product Description

WE43 is a high strength Magnesium Alloy which offers good mechanical properties both at ambient and elevated temperatures. The alloy mainly contains yttrium and neodymium. WE43 can be used successfully in temperatures up to 300°C and benefits from good corrosion resistance. The alloy is an excellent engineering solution in applications where weight reduction without compromising performance is required. Motorsport therefore is an obvious beneficiary as is the aerospace sector.

#### Key features

- High strength
- Good overall mechanical properties
- Suitable in ambient and elevated temperatures (up to 300°C)
- Excellent engineering solution where weight reduction is required

#### Availability

Bar

#### Corrosion resistance

Good

#### Weldability

WE43 can be welded using tungsten arc inert gas process. A filler rod of similar composition should be used.

#### Chemical Composition (weight %)

	Mg	Y	Zr	Rare earths
min	Rem	3.70		2.40
max	Rem	4.30	0.4	4.40

#### Mechanical Properties

	Metric	Imperial
Tensile strength	250 MPa	36259 psi
Poisson's ratio	0.27	0.27
Elongation	2%	2%
Hardness, Vickers	85-105	85-105

#### Physical Properties

	Metric	Imperial
Density	1.8 g/cm <sup>3</sup>	0.06516/in <sup>3</sup>
Melting Point	540 - 640°C	1004 - 1184°F

#### Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

#### UK Service Centres:

Smiths Belfast **02895 908 897**  
 Smiths Biggleswade **01767 604 704**  
 Smiths Birmingham **0121 728 4940**  
 Smiths Bristol **0117 971 2800**  
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#### Quality & Testing:



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