

What is POM-C MDT blue

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POM-C, metal detectable (MDT)

POM-C MDT blue is a polyoxymethylene copolymer with a metal detectable filler (MDT). If a component made of this material breaks in a food-processing line, the fragments are detected by standard metal detectors and the affected batch is rejected. The blue colouring additionally facilitates visual detection.

Properties

POM-C MDT blue retains the typical POM-C properties: a yield stress of 65 MPa, a tensile modulus of 3,000 MPa, good toughness (elongation at break 25 %), low moisture absorption (0.2 %) and the excellent machinability POM is known for. According to the resin manufacturer, the compound fulfils the requirements of Regulation (EU) No 10/2011 regarding migration into food and is thus suitable for HACCP concepts in food processing.

The detectable filler increases the density (1.53 g/cm³) and limits the continuous service temperature to 90 °C. Detectability depends on fragment size and detector sensitivity and must be verified for the specific line. Like all POM grades, the material is not resistant to strong acids.

Advantages

- Metal detectable – foreign body risk in food-processing lines minimised
- Blue colouring for visual detectability
- Good strength and toughness, low moisture absorption
- Very good machinability

Disadvantages

- Continuous service temperature limited to 90 °C
- Detectability must be verified for the specific line
- Not resistant to strong acids

Processing

POM-C MDT blue is one of the easiest engineering plastics to machine: sawing, turning, milling, drilling and thread cutting are straightforward with standard HSS or carbide tools, chips break short and surfaces come out clean. Good cooling via chip removal avoids heat build-up.

For tight tolerances and thick-walled parts, we recommend intermediate annealing to relieve machining stresses; the low moisture absorption makes conditioning unnecessary.

Typical Applications

POM-C MDT blue is used wherever plastic components are in direct contact with food and any foreign body contamination must be reliably detected – for example in the food and packaging industries and the associated mechanical engineering.

- Scrapers, wipers and cutting strips
- Format parts, star wheels and guides in filling and packaging lines
- Sliding and guide elements for conveyor belts

Typical Properties

- Metal detectable
- Blue colouring for visual detectability
- Good machinability

Product Examples

- Scrapers and wipers
- Format parts and star wheels
- Sliding and guide elements

Typical Industries

- Food Industry
- Packaging Industry
- Mechanical Engineering

	Test Method	Unit	Value
General Properties			
Density	DIN EN ISO 1183-1	g / cm ³	1.53
Water absorption	DIN EN ISO 62	%	0.20
Flammability (Thickness 3 mm / 6 mm)	UL 94		HB / HB
Mechanical Properties			
Yield stress	DIN EN ISO 527	MPa	65
Elongation at break	DIN EN ISO 527	%	25
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3.000
Notched impact strength	DIN EN ISO 179	kJ / m ²	5.0
Ball indentation hardness	DIN EN ISO 2039-1	MPa	180
Shore hardness	DIN EN ISO 868	scale D	82
Thermal Properties			
Melting temperature	ISO 11357-3	°C	168
Coefficient of linear thermal expansion	DIN 53752	10 ⁻⁶ / K	120
Service temperature, long term	Average	°C	-20 ... 90
Service temperature, short term (max.)	Average	°C	140
Heat deflection temperature	DIN EN ISO 75, Verf. A, HDT	°C	100