

What is POM-C ESD60 PLUS black

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POM-C, electrostatically dissipative (ESD 60 PLUS)

POM-C ESD60 PLUS black is a polyoxymethylene copolymer made electrostatically dissipative by conductive additives (surface resistivity approx. $10^4 \Omega$). It combines the high stiffness and good machinability of POM-C with reliable dissipation of electrostatic charges.

Properties

With a tensile modulus of 3,700 MPa and a ball indentation hardness of 180 MPa, POM-C ESD60 PLUS black offers higher stiffness and hardness than unmodified POM-C, at a continuous service temperature of 100 °C and low moisture absorption (0.2 %). The low surface resistivity dissipates charges quickly and permanently – independent of humidity, since the dissipative properties are anchored in the material.

The additives reduce toughness and elongation at break (10 %) compared to standard POM-C; the material is available in black only and is not declared for food contact. Like all POM grades, it is not resistant to strong acids.

Advantages

- Permanently electrostatically dissipative (approx. $10^4 \Omega$), independent of humidity
- High stiffness and hardness
- Very good machinability, low moisture absorption
- Good dimensional stability

Disadvantages

- Lower toughness than standard POM-C
- Available in black only
- Not generally declared for food contact (see FDA declaration)

Processing

POM-C ESD60 PLUS black 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 ESD60 PLUS black is used wherever electrostatic charges must be dissipated safely – for example in the electrical and semiconductor industries, in mechanical engineering and in conveyor technology for electronic components.

- Handling and gripper parts for electronics production
- Guides, rollers and sliding elements in ESD areas
- Housing and fixture parts for test and measurement equipment

Typical Properties

- Electrostatically dissipative (ESD)
- High stiffness
- Good machinability

Product Examples

- Handling and gripper parts
- Guides and rollers
- Fixtures for test equipment

Typical Industries

- Electrical Industry
- Semiconductor Industry
- Mechanical Engineering

	Test Method	Unit	Value
General Properties			
Density	DIN EN ISO 1183-1	g / cm ³	1.44
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	45
Elongation at break	DIN EN ISO 527	%	10
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3.700
Notched impact strength	DIN EN ISO 179	kJ / m ²	2.5
Ball indentation hardness	DIN EN ISO 2039-1	MPa	180
Shore hardness	DIN EN ISO 868	scale D	78
Thermal Properties			
Melting temperature	ISO 11357-3	°C	165
Service temperature, long term	Average	°C	-20 ... 100
Service temperature, short term (max.)	Average	°C	140
Heat deflection temperature	DIN EN ISO 75, Verf. A, HDT	°C	110
Electrical Properties			
Surface resistivity	DIN EN 62631-3-2	Ω	10 ⁴