

CABELEC® CA4857



Conductive Polystyrene Compound for Extrusion

CABELEC CA4857 is an electrically conductive compound based on conductive carbon black dispersed in a modified styrenic resin. The electrical properties are permanent and are not dependent on atmospheric conditions.

Applications

CABELEC CA4857 has been specially designed for packaging and electronic product handling where freedom from the hazard of electrostatic discharge is necessary. Examples of use are in handling of explosives, electronic components and pigments.

Processing

Pre-drying (Moisture)

CABELEC CA4857 absorbs moisture under normal storage conditions and this can result in surface blemishes. It is therefore advisable to dry the compound prior to use. Usually 2 - 4 hours in a drier at 80°C is sufficient time to reduce the moisture content to an acceptable level.

Extrusion

CABELEC CA4857 can be processed on conventional extrusion equipment. It should be processed under low shear conditions. Actual extrusion temperatures should be adapted according to the nature of the equipment and the manufactured article to give optimum extrusion quality.

As a general guide, extrusion temperatures of 170-200°C have been used successfully on extrusion lines.

Temperatures in excess of 230°C should be avoided.

To ensure good electrical and mechanical properties of the material it is nevertheless strongly recommended that high shear mixing elements be avoided.

The information given in this section should be used as a guide only as different equipment could need different conditions.

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Physical Properties

Typical values for CABELEC CA4857 are presented in the following table. Some of them are characteristic of injection moulded pieces:

PROPERTY	TEST METHOD*	UNIT	VALUE
Density @ 23°C	CTM E023	kg/m ³	1090
Hardness (15 second value)	CTM E030 (ASTM D2240)	Shore D	73
Heat Distortion Temperature @ 1.80 MPa	CTM E038 (ISO75)	°C	67
Vicat Softening Point @10 N	CTM E039 (ISO 306)	°C	100
Melt Flow Index (200°C/5 kg)	CTM E005 (ISO 1133)	g/10 min	1.0
Melt Flow Index (200°C/10 kg)	CTM E005 (ISO 1133)	g/10 min	6
Melt Flow Index (200°C/21.6 kg)	CTM E005 (ISO 1133)	g/10 min	67
Volume Resistivity on injection moulded parts	CTM E043B	Ohm.cm	100
Surface Resistivity on injection moulded parts	CTM E042E	Ohm/sq	5 - 10 ³
Surface Resistivity on 400 µm extruded tape	CTM E042D	Ohm/sq	1 - 10 ³
Flexural Modulus	CTM E040A (ISO 178)	MPa	2015
Tensile Strength at Break	CTM E041 (ISO 527)	MPa	20.4
Tensile Strength at Yield	CTM E041 (ISO 527)	MPa	25.8
Elongation at Break	CTM E041 (ISO 527)	%	25
Notched Izod Impact @ 23°C	CTM E044A (ISO 180)	kJ/m ²	9

*Tests are performed according to Cabot Test Methods (CTM) based on international standards.

Quoted test results should not be used for specification purposes but are typical test values intended for guidance only.

Packaging

CABELEC compounds are supplied in regular pellet form packed in 25 kg bags and should be stored in a dry place. Larger quantities can be packaged to suit customer's specific requirements.

Recommended storage life: up to 1 year provided it is stored as directed.



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