

CABELEC[®] CA4749 Conductive Compound



Conductive Compound for Extrusion

CABELEC CA4749 electrically conductive compound is made from carbon black and a copolymer of ethylene and vinyl acetate. This product is suitable for extrusion applications where low resistivity and low flexural modulus are required.

Applications

CABELEC CA4749 conductive compound is suitable for incorporation into flexible articles such as pipes, tubes, flooring and matting and for applications where it is desirable to mitigate the hazard of electrostatic discharge, such as ordnance and ammunition works, mines and petroleum plants.

Processing

Pre-drying

CABELEC CA4749 conductive compound absorbs very little moisture from the atmosphere under normal storage and usage conditions. Pre-drying of the compound before processing can therefore be avoided in most cases. Nevertheless, for critical applications, if the compound has been stored outside, and/or is used in climates with high relative humidity, it is advisable to pre-dry the material to reduce the moisture content to an acceptable level. Typically 2 - 4 hours in a dryer at 75°C is sufficient.

Extrusion

CABELEC CA4749 conductive compound can be processed on most types of 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 general guidance, extrusion temperatures of 150-170°C have been used successfully on extrusion lines. Temperatures in excess of 210°C should be avoided as some degradation of the base polymer may occur. For optimal conductivity, it is strongly suggested that high shear mixing elements be avoided in order to limit any potential porosity. It is advisable to cool the extrudate as soon as possible after it leaves the die.

The information given in this section should be used for guidance only as different equipment require different processing parameters.

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Physical Properties

Typical values for CABELEC CA4749 conductive compound are presented in the following table. Some of these values are characteristic of injection moulded pieces.

PROPERTY	TEST METHOD	UNIT	VALUE
Density @ 23°C	CTM E023*	kg/m ³	1140
Hardness (15 second value)	ASTM D2240	Shore D	51
Heat Dispersion Temperature @ 0.45 MPa	ISO 75	°C	43
Vicat Softening Point @ 10 N	ISO 306	°C	75
Mould shrinkage	ASTM D955	%	2.0 - 2.3
Melt Flow Index (190°C/21.6 kg)	ISO 1133	g/10 min	4
Melt Flow Index (190°C/10 kg)	ISO 1133	g/10 min	0.1
Volume Resistivity	CTM E043B*	Ohm.cm	5
Surface Resistivity	CTM E042E*	Ohm/sq	50
Flexural Modulus	ISO 178	MPa	220
Tensile Strength at Yield	ISO 527	MPa	14.6
Tensile Strength at Break	ISO 527	MPa	14.6
Elongation at Break	ISO 527	%	260

*Tests are performed according to Cabot Test Methods (CTM).

The data in the table above are typical test values intended for guidance only, and are not product specifications. Product specifications are available from your Cabot representative.

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.

Storage life: up to 6 months provided it is stored as directed.



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