

CABELEC® CA3899



Conductive Polyacetal Compound

CABELEC CA3899 is an electrically conductive compound based on carbon black and a polyacetal copolymer. Its electrical properties are permanent and are not dependent on atmospheric conditions. The compound can easily be processed on conventional moulding equipment.

Applications

CABELEC CA3899 is principally recommended for applications where freedom from the hazard of electrostatic discharge is necessary. Examples of use are in handling of explosive powders, pigments, liquids and electronic components.

Processing

Special Features

CABELEC CA3899 absorbs very little moisture from the atmosphere during normal storage and usage conditions. Predrying of the compound before processing can thus usually be avoided. Nevertheless for critical applications, in case of external storage and when the compound is used in climates with high relative humidity it is still recommended to predry* the material to achieve a product of good quality.

* Usually 3 - 4 hours in a drier at 80-100°C is sufficient time to reduce the moisture content to an acceptable level.

Injection Moulding

CABELEC CA3899 can be processed on most types of injection moulding machine. Low shear conditions are nevertheless strongly recommended in order to achieve good electrical conductivity. The precise processing conditions depend on the machinery, output rate and complexity of the injected part under consideration. As a general guide, the following injection moulding temperatures have been used successfully:

- Barrel/nozzle: 180°C / 200°C
- Mould: 60°C

Mould Design

Generous gates are helpful for the moulding of filled CABELEC as for other highly filled thermoplastics.

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

The typical values for CABELEC CA3899 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	1390
Hardness (15 second value)	CTM E030 (ASTM D2240)	Shore D	79
Heat Distortion Temperature @ 1.80 MPa	CTM E038 (ISO 75)	° C	72
Vicat Softening Point @ 10 N	CTM E039 (ISO 306)	° C	168
Mould Shrinkage	CTM E047 (ASTM D955)	%	1.5 - 2.5
Melt Flow Index (190°C/2.16 kg)	CTM E005 (ISO 1133)	g/10 min	3
Melt Flow Index (190°C/5 kg)	CTM E005 (ISO 1133)	g/10 min	9.3
Melt Flow Index (190°C/10 kg)	CTM E005 (ISO 1133)	g/10 min	28
Volume Resistivity	CTM E043B	Ohm.cm	39
Surface Resistivity	CTM E042E	Ohm/sq	500
Flexural Modulus	CTM E040A (ISO 178)	MPa	1900
Tensile Strength at Break	CTM E041 (ISO 527)	MPa	45.2
Tensile Strength at Yield	CTM E041 (ISO 527)	MPa	45.7
Elongation at Break	CTM E041 (ISO 527)	%	42
Notched Izod Impact @ 23°C	CTM E044A (ISO 180)	kJ/m ²	11

*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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