

# CABELEC<sup>®</sup> CA3839 Conductive Compound



### Static Dissipative Polypropylene Compound for Moulding

CABELEC CA3839 conductive compound is a static dissipative compound made from carbon black dispersed in a polypropylene copolymer. Its electrical and mechanical properties are not dependent on atmospheric conditions. It has good rigidity and can be easily processed on conventional moulding equipment.

### Applications

The static dissipative nature of CABELEC CA3839 conductive compound provides products with a higher resistivity than typical conductive materials and can provide long-lasting static dissipation.

Typical areas of applications are ordnance and ammunition works, mines, petroleum plants, electronics packaging and other environments where it is important to mitigate the hazard of electrostatic discharge.

### Processing

#### Special Features

CABELEC CA3839 conductive compound absorbs very little moisture from the atmosphere during normal storage and usage conditions, which is a significant benefit for applications where a very low moisture absorption is essential for a good surface appearance. Therefore predrying of the compound before processing is not necessary for most applications. Nevertheless, for critical applications, if the compound is stored outside, and/or used in climates with high relative humidity, it is advisable to predry the material to achieve a good quality final product. Usually 2 - 4 hours in a dryer at 60°C is sufficient time to reduce the moisture content to an acceptable level.

#### Injection Moulding

CABELEC CA3839 conductive compound can be processed on most types of injection moulding machinery. Low shear conditions are nevertheless required in order to achieve good electrical conductivity. The optimal processing conditions depend on the machinery, output rate and complexity of the injected part under manufacture. As a general guidance, the following injection moulding temperatures have been used successfully: barrel/nozzle: 200 °C / 220 °C, mould: 30 °C.

#### Mould Design

Generous gates are helpful for the moulding of CABELEC CA3839 conductive compound as for other highly filled thermoplastics.

The processing information provided above should be used as a guidance only as different equipment could require different conditions to achieve the desired results.

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## Physical Properties

Typical values for CABELEC CA3839 conductive compound are presented in the following table. Some of them are measured on injection moulded pieces:

PROPERTY	TEST METHOD	UNIT	VALUE
Density @ 23°C	CTM E023*	kg/m <sup>3</sup>	1038
Hardness (15 second value)	ASTM D2240	Shore D	63
Heat Distortion Temperature @ 1.80 MPa	ISO 75	° C	47
Vicat Softening Point @ 10 N	ISO 306	° C	150
Mould Shrinkage	ASTM D955	%	0.8 - 1.0
Melt Flow Index (230°C/2.16 kg)	ISO 1133	g/10 min	4
Melt Flow Index (230°C/5.0 kg)	ISO 1133	g/10 min	20.5
Melt Flow Index (230°C/10.0 kg)	ISO 1133	g/10 min	94
Volume Resistivity	CTM E043B*	Ohm.cm	10 <sup>4</sup>
Surface Resistivity	CTM E042E*	Ohm/sq	10 <sup>6</sup>
Flexural Modulus	ISO 178	MPa	1200
Tensile Strength at Break	ISO 527	MPa	15
Tensile Strength at Yield	ISO 527	MPa	21
Elongation at Break	ISO 527	%	59
Notched Izod Impact @ 23°C	ISO 180	KJ/m <sup>2</sup>	45

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

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

## Packaging

CABELEC compounds are supplied in 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 1 year provided it is handled and stored as directed.



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