CABELEC® CA3896

Conductive Polystyrene Compound for Moulding and Extrusion

CABELEC CA3896 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 CA3896 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

Special Features

CABELEC CA3896 absorbs very little water 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 2 - 4 hours in a drier at 60°C is sufficient time to reduce the moisture content to an acceptable level.

Injection Moulding

CABELEC CA3896 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: 200°C / 235°C • Mould: 30°C

Mould Design

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

Extrusion

CABELEC CA3896 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.

CABELEC® CA3896

Physical Properties

Typical values for CABELEC CA3896 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	1087
Hardness (15 second value)	CTM E030 (ASTM D2240)	Shore D	75
Heat Distortion Temperature @ 1.80 MPa	CTM E038 (ISO 75)	° C	72
Vicat Softening Point @ 10 N	CTM E039 (ISO 306)	° C	101
Melt Flow Index (200°C/5 kg)	CTM E005 (ISO 1133)	g/10 min	1
Melt Flow Index (200°C/10 kg)	CTM E005 (ISO 1133)	g/10 min	5
Melt Flow Index (200°C/21.6 kg)	CTM E005 (ISO 1133)	g/10 min	38
Volume Resistivity	CTM E043B	Ohm.cm	300
Surface Resistivity on 0.4mm thick extruded tape	CTM E042E	Ohm/sq	2.10^3
Flexural Modulus	CTM E040A (ISO 178)	MPa	1875
Tensile Strength at Break	CTM E041 (ISO 527)	MPa	24.3
Tensile Strength at Yield	CTM E041 (ISO 527)	MPa	30.4
Elongation at Break	CTM E041 (ISO 527)	%	23
Notched Izod Impact @ 23°C	CTM E044A (ISO 180)	kJ/m^2	16
Flammability class (3mm)	UL94	rating	HB 40

*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.

CABOT

cabotcorp.com

NORTH AMERICA
Cabot Corporation Business and Technical Center
157 Concord Road
Billerica, MA 01821-7001
USA
TEL +1 800 462 2313
FAX +1 978 670 7035

SOUTH AMERICA
Cabot Latin American Division
Rue do Paraiso, 148 - 5º ander
04103-000, Sao Paolo, SP BRAZIL
TEL +55 11 2144 6400
FAX +55 11 3253 0051

EUROPE
Cabot Specialty Chemicals
Interleuvenlaan 15 i
3001 Leuven, BELGIUM
TEL +32 16 39 24 31
TEL +32 16 39 25 68
FAX +32 16 39 24 44

MIDLE EAST/AFRICA
Cabot Specialty Chemicals
Jebel Ali Free Zone
LOB 15, Office 424
Dubai
UNITED ARAB EMIRATES
TEL +971 4 8871 800
FAX +971 4 8871 801

ASIA PACIFIC
Cabot China Ltd.
558 Shuangbai Road
Shanghai 201108, CHINA
TEL +86 21 5175 8800
FAX +86 21 6434 5532

JAPAN
Cabot Specialty Chemicals, Inc.
Sumitomo Chiba-Daimon Idg. 3 F
2-5-5 Shiba Daimon, Minato-ku, Tokyo 105-0012, JAPAN
TEL +81 3 6820 0255
FAX +81 3 5425 4500

This information is provided as a convenience and for informational purposes only. No guarantee or warranty as to this information, or any product to which it relates, is given or implied. This information may contain inaccuracies, errors or omissions and CABOT DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AS TO (i) SUCH INFORMATION, (ii) ANY PRODUCT OR (iii) INTELLECTUAL PROPERTY INFRINGEMENT. In no event is Cabot responsible for, and Cabot does not accept and hereby disclaims liability for, any damages whatsoever in connection with the use of or reliance on this information or any product to which it relates.

CABELEC is a registered trademark of Cabot Corporation.

©2013 Cabot Corporation.

9/2013