CONDUCTIVE COMPOUNDS AND CONCENTRATES

CABELEC® CA3896 CONDUCTIVE COMPOUND

Product highlights

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.

Key applications

CABELEC CA3896 electrically conductive compound has been specially designed for packaging and electronic product handling where freedom from the hazard of electrostatic discharge is necessary.

Processing

Pre-drying

CABELEC CA3896 electrically conductive compound absorbs very little water from the atmosphere during normal storage and usage conditions. Pre-drying 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 pre-dry the material to achieve a product of good quality. Usually 2 - 3 hours in a drier at 80°C is sufficient time to reduce the moisture content to an acceptable level.

Injection molding

CABELEC CA3896 electrically conductive compound can be processed on most types of injection molding 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 molding temperatures have been used successfully:

- Barrel/nozzle: 200°C / 235°C
- Mold: 30°C

Mold design

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

Extrusion

CABELEC CA3896 electrically conductive compound can be processed on conventional extrusion equipment. It should be processed under low shear conditions. 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 are avoided. The information given in this section is provided as guidance only as different equipment could require different processing conditions to achieve the desired results.

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TYPICAL PROPERTIES			
PROPERTY	**TYPICAL VALUE**	**UNITS**	**TEST METHOD**
Density @ 23°C	1087	kg/m^3	ISO 1183
Hardness (15 second value)	75	Shore D	ISO 868
Heat Distortion Temperature @ 1.80 MPa	72	°C	ISO 75
Vicat Softening Point @ 10 N	101	°C	ISO 306
Melt Flow Index (200°C/5 kg)	1	g/10 min.	ISO 1133
Melt Flow Index (200°C/10 kg)	5	g/10 min.	ISO 1133
Melt Flow Index (200°C/21.6 kg)	38	g/10 min.	ISO 1133
Volume Resistivity	$< 10^3$	Ohm.cm	IEC 61340-2-3
Surface Resistivity (on 0.4mm thick extruded tape)	$< 10^5$	Ohm/sq	IEC 61340-2-3
Flexural Modulus	1875	MPa	ISO 178
Tensile Strength at Break	24	MPa	ISO 527
Tensile Strength at Yield	30	MPa	ISO 527
Elongation at Break	23	%	ISO 527
Notched Izod Impact @ 23°C	31	kJ/m^2	ISO 180A
Flammability class (3mm)	HB 40	rating	UL94

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

Product form and logistics

- Product form: pellets
- Regional availability: global
- Packaging options: 25 kg bags

For information on product-specific storage conditions, please refer to the applicable Safety Data Sheet (SDS) available from your Cabot representative or at cabotcorp.com.

NORTH AMERICA
Cabot Plastics Canada
707 Pierre Tremblay Boulevard
Saint-Jean-sur-Richelieu
QC, J2X 5G5
Canada
T +1 450 347 4371
F +1 450 347 9936

SOUTH AMERICA
Cabot Brasil Industria e Comercio Ltda.
Rua do Paraíso 148 - 5° andar
04103-000 São Paulo
Brazil
T +55 11 2144 6400
F +55 11 3253 0051

EUROPE
SIA Cabot Latvia
101 Mukusalas Street
LV-1004 Riga
Latvia
T +371 670 50 900
F +371 670 50 985

MIDDLE EAST/AFRICA
Cabot Specialty Chemicals
Jebel Ali Free Zone
LOB 15, Office 424, Dubai
United Arab Emirates
T +971 4 8871 800
F +971 4 8871 801

ASIA PACIFIC
Cabot China Ltd.
558 Shuangbai Road
Minghang District
Shanghai 201108
China
T +86 21 5175 8800
F +86 21 6434 5532

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