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

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>TYPICAL VALUE</th>
<th>UNITS</th>
<th>TEST METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density @ 23°C</td>
<td>1087</td>
<td>kg/m³</td>
<td>ISO 1183</td>
</tr>
<tr>
<td>Hardness (15 second value)</td>
<td>75</td>
<td>Shore D</td>
<td>ISO 868</td>
</tr>
<tr>
<td>Heat Distortion Temperature @ 1.80 MPa</td>
<td>72</td>
<td>°C</td>
<td>ISO 75</td>
</tr>
<tr>
<td>Vicat Softening Point @ 10 N</td>
<td>101</td>
<td>°C</td>
<td>ISO 306</td>
</tr>
<tr>
<td>Melt Flow Index (200°C/5 kg)</td>
<td>1</td>
<td>g/10 min.</td>
<td>ISO 1133</td>
</tr>
<tr>
<td>Melt Flow Index (200°C/10 kg)</td>
<td>5</td>
<td>g/10 min.</td>
<td>ISO 1133</td>
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<tr>
<td>Melt Flow Index (200°C/21.6 kg)</td>
<td>38</td>
<td>g/10 min.</td>
<td>ISO 1133</td>
</tr>
<tr>
<td>Volume Resistivity</td>
<td>&lt; 10³</td>
<td>Ohm.cm</td>
<td>IEC 61340-2-3</td>
</tr>
<tr>
<td>Surface Resistivity (on 0.4mm thick extruded tape)</td>
<td>&lt; 10⁵</td>
<td>Ohm/sq</td>
<td>IEC 61340-2-3</td>
</tr>
<tr>
<td>Flexural Modulus</td>
<td>1875</td>
<td>MPa</td>
<td>ISO 178</td>
</tr>
<tr>
<td>Tensile Strength at Break</td>
<td>24</td>
<td>MPa</td>
<td>ISO 527</td>
</tr>
<tr>
<td>Tensile Strength at Yield</td>
<td>30</td>
<td>MPa</td>
<td>ISO 527</td>
</tr>
<tr>
<td>Elongation at Break</td>
<td>23</td>
<td>%</td>
<td>ISO 527</td>
</tr>
<tr>
<td>Notched Izod Impact @ 23°C</td>
<td>31</td>
<td>kJ/m²</td>
<td>ISO 180A</td>
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<tr>
<td>Flammability class (3mm)</td>
<td>HB 40</td>
<td>rating</td>
<td>UL94</td>
</tr>
</tbody>
</table>

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.

The CABELEC name is a registered trademark of Cabot Corporation.

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**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 Indústria e Comércio 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  
PO Box 15  
Dubai  
United Arab Emirates  
T +971 4 8871 800  
F +971 4 8871 801

**ASIA PACIFIC**
Cabot China Ltd.  
508 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 3 5425 4500  
F +81 3 5425 4500

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