

CABELEC[®] CA6114 Conductive Compound



Conductive Polyethylene Compound

CABELEC CA6114 electrically conductive compound is made from conductive carbon black dispersed in a modified high density polyethylene resin. Its electrical and mechanical properties are not impacted by normal atmospheric conditions.

Applications

CABELEC CA6114 conductive compound is used for injection moulding applications. It is suitable for product handling applications where it is desirable to mitigate the hazard of electrostatic discharge, such as in automotive fuel systems or the handling and packaging of explosive powders and liquids, pigments or electronic components.

Processing

Pre-drying

CABELEC CA6114 conductive compound absorbs moisture under normal storage conditions and this can result in surface blemishes in the final product. It is therefore advisable to dry the compound prior to use. Typically 2-4 hours in a dryer at 80°C is sufficient time to reduce the moisture content to an acceptable level.

Injection Moulding

CABELEC CA6114 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 precise processing conditions depend on the machinery, output rate and complexity of the injected part under consideration. As general guidance, the following injection moulding temperatures have been used successfully: barrel to nozzle: 200°C / 230°C, mould: 35-45°C, screw speed: 50-60 rpm, injection speed: low, and injection pressure: moderate.

Mould Design

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

The information given in this section should be used for guidance only as different equipment could require different processing parameters.

CABELEC® CA6114 Conductive Compound

Physical Properties

Typical values for CABELEC CA6114 conductive compound are presented in the following table. Some of these values are characteristic of injection moulded pieces.

PROPERTY	TEST METHOD	UNIT	VALUE
Density @ 23°C	CTM E023*	kg/m ³	1065
Hardness (15 second value)	ASTM D2240	Shore D	61
Heat distortion temperature at 1.81 MPa	ISO 75-2	°C	40
Heat distortion temperature at 0.45 MPa	ISO 75-2	°C	65
Vicat Softening Point at 10 N	ISO 306	°C	119
Mould shrinkage (longitudinal) on UL94 bars	ASTM D955	%	2.5 - 3.5
Melt Flow Index (190°C/5 kg)	ISO 1133	g/10 min	1
Melt Flow Index (190°C/10 kg)	ISO 1133	g/10 min	4.5
Melt Flow Index (190°C/21.6 kg)	ISO 1133	g/10 min	16
Volume Resistivity injection moulding	CTM E043B*	Ohm.cm	20
Surface Resistivity injection moulding	CTM E042E*	Ohm/sq	160
Flexural Modulus	ISO 178	MPa	744
Flexural Strength	ISO 178	MPa	23
Tensile Modulus	ISO 527	MPa	649
Tensile Strength at Break	ISO 527	MPa	18
Tensile Strength at Yield	ISO 527	MPa	22
Elongation at Break	ISO 527	%	147
Elongation at Yield	ISO 527	%	19
Notched Izod Impact at 23°C	ISO 180	kJ/m ²	20

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

The data in the table 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 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.

Storage life: up to 1 year provided it is stored as directed.



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 Paraíso, 148 -
5º andar
04103-000, Sao Paulo,
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

MIDDLE 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 Bldg. 3 F
2-5-5 Shiba Daimon,
Minato-ku, Tokyo 105-0012,
JAPAN
TEL +81 3 6820 0255
FAX +81 3 5425 4500

The data and conclusions contained herein are based on work believed to be reliable, however, Cabot cannot and does not guarantee that similar results and/or conclusions will be obtained by others. 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.