



**CABOT**

creating what matters

## CONDUCTIVE POLYETHYLENE COMPOUND

# CABELEC® 6114



CABELEC® 6114 is an electrically conductive compound based on conductive carbon black dispersed in a modified high density polyethylene resin. Its electrical and mechanical properties are permanent and are not dependent on atmospheric conditions.

### APPLICATIONS

CABELEC® 6114 is used for injection moulding applications. It is recommended for product handling applications where freedom from the hazard of electrostatic discharge is necessary. Examples are parts for use in automotive fuel systems or where there is handling of explosive powders and liquids, pigments or electronic components.

### PROCESSING

#### Pre-drying (moisture)

CABELEC® 6114 absorbs moisture under normal storage conditions and this can result in surface blemishes. It is therefore advisable to dry the compound prior to use. Usually 2-4 hrs in a hopper drier at 80°C is sufficient time to reduce the moisture content to an acceptable level.

### Injection Moulding

CABELEC® 6114 can be processed on most types of injection moulding machines. 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: 190°C / 215°C - Mould: 35°C

#### Mould design:

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

This information should be used as a guide only as different equipment could need different conditions.



**Cabot Corporation**

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**PHYSICAL PROPERTIES**

Typical values for CABELEC® 6114 are as follows:

PROPERTY	CABOT TEST METHOD (*)	UNIT	VALUE
Density @ 23°C	CTM E023	kg/m <sup>3</sup>	1065
Hardness (15 second value)	CTM E030 (ASTM D2240)	Shore D	61
Heat distortion temperature at 1.81 MPa	CTM E038 (ISO 75-2)	°C	40
Heat distortion temperature at 0.45 MPa	CTM E038 (ISO 75-2)	°C	65
Vicat Softening Point at 10 N	CTM E039 (ISO 306)	°C	119
Mould shrinkage (longitudinal) on UL94 bars	CTM E047 (ASTM D955)	%	2.5 - 3.5
Melt Flow Index (190°C/5 kg)	CTM E005 (ISO 1133)	g/10 min	1
Melt Flow Index (190°C/10 kg)	CTM E005 (ISO 1133)	g/10 min	4.5
Melt Flow Index (190°C/21.6 kg)	CTM E005 (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	CTM E040A (ISO 178)	MPa	744
Flexural Strength	CTM E040B (ISO 178)	MPa	23
Tensile Modulus	CTM E041 (ISO 527)	MPa	649
Tensile Strength at Break	CTM E041 (ISO 527)	MPa	18
Tensile Strength at Yield	CTM E041 (ISO 527)	MPa	22
Elongation at Break	CTM E041 (ISO 527)	%	147
Elongation at Yield	CTM E041 (ISO 527)	%	19
Notched Izod Impact at 23°C	CTM E044A (ISO 180)	kJ/m <sup>2</sup>	20

(\*) 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. 21-06-2010

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