

CABELEC® CA4701



Conductive Polypropylene Compound for Extrusion

CABELEC CA4701 is an electrically conductive compound based on carbon black and a polypropylene copolymer. Its electrical and mechanical properties are permanent and are not dependent on atmospheric conditions.

Applications

CABELEC CA4701 has been specially designed for sensitive extrusion applications such as sheets and corrugated sheets for packaging electronics, where freedom from the hazard of electrostatic discharge is required.

Processing

Special Features

CABELEC CA4701 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.

Extrusion

CABELEC CA4701 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 190 - 220°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.

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Physical Properties

Typical values for CABELEC CA4701 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	1208
Hardness (15 second value)	CTM E030 (ASTM D2240)	Shore D	68
Heat Distortion Temperature @ 1.80 MPa	CTM E038 (ISO 75)	° C	50
Vicat Softening Point @ 10 N	CTM E039 (ISO 306)	° C	155
Melt Flow Index (230°C/5.0 kg)	CTM E005 (ISO 1133)	g/10 min	2.3
Melt Flow Index (230°C/10.0 kg)	CTM E005 (ISO 1133)	g/10 min	10.3
Volume Resistivity on injection moulded plaque	CTM E043B	Ohm.cm	70
Surface Resistivity on injection moulded plaque	CTM E042E	Ohm/sq	979
Flexural Modulus	CTM E040A (ISO 178)	MPa	1108
Tensile Strength at Yield	CTM E041 (ISO 527)	MPa	27.5
Tensile Strength at Break	CTM E041 (ISO 527)	MPa	19.5
Elongation at Break	CTM E041 (ISO 527)	%	37
Notched Izod Impact @ 23°C	CTM E044A (ISO 180)	kJ/m ²	72

Typical values for CABELEC CA4701 obtained on 0.4 mm-thick extruded tape:

PROPERTY	TEST METHOD*	UNIT	VALUE
Surface Resistivity	CTM E042D	Ohm/sq	770

*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.



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

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