

CABELEC[®] CC6277 Conductive Concentrate



Conductive Concentrate for Polypropylene Slit Tape Application

CABELEC CC6277 conductive concentrate is an electrically conductive concentrate made from a well-selected carbon black finely dispersed in polyethylene resins. Its electrical and mechanical properties are not dependent on atmospheric conditions however, they depend on the type and level of dilution of the resin used and the processing conditions.

Unlike standard conductive compounds, which have very limited dilution potential, CABELEC CC6277 conductive concentrate has the potential to be diluted with a high quantity of natural resin (see chart hereafter). This allows users of CABELEC CC6277 conductive concentrate to benefit from the versatility of this concentrate and from the enhanced physical properties due to higher levels of dilution resin.

Applications

CABELEC CC6277 conductive concentrate can reduce the hazards of electrostatic discharge in applications such as polypropylene based conductive slit tape and polypropylene Flexible Intermediate Bulk Containers (FIBCs).

Processing

Pre-drying (moisture)

CABELEC CC6277 conductive concentrate absorbs moisture under normal storage conditions and this can result in surface blemishes. It is therefore advisable to dry the compound prior to use. About 4 hours in a hopper dryer at 80°C is generally sufficient time to reduce the moisture content to an acceptable level.

Extrusion

CABELEC CC6277 conductive concentrate can be processed on conventional tape extrusion equipment. It should be processed under low shear conditions. To promote good electrical and mechanical properties of the material, it is suggested that high shear mixing elements be avoided. As a general guide, extrusion temperatures of 200-230°C have been used successfully on extrusion lines. Actual extrusion temperatures should be adapted according to the nature of the equipment and the manufactured article to give optimum extrusion quality.

The information given in this section are guidelines only, as results can vary depending on the processing equipment used.

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Physical Properties

Typical values for CABELEC CC6277 conductive concentrate are presented in the following tables.

CABELEC CC6277 Conductive Concentrate as a Concentrate:

PROPERTY	VALUE	CABOT TEST METHOD*
Carrier	PE	-
Density @ 23°C	1150 kg/m ³	CTM E023
MFI 21.6 kg/190°C	4 g/10 min	CTM E005

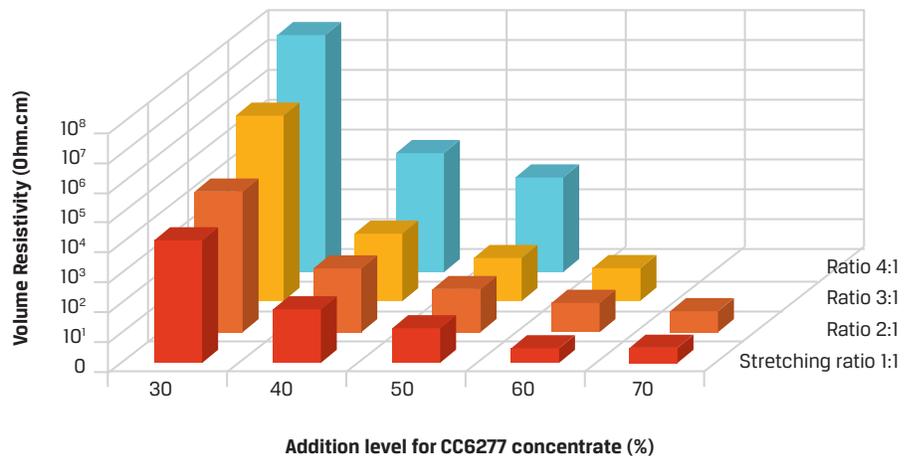
*Tests are performed according to Cabot Test Methods (CTM).

The data in the table above are typical test values intended as guidance only, and are not product specifications.

CABELEC CC6277 Conductive Concentrate Diluted:

CABELEC CC6277 conductive concentrate is diluted with commercially available polypropylene homopolymer (PPH) and high density polyethylene (HDPE), in a proportion of 3 to 1.

Volume resistivity measured on rheometer strands (Cabot test method CTM E 043D) at various dilution rates for CABELEC CC6277 conductive concentrate and several stretching ratio



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Mechanical properties measured on rheometer strands for CABELEC CC6277 conductive concentrate used at various dilution rates and at a stretching ratio of 2:1.

PROPERTY	CABOT TEST METHOD*	UNIT	ADDITION LEVEL OF CABELEC CC6277 CONDUCTIVE CONCENTRATE				
			30%	40%	50%	60%	70%
Tensile Strength at Yield	CTM E0411	MPa	30	35	33	31	29
Tensile Strength at Break	CTM E0411	MPa	42	41	34	29	27
Tensile Elongation at Yield	CTM E0411	%	10	10	11	11	12
Tensile Elongation at Break	CTM E0411	%	1047	917	728	108	16

*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 upon request from your Cabot representative.

Packaging

CABELEC CC6277 conductive concentrate is 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.



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