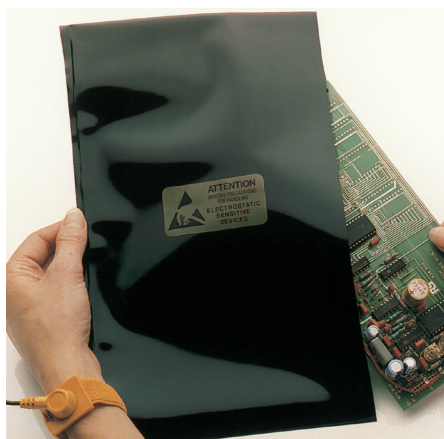


CABELEC[®] CA4918 Conductive Compound



Conductive Polyethylene Compound (PE) for Blown Film Applications

CABELEC CA4918 electrically conductive compound is made from conductive carbon black dispersed in a modified low density polyethylene resin. Its electrical and mechanical properties are not impacted by normal atmospheric conditions.

Applications

CABELEC CA4918 conductive compound is suitable for applications where it is desirable to mitigate the hazard of electrostatic discharge, such as the handling and packaging of explosive powders, pigments and electronic components.

Processing

Pre-drying

CABELEC CA4918 conductive compound absorbs very little moisture from the atmosphere under normal storage and usage conditions. Pre-drying of the compound before processing can therefore be avoided in most cases. Nevertheless for critical applications, if the compound is stored outside, and/or used in climates with high relative humidity, it is advisable to pre-dry the material to achieve a good quality film. Typically 2 - 4 hours in a dryer at 60°C is sufficient time to reduce the moisture content to an acceptable level.

Blown Film Extrusion

CABELEC CA4918 conductive compound can be processed on most types of extrusion equipment. Low shear conditions are nevertheless required in order to achieve good electrical conductivity and mechanical properties. For optimal conductivity, it is advisable to operate with moderate blow up ratios and the highest processing temperatures defined by the manufacturing parameters for good quality film.

As general guidance, extrusion temperatures of 180-200°C have been used successfully on blown film extrusion lines. Temperatures in excess of 230°C should be avoided.

To promote good electrical and mechanical properties of the material it is nevertheless strongly suggested to avoid high shear mixing elements.

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

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Physical Properties

Typical values for CABELEC CA4918 conductive compounds are presented in the following table:

| PROPERTY | TEST METHOD | UNIT | VALUE |
|--|--------------|-------------------|-------------------|
| Density @ 23°C | CTM E023*** | kg/m ³ | 1060 |
| Melt Flow Index (190°C/5 kg) | ISO 1133 | g/10 min | 0.8 |
| Melt Flow Index (190°C/10 kg) | ISO 1133 | g/10 min | 3.5 |
| Surface Resistivity on 100 µm film | CTM E042B*** | Ohm/sq | 5.10 ³ |
| Tensile Strength at Break* on 100 µm film LD | ISO 527 | MPa | 20.5 |
| Tensile Strength at Break* on 100 µm film TD | ISO 527 | MPa | 19.8 |
| Tensile Strength at Yield* on 100 µm film LD | ISO 527 | MPa | 11.5 |
| Tensile Strength at Yield* on 100 µm film TD | ISO 527 | MPa | 11.0 |
| Elongation at Break* on 100 µm film LD | ISO 527 | % | 580 |
| Elongation at Break* on 100 µm film TD | ISO 527 | % | 425 |
| Elongation at Yield* on 100 µm film LD | ISO 527 | % | 23 |
| Elongation at Yield* on 100 µm film TD | ISO 527 | % | 22 |
| Trouser Tear Resistance** on 50 µm film LD | ASTM D1938 | cN/µm | 4.6 |
| Trouser Tear Resistance** on 50 µm film TD | ASTM D1938 | cN/µm | 3.1 |
| Elmendorf Tear Resistance on 100 µm film LD | ASTM D 1922 | cN/µm | 21 |
| Elmendorf Tear Resistance on 100 µm film TD | ASTM D 1922 | cN/µm | 20 |

* 500 mm/min

** 250 mm/min

NB. No yield was observed. The values quoted are calculated for a theoretical yield at 15% offset.

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

LD - longitudinal direction

TD - transverse direction

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.



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