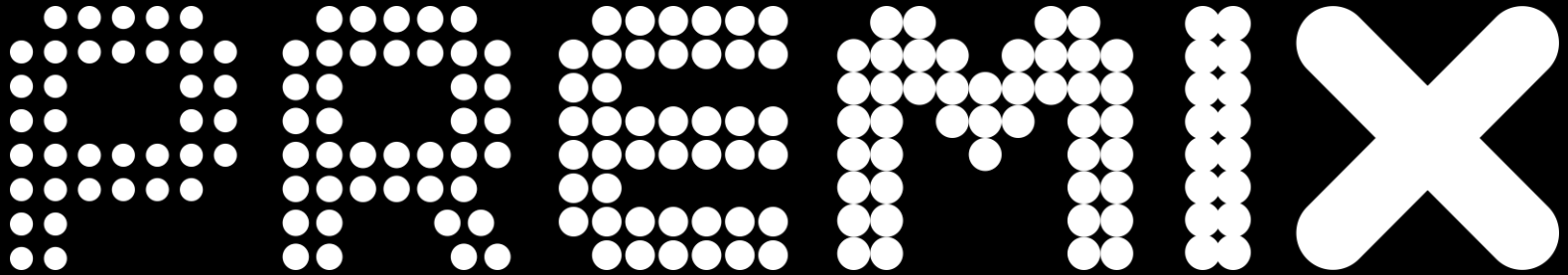


Conductive PRE-ELEC® compounds for FIBC applications


"Creating a safe society
with functional materials"

Packaging is a globally growing industry. Premix's electrically conductive materials bring safety for packaging. When packaging, storing and transporting explosive and flammable materials, safety is a must.

Premix offers conductive material solutions for filaments and the inner liner films in FIBC solutions. The layers are very thin, and this requires a very high quality also from raw materials.

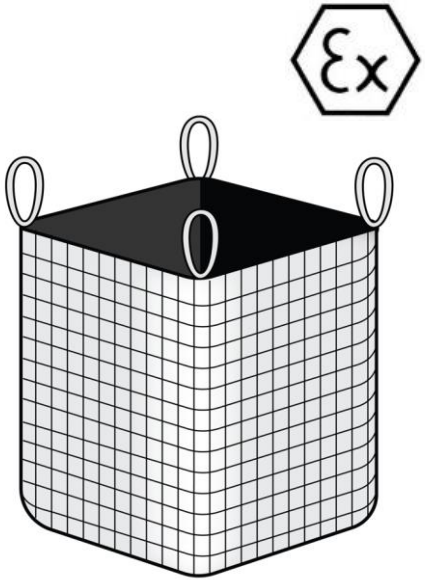
Premix materials are highly dispersed and easily stretchable which makes the manufacturing of thin products easier.

Four types of FIBC
(Flexible Intermediate Bulk Container)

Types A and B FIBCs are made of plain-woven polypropylene or other non-conductive fabrics. They can be used to safely transport non-flammable materials or materials with low breakdown voltage.

Type C FIBCs, also known as conductive FIBCs or ground-able FIBCs, are made from non-conductive polypropylene fabrics interwoven with **conductive threads** traditionally sewn in a grid pattern. Type C FIBC is the most used FIBC type for flammable material handling.

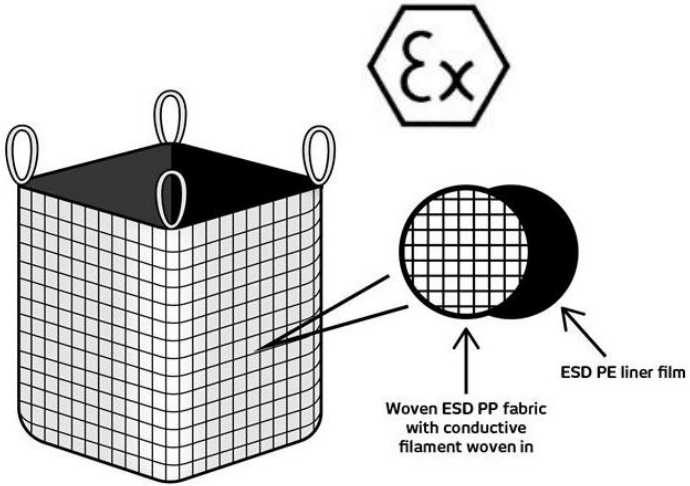
Type D FIBCs are made from antistatic and static dissipative fabrics designed to prevent the occurrence of sparks and brush discharges without the need for a connection from the FIBC to a designated ground.




PRE-ELEC® compounds
for FIBC type C monofilaments and raffia tapes

Premix's electrically conductive PRE-ELEC® compounds and concentrates are **specially developed for thin and durable monofilaments and raffia tapes in FIBC type C applications**.

The material maintains an **excellent conductivity level**. The electrically conductive filaments **can be easily braided** with non-conductive filaments. This enables conductivity into the end-product.



PRE-ELEC® compounds and concentrates meet the high requirements

Our portfolio covers materials specially innovated for **thin applications**. A selection of compounds and concentrates is available for FIBC type C applications (raffia tapes, filaments and films).

Material properties of our grades are high. We use **high-quality raw materials**, the carbon black **is well dispersed** and the compounds are **easily processable**.

Premix has a long-term experience in the industry and over 40 years of polymer compounding know-how. We always offer technical customer support and expertise during customer trials, continuing through the whole customer relationship.

Extremely cost-efficient and ready-to-use PE-LD compound PRE-ELEC® PE 18912 for FIBC liner films is now available!

PRE-ELEC® portfolio
FIBC monofilaments and tapes

Product	Base polymer	Typical properties	Special features
PRE-ELEC® PP 1353	PP	Conductive PP concentrate for monofilaments and raffia tapes (FIBC type C)	Dilute up to 50% with commodity PP to produce conductive raffia tapes and monofilaments. 5:1 stretching ratio, high carbon black dispersion.
PRE-ELEC® PE 17840	PE	Conductive multipurpose PE concentrate for monofilaments (with PP), liner films (with PE-LD) and yarn tapes	Dilute up to 40% with commodity PP to produce cost-effective conductive raffia tapes and monofilaments.

PP concentrate

PRE-ELEC® PP 1353

PRE-ELEC® PP 1353 in 50% diluted tape	Typical properties
Volume resistivity	180 Ωcm
Surface resistance	10^3 Ω
MFI, 230°C/10kg (100%)	9
Tensile strength	28 MPa
Elongation at break	450 %

- Highly conductive concentrate based on PP
- Good dispersion
- Easy to stretch up to 5:1
- Suitable for raffia tapes and monofilaments
- High strength and elongation to stand the fabric braiding process

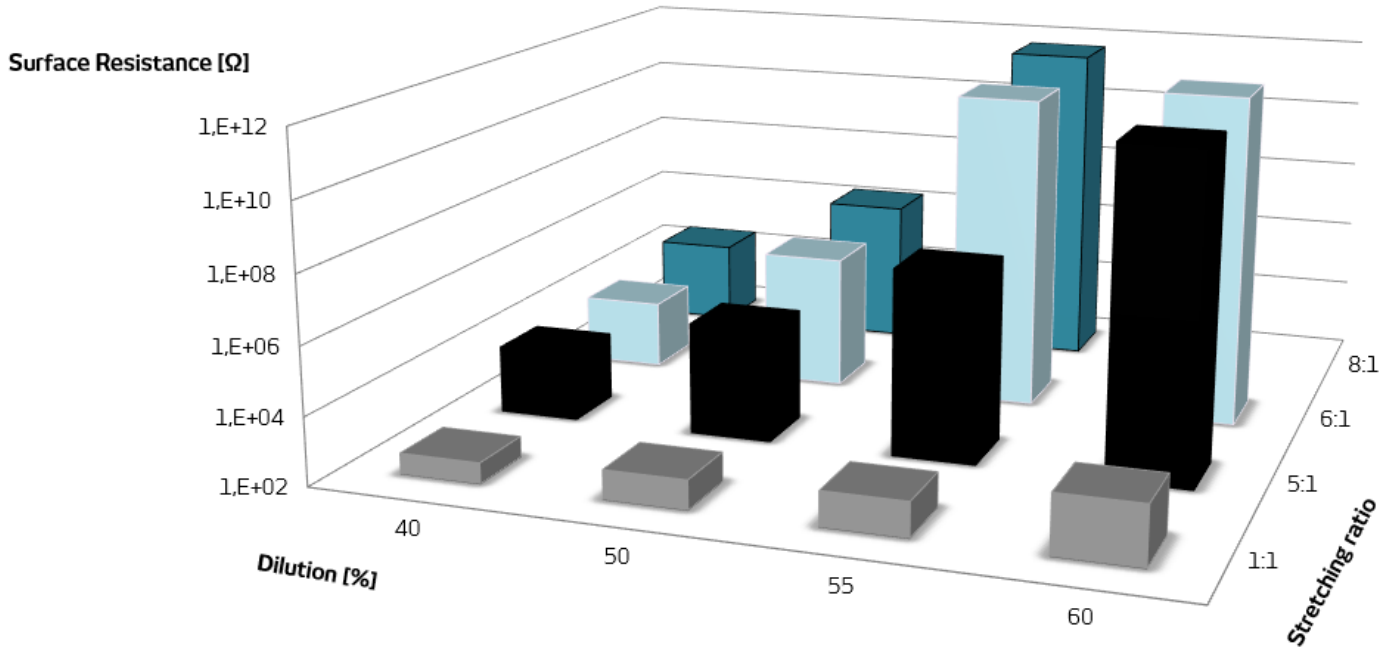
PE concentrate

PRE-ELEC® PE 17840

PRE-ELEC® PE 17840 in 50% diluted tape	Typical properties
Volume resistivity	25 Ωcm
Surface resistance	10^3 Ω
MFI, 230°C/21,6kg (100%)	5
Tensile strength	31 MPa
Elongation at break	>1000 %

- Highly conductive cost-effective concentrate based on PE-LLD
- Good dispersion
- Easy to stretch up to 5:1
- Suitable for raffia tapes and monofilaments with PP dilution
- High strength and elongation to stand the fabric braiding process

Surface resistance at various dilution levels and stretching ratio | PRE-ELEC® PP 1353

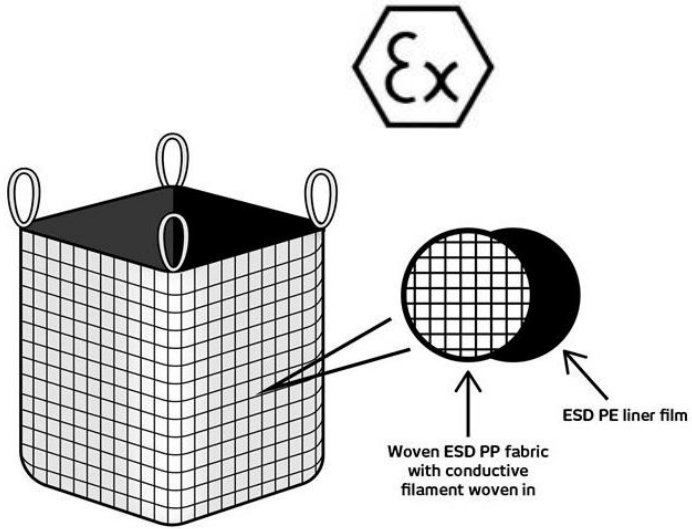


PRE-ELEC® compounds
for FIBC type C liner films

FIBC **liner films** can also be made of Premix conductive PE-LD/PE-LLD compounds and concentrates. The materials are **easily processable**, e.g., with a **high blowing ratio** and still **retaining the required level of conductivity**.

Final properties can be modified by choosing a concentrate instead of direct compound. A lower dilution ratio leads to higher conductivity. A special dilution polymer brings special mechanical properties, such as better flexibility.

Film grades are also suitable for multilayer films where surface layers are conductive.



Conductive compound portfolio
FIBC liner films

Product	Base polymer	Typical properties	Special features
PRE-ELEC® PE 1271	PE	• Easy to blow into thin film, also multilayer • High conductivity • Excellent dispersion	Ready-to-use conductive PE-LD/PE-LLD based compound for liner films (FIBC type C)
PRE-ELEC® PE 17840	PE	• Dilute up to 40% with non-conductive film PE-LD • Cost effective option • Possibility to modify properties with different dilution polymers and ratios • Easy to blow into thin film, also multilayer • High conductivity, fine dispersion	Multipurpose conductive PE-LLD based concentrate for liner films
PRE-ELEC® PE 18912 Experimental grade	PE	• Easy to blow into thin film, also multilayer • High conductivity • Good dispersion	Cost-effective ready-to-use conductive PE-LD/PE-LLD based compound for liner films (FIBC type C)

PE compound

PRE-ELEC® PE 1271

PRE-ELEC® PE 1271 in blown film, 80 µm	Typical properties
Volume resistivity	70 Ωcm
Surface resistance	10^3 Ω
MFI, 190°C/5kg	2
Tensile strength	24 MPa
Elongation at break	600 %

- Highly conductive compound based on a blend of PE-LD/PE-LLD
- Very high dispersion
- Blowing ratio more than 2:1
- Suitable for film and extrusion applications

PE concentrate

PRE-ELEC® PE 17840

PRE-ELEC® PE 17840 in 40% diluted film, 80 µm	Typical properties
Surface resistance	10^4 Ω
MFI, 190°C/21,6kg (100%)	5
Tensile strength	26 MPa
Elongation at break	500 %

- Highly conductive cost-effective concentrate based on PE-LLD
- Good dispersion
- Dilute up to 50%
- Modify the properties by diluting with specific polymers
- Blowing ratio more than 2:1
- Suitable for FIBC liner films with PE-LD dilution

PE compound

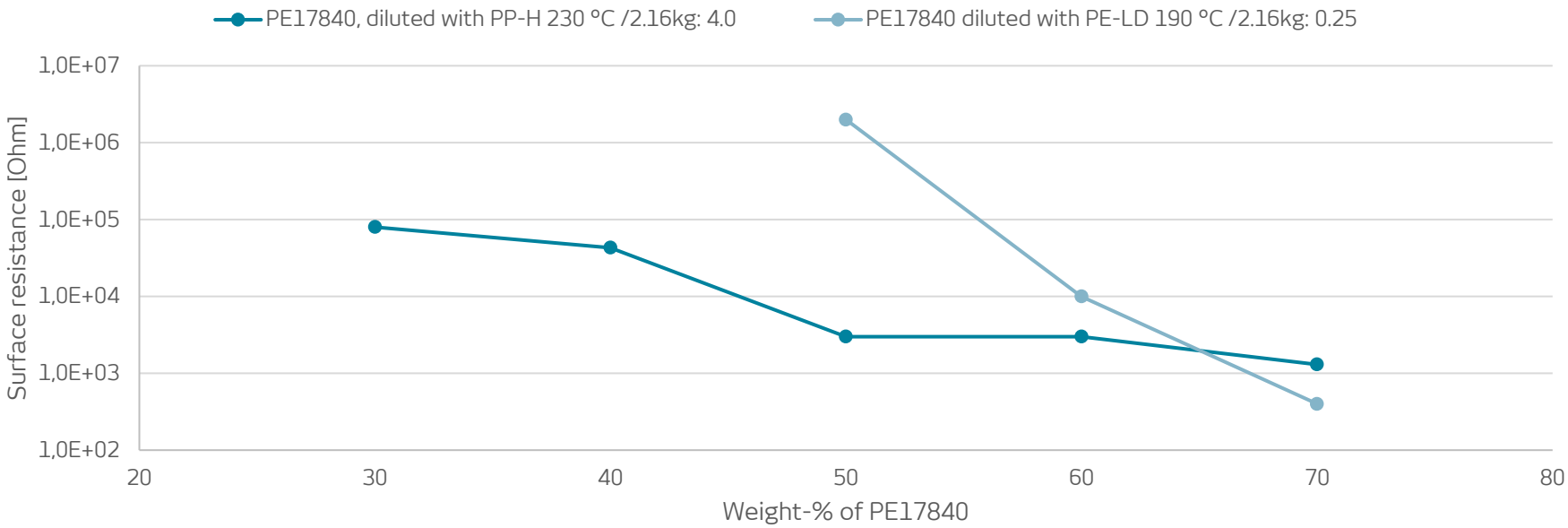
PRE-ELEC® PE 18912

Experimental grade

PRE-ELEC® PE 18912 extruded tape, 800 µm	Typical properties
Volume resistivity	70 Ωcm
Surface resistance	10^3 Ω
MFI, 190°C/5kg	2
Tensile strength	15 MPa
Elongation at break	400 %

- Cost-effective highly conductive compound based on a blend of PE-LD/PE-LLD
- High dispersion
- Blowing ratio more than 2:1
- Suitable for film and extrusion applications

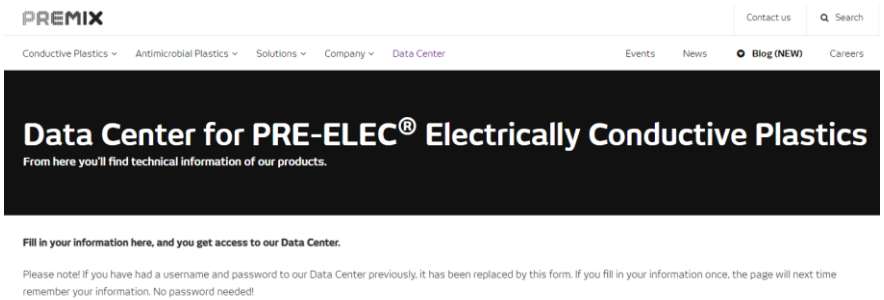
Percolation curve of | PRE-ELEC® PE 17840



Premix Data Center
Technical datasheets

In our Data Center, we have collected **technical information** about our products for you, including **processing instructions** for PRE-ELEC® conductive compounds and concentrates.

https://premixgroup.com/data-center



Premix Oy

High expertise in product development
& technical support

PREMIX

Premix Oy – Your reliable material supplier

European market leader and global forerunner in **Electrically Conductive Plastics**. Strong focus on developing future material solutions.

Long-term expertise in polymer compounding; product development and material processing know-how in FIBC applications.

The newly invested state-of-the-art machinery makes Premix **one of the strongest producers of conductive PP and PE compounds.** Comprehensive grade selection and concentrates for FIBC applications, also tailored solutions.

Technical support available for trial runs.

Wide distributor network and local representatives in various countries.

Responsible Care
Our commitment to sustainability

QUALITY SYSTEM CERTIFICATION
DNV·GL
ISO 9001:2015

PREMIX

PREMIX

Family owned, independent company

Established 1980

110 employees

Sales revenue 46 M€ (2020)

Production capacity 70 kt/a

LET'S MAKE
A GOOD MIX

www.premixgroup.com