

Item Description

Item ID

Polyester-TPU extrusion compound
Electrically conductive
Flexible

Typical end product
TPU/ABS Sheets

Applications
Profiles
Sheets

PRE-ELEC[®] TPU 1512 is a conductive thermoplastic elastomer compound based on a polyester -based thermoplastic polyurethane (TPU). Conductivity is achieved by using special conductive carbon black. In addition to a low electrical resistivity, it has retained the excellent mechanical properties of the base elastomer. The grade has been developed for extrusion but is also suitable for injection moulding applications.

| Special properties | Unit | Value | Method |
|-----------------------|------|-------|---------------|
| Volume resistivity(*) | Ω.cm | 10 | PRE021 |
| Surface resistance(*) | Ω | <1E3 | IEC 61340-2-3 |

| General properties | Unit | Value | Method |
|------------------------------------|-------------------|-----------|-----------|
| Density | g/cm ³ | 1,3 | ISO 1183 |
| Melt flow rate at 190°C 10.0 kg | g/10 min | 3 | ISO 1133 |
| Mould shrinkage | % | 1.0 - 1.3 | ISO 294-4 |

| Mechanical properties | Unit | Value | Method |
|-------------------------|-------------------|-------|---------|
| Stress at break | MPa | 26 | ISO 527 |
| Strain at break | % | 1000 | ISO 527 |
| Tensile modulus(*) | MPa | 26 | ISO 527 |
| Impact strength, Charpy | kJ/m ² | | ISO 179 |
| Unnotched, +23°C | | NB | |
| Notched, +23°C | | NB | |
| Unnotched, -20°C | | NB | |
| Notched, -20°C | NB | | |
| Hardness, Shore A | - | 89 | ISO 868 |
| Hardness, Shore D | - | 43 | ISO 868 |

MFR is measured from granulates.

Test specimen: Injection moulded rod; ISO 527 TYPE 1A; Thickness: 10 mm, width: 4 mm

(* extruded tape; ISO 527-2 Type 1B, thickness 400 - 800 µm)



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Processing instructions

| | | Unit | Processing range | |
|--------------------|------------------------------|------|------------------|-------|
| Extrusion | Cylinder temperature profile | °C | 145 | - 170 |
| | Die temperature profile | °C | 170 | - 170 |
| | Tool/Roll temperature | °C | 40 | - 40 |
| Injection moulding | Material temperature | °C | 180 | - 210 |
| | Mould temperature | °C | 30 | - 50 |
| | Injection pressure | Bar | 200 | - 800 |
| | Injection speed | | moderate / high | |

Notes

Drying of the product is recommended for 2-3 hours at 80°C prior to use.

The moisture content after drying should be less than 200 ppm in order to avoid loss of properties. These parameters are for guidance only. The process parameters should always be optimized for the used equipment. The instructions of the equipment manufacturer should be followed. Caution should be taken when handling molten material as it is extremely hot and may cause severe burns.

Storage

Product-specific details are mentioned in the notes above. The general minimum shelf life for Premix's product is 3 years with the following conditions: 1) original package is unopened, 2) the storage area and conditions provide protection from direct sunlight and significant changes in storage temperature, 3) the product is pre-dried accordingly before use.

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