Technical Datasheet

Item Description
PRE-ELEC® TPU 1512

Item ID
TPU1512

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 suitabe 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/cm3	1,3	ISO 1183
Melt flow rate at 190°C	g/10 min		ISO 1133
10.0 kg		3	
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/m2		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.