

Item Description

Item ID

PRE-ELEC[®] TPU 18438
TPU18438

Polyester-TPU extrusion compound	Typical end product	Flextubes
Electrically conductive	Applications	Profiles
Flexible		

PRE-ELEC[®] TPU 18438 is a conductive thermoplastic elastomer compound based on a polyester -based thermoplastic polyurethane (TPU).

Special properties	Unit	Value	Method
Volume resistivity(*)	Ω.cm	250	PRE021
Surface resistance(*)	Ω	2E+03	IEC 61340-2-3
General properties	Unit	Value	Method
Specific gravity	g/cm ³	1,27	ISO 1183
Melt flow rate at 190°C	g/10 min		ISO 1133
10.0 kg		9	
Mould shrinkage	%	1,34	ISO 294-4
Mould shrinkage, Transverse	%	1	ISO 294-4
Mechanical properties	Unit	Value	Method
Tensile strength(*)	MPa	34	ISO 527
Tensile strain at break(*)	%	1000	ISO 527
Tensile stress at 100%(*)	MPa	5,4	ISO 527
Tensile stress at 200%(*)	MPa	7,8	ISO 527
Tensile stress at 300%(*)	MPa	10,3	ISO 527
Tensile modulus(*)	MPa	23	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	-	84	ISO 868
Hardness, Shore D	-	36	ISO 868

MFR is measured from granulates

Test specimen: injection moulded rod; Thickness: 10 mm, width: 4 mm

*) extruded tape; Thickness 600-800 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 - 200
	Mould temperature	°C 20 - 40
	Injection pressure	Bar 200 - 600
	Injection speed	Slow

Notes

Drying of the product is recommended for 3-4 hours at 80°C prior to use.

TPU is a hygroscopic material. The moisture content after drying should be less than 200 ppm in order to avoid loss of properties. The use of desiccant / vacuum dryer is recommended. Extensive drying time may lead to degradation of the product. 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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