

# PRE-ELEC<sup>®</sup> TP 16159

TPU injection moulding compound  
Electrically conductive  
Carbon fiber

Applications: Injection moulded parts  
Casters  
Wheels

PRE-ELEC<sup>®</sup> TP 16159 is a conductive thermoplastic elastomer compound based on a polyester -based thermoplastic polyurethane (TPU). Conductivity is achieved by using special conductive carbon fibre. In addition to a low electrical resistivity, it has excellent mechanical properties due to carbon fibre reinforcement. The grade is suitable for extrusion and injection moulding applications.

Special properties	Unit	Value	Method
Volume resistivity	Ω.cm	9	PRE021
Surface resistance	Ω	2E+04	IEC 61340-2-3

General properties	Unit	Value	Method
Specific gravity	g/cm <sup>3</sup>	1.28	ISO 1183
Melt flow rate at 190°C 10.0 kg	g/10 min	33.0	ISO 1133
Mould shrinkage	%	0.1	ISO 294-4
Vicat, Rate A	°C	120	ISO 306/A50
Vicat, Rate B	°C	62	ISO 306/B50
HDT, 0.45 MPa	°C	87	ISO 75/Bf
HDT, 1.80 MPa	°C	55	ISO 75/Af

Mechanical properties	Unit	Value	Method
Tensile strength	MPa	50	ISO 527
Tensile strain at break	%	25	ISO 527
Flexural modulus	MPa	660	ISO 178
Impact strength, Charpy	kJ/m <sup>2</sup>		ISO 179
Unnotched, +23°C		NB	
Unnotched, -20°C		71	
Hardness, Shore D	-	62	ISO 868

MFR is measured from granulates

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

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This product is REACH and RoHS compliant

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## Processing instructions

	Unit	Processing range
<b>Extrusion</b>		
Cylinder temperature profile	°C	170 - 210
Die temperature profile	°C	215 - 220
Tool/Roll temperature	°C	60 - 50
<b>Injection moulding</b>		
Material temperature	°C	180 - 220
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 70-90°C prior to use.

Processing conditions as with filled TPU. The moisture content after drying should be less than 200 ppm in order to avoid loss of properties. The shelf life for this product is 1 year from the date of delivery with the same conditions as written below. 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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