Technical Datasheet

Item Description
PRE-ELEC® TP 15837

Item ID
TP15837

PS concentrate
Electrically conductive

Typical end product
Sheets

Applications
Thermoformed trays

PRE-ELEC® TP 15837 is a conductive thermoplastic concentrate based on polystyrene. Conductivity is achieved by using a high concentration of special conductive carbon black. It can be diluted with natural or recycled polystyrene. The actual ratio of the polymers should always be tested. It can be both mono- and co-extruded.

The values with the exception of MFR are measured from dilution: 50% HIPS, MFI 4 (200°C/5 kg)

Special properties	Unit	Value	Method
Volume resistivity(*	Ω.cm	100	PRE021
Surface resistance(* - See percolation curve	Ω	8E+02	IEC 61340-2-3

General properties	Unit	Value	Method
Specific gravity	g/cm3	1.17	ISO 1183
Melt flow rate at 200°C	g/10 min		ISO 1133
21.6 kg		2.3	
Mould shrinkage	%	0.4 - 0.6	ISO 294-4
Vicat, Rate A	°C	103	ISO 306/A50
Vicat, Rate B	°C	84	ISO 306/B50
HDT, 0.45 MPa	°C	79	ISO 75/Bf
HDT, 1.80 MPa	°C	68	ISO 75/Af

Mechanical properties	Unit	Value	Method
Tensile strength(*	MPa	35	ISO 527
Yield strength(*	MPa	32	ISO 527
Tensile strain at break(*	%	35	ISO 527
Tensile strain at yield(*	%	4	ISO 527
Flexural modulus	MPa	1650	ISO 178
Impact strength, Charpy	kJ/m2		ISO 179
Unnotched, +23°C		NB	
Notched, +23°C		13	
Unnotched, -20°C		NB	
Notched, -20°C		6	
Hardness, Shore A	-	> 90	ISO 868
Hardness, Shore D	-	72	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

Extrusion

	Unit	Processing range
Cylinder temperature profile	°C	180 - 220
Die temperature profile	°C	200 - 220
Tool/Roll temperature	°C	90 - 60

Notes

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

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.