

PRE-ELEC[®] TPE 1504

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PRE-ELEC[®] TPE 1504 is a highly conductive thermoplastic compound based on a thermoplastic elastomer (TPE). Conductivity is achieved by using special conductive carbon black. In addition to a low electrical resistivity PRE-ELEC[®] TPE 1504 has retained the excellent mechanical properties of the base elastomer.

Typical applications included extruded profiles, sheets and injection moulded technical parts.

Processing

PRE-ELEC[®] TPE 1504 compound can be extruded or injection moulded in the machines using normal processing conditions as with TPE.

Injection moulding:

Material temperature	180 – 210 °C (355 – 410 °F)
Mould temperature	30 – 50 °C (85 – 120 °F)
Injection pressure	low - medium
Injection speed	medium - high

Extrusion temperature:

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Die	210 °C (410 °F)	210 °C (410 °F)	210 °C (410 °F)	210 °C (410 °F)	210 °C (410 °F)	
Cylinder	170 °C (340 °F)	180 °C (355 °F)	190 °C (375 °F)	200 °C (390 °F)	210 °C (410 °F)	210 °C (410 °F)
Rolls	1st 60 °C (140 °F)	2nd 60 °C (140 °F)	3rd 50 °C (120 °F)			

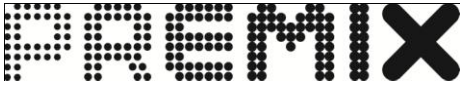
These temperatures can be used for guidance purposes. They will also depend on the equipment used. The instructions of the equipment manufacturer should be followed.

Pre-drying is recommended e.g. 1 - 2 hours at max. 65 °C (150 °F)

Packaging and Storage

PRE-ELEC[®] TPE 1504 is supplied in granule form, packed in 20 kg polyethylene valve bags (1000 kg on one-way pallet) or in 1100 kg octabin.

The product can be stored for one year in its original package. Packages should be stored indoors.



Physical Properties

PRE-ELEC [®] TPE 1504	ISO	Unit		ASTM	Unit	
Specific gravity		g/cm ³	1.1			
Density					lb/in ³	0.040
Melt Flow Index	1133	g/10min	18	D-1238		
190°C / 10.0 kg						
Tensile strength ⁽²⁾	527	MPa	-	D-638	psi	-
Tensile strength at 100%	527	Mpa	2.4	D-638	psi	350
Tensile strength at 200%	527	Mpa	3.2	D-638	psi	460
Tensile strength at 300%	527	Mpa	3.9	D-638	psi	550
Yield strength ⁽²⁾	527	MPa	-	D-638	psi	-
Elongation at break	527	%	>800	D-638	%	>800
Tensile modulus ⁽²⁾	178	MPa	-	D-790	10 ³ psi	-
Impact strength, unnotched Izod ⁽²⁾	180	kJ/m ²		D-256	ft-lb/in ²	
4.0 mm (0.156-in) thickness,23°C/73°F			-			-
4.0 mm (0.156-in) thickness,-20°C/-4°F			-			-
Impact strength, notched Izod ⁽²⁾	180	kJ/m ²		D-256	ft-lb/in ²	
4.0 mm (0.156-in) thickness,23°C/73°F			-			-
4.0 mm (0.156-in) thickness,-20°C/-4°F			-			-
Impact strength, unnotched Charpy	179	kJ/m ²		D-256	ft-lb/in ²	
4.0 mm (0.156-in) thickness,23°C/73°F			-			-
4.0 mm (0.156-in) thickness,-20°C/-4°F			-			-
Impact strength, notched Charpy	179	kJ/m ²		D-256	ft-lb/in ²	
4.0 mm (0.156-in) thickness,23°C/73°F			-			-
4.0 mm (0.156-in) thickness,-20°C/-4°F			-			-
Vicat softening point	306/			D-1525		
Rate A	A50	°C	-		°F	-
Rate B	B50	°C	-		°F	-
Deflection temperature	75/			D-648		
0.45 MPa (66 psi) - load	Method Bf	°C	-		°F	-
1.8 MPa (264 psi) - load	Method Af	°C	-		°F	-
Volume resistivity ⁽²⁾	PRE021	Ω cm	<10²	PRE021	Ω cm	<10²
Surface resistance ⁽¹⁾	IEC	Ω		ANSI/ES	Ω	
	61340-2-3		<10⁵	D STM		<10⁵
				111.11		
Mould shrinkage ⁽²⁾	294-4	%	1.6-1.8	D-955	in/in	0.016-0.018
Hardness Shore A ⁽²⁾			70			70
Hardness Shore D ⁽²⁾	868		-	D-2240		-

⁽¹⁾ test specimen: : 400µm (16 mils) thick sheet

⁽²⁾ test specimen: 4.0 mm (0.156 in) thick, 10.0 mm (0.391 in) wide moulded rod

The information in this data sheet represents typical values obtained by us and should not be regarded as a specification.

We condition that the product will be inspected and qualified by the customer for his process to meet the specific requirements set by application, processing equipment and end product.