

Electrical insulating material

Teonex® Q 51 | FI 14090

Composition: Teonex® Q 51 | FI 14090 is a flexible, light hazy, biaxial orientated polyethylene naphthalate (PEN) film.

Properties: Teonex® Q 51 | FI 14090 has better properties in comparison to PET-polyester films. Since Teonex® Q 51 | FI 14090 has an increased temperature resistance, it is classified to insulation class F (155°C). According to UL Teonex® Q 51 | FI 14090 has an RTI of 180°C and a mechanical RTI of 160°C. Further advantages of Teonex® Q 51 | FI 14090 are: very high dielectric strength, good mechanical strength, high stiffness, low humidity absorption and it can also be laminated easily.

Applications: Teonex® Q 51 | FI 14090 was especially designed for usage as slot and phase insulation as well as slot closure in electro motors with increased stress.

Delivery forms: Teonex® Q 51 | FI 14090 is available as die-cut or formed part, sheet, cut or on rolls (with width up to 1000 mm) and reels (with width from 6 mm) in the following thicknesses 12, 16, 25, 38, 50, 75, 100, 125, 188, 250 µm. Other delivery forms upon customer request.

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Property	Test method	Unit	Value
Density	JIS C-2151	g/cm ³	1.36
Tensile strength	JIS C-2318	kg/mm ²	28
Elongation at break	JIS C-2318	%	90
Water absorption	TDF Method	%	0.3
Shrinkage at 150 °C longitudinal	JIS C-2318 (TDF Method)	-	0.4
Shrinkage at 150 °C crosswise	JIS C-2318 (TDF Method)	-	0.0
Shrinkage at 200 °C longitudinal	JIS C-2318 (TDF Method)	-	2.0
Shrinkage at 200 °C crosswise	JIS C-2318 (TDF Method)	-	1.0
Continuous working temperature	UL 746B	°C	160/180
Coefficient of thermal expansion	TDF Method	1/°C	13 x10 ⁻⁶
Melting temperature	DSC	°C	269
Dielectric strength	JIS C-2318	kV/mm	250
Dielectric constant (AC 60 Hz, 25°C)	JIS C-2318	-	3.0
Dielectric dissipation factor (AC 60 Hz, 25°C)	JIS C-2318	-	0.003
Volume resistivity	JIS C-2118 at 25°C	Ω/m	10 ¹⁸
Surface resistivity	JIS C-2118 at 25°C	Ω/m	2.10 ¹⁷

Trademark information: Teonex® is a registered trademark of the company DuPont.

Information:

The information in this Technical Data Sheet is based on our present knowledge and experiences. It does not release the user from conducting their own trials and examinations to determine the suitability of the product for his intended use. A legally obligatory warranty of certain characteristics or the suitability for a specific targeted application cannot be derived from our data. Depending upon individual cases we recommend consultation with us. Any patent rights as well as existing laws are to be considered by the receiver of our products as their own responsibility.

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