

Electrical insulating materials

Melinex® 238 | FI 13020

Composition: Melinex® 238 | FI 13020 is a flexible, white polyester film with matt surfaces.

Properties: Melinex® 238 | FI 13020 has a relevant temperature index of 140°C according to UL classification, a mechanical RTI of 130°C and an excellent ageing behaviour in comparison to other standard polyester films which have a higher oligomer content. Furthermore Melinex® 238 | FI 13020 has a high dielectric strength, small change of dielectric values, special mechanical properties as well as very good hydrolytic stability. The half-life period of the mechanical properties is comparatively doubled.

Applications: Melinex® 238 | FI 13020 was especially designed for usage as slot insulation, phase insulation and slot closure in electric motors with high chemical stress. It can also be used for hermetic motors which are refrigerant-stressed because of its low oligomer extraction.

Form of supply: Melinex® 238 | FI 13020 is supplied on rolls (up to ca. 1100 mm), as reels (with a width from 6 mm), as feathered reels and as adhesive tapes. Further sheets, cuts, die-cut and formed parts are available on request, other forms, e.g. self-adhered are also available.

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Property	Test method	Unit	Value			
			125	190	250	350
Total thickness	-	µm	125	190	250	350
Yield	-	m ² /kg	5.7	3.8	2.9	2.0
Density	ASTM D 1505-68 (1975) at 23°C (changed to Melinex®-Test)	g/cm ³	1.40			
Water absorption	ASTM D 570-81 at 23° (1972)	%	0.55			
Oligomer extraction	24 h in boiling xylene	%	0.6			
Tear strength CD MD	ASTM D 822-75b (250 µm film, 23°C, 50%/min elongation speed)	kg/mm ² kg/mm ²	21 22			
Elongation at break CD MD	ASTM D 822-75b (250 µm film, 23°C, 50%/min elongation speed)	% %	150 130			
Coefficient of friction	ASTM D 1894-75 (changed to Melinex®-Test)	-	0.30			
Melting temperature	ASTM E794-85	°C	255 – 260			
Heat capacity	at 25°C	kJ /kg.K	1.3			
Heat capacity	at 25 °C	cal/g. °C	0.32			
Coefficient of thermal expansion	20 to 50 °C	1/K(cm/cm °C)	33 x 10 ⁻⁶ (MD) / 32 x 10 ⁻⁶ (TD)			
Shrinkage CD MD	after 5 min at 90°C after 5 min at 90°C	% %	2 2			
Breakdown voltage	IEC 243, 50 Hz, 500V/ s ramp, 6,3 mm electrodes	kV	16	19	23	26
Dielectric constant (AC, 23°C, 50 Hz)	IEC 250	-	3.3			
Dielectric dissipation factor (AC 50 Hz, 23 °C)	IEC 250	-	0.0020			
Volume resistivity	IEC 93 (100V DC at 25°C und 1000s)	Ω/m	10 ¹⁵			
Surface resistivity	EC 93 (500 V DV at 20°C und 54 % rel. air humidity)	Ω/m	> 10 ¹³			
Weak acids and bases	-	-	Good			
Lubricants, oils and greases	-	-	Good			
Organic solvents, alcohol and carbon hydride	-	-	Good			

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Trademark information: Melinex® is a registered trademark of the company Du Pont.

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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