



Melinex®

polyester film

Melinex® 238

Melinex® 238 is a white polyester film with both surfaces semi matt. It has been specifically developed for use as an insulating material (slot liner, closure and interphase) in electric motors. It has a reduced level of low molecular weight material (oligomers) when compared with normal polyester film and is especially suitable for use in motors driving hermetic compressors where oligomer extraction needs to be limited.

A particular feature of Melinex® 238 is its' superior thermal ageing performance in comparison to standard polyester films. Melinex® 238 is available in thicknesses of 125, 190, 225, 250, 300 and 350 micron.

TYPICAL VALUES OF PROPERTIES

Property	Test Method	Unit	Value			
General						
Thickness	---	micron	125	190	250	350
Area Yield	---	m ² /kg	5.7	3.8	2.9	2
Relative Density (at 23°C)	ASTM D 1505-68 (1975) (Modified to Melinex test method)	--	1.4			
Water absorption (1 week at 23°C)	ASTM D 570-81 (1972)	%	0.55			
Oligomer extraction	24 hours boiling Xylene	%	0.6			
Thermal						
Upper melt temperature	ASTM E794-85	°C	MD		TD	
Shrinkage	190°C for 5 minutes	%	255-260		~2	
Coefficient of thermal expansion (between 20°C and 50°C)		1/K (cm/cm deg C)	~2		~2	
Specific Heat (at 25°C)			33x10 ⁻⁶		32x10 ⁻⁶	
			kJ/kg deg K		1.3	
			cal/g dec C		0.32	
Mechanical						
Tensile strength at break	ASTM D 882-75b (250µm film 23°C at 50% rh Strain rate 50%/min)	kgf/mm ²	MD*		TD**	
Elongation at break	as above	%	21		22	
Slip (coefficient of static friction)	ASTM D 1894-75 (Modified to Melinex test method) 250µm film	--	150		130	
			0.3			
Electrical						
Breakdown Voltage	IEC 243 (50 Hz continuously increasing at 500 V/sec 6.3mm electrodes)	kV	125	190	250	350
Surface resistivity	IEC 93 (500 V dc at 20°C and 54% RH)	ohm/	16	19	23	26
Volume resistivity	IEC 93 (100 V dc at 25°C and 1000s)	ohm m	>10 ¹³			
			10 ¹⁵			

Permittivity	IEC 250	--	3.26
23°C, 50Hz		--	3.24
23°C, 1kHz		--	3.21
23°C, 10kHz		--	3.26
0°C, 50Hz		--	3.27
50°C, 50Hz		--	3.35
100°C, 50Hz		--	3.65
Dissipation Factor	IEC 250	--	0.002
23°C, 50Hz		--	0.0055
23°C, 1kHz		--	0.011
23°C, 10kHz		--	0.004
0°C, 50Hz		--	0.0015
50°C, 50Hz		--	0.007
100°C, 50Hz		--	0.006
Chemical Resistance			
Dilute acids and alkalis			Good
Concentrated alkalis			Poor
Concentrated hydrochloric acid			Fair
Concentrated sulphuric acid			Poor
Greases, oils and fats			Good
Organic solvents, alcohols and hydrocarbons			Good
Ketones, esters and chlorinated compounds			Fairly good
Phenols, cresols and chlorinated phenols			Poor

1µm = 1 micron = 0.001 mm approx 4 gauge, MD = Machine Direction, TD = Transverse Direction

Enquiries should be addressed to:

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Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Teijin Films Medical Caution Statement", H-50102-DTF.

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