



Melinex®

polyester film

MXTD209 Issue 2

Melinex® ST506/505™ film

General Description

Melinex® ST506™ film is an optically clear, heat stabilised film, pre-treated on both surfaces to make it particularly suitable for the graphics and circuitry layers of membrane touch switches.

Our process of continual improvement in quality and specification now enable us to provide the following properties and benefits:

- * Heat stabilised to give excellent dimensional stability at temperatures up to 150°C.
- * Excellent adhesion to a wide range of solvent based inks, graphics inks and varnishes, silver conductive inks and dielectrics.
- * Excellent durability and toughness giving long lasting switches, particularly when compared with polycarbonate.
- * Greatly superior solvent resistance to that of polycarbonate, making Melinex® ST506™ film particularly suitable for use in many industrial applications.

Melinex® ST505™ film is an unknurled film which is available in knurled form as Melinex® ST506™ film. Both are available for membrane touch switches in thicknesses of 100, 125, 175 and 250 microns.

TYPICAL VALUES OF PROPERTIES

Property	Test Methods	Units	Typical value
Thermal			All Thickness (mm)
Melting point	BS 2782	°C	255
Coefficient of thermal expansion 20-50°C		cm/cm/°C	19x10 ⁻⁶ 19x10 ⁻⁶
Residual Shrinkage 30 mins 150°C		%	MD* 0.10 0.10 TD** 0.03 0.03
Optical			Film Thickness (µm)
Haze	ASTM D1003	%	125 175 250 1.0 1.5 1.7
Total Light transmission	ASTM D1003	%	89 89 89
Gloss 60°	ASTM D 523		150 150 150
General and Mechanical			Film Thickness (µm)
Area Yield			125 175 250
Relative Density (at 23°C)	--	m ² /kg	5.7 4.0 2.9

Tensile strength - break	ASTM D1505-79 (modified to Melinex test method)	--	1.39	
Flexural strength (MIT fold)	ASTM D882	Kfg/mm ²	>17.4	>15.7
Coefficient of friction (static)	ASTM D2176	Cycles	>20,000	>15,000 >10,000
Water vapour permeability 38°C/90% rh	ASTM D1894		<0.70	<0.70
Coefficient of hygroscopic expansion	BS 3177	g/m ² /24hrs	4.0	2.9 0.86
		per 1% rh	8x10 ⁻⁶	8x10 ⁻⁶
Electrical				
Dielectric strength	ASTM D149	KV/mm	125	105
Dielectric Constant 50c/sec	ASTM D150		2.9	2.9
Surface Resistivity	ASTM D257	ohm/□	10 ¹³	10 ¹³
Volume Resistivity	ASTM D257	ohm m	10 ¹⁵	10 ¹⁵

1µm = 1 micron = 0.001mm approx. 4 gauge

*MD = Machine Direction

**TD = Transverse Direction

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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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