



# Melinex®

polyester film

MXTD182 Issue 1

## Melinex® ST507

### General Description

Melinex® ST507 is a through-filled, heat stabilised film particularly suitable for use as the circuit layer in membrane touch switches.

ST507 is a slightly hazy film based on Melinex® S. It has good handling characteristics and is recommended for silver circuitry applications, particularly where roll to roll printers are used and where there is no requirement for specialist adhesion promotion.

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

- Heat stabilised to give excellent dimensional stability at temperatures up to 150°C
- Excellent slip properties
- Excellent handling characteristics allowing easy conversion
- Suited to roll to roll printing processes
- Recommended for silver circuitry applications
- Being an unknurled film, Melinex® ST507 offers reduced conversion losses
- Excellent surface quality, avoiding 'feathering' of printed circuit backs
- Melinex® ST507 has achieved a UL94 flammability rating of VTM-2(75, 100 and 125 microns)

Melinex® ST507 for membrane touch switches is available at a thicknesses 125 microns, and also 75 and 100 microns by special request.

### TYPICAL VALUES OF PROPERTIES

Property	Test Methods	Units	Typical value		
<b>Thermal</b>			<b>Film Thickness (mm)</b>		
			<b>75</b>	<b>125</b>	
Melting point	BS 2782	°C	265	265	
Coefficient of thermal expansion 20-50°C		cm/cm/°C	19 x 10 <sup>-6</sup>	19 x 10 <sup>-6</sup>	
Residual Shrinkage 30 mins 150°C		%	MD* 0.20 TD** 0.03	0.10 0.03	
<b>Optical</b>			<b>Film Thickness (mm)</b>		
			<b>75</b>	<b>125</b>	<b>18</b>
Haze	ASTM D1003	%		23	
Total Light transmission	ASTM D1003	%	>85	>85	

**General/ Mechanical**

			Film Thickness (mm)		
			75	100	125
Area Yield	-	m <sup>2</sup> /kg	9.5	7.0	5.7
Relative Density (at 23°C)	ASTM D1505-79 (modified to Melinex test method)	- -		1.39	
Tensile strength - break	ASTM D882	Kfg/mm <sup>2</sup>		>17.4	
Flexural strength (MIT fold)	ASTM D2176	Cycles	>30,000		>20,000
Coefficient of friction (static)	ASTM D1894	- -		0.4	
Water vapour permeability 38°C/90% RH	BS 3177	g/m <sup>2</sup> /24hrs	6.7		4.0
Coefficient of hygroscopic expansion		per 1% rh		8 x 10 <sup>-6</sup>	

**Electrical**

Breakdown Voltage	ASTM D149-81 (0.25 inch electrodes in dry air at 25°C)	KV	12	14	16
Surface Resistivity	ASTM D257-83 (500v d.c. at 20°C and 54%RH)	ohm/€	10 <sup>15</sup>		10 <sup>15</sup>
Volume Resistivity	ASTM D257-83 (100v d.c. at 25°C and 1000 s)	ohm m	10 <sup>13</sup>		10 <sup>13</sup>
Dielectric strength	ASTM D149	KV/mm		125	
Dielectric Constant 50c/sec	ASTM D150			2.9	

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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