

AUTOTEX

Product data sheet

Polyester film is tougher and more durable than polycarbonate and PVC film. It offers enhanced chemical resistance and dramatically improved flex life. The Autotex range of textured polyester films extends the functionality of polyester film into areas demanding high abrasion resistance together with excellent receptivity to graphic inks and windowing lacquers. Autotex has been developed for applications requiring a combination of high abrasion resistance and flexibility, such as embossed membrane switches.

1. Product description

Autotex is a high quality textured polyester film, consisting of a base polyester and a flexible chemically bonded, UV-cured textured coating. It is available in sheets and rolls.

Product range:

Autotex Fine	Fine texture
F150, F200, F280	150, 200 and 280 micron
Autotex Velvet	Velvet texture
V150, V200, V280	150, 200 and 280 micron

Primer:

Autotex has an ink adhesion primer on the second surface. This primer confers excellent adhesion to a wide range of solvent based graphic inks. The primer is not recommended for use with UV-cured graphic inks or a combination of solvent and UV graphic inks because the adhesion performance will be inconsistent. A special primer is available for use with UV inks, please see Autotex (7 Series) Product Data Sheet.

Windows:

Autotex can be screen printed with Windotex to obtain a clear window (see Windotex product data sheet). Autotex Fine, because of its lighter texture, will produce clearer windows than Autotex Velvet.

Outdoor use:

In common with most other plastics, Autotex has limited long term resistance to UV light and therefore is not recommended for long term use outdoors. In order to overcome this issue, MacDermid Autotype has specially developed Autotex XE, a UV resistant version of Autotex. Please see Autotex XE Product Data Sheet.

2. Product applications

Autotex is used as a substrate in the following markets:

Markets

Membrane switch overlays
 Facia panels
 Nameplates
 Labels/Product marking

Major Benefits

- ▶ Long flex life
- ▶ Chemical and household cleaner resistance even at the edges
- ▶ Clear window facility
- ▶ Embossable
- ▶ Excellent scratch resistance
- ▶ Consistent low gloss, textured surface
- ▶ Attractive appearance

3. Chemical Properties

Property	Autotex	Test Method
Chemical Resistance	Resistant to: Alcohols Dilute acids Dilute alkalis Esters Hydrocarbons Ketones Household cleaning agents *	DIN 42 115
Coefficient of hygroscopic expansion ¹	MD 8×10^{-6} (per 1% RH) TD 7×10^{-6} (per 1% RH)	DuPont Teijin Films Method ¹ Between 40-80% RH
Moisture vapour transmission rate (MVTR) ¹	3.57g/m ² /24hr	ASTM F372-73
Oxygen transmission rate ¹	8.2ml/m ² /24 hours	ASTM D1434-82 @ 25° C, 77% RH

¹ Data derived from DuPont Teijin Films literature for 125µ Melinex OD. ²The Autotex coating slightly enhances most properties.

* For more detailed information refer to Autotex solvent resistance sheet.

4. Electrical Properties

Property	Autotex	Test Method
Dielectric strength ¹	13.5 kV	ASTM D149-81 6.35mm electrodes in dry air @ 25°C
Dissipation factor ¹	0.005	ASTM D150-70
Surface resistivity	>10 ¹³ Ω/sq 500Vd.c	ASTM D257-83 @ 20°C/54% RH
Volume resistivity ¹	10 ¹⁵ Ωm 100Vd.c	ASTM D257-83 @ 25°C/1000s

¹Data derived from DuPont Teijin Films literature for 125μ Melinex OD. ²The Autotex coating slightly enhances most properties.

5. Mechanical Properties

Property	Autotex	Test Method
Young's modulus ¹	3700N/mm ²	ASTM D882
Elongation at break ¹	70%	ASTM D1505
Switch life	>5 million flexes	Autotype Method ³
Tensile strength at break ¹	150N/mm ²	ASTM D882
Tensile strength at yield point ¹	100N/mm ²	ASTM D882
Tear strength ¹	350N/mm ²	ASTM D882

¹ Data derived from DuPont Teijin Films literature for 125μ Melinex OD ² Adapted to Autotype Method, see Test method manual ³ See Test method manual

6. Optical Properties

Property	Autotex (150μ)	Test Method
Gardner Haze Fine Velvet	55% ±5% 71% ±5%	ASTM D1003-77 ¹
Gloss Level (60°) Fine Velvet	7% ±0.5% 4.3% ±0.5%	ASTM D2457-70 ¹
Texture profile Ra Fine Velvet Rtm Fine	1.6μ ±0.2μm 2.8μ ±0.2μm 8μ ±2μm 13.4μ ±2μm	Autotype Method ²
Total luminous transmission	92% ±2%	ASTM D1003-77 ¹
UV absorption	1.3 - 1.4	Autotype Method ² (370nm)
Yellowness index ²	<3	ASTM D1925-70

¹ Adapted to Autotype method, see Test method manual ² See Test method manual



7. Physical Properties

Property	Autotex	Test Method
Density ¹	1.39 g/cm ³	ASTM D1505
Thicknesses	F150 150μ ± 10% F200 200μ ± 10% F280 280μ ± 10% V150 150μ ± 10% V200 200μ ± 10% V280 280μ ± 10%	Autotype Method ²

¹ Data derived from DuPont Teijin Films literature for 125μ Melinex OD ² See Test method manual

8. Thermal Properties

Property	Autotex	Test Method
Coefficient of thermal expansion ¹	0.002%/degree	DuPont Teijin Films Method
Coefficient of humidity expansion ¹	0.009%/RH	DuPont Teijin Films Method
Dimensional stability	0.2% maximum shrinkage MD at 120°C	Autotype Method ²
Maximum processing temperature	120°C	
Maximum use temperature	Low humidity (<10%RH) 85°C High humidity (10-95%RH) <60°C	
Minimum use temperature	-40°C (-40°F)	Autotype Method ²

¹ Data derived from DuPont Teijin Films literature for 125μ Melinex OD ² See Test method manual

9. Ozone depleting substances

EC Regulation 594/91 classifies ozone depleting substances into a number of different groups, I-VI. Autotex does NOT contain any substance classified in groups I-VI nor have any of the substances been used by MacDermid Autotype during manufacture.

For details of the content of each of the groups, please see separate ozone depleting substances document.

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