## 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 advanced manufacturing techniques used by Autotype provide a controlled textured surface.

## **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 F150, F200, F280	Fine texture 150, 200 and 280 micron
	Autotex Velvet V150, V200, V280	Velvet texture 150, 200 and 280 micron
Primer:	Autotex has an ink adhesion primer of primer confers excellent adhesion to based graphic inks. The primer is no with UV cured graphics inks or a cor UV graphic inks because the adhesio inconsistent. A special primer is avai upon request.	on the second surface. This a wide range of solvent t recommended for use nbination of solvent and n performance will be ilable for use with UV inks
Windows:	Autotex can be screen printed with W window (see Windotex Product Data because of its lighter texture, will pro Autotex Velvet.	Vindotex to obtain a clear Sheet). Autotex Fine, oduce clearer windows than

## 2. PRODUCT APPLICATIONS

Autotex is used as a substrate in the following markets:

### Markets

### **Major Benefits**

Membrane switch overlays	Long flex life
Escie papels	Chamical and household cleaner
Nameplates	resistance even at the edges
Labels/Product marking	Clear window facility
-	Embossable
	Excellent scratch resistance
	Consistent low gloss, textured surface
	Attractive appearance

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### **3. PRODUCT PERFORMANCE**

Property	Autotex	Test Method
CHEMICAL Chemical resistance	Resistant to: Alcohols Dilute acids Dilute alkalis Esters Hydrocarbons Ketones Household cleaning agents	DIN 42 115
MECHANICAL Switch life MIT fold durability	>5 million flexes >20,000 folds transverse direction	Autotype Method <sup>1</sup> ASTM D2176
OPTICAL Gardner haze	Fine 60% ±3%   Velvet 71% ±5%	ASTM D1003-77 <sup>2</sup>
□ Total luminous transmission	Fine 91% ±2%   Velvet 91% ±2%	ASTM D1003-77 <sup>2</sup>
THERMAL Dimensional stability	0.2% maximum shrinkage at 120°C Typical result 0.1%	Autotype Method <sup>1</sup>

Autotex polyester films have limited long term resistance to UV light and therefore are not recommended for prolonged use outdoors (see Autotex UV).

<sup>1</sup>See Test Method Manual

<sup>2</sup>Adapted to Autotype Method - See Test Method Manual

## 4. 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 Autotype during manufacture.

For details of the content of each of the groups, please see separate Ozone Depleting Substances Document.

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## AUTOTEX TECHNICAL DATA

### **1. CHEMICAL PROPERTIES**

Property	Autotex	Test Method
Chemical Resistance	See Autotex Solvent Resistance	DIN 42 115
Coefficient of hygroscopic expansion <sup>1</sup>	MD 8 x $10^{-6}$ (per 1% RH) TD 7 x $10^{-6}$ (per 1% RH)	DuPont Teijin Films Method <sup>1</sup> Between 40-80% RH
Moisture vapour transmission rate (MVTR) <sup>1</sup>	$3.57 \text{g/m}^2/24 \text{hr}$	ASTM F372-73
Oxygen transmission rate <sup>1</sup>	8.2ml/m <sup>2</sup> /24 hours	ASTM D1434-82 @ 25°C, 77% RH

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

### 2. ELECTRICAL PROPERTIES

Property	Autotex	Test Method
Dielectric strength <sup>1</sup> 125μ 175μ 250μ	125kV/mm = 15.6 kV 105kV/mm = 18.4 kV 84 kV/mm = 21 kV	ASTM D149-81 6.35mm electrodes in dry air @ 25°C
Dissipation factor <sup>1</sup>	0.005	ASTM D150-70
Surface resistivity	$>10^{13} \Omega/sq 500Vd.c$	ASTM D257-83 @ 20°C/54% RH
Volume resistivity <sup>1</sup>	$10^{15} \Omega m 100 Vd.c$	ASTM D257-83 @ 25°C/1000s

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

#### **3. MECHANICAL PROPERTIES**

Property		Autotex	Test Method
Elastic modulus	175	4.5.5 CDc	ASTM D882-83 23°C, @ 50% RH.
(1% secant)	175μ	4-5.5 GPa	Strain rate - 10%/1 minute
Elongation at break	175µ	MD 125% TD 80%	ASTM D882-83 23°C, @ 50% RH. Strain rate - 50%/minute
MIT fold durability		>10,000 folds TD	ASTM D2176-69 <sup>2</sup>
Switch life		>5 million flexes	Autotype Method <sup>3</sup>
Tensile strength at break	175µ	160-250 MPa (160-250 N/ mm <sup>2</sup> )	ASTM D882-83
Yield point		6%	ASTM D882-83
Yield strength		95-140 MPa TD	ASTM D882-83

<sup>1</sup>Data derived from DuPont Teijin Films literature for Melinex OD <sup>2</sup>Adapted to Autotype Method, see Test Method Manual <sup>3</sup>See Test Method Manual

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## **4. OPTICAL PROPERTIES**

Property			Autotex	Test Method
Gardner Haze		Fine Velvet	60% ±3% 71% ±5%	ASTM D1003-77 <sup>1</sup>
Gloss Level (60°)		Fine Velvet	5.6% ±1% 4.3% ±0.5%	ASTM D2457-70 <sup>1</sup>
Texture profile	Ra Rtm	Fine Velvet Fine	1.9μ ±0.2μ 2.6μ ±0.2μ 10μ ±2μ	Autotype Method <sup>2</sup>
Total luminous transmission		Velvet Fine Velvet	13.4µ ±2µ 91% ±2% 91% ±2%	ASTM D1003-77 <sup>1</sup>
UV transmission	density		0.09	Autotype method <sup>2</sup> 365nm narrowpass filter
Yellowness index			<4.5	ASTM D1925-70

<sup>1</sup>Adapted to Autotype method, see Test Method Manual <sup>2</sup>See Test Method Manual

## **5. PHYSICAL PROPERTIES**

Property		Autotex	Test Method
Relative density <sup>1</sup>		1.40	ASTM D1505-85 modified to DuPont Teijin Films Method <sup>1</sup> at 23°C
Pencil hardness		2Н	Autotype Method <sup>2</sup>
Thicknesses	F150 F200 F280 V150 V200 V280	$\begin{array}{l} 150\mu \pm 10\% \\ 200\mu \pm 10\% \\ 280\mu \pm 10\% \\ 150\mu \pm 10\% \\ 200\mu \pm 10\% \\ 280\mu \pm 10\% \end{array}$	

<sup>1</sup>Data derived from DuPont Teijin Films literature for Melinex OD

<sup>2</sup>See Test Method Manual



### 6. THERMAL PROPERTIES

Property	Autotex	Test Method
Coefficient of thermal expansion <sup>1</sup>	MD 19 x $10^{-6}$ cm cm <sup>-1</sup> °C <sup>-1</sup> TD 16 x $10^{-6}$ cm cm <sup>-1</sup> °C <sup>-1</sup>	DuPont Teijin Films Method <sup>1</sup> between 20-50°C
Dimensional stability	0.2% maximum shrinkage MD at 120°C [Typical result 0.1%]	Autotype Method <sup>2</sup>
Maximum Processing Temperature	120°C	
Maximum and minimum use temperatures	See Autotex Solvent Resistance and Environmental data	Autotype Method <sup>2</sup>

<sup>1</sup>Data derived from DuPont Teijin Films literature for 125µ Melinex OD

See Test Method Manual

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