

Product Data

autotype



PRODUCT DESCRIPTION

Autotex AM is a high quality, textured polyester film offering Microban® antimicrobial protection within the textured hardcoat.

The Microban® technology is incorporated into the Autotex textured hardcoat during the manufacturing process. This process ensures even distribution of the antimicrobial agent throughout the textured hardcoat and the film surface. When bacteria come into contact with Autotex AM, the antimicrobial function disrupts the bacterial cell wall killing or inhibiting bacterial growth. The result is the film surface of Autotex AM provides dependable and constant protection against bacterial contamination.

- Product range:** Autotex AM F150L AM, F200L AM Fine texture 150 and 200 micron
- Primer:** Autotex AM with Microban® 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 graphics inks or a combination of solvent and UV graphic inks as the adhesion performance may be inconsistent. Please contact Autotype for the latest updates.
- Windows:** Autotex AM can be screen printed with Windotex* to obtain a clear window (see Windotex Product Data Sheet).
**NB Windotex does not offer any antimicrobial protection*

PRODUCT APPLICATIONS

A full range of market applications for Autotex AM with Microban® are still being explored but include:

Markets Applications

Membrane switch overlays
Surface applications (doors, worktops, etc)
Fascia panels
Nameplates
Labels/Product marking
antimicrobial)

Major Benefits

Antimicrobial protection
Long flex life
Resistant to chemical and household cleaners
Embossable
Clear window facility (windows are not
Excellent scratch resistance
Consistent low gloss, textured surface
Attractive appearance

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ANTIMICROBIAL PROPERTIES

Sample Description	Microbial Testing*	Test Result	Test Method
Autotex AM Unprocessed ¹ samples	Antimicrobial effectiveness tested with: <ul style="list-style-type: none"> Staphylococcus aureus (MRSA) Escherichia coli 0157 Pseudomonas aeruginosa Salmonella enteritidis Bacillus cereus Streptococcus faecalis Klebsiella pneumoniae Aspergillus niger Penicillium purpurogenum Phoma violacea Saccharmyces cerevisiae 	Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁶
Simulated printed sample ²	<ul style="list-style-type: none"> Staphylococcus aureus (MRSA) Escherichia coli 0157 	Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁶
Simulated wear test ³	<ul style="list-style-type: none"> Staphylococcus aureus (MRSA) Escherichia coli 0157 	Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁶
Simulated embossed sample ⁴	<ul style="list-style-type: none"> Staphylococcus aureus (MRSA) Escherichia coli 0157 	Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁶
15 Year Life time test ⁵	<ul style="list-style-type: none"> Staphylococcus aureus (MRSA) Escherichia coli 0157 Aspergillus niger 	Biocidal Pass Biocidal Pass Biocidal Pass	Work surface protocol AATCC Test Method 100 ⁶

* The bacteria chosen for each of the tests was recommended by LawLabs

Process Conditions for each Sample

¹ Unprocessed Samples: Film samples were tested straight from the pack

² Film samples were subjected to the following tests to simulate graphics printing :
 10 Jet dryer passes (80°C x 2 mins)
 10 Fusion UV passes (500MJ/pass)
 5 passes under IR lamps
 1 Fusion UV pass (500MJ/pass) - (hardcoat surface)

³ Film samples were vigorously sandpapered until the texture peaks were removed. The film surface was then polished with wire wool until smooth. This was carried out to simulate extreme surface wear.

⁴ Film samples were stretched by 20% in both MD/TD direction. This simulates the process of embossing. (An embossed sample can not be AM tested as a flat surface is required by LawLabs)

⁵ Film samples are tested by LawLabs using standard test protocols that simulate real life cleaning regimes representing a period of 15 years. Test Method and certificate available on request

⁶ Test Method available on request

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CHEMICAL PROPERTIES

Property	Autotex AM	Test Method
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	8.21ml/m ² /24 hours	ASTM D1434-82@25°C, 77%RH

¹ Typical data derived from DuPont Teijin films literature for Melinex OD. The Autotex coating slightly enhances most properties. Autotex AM films have limited long term resistance to UV light and therefore are not recommended for prolonged use outdoors

ELECTRICAL PROPERTIES

Property	Autotex AM	Test Method
Dielectric strength ¹ AC 60Hz	13.5kV	ASTM D149
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

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

PHYSICAL PROPERTIES

Property	Autotex AM	Test Method
Relative Density ¹	1.39g/cm ³	ASTM D1505
Thickness	F150 150μ ± 10% F200 200μ ± 10%	Autotype Method ²

¹ Data derived from DuPont Teijin Films literature for Melinex OD ² see Test Method Manual

MECHANICAL PROPERTIES

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

¹ Data derived from DuPont Teijin Films literature for Melinex OD ² See Test Method Manual

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OPTICAL PROPERTIES

Property	Autotex AM	Test Method
Gardner Haze	54.5 ± 1.0	ASTM D1003-77 ¹
Gloss Level (60°)	7.0 ± 0.5	ASTM D2457-70 ¹
Texture profile Ra Rtm	1.6µ ± 0.2µ 8µ ± 2µ	Autotype Method ²
Total Luminous Transmission	92.0 ± 0.5	ASTM D 1003-77 ¹
UV transmission density	0.09	Autotype Method ² 365nm narrow pass filter
Yellowness index ²	4.2 ± 0.5	ASTM D1925-70

¹ Adapted to Autotype method, see Test Method Manual ² see Test Method Manual

THERMAL PROPERTIES

Property	Autotex AM	Test Method
Coefficient of ¹ Thermal expansion Humidity expansion	0.002% / degree 0.0009% / %RH	DuPont Teijin Films Method ¹
Dimensional stability	0.2% maximum shrinkage MD @ 120°C [Typical result 0.1%]	Autotype Method ²
Maximum processing temperature	120°C	
Maximum & minimum use temperature	High humidity (10-95% RH) ≤60°C Low humidity (<10%RH) 85°C Min Temperature -40°C/-40°F	Autotype Method ²

¹ Data derived from DuPont Teijin Films literature for Melinex OD ² see Test Method Manual

OZONE DEPLETING SUBSTANCES

EC Regulation 594/91 classifies ozone depleting substances into a number of different groups, I-VI. Autotex AM 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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