

GATGARD® Autotex AM Overlamine

Product Data Sheet

Autotex AM overlamine is a stabilized polyester film with Microban® antimicrobial protection permanently embedded in the micro-fine textured hard-coat. The film has a unique, tough hard-coat on the top surface with a clear pressure sensitive adhesive on the second surface. This hard-coat offers exceptional scratch, impact and chemical resistance while maintaining excellent clarity for colour and graphic detail.

PRODUCT DESCRIPTION

The Microban® technology is incorporated into the textured hardcoat during the manufacturing process.

- The process ensures even distribution of the antimicrobial agent throughout the textured hard coat and the film surface.
- When bacteria comes into contact with the Autotex AM Microban® hardcoat, the antimicrobial function disrupts the bacterial cell wall killing or inhibiting bacterial growth.
- As a result the film surface of Autotex AM overlamine provides dependable and contact protection against bacterial contamination and growth of mould & mildew.

Product Range:

Autotex AM overlamine, 150µ

- Graphic & surface protection film
- Micro-fine textured matt finish
- Pressure sensitive clear adhesive on second surface

PRODUCT APPLICATION

Autotex AM is designed for use in the following applications:

- Signage in hygiene critical areas (hospitals, schools, etc.)
- Point-of-purchase displays
- In-store Decoration & Cladding
- Exhibitions & Temporary displays
- Wall, floor & counter graphics
- Membrane touch switch and fascia panels
- Protection for surfaces in 'high traffic areas'

Major Benefits:

- Antimicrobial protection
- Outstanding clarity for maximum 'color punch'
- Resistant to chemicals & household cleaners
- Resistant to scratches, abrasion and impacts
- Consistent low glare textured surface finish
- Durable and lightweight
- Global market leading technology

PRODUCT PERFORMANCE

Antimicrobial Properties

Sample Description	Microbial Testing*	Test Result	Test Method
Autotex AM (Unprocessed samples ¹)	<i>Effectiveness tested with:</i> Staphylococcus aureus (MRSA) Escherichia coli 0157 Pseudomonas aeruginosa Salmonella enteritidis Bacillus cereus Streptococcus faecalis Klebsiella pneumoniae Aspergillus niger Penicillium purpurogenum Phoma violacea Saccharmyces cerevisiae Listeria monocytogenes	Biocidal Pass 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 ⁷
Simulated printed sample ²	Staphylococcus aureus (MRSA) Escherichia coli 0157	Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁷
Simulated wear test ³	Staphylococcus aureus (MRSA) Escherichia coli 0157	Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁷
Simulated embossed sample ⁴	Staphylococcus aureus (MRSA) Escherichia coli 0157	Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁷
15 Year Life time test ⁵	Staphylococcus aureus (MRSA) Escherichia coli 0157 Aspergillus niger	Biocidal Pass Biocidal Pass Biocidal Pass	Work surface protocol AATCC Test Method 100 ⁷
24 Hour soak in: Ethanol ⁶ IPA MEK Phenol Based Disinfectant Quaternary Ammonium Based Disinfectant Bleach	Staphylococcus aureus (MRSA) Escherichia coli 0157	Biocidal Pass Biocidal Pass	AATCC Test Method 100 ⁷

* The bacteria chosen for each of the tests was recommended by an Independent Test House

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 directions. This simulates the process of embossing. (An embossed sample can not be AM tested as a flat surface is required by an Independent Test House)



⁵ Film samples are tested by an Independent Test house using standard test protocols that simulate real life cleaning regimes representing a period of 15 years.

⁶ Film samples were soaked for 24 hours before subjected to antimicrobial testing

⁷ Test Method and certificate available on request.

Chemical Properties

Property	Data	Test Method	
Chemical resistance (concerning physical integrity of coating)	Turpentine Hydrochloric acid (36%) Diacetone alcohol Butyl acetate Nitric acid (10%) Acetone Sodium Hydroxide (40%) Benzyl alcohol Diesel Lenor/Downey (fabric conditioner)	Bleach MEK White spirit Castor oil Acetaldehyde Acetic acid (50%) Acetonitrile Toluene IMS Cyclohexanone	DIN 42 115

* For more information refer to Autotex Solvent Resistance Sheet

Optical Properties

Property	Data	Test Method
Gardner Haze	55% ± 5%	ASTM D1003-77 ¹
Gloss Level (60°)	7% ± 1.5%	ASTM D2457-70 ¹
Texture Profile Ra Rtm	1.6µ ±0.2µ 8µ ±2µ	MacDermid Autotype Method ²
Total Luminous Transmission	92% ±2%	ASTM D1003-77 ¹
Yellowness Index	<3	ASTM E313
UV Absorption	1.3-1.4	MacDermid Autotype Method ²

¹Adapted to MacDermid Autotype Method. ²See Test Method Manual

Physical Properties

Property	Data	Test Method
Density	1.39g/cm	ASTM D1505
Thickness	150µ ±10% 200µ ±10%	MacDermid Autotype Method ²

¹Data derived from DuPont Teijin Films literature. ²See Test Method Manual



Thermal Properties

Property	Data	Test Method
Coefficient of thermal expansion ¹	0.002%/°C	DuPont Teijin Films Method
Coefficient of humidity expansion ¹	0.009% per %RH	DuPont Teijin Films Method
Dimensional Stability	0.2% MD @ 120°C maximum shrinkage	MacDermid Autotype Method ²
Min use temperature	-40°C	MacDermid Autotype Method ²

¹Data derived from DuPont Teijin Films literature. ²See Test Method Manual

PHYSICAL AND CHEMICAL ADHESIVE SPECIFICATION

High tack, high shear, pressure sensitive specifically designed for lamination to graphics, vinyls and smooth surfaces.

- Adhesive type: Clear Solvent Acrylic (Pressure Sensitive)
- Adhesive thickness: 22µ
- Peel (20 min, stainless steel): 18N/25mm (FINAT test)
- Peel (24 hours, stainless steel): 23N/25mm (FINAT test)
- Initial tack: high
- Heat resistance: up to 130°C
- Minimum operating temperature: -15°C

WORKING INSTRUCTIONS

Process settings:

Roller Laminator	Press
<i>Application temperature:</i> Room temperature to 49° C (120° F) <i>Speed:</i> 0.3m to 1.75m (1 ft to 6 ft) per minute	NOT RECOMMENDED

Application guidelines:

- The surface to be bonded must be clean i.e. free of dust, release agents, processing oils and grease
- The temperature of the application should not be below the dew point of the surrounding air.
- The warmer the tape the better the adhesive will wet out and consequently the higher the immediate adhesion will be.
- Handle film at edge to avoid marking
- Always test adhesion properties with your substrate to ensure optimum performance and compatibility

Application without a laminator

- Apply when air & substrate surface temperature is at least 16°C
- Use water detergent solution in a spray bottle (2 ml conc. detergent to 1l water)
- Spray solution on clean substrate
- Slowly remove release liner from adhesive while spraying solution on exposed adhesive
- Align and apply film to substrate
- Use applicator squeegee from the centre out to smooth out wrinkles and bubbles



HAZARDS & WARNINGS

None associated with this product.

FIRE PRECAUTIONS

Polyester films will burn with difficulty. Extinguisher method: foam, water, CO₂ or PCF.

FIRST AID

No chemical related injury is anticipated from the use of this product.

ENVIRONMENTAL & DISPOSAL

EC Regulation 594/91 classifies ozone depleting substances into a number of different groups, I-VI. This range of products do 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

EU Directives 2003/11/EC; 2002/95/EC; 2002/525/EC; 2006/122/EC (ROHS)

Restriction on use of Pentabromodiphenyl ether CAS 32534-81-9
Octabromodiphenyl ether CAS 32536-52-0
Polybrominated biphenyls
Polybrominated diphenylether
Lead, Mercury, Cadmium, Chromium VI
Perfluorooctanesulphonate, Perfluorooctanic acid & related compounds

In relation to the above directive, this range of products does not contain polybrominated biphenyl & diphenyl ethers, brominated compounds, perfluorooctane derivatives or any flame retardant agents. MacDermid Autotype products are also free of the heavy metals specified in the above Directives (lead, mercury, cadmium, chromium VI).

EU Directive 2002/96/EC (WEEE) relates to the Disposal and Recycling of Waste Electronic and Electrical Equipment. MacDermid Autotype products are compliant with this directive and do not contain any materials identified in Directives 2003/11/EC & 2002/53/EC (also 2037/2000). MacDermid Autotype Limited has no responsibility for the compliance of finished equipment, which will contain materials from other suppliers.

This range of products comprises films with a chemically treated surface which renders them difficult to recycle in appropriate material recovery schemes. The product contains no substances listed on the EC Black or Grey lists and may be safely disposed of in a landfill or by authorized incineration.

STORAGE

Store in original packaging, in a cool, dry place, away from direct sunlight / UV light source.

Shelf Life:

2 years when stored at 18-25°C and 40-60% relative humidity.

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