

AUTOTEX AM

Product Data Sheet EU and Asia Version

Hardcoat Polyester Film with Microban® Antimicrobial Product Protection



DESCRIPTION

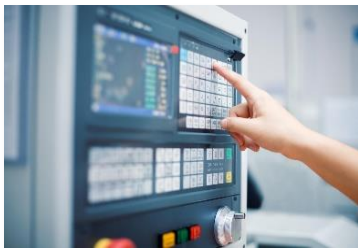
Autotex AM is MacDermid Enthone Industrial Solutions hardcoated polyester film with Microban® ZPTech® technology embedded into the hardcoat during manufacture.

Autotex AM combines unique UV cured hardcoat technology for durability and chemical resistance with antimicrobial technology which is active 24/7 to inhibit the growth of bacteria on the surface. The result is a surface that is robust for cleaning and stays hygienically cleaner and fresher between routine cleans.

Autotex AM has an ink primer on the second surface for protected graphics.

Autotex AM is available in Fine and Touch textures. Fine is the texture typically used for membrane touch switch and equipment overlay applications. Touch is a finer feel texture originally designed for computer touchpads. They are both now available with AM additive for wide ranging high touch and communal touch surfaces to help improve surface hygiene and cleanliness. There are additional AM products in development; please contact your Account Manager or industrialfilms@macdermidenthone.com for details and availability.

Autotex AM



Durable



Cleanable



Antimicrobial

AUTOTEX AM PRODUCT RANGE

Product	Finish	Gauge	
		150 µm	200 µm
Autotex AM T with 3-series or 7-series ink primer	Touch	AM T153 L	AM T203 L
		AM T157 L	AM T207 L
Autotex AM F with 7-series ink primer	Fine	AM F157 L	AM F207 L



PRIMER

Autotex AM has a choice of ink adhesion primers on the second surface.

The 3-series primer is recommended for new projects and offers excellent adhesion to a wide range of UV inkjet, solvent based screen printing inks and UV curable screen printing inks.

The 7-series primer is available for compatibility with existing projects and is suitable for a wide range of solvent based screen printing inks and UV screen printing inks.

LAMINATE

MacDermid Enthone Industrial Solutions supply the **Autotex AM** film range with a protective laminate on the ink primer surface and recommend that the laminate remains in place until the first ink print pass.

DURABILITY

Property	Typical Value	Test Method
RCA Wear	Hardcoat not worn through at 200 cycles	ASTM F2357-10
IPA/Water 85%/15% abrasion test	No visual change to appearance. No traces of abrasion at 200 cycles	BS-EN-ISO 105-X12:2016.
15% Sodium Hypochlorite (Bleach) abrasion test	No visual change to appearance. No traces of abrasion at 200 cycles	BS-EN-ISO 105-X12:2016.

SURFACE CLEANING

Please note that the use of **Autotex AM** does not substitute for proper cleaning and disinfection of surfaces.

CLEANING CHEMICAL RESISTANCE

Autotex AM has been tested for resistance against the following cleaning and disinfecting chemicals. Film was soaked for 24 hours in the reagent prior to testing.

There was no visual change to the appearance of the film.

Antimicrobial efficacy was confirmed by testing against *E. coli* according to ISO 22196:2011 at an independent test house. Results quoted are % reduction of *E. coli* (Geometric Mean of 3 Replicates as Colony Forming Units cm⁻²)



Disinfectant Type	Brand	AM F207 (% reduction)	AM T207 (% reduction)
Soap and water	Fairy™ liquid	≥ 99.99	≥ 99.99
Hydrogen Peroxide	ETO™	≥ 99.99	≥ 99.99
Bleach - Sodium Hypochlorite	Domestos™ (50:50 blend in water)	≥ 99.99	≥ 99.99
Quaternary Ammonium - alkyl dimethyl benzyl ammonium chloride	Virex™ TB	99.99	≥ 99.99
Hydrogen Peroxide	25% solution in water	> 99.99	> 99.99
Peracetic acid	Perform™ PAA 0.07%	99.99	99.99
Ethanol	70% solution in water	99.96	99.99
IPA	70% solution in water	99.94	99.99
Chlorhexidine	Hibiscrub™	≥ 99.99	≥ 99.99
Ortho-phthaldehyde	Cidex™ OPA	99.99	≥ 99.99
Pentapotassium bis(peroxymonosulphate)	Descogen® Liquid r.f.u.	99.98	≥ 99.99
Phenolic	Wex-cide 128	≥ 99.99	≥ 99.99
Glucoprotamin	Incidin® Plus	99.97	99.96
Bleach - Sodium Hypochlorite	Fantastik All Purpose Cleaner	99.99	99.97
All Purpose Cleaner (Butyl Diglycol)	Mr Clean	≥ 99.99	≥ 99.99
Quaternary Ammonium	Formula 409	≥ 99.99	≥ 99.99
Quaternary ammonium; Ethanol (Ethyl alcohol)	Lysol® Disinfectant Spray	99.97	≥ 99.99
Lactic Acid	10% Lactic acid solution	≥ 99.99	≥ 99.99
Citric acid	10% Citric acid solution	≥ 99.99	≥ 99.99



TYPICAL PROPERTIES: ANTIBACTERIAL

Autotex AM has been tested against a wide range of microbes at an independent test house according to ISO 22196:2011 Measurement of antibacterial activity on plastics and other non-porous surfaces.

Results quoted are % reduction of named species (Geometric Mean of 3 Replicates as Colony Forming Units cm⁻²)

Species	AM F207 (% reduction)	AM T207L (% reduction)
<i>Escherichia coli</i>	≥ 99.99	≥ 99.99
<i>Staphylococcus aureus</i>	≥ 99.99	99.67
<i>Pseudomonas aeruginosa</i>	≥ 99.99	≥ 99.99
<i>Klebsiella pneumoniae</i>	≥ 99.99	99.97
<i>Listeria monocytogenes</i>	99.03	99.94
<i>Salmonella enterica</i>	≥ 99.99	≥ 99.99
<i>Acinetobacter baumannii</i>	≥ 99.99	≥ 99.99

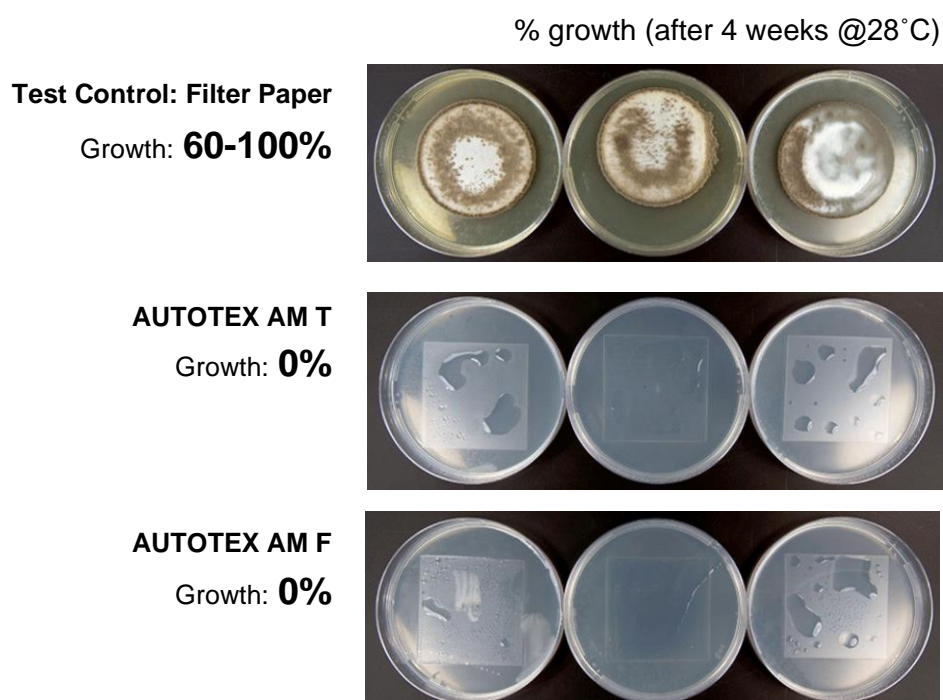


TYPICAL PROPERTIES: RESISTANCE TO FUNGI & MOULD GROWTH

Autotex AM has been tested at an independent test house against the range of fungi described below and in accordance with ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

Species in the inoculation suspension:	Mould growth (after 4 weeks @28°C)
<i>Aspergillus niger</i>	No growth
<i>Penicillium pinophilum</i>	
<i>Chaetomium globosum</i>	
<i>Trichoderma virens</i>	
<i>Aureobasidium pullulans</i>	

Typical visual assesment images from an independant report:





TYPICAL PROPERTIES: PHYSICAL

Property	Typical Value	Test Method
Haze ¹	T texture 61% ± 4% F texture 58% ± 5%	ASTM D1003
Total luminous transmission ¹	92% ± 2.0%	ASTM D1003
Gloss level (60°) ¹	T 6 ± 1 GU F 7 ± 1.5 GU	ASTM D2457 (Modified to test method 022)
Yellowness index ³	< 3	ASTM E313
Switch life ¹	> 5 million actuations	Test method 003
Hardcoat adhesion ³	Pass	Test method 080
Tensile strength at break ²	172 - 190 N/ mm ²	ASTM D882
Breakdown voltage ² 150 µm 200 µm	16 - 18 kV 18 - 20 kV	ASTM D149
Dimensional stability ³	< 0.2% MD at 120°C maximum shrinkage	Test method 094
Thickness all grades ¹	Nominal ± 10%	Test method 096
Maximum processing temp	120 °C	-
Maximum use temperature ¹ Low humidity High humidity	(< 10% RH) 85 °C (85% RH) 60 °C	Test method 012
Minimum use temperature ¹	-40 °C (-40 °F)	Test method 012
Antimicrobial properties	Every batch independently tested against <i>E. coli</i> ISO 22196:2011	

¹ For details of test method, please contact MacDermid Enthone Industrial Solutions

² Data derived from base film manufacturer's literature. The coating slightly enhances most properties

³ Specification value

Note – performance characteristics may be subject to change

WINDOW PRINTING

Autotex AM can be screen printed on the first surface with Windotex windowing lacquers to obtain a clear window. Printing guidelines are available in the Windotex Processing and Safety Recommendations. Note: Windotex does not offer any antimicrobial protection.



SHELF LIFE & STORAGE CONDITIONS

The recommended shelf life is 36 months from date of manufacture. MacDermid Enthone Industrial Solutions guarantee a minimum remaining shelf life of 8 weeks at the time of despatch.

The recommended shelf life represents the maximum processing life time of the product from the date of manufacture when stored correctly and in unopened packaging.

The following storage conditions are recommended:

Storage Conditions	
Temperature	15 °C to 25 °C
Relative Humidity	50 to 65%
Packaging	Store in original protective packaging Once the packaging has been opened, the processing lifetime can be compromised due to air ingress, contamination or UV light
Moisture	Store away from water sources
Chemicals	Keep away from aggressive solvents
Stacking	For material $\leq 250 \mu\text{m}$ thick, 100 sheet packs should be stacked no more than 10 packs high

IMDS ID-No

By arrangement with our regulatory affairs team.



SAFETY & WARNING

MacDermid Enthone Industrial Solutions recommends that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use.

Safety Data Sheets are available from MacDermid Enthone Industrial Solutions.

WASTE TREATMENT

Prior to using any recommendations or suggestions by MacDermid Enthone Industrial Solutions for waste treatment, the user is required to know the appropriate local/state/federal regulations for on-site or off-site treatment which may require permits. If there is any conflict regarding our recommendations, local/state/federal regulations take precedent.

CONTACT INFORMATION

To confirm this is the most recent issue, please contact us:

IndustrialFilms@macdermidenthone.com

Americas 245 Freight Street Waterbury, CT 06702, USA (800) 323 0632	Europe & rest of the world Grove Road, Wantage, Oxon OX12 7BZ, UK +44 (0) 1235 771111	Asia 26 Tuas West Road Singapore 638382 +65 6862 3327
---	---	---

Website: industrial.macdermidenthone.com

The information and recommendations in this publication are believed to be accurate and are offered in good faith. Suggestions concerning uses and applications are only the opinion of MacDermid Autotype Limited and/or its affiliates and related entities (referred to herein as "MacDermid") and users should carry out their own testing procedures to confirm suitability for their purposes. Except in case of death or personal injury caused by the materials, MacDermid MAKES NO WARRANTY OF ANY KIND AND EXCLUDES ANY STATUTORY WARRANTY EXPRESS OR IMPLIED other than that materials conform to their current applicable standard specifications. Statements herein therefore should not be construed as guarantees of satisfactory quality or fitness for purpose unless expressly prohibited by compulsory law provisions. The responsibility of MacDermid for claims arising out of breach of guarantee, negligence, strict liability or otherwise is limited to the purchase price of the material.

Suggestions concerning working practices and procedures are based on the practices adopted by existing users of the products and are made in good faith. IT IS THE RESPONSIBILITY OF THE USER TO ENSURE THAT ALL RELEVANT HEALTH AND SAFETY LAWS AND REGULATIONS ARE COMPLIED WITH. MacDermid does not provide any advice on such laws and regulations and accepts no responsibility, express or implied, for breach of such regulations.

WARNING: Nothing in this guide or in these technical specifications should be construed to imply or suggest that the user employ operations or create articles, which would infringe any patents belonging to third parties. It is the customer's responsibility to ensure that its operations, the conditions of processing, and articles of manufacture do not infringe the foregoing patents, or any third-party patents. MacDermid does not accept responsibility for any infringement of intellectual property rights of third parties.