



Ultra Clear Removable Overlaminating Film

76991

Technical Data

August, 2007

Product Description 3M™ Ultra Clear Removable Overlaminating Film 76991 is a highly transparent clear polyester overlaminating film. 3M™ Acrylic Removal Adhesive offers excellent clarity while allowing for clean removability from the application surface.

Construction	Facestock	Adhesive	Liner
	.0014 in. Clear Polyester TC	Removable Acrylic 0.6 mil (15 micron)	.002 in. Opaque White Polyester Liner (51 micron)

(Calipers are nominal values.)

- Features**
- Ultra-clear, high transparency film and adhesive combination – suitable for display panels.
 - Removable adhesive – easily removable from many surfaces with no adhesive residue.
 - Lined product which allows for die-cutting to any shape and is suitable for high-speed, automatic dispensing.
 - Polyester face material – much higher temperature resistance than PE protective films – use as a protective mask in painting applications.
 - Before application the surfaces must be free from oil, fat, dust and solvents. Best results are achieved when applied between 50°F and 104°F.
 - The product has a high transparency.
 - The product has good resistance to moisture, oil and solvents.
 - When applied to aluminum, glass and polycarbonate, clean removal can be achieved after room temperature (73°F) for 6 months.

- Application Ideas**
- Window apertures in electronics applications.
 - Paint masking applications in engineering and automotive environments.
 - Temporary protection of sensitive surfaces against dirt, dust and damage during processing, storage and mounting etc.
 - Low level of adhesion and is suitable for protection of many surfaces including:
 - Varnished / hardcoated surfaces
 - Aluminum
 - Plastic surfaces

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Typical Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

		ASTM Test Method
Peel Adhesion to:		
Glass	5.7 oz. N ± 3.6	FINAT FTM2 (90° Peel)
Aluminum	2.2 oz. N ± 1.4	
Polycarbonate	7.9 oz. N ± 4.3	
Release	6 - 20 gram	FINAT FTM3 (2 m at 12"/min)
Thickness:		
Total	3.9 ± 0.4 mil	TAPPI 411
Overlamine	2.0 ± 0.3 mil	
Liner	2.0 ± 0.1 mil	
Breaking Strength, Overlamine:		ASTM D882-83
Machine Direction	27,000 psi	
Transverse Direction	12,250 psi	
Elongation at Break, Overlamine:		ASTM D882-83
Machine Direction	125%	
Transverse Direction	80%	
Optical: Haze	< 2% typical	ASTM-1003-77

Environmental Aging Tests

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Removable overlamine film applied to hardcoated polycarbonate 24 hours prior to testing. Tests carried out at conditions noted below. After test samples left at standard conditions for 2 hours, then evaluated. Standard conditions are 23°C and 50% relative humidity.

Parameter	Test	Performance
Cold	-40°F for 16 hours	Appearance is good. Removal smooth with no adhesive transfer or residue.
Heat	+185°F for 16 hours	Appearance is good. Removal smooth with no adhesive transfer or residue. Removal tighter than sample left at standard conditions.
Change of Temperature	-40°F for 2 hours then +185°F for 2 hours. Repeat 5 times. Change time 10 seconds.	Appearance is good. Removal smooth with no adhesive transfer or residue.
Damp Heat Cycle	Constant 95% R.H. +77°F for 12 hours then +131°F for 12 hours. Repeat 6 times.	Appearance is good. Removal smooth with no adhesive transfer or residue. Removal slightly tighter than sample left at standard conditions.

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Printing Polyester film is designed with a printable surface suitable for printing instructions, promotional messages or bar codes via thermal transfer and conventional flexographic printing methods.

Storage Store at room temperature conditions of 72°F (22°C) and 50% relative humidity.

Shelf Life If stored under proper conditions, product retains its performance and properties for two years from date of manufacture.

Product Use All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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ISO 9001:2000

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