



Destructible Polyurethane Label Stock 3812

Product Data Sheet

Updated : June 2000
Supersedes : March 1995

Description : 3812 is a destructible, non-shrink opaque white polyurethane film. It is designed as a non-removable label stock. Once applied in a correct manner, a one piece removal is not possible on most surfaces.

Physical Properties
Not for specification purposes
(Calipers are nominal values)

Facestock	40 micron matte white polyurethane
Adhesive	25 micron #350 Hi Holding modified acrylic PSA
Liner	75 micron Bleached, 90g/m ² glassine paper, single sided siliconised
Shelf Life	24 months from date of manufacture by 3M when properly stored at 22°C & 50 % Relative Humidity

Physical Properties
Not for specification purposes

Tensile Stress at Yield (Down Web) (DIN 53455)	< 27.5 N/10 mm
Elongation at Yield (Down Web) (DIN 53455)	< 5 %
Liner Release (Finat FTM-3)	2.75 – 9 cN/10 mm

Adhesion Performance
Not for specification purposes

	180° Adhesion after 20 minutes (N/10 mm)	
	Typical Results <i>Test specimen not reinforced</i>	Test Method <i>Test specimen reinforced</i>
Aluminium	Destructible	25Finat FTM 1
Stainless Steel	Destructible	25Finat FTM 28
AFERA Steel	Destructible	25Finat FTM 22
Polyethylene	3.1	-
Polypropylene	0.39	-
PVC	2.75	-
PET	Destructible	25Finat FTM 22
PC	Destructible	25Finat FTM 18
ABS	Destructible	25Finat FTM 22
PMMA	Destructible	25Finat FTM 22

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Adhesion Performance
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180° Adhesion after 24 hours (N/10 mm)		
	Typical Results <i>Test specimen not reinforced</i>	Test Method <i>Test specimen reinforced</i>
Aluminium	Destructible	30Finat FTM 1
Stainless Steel	Destructible	30Finat FTM 30
AFERA Steel	Destructible	30Finat FTM 30
Polyethylene	3.9	-
Polypropylene	Destructible	30Finat FTM 6
PVC	Destructible	30Finat FTM 20
PET	Destructible	30Finat FTM 25
PC	Destructible	30Finat FTM 22
ABS	Destructible	30Finat FTM 25
PMMA	Destructible	30Finat FTM 25

180° Adhesion after 7 days at 70°C (N/10 mm)		
	Typical Results <i>Test specimen not reinforced</i>	Test Method <i>Test specimen reinforced</i>
Aluminium	Destructible	30Finat FTM 1 & 5
Polyethylene	2.75	-
Polypropylene	Destructible	30Finat FTM 13

180° Adhesion after 7 days at 40°C / 100% RH (N/10 mm)		
	Typical Results <i>Test specimen not reinforced</i>	Test Method <i>Test specimen reinforced</i>
Aluminium	Destructible	25Finat FTM 1 / DIN30646

180° Adhesion after 7 cycles at : 1 cycle: 8 hours 40°C/100% RH 16 hours 22°C / 100% RH (N/10 mm)		
	Typical Results <i>Test specimen not reinforced</i>	Test Method <i>Test specimen reinforced</i>
Aluminium	Destructible	30Finat FTM 1 / DIN30646

Static Shear (on Aluminium) (Minutes)		
22°C / load 1 kg	10000+	Finat FTM 8
50°C / load 250 g	10000+	30Finat FTM 1 / DIN30646

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Thermal Properties

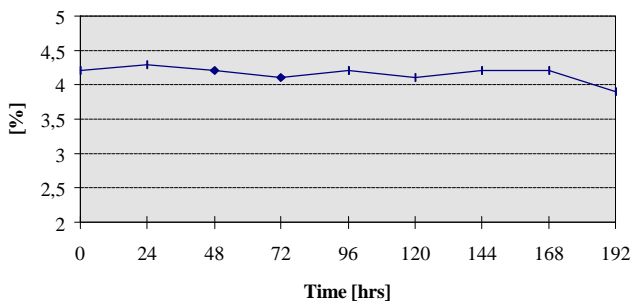
Not for specification purposes

Temperature Resistance (Visual) DIN 30646	
Long Term Short Term	- 40°C to 120°C up to 150°C
Shrink (test specimen applied on aluminium) DIN 30646	
120°C / 10 minutes 120°C / 7 days	Not measurable Not measurable

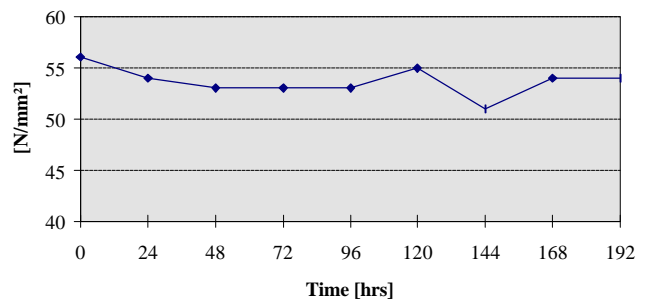
Thermal Ageing

Thermal ageing was tested at a temperature of **120 °C**. Test method: DIN 3455.
 During the tested time period 3812 Polyurethane Labelstock did not show any changes in performance

Elongation at Yield Stress



Tensile at 5 % Strain



Visual Properties

	Gloss (60°)	Colour (DIN6174) CIELAB-System-Value*	Visual Appearance
Standard Material	20	95.5	O.K.
7 days at 70°C	25	95.1	No changes
7 days at 40°C/100% RH	25	95.3	No changes
7 cycles at : 8 hrs 40°C/100% RH 16 hrs 22°C/100% RH	25	95.3	No changes
Saltspray	25	95.2	No changes

*L value of 100 correspond to ideal white // L value of 0 correspond to black

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**Resistance to
Chemicals & Solvents**
Not for specification purposes

Test method : DIN 30646		
Chemical/Solvent	Duration of Immersion	Comment / Result
Detergent (1%0	24 hrs	No change
Antifreezing Solution	24 hrs	No change
Diesel Fuel	24 hrs	No change
Motor Oil	24 hrs	No change
Water (95°C)	8 hrs	No change
Sulphuric Acid (30%)	8 hrs	No change
Caustic Soda (10%)	8 hrs	No change
Xylene	10 min.	No change
Ethanol	5 min.	No change
Toluene	5 min.	No change
Test Fuel	5 min.	No change

Processing

Cutting:

3812 Destructible Polyurethane Labelstock features a smooth, hard, caliper controlled liner with very good kiss cutting characteristics. Weed stripping is recommended using a 25 mm idler. For better handling we recommend label formats with "rounded" corners, length of label in the machine direction, minimum 3 mm between labels and minimum 10 mm liner- supported waste matrix sidebars.

Printing:

3812 Destructible Polyurethane Labelstock is recommended for screenprinting processes using appropriate inks from suppliers like Wiederhold, Marabu etc. Both UV and solvent based inks are suitable. Sheet screenprinting must be evaluated depending on size and actual conditions.

3812 is suggested for evaluation for flexographic, letterpress, offset and screen "Roll" printing methods.

The following inks were found to give good results:

Flexo: Water based: Akzo Nobel: Hydrofilm, Hydrokett, Thermokett TC, Aarberg: Series 53-1 These Water based flexo inks should be evaluated on a case by case basis for very harsh conditions.

Flexo: UV: Akzo Nobel: Flexocure after corona treatment, Aarberg: Series 39-2, Sun Chemical: Bargoflex UV inks 67, 75.

Letterpress: UV: Aarberg: Series 32-2, 41-2 inks after corona treatment. Other flexographic, letterpress and offset printing inks can be considered but should be evaluated on a case to case basis.

Application:

All surfaces must be clean and dry and at an ambient temperature of over 10° C. 3812 Destructible Polyurethane Labelstock has been developed for application to smooth and slightly rough surfaces, including several low-surface energy plastics and small diameter applications. Individual substrates should be evaluated for suitability.

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Agency Recognition: UL Recognised File No.MH16411 and CSA Accepted File No. 99316

Storage: Unprocessed films: two years. Processed labels: one year.

Films and labels must be stored in a clean area free of excessive moisture and direct sunlight at room temperature. Processed labels should be stored in Polyethylene bags, 0.1 mm thickness, to protect against moisture.

Thermal Transfer Imageability :

3812 Destructible Polyurethane Labelstock offers an ideal surface for Thermal Transfer Printing. This printing technology provides excellent covering power combined with the capability of uniform surface coverage. It also allows the individual printing of high density BARCODES beyond standard labelling applications.

The quality of the printing is dependent on the printer/ribbon combination. Good results have been obtained with the following units.

Printers	Ribbons
Zebra Z 90, 91,130, 140	ICS-CC 4099-1, Zebra 5175, Ricoh B 110 A, Armor AXR 7 + (limak SH 36)
Datamax Prodigy Plus	ICS-CC 4099-1, Ricoh B 110 A, Armor AXR 7+ (limak SH 36)
TEC B 602, B 402, B 65, B 30	ICS-CC 4099-1, Ricoh B 110 A, Armor AXR 7+ (limak SH 36)
Sato 8400, 8450	ICS-CC 4099-1, Ricoh B 110 A, Armor AXR 7+ (limak SH 36)

This listing does not claim to be complete or represent any order of merit. Other combinations can be considered but should be evaluated on case to case basis.

Parameter:

New printer / ribbon combinations should be evaluated beginning with lowest printing speed and highest burn temperature. Printing speed and burn temperature can be then successively increased / reduced.

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Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications.

This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.



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