3M™ Polyester Label Material 7870EC

Product Data Sheet

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Supersedes : March 2010

Product Description

3M Polyester Label Material 7870EC is a 50 micron, matt white thermal transfer printable labelstock that offers excellent durability of the printed image when exposed to various chemicals. This product utilizes 3M™ Adhesive 350E, designed to provide excellent adhesion to high and low surface energy plastics, metals, painted metals and powder coatings.

Product Descriptor / Dispatch Labelling

7870EC 3M TT0 MW PET50-350E-65DWG

Physical Properties

Not for specification purposes
(Calipers are nominal values)

Facestock	50 micron matt white polyester
Adhesive	27 micron 350E acrylic
Liner	56 micron, 62 g/m² white densified double-sided glassine

Key Features

- Facestock is topcoated with a high durability matt topcoat capable of withstanding harsh chemicals encountered in automotive and electronic applications
- When printed with specific ribbons, thermal transfer image remains legible after rubbing with chemicals including brake fluid, diesel fuel and acetone.
- 350E is 3M's most universal labelstock adhesive and offers excellent adhesion, even on low surface energy substrates, combined with excellent temperature and chemical resistance.
- Densified double-sided glassine liner for consistent die cutting. The double-side liner improves ease of dispensing.
- UL and cUL Recognized (File MH18072).

Application Ideas

- Barcode labels and rating plates.
- Property identification and asset labelling.
- Warning, instruction, and service labels for durable goods.
- Nameplates for durable goods.

Performance Characteristics

Not for specification purposes

Standard Test Conditions are 23ºC and 50% Relative Humidity

180º Peel Adhesion tested using FINAT Test Procedure FTM 1 (300mm/min)
90ºPeel Adhesion tested using FINAT Test Procedure FTM 2 (300mm/min)

Adhesion	20 Minutes at Standard Conditions		72 Hours at Standard Conditions	
	180º Peel N/25mm	**90º Peel** N/25mm	**180º Peel** N/25mm	**90º Peel** N/25mm
Stainless Steel	19.1	13.9	21.4	15.8
ABS	16.4	12.1	18.1	13.5
Polycarbonate	18.8	13.3	18.3	14.1
Polypropylene	15.7	12.1	18.1	13.2

Adhesion	72 Hours at 70ºC		72 Hours at - 40ºC	
	180º Peel N/25mm	**90º Peel** N/25mm	**180º Peel** N/25mm	**90º Peel** N/25mm
Stainless Steel	23.7	16.1	22.4	17.8
ABS	19.9	14.3	18.6	13.9
Polycarbonate	18.9	15.4	20.2	14.5
Polypropylene	14.0	8.9	20.0	14.1

Adhesion	72 Hours at 40ºC and 95% RH	
	180º Peel N/25mm	**90º Peel** N/25mm
Stainless Steel	24.9	16.0
ABS	15.6	8.0
Polycarbonate	15.9	9.3
Polypropylene	19.2	13.3

Liner Release tested using FINAT Test Procedures
FTM 3 (180º removal of liner from face material at 300mm/min)
FTM 4 (180º removal of liner from face material at 10m/min)

Liner Release	Rate of Removal	Release Force	Units
FTM 3	300 mm per min	15.6	cN/50mm
FTM 4	10 m per min	4.6	cN/25mm

Performance Characteristics

Not for specification purposes

Environmental Performance	Samples printed with specific thermal transfer ribbons were rubbed back and forth for a maximum of 100 times with cloth soaked in test chemical and approximately 300g downward pressure. Excellent durability of the thermal transfer image was obtained after exposure to the following test chemicals.	
	IPA	Unleaded Petrol
	Heptane	Diesel
	Screen Wash	15W40 Engine Oil
	Anti-Freeze	DOT4 Brake Fluid

Temperature resistance of label applied to stainless steel.
Other substrates should be tested as per application

Service Temperature	-40 to 150ºC
Minimum Application Temperature	5ºC

Processing

Printing:
Optimum durability may be achieved when printing with specific thermal transfer ribbons. Recommendations of suitable ribbons can be given. Facestock is printable by standard roll processing methods including flexography, hot stamp, letterpress, and screen printing. The compatibility of ink systems and printing methods should be verified by testing in the actual process.

Die Cutting:
Rotary die cutting is recommended. Fanfolding of labels is not recommended. Small labels should be evaluated carefully. Winding tensions should be kept at a minimum to help prevent the adhesive from oozing.

Packaging:
Finished labels should be stored in plastic bags.

Special Considerations

For maximum bond strength, the surface should be clean and dry. Isopropyl alcohol is a typical cleaning solvent.

NOTE: When using solvents, read and follow the manufacturer's precautions and directions for use.

For best bonding conditions, application surface should be at room temperature or higher. Low temperature surfaces, below 5°C can cause the adhesive to become so firm that it will not develop maximum contact with the substrate. Higher initial bonds can be achieved through increased rubdown pressure.

Storage

Store at standard room temperature conditions of 21ºC and 50% relative humidity.

Shelf Life

24 months from date of dispatch by 3M when stored in the original packaging at 21°C & 50 % relative humidity

For Additional Information	To request additional product information or to arrange for sales assistance, call…… Address correspondence to: 3M
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