



# 3M™ Tamper Indicating Polyester Label Material 76970

## Product Data Sheet

August 2008  
Supersedes : February 2007

**Product Description** 3M Tamper Indicating Polyester Label Material 76970 is a matt white labelstock intended for use as a tamper indicating label or seal. Evidence of tampering is provided by the activation of a “triangles” pattern in the facestock when removal of the label is attempted.

**Product Descriptor / Dispatch Labelling** 76970 3M TT5 MW PET50 Triangles-350E/20-90WG

### Physical Properties

Not for specification purposes  
(Calipers are nominal values)

<b>Facestock</b>	55 micron matt white topcoated polyester
<b>Destruct Pattern</b>	Triangles
<b>Adhesive</b>	20 micron acrylic
<b>Liner</b>	77 micron, 90 g/m <sup>2</sup> White Densified Glassine

### Key Features

- Tamper indicating - designed to provide a triangles pattern in the facestock when removal is attempted.
- TT5 topcoat provides a smooth matt surface, enabling excellent thermal transfer images at reduced burn temperature settings. The topcoat also provides improved ink anchorage for traditional forms of press printing
- 3M™ Adhesive 350E offers excellent adhesion to both high and low surface energy substrates, combined with excellent temperature and chemical resistance
- The compact format of the pattern permits manufacture of small labels
- Durable polyester facestock for harsh environments
- 90g/m<sup>2</sup> Glassine liner for consistent die cutting.
- UL and cUL Recognized (File MH18072)

**Application Ideas**

- Non transferable labels for automotive, appliance and electronics industries
- Tamper indicating labels and seals for medical and pharmaceutical industries

**Performance Characteristics**

Not for specification purposes

<b>Adhesive Performance</b>	Label material was found to be tamper indicating when removed by hand after being applied for 24 hours to the following surfaces at standard conditions (23°C and 50% relative humidity)  Stainless Steel Polyester Powder Coated Metal Aluminium ABS Polycarbonate Polypropylene Glass
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<b>Environmental Performance</b>	Performance of label applied to stainless steel. Other substrates should be tested as per application  Normal use: Standard room temperature & humidity  Short term exposure: -40°C to 121°C  Minimum application temperature: +5°C
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Liner Release tested using FINAT Test Procedures  
 FTM 3 (180° removal of liner from face material at 300mm/min)  
 FTM 4 (180° removal of liner from face material at 10m/min)

Liner Release	Rate of Removal	Release Force	Units
FTM 3	300 mm per min	12.3	cN/50mm
FTM 4	10 m per min	4.9	cN/25mm

**Processing**

**Printing:**

Facestock is topcoated for improved ink receptivity and is designed for thermal transfer printing. Resin ribbons are recommended for optimum durability. It 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.

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<b>Special Considerations</b>	For maximum bond strength, the surface should be clean and dry. Isopropyl alcohol is a typical cleaning solvent.  <b>NOTE:</b> 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.  The tamper indicating mechanism (i.e. the triangle pattern) depends upon adequate adhesion of the label to the substrate. A sufficient bond may not develop on all surfaces due to low surface energy, contaminated or textured surfaces. The length of dwell time on the surface and the environmental conditions should also be considered. Therefore, it is important to determine the suitability of the material in the intended application by carefully pre-testing before the application process has begun.  The primary function of the material is to affect a non-transferable (non-reusable) label or seal by causing the triangle pattern to appear on the facestock surface when removal is attempted.  As a result of the primary function described above the triangle pattern may also be transferred to the application surface. This message is a secondary rather than a permanent indication of tampering since the pattern transferred to the application surface can be removed by rubbing or by solvent wiping.  Caution should be exercised to avoid covering the surface of the label with opaque graphics to the extent that the security pattern is hidden by the graphics and the effectiveness of the label or seal is lessened.  Since no tamper-indicating feature is 100% tamper proof, careful consideration must be taken when designing labels and seals. Where necessary, additional methods should be considered in combination with the labels so that the tamper indicating features are appropriate for the requirements of the application.
<b>Storage</b>	Store at standard room temperature conditions of 21°C and 50% relative humidity.
<b>Shelf Life</b>	24 months from date of dispatch by 3M when stored in the original packaging at 21°C & 50 % relative humidity
<b>For Additional Information</b>	To request additional product information or to arrange for sales assistance, call..... Address correspondence to:
<b>Important Notice</b>	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

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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 or application. All questions of liability relating to this product are governed by the terms of the sale subject, where applicable, to the prevailing law

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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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