3M™ Tamper Indicating Polyester Label Material 76970

Product Data Sheet

August 2011
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)

Facestock	55 micron matt white topcoated polyester
Destruct Pattern	Triangles
Adhesive	20 micron acrylic
Liner	77 micron, 90 g/m² 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/m2 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

Adhesive Performance	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 (23ºC and 50% relative humidity) Stainless Steel Polyester Powder Coated Metal Aluminium ABS Polycarbonate Polypropylene Glass

Environmental Performance	Performance of label applied to stainless steel. Other substrates should be tested as per application Normal use: Standard room temperature & humidity Short term exposure: –40ºC to 121ºC Minimum application temperature: +5ºC

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	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.

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. 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.
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:
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