



Void Polyester Label Products

FMV02 • FMV12 • FMV22 • FMV32 • FMV0E

Technical Data

February, 2007

Product Description 3M™ Void Polyester Label Products are tamper-indicating stocks designed to provide a “void” message in the facestock when removal is attempted. These void polyester labels utilize 3M™ Adhesive P1410 which is an aggressive tackified emulsion acrylic adhesive that offers excellent adhesion to a wide variety of substrates, including polyolefins.

| Construction | Product | Facestock | Adhesive | Liner |
|--------------|---|--|-------------------|--|
| | 3M™ Void Polyester Label Product FMV02 | .002 in. Silver Void Polyester TC | P1410 Perm. 18 | 50# SC 3.1 mil semi-bleached super calendered kraft sheet |
| | 3M™ Void Polyester Label Product FMV12 | .002 in. White Void Polyester EDP | P1410 Perm. 18 | 50# SC Remoist 3.1 mil semi-bleached super calendered kraft sheet |
| | 3M™ Void Polyester Label Product FMV22 | .002 in. White Void Polyester TC | P1410 Perm. 18 | 50# SC 3.1 mil semi-bleached super calendered kraft sheet |
| | 3M™ Void Polyester Label Product FMV32 | .002 in. Silver Void Polyester Translucent EDP | P1410 Perm. 18 | 50# SC Remoist 3.1 mil semi-bleached super calendered kraft sheet |
| | 3M™ Void Polyester Label Product FMV0E | .002 in. Silver Void Polyester TC | P1410 Perm. 18 | 50# SC C2S 3.1 mil semi-bleached super calendered kraft sheet |

(Calipers are nominal values)

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.

Adhesion properties determined per TLMI Method using 1.0 mil polyester with 0.9 mils of adhesive on a stainless steel panel.

| | | |
|--------------------------------|--|--|
| Peel Adhesion | 3.0 lbs./in. (528 N/m) | TLMI Method, 180° Peel, 12"/min., 1" wide sample |
| Loop Tack | 1.8 lbs./in. (316 N/m) | TLMI Method, 12"/min., 1" wide sample |
| Shear | 1.0 hour | TLMI Method, 0.25 in ² x 500g |
| Adhesive Coat Weight | 1.75 g/100 in. ² ± 10% | 3M Method E10MFP01 |
| Liner Release | 15 to 50 g/2 in. | TLMI Method, 180° removal, 300 in./min. |
| Application Temperature | 40°F to 120°F (5°C to 49°C) | |
| Service Temperature | -20°F to 240°F (-29°C to 115°C) | |
| Conformability | Semi-rigid – Label is suitable for flat or slightly curved surfaces. | |

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Features

- The polyester film is top coated to accept most film ink systems and thermal transfer printing.
- Meets CONEG requirements.
- Adhesive dry ingredients are listed by FDA as indirect food contact additives when used in food packaging with minimum opportunity for exposure. See 21 CFR 175.105.
- Liner is designed for high-speed die-cutting and matrix stripping. Not recommended for sheet on press applications. The C2S version has a light coating of silicone on the backside to reduce label pick and is effective when used in conjunction with soft adhesives and heavy adhesive coating weights. The remoist version has been remoisturized after silicone coating to restabilize the sheet and reduce side curl.

Printing

- Gloss topcoat is designed to be printable with a variety of film inks and thermal transfer ribbons. The following inks and thermal transfer ribbons have been evaluated and found to give excellent adhesion when tested with 3M™ Tape 610 and 3M™ Tape 810. However, press conditions vary and proper evaluation using your specific conditions is critical and highly recommended for successful ink and ribbon adhesion.

| Supplier UV Inks | Ink Series | Printing Process |
|------------------------------|------------------------------|----------------------|
| XSYS Print Solutions | UNV80071 | Letterpress |
| | USC50022 | Screen |
| | USC10031 | Screen |
| Environmental Inks Nazdar | Ultra Kote 1800 OPV | Flexo |
| | PSST-3952 | Screen |
| | Norcote | Screen |
| Norcote | 02-022, 80049, 02304, 021019 | Screen |
| | | |
| Water Based | | |
| XSYS Print Solutions | HMF80071 | Flexo |
| | HMF90100 | Flexo |
| | MHF30004 | Flexo |
| Water Ink Technologies | WFLO 42976 | Flexo |
| | Environmental Inks | Aqua Polyscreen Plus |
| Wykoff Inks | Aqua Poly Cup | Flexo |
| | SCF 6551 | Flexo |
| Solvent Based | | |
| Siegwerk Ink | FCTB65L2 | Flexo |
| | FCTD65L4 | Flexo |
| | FCTE65L3 | Flexo |
| | FCTH65L5 | Gravure |
| | Nazdar | GV124 |
| Thermal Transfer | | |
| Ribbon Supplier | | |
| Armor | AXR7 + | Resin |
| | W137-C | Wax |
| DNP | M-250 | Wax/Resin |
| | R510-W | Resin |
| | SP330, DC400 | Resin |
| iimak | Prime Mark, PM350 | Wax/Resin |
| | B110A | Wax/Resin |
| Ricoh | BC110C | Resin |
| | Sony | 3022, 4085 Plus |
| Sony | 4070 | Resin (UV+) |
| | 4075 | Resin |

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Application Ideas

- Tamper-indicating labels and seals for packaging applications.
- Non-transferable durable goods label.

Die-Cutting

The compact “void” message permits manufacture of labels as small as 1/2 in. x 1 1/4 in. (13 mm x 32 mm).

It is recommended that the user test for the presence of the “void” message on every roll of label seals as they process them, to insure the product quality and consistency. Which can be done by laminating a label seal to an untreated polyester film test surface. The label seal should be wiped down with a squeegee, allowed to dwell 10 minutes, and then removed to observe the presence and functions of the “void” message on both the facestock and the substrate. It is also recommended that the user test each lot of label seals on the actual application surface to assure the function of the “void” message.

Dispensing

As care should be taken not to disturb the tamper-indicating feature by pre-destructing the “void” message when manually removing the label from the liner, slowly remove the liner from the label at a 90° angle. It is recommended that the user test samples for each roll of label seals by laminating a representative label seal to the specific application surface to assure its function meets expectations. This test can be run after 10 minutes dwell; however, final judgement should be based on 72 hours dwell at room temperature prior to testing.

Application

The tamper-indicating mechanism (i.e. the “void” message both on the facestock and on the substrate) depends upon adequate adhesion of the label to the substrate. A sufficient bond may not develop on all surfaces due to low surface energy (e.g. PTFE), contaminated or textured surfaces. Therefore, it is important to determine the suitability of the product in the intended application by carefully pretesting. The primary function of the products is to effect a non-transferable (non-reusable) label seal by causing the “void” message to appear on the facestock when removal from the substrate is attempted. As a result of the primary function, a “void” message is also transferred to the substrate and can be removed by hand rubbing or by solvent wiping.

Our tamper-indicating product line is designed to indicate tampering by destructing when an attempt is made to remove the label. Since no tamper-indicating feature is 100% tamper proof, careful consideration must be taken when designing label seals. When the consequences of tampering could be severe, such as injury or loss of human life or significant monetary loss, these products are not recommended as the sole means of package or product tamper indication. In these instances, additional methods in combination with the labels should be considered so that the tamper-indicating features are commensurate with the requirements of the application.

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Storage Conditions

Store under normal conditions of 70°F (21°C) and 50% relative humidity. To minimize the effects of humidity on the products, package the die-cut and printed stock in polyethylene bags. Low density polyethylene (2-4 mils) can help prevent humidity penetration.

Shelf Life

To obtain best performance, use this product within two years from the 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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