Tamper-Indicating Label Material for Thermal Transfer Printing
7866

Technical Data November 2007

Product Description

3M™ Tamper-Indicating Label Material for Thermal Transfer Printing 7866 is a durable, high performance material that offers excellent thermal stability, moisture resistance and chemical resistance. This material utilize 3M™ High Strength Adhesive 300, which has excellent quick tack and also bonds well to a variety of surfaces including LSE plastics.

Construction

(Calipers are nominal values.)

Facestock	Destruct Pattern	Adhesive	Liner
2.0 mils (50 microns) Gloss White Polyester	"VOID"	1.0 mil (25 microns) #300 High Strength Acrylic	3.2 mils (80 microns) 55# Densified Kraft

Features

- This tamper-indicating stock is designed to provide a "void" message in the facestock when removal is attempted.
- Durable polyester facestock is top-coated for thermal transfer printing with select resin ribbons.
- The compact format of the "void" message permits manufacture of small labels (1/2" x 1-1/4").
- Adhesive provides high bond to most surfaces. Compatibility must be determined.
- 55# densified kraft liner assures consistent die cutting.
- UL recognized (File MH16411) and CSA accepted (File 99316). See the UL and CSA listings for details.

Application Ideas

- Non-transferable labels for automatic, appliance and electronic industries.
- Tamper-indicating labels and seals for over-the-counter drugs and other packaging applications.

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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.

Adhesive Coat Weight	1.08 to 1.62 g/100 in^2	TM-2279
Release Range	5 to 35 g/2 in.	TLMI Method, 180° removal, 300 in./min.
Service Temperature	-40°F to 250°F (-40°C to 121°C) See Environmental section	
Minimum Application Temperature	50°F (5°C)	
Convertability	3M™ High Strength Acrylic Adhesive 300 is designed to be compatible with a variety of print methods and end use applications. Due to the quick flowing aggressive nature of this adhesive, care should be taken when converting labels for thermal transfer applications. Please refer to the die cutting/converting section of this data page or the "Guide to Converting and Handling Label Products" technical bulletin for additional information.	

Typical Peel Adhesion Properties

Assume all surfaces to which these label materials will be applied are contaminated – metals may be oily or dusty; plastics may be coated with mold release agents, dirt, etc. Any surface contaminant will adversely affect adhesion and the destruct message; therefore, it must be removed prior to application by wiping with a solvent. Consult the manufacturer's Material Safety Data Sheet for proper handling and storage of solvents.

Adheres to the following clean surfaces:

Stainless Steel	Painted Metals	Nylon
ABS	Polyester	Glass
Polypropylene	HDPE	Polycarbonate

Note: No specific peel values have been provided due to the "void" feature embedded in the label. The "void" feature will cause peel values to vary. Please test to determine suitability in a particular application.

Conformability: Semi-rigid, suitable for flat or slightly curved surfaces.

Environmental Performance

Note: The following tests are intended as a guide to product performance. Application testing is recommended using actual substrates, expected dwell times, and actual conditioning for best determination of product suitability.

The properties defined are based on the adhesion of the label material to a stainless steel test surface.

Chemical Resistance	Gasoline	1 hour at room temperature
	Auto Oil	72 hours at 120°F (49°C)
	Weak Alkali	4 hours at room temperature
	Weak Acid	4 hours at room temperature
	MEK	1 hour at room temperature
	Chlorofluorocarbon	1 hour at room temperature
	NaCL Solution	72 hours at room temperature
Water Resistance	Withstands exposure to water at room temperature for 72 hours	
Temperature Resistance	Withstands exposure from -40°F (-40) to 250°F (121°C).	
Humidity Resistance	Withstands exposure to 90°F (32°C) and 90% RH for 168 hours	

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Application Techniques	Determining Suitability	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, 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-transferrable (non-reusable) label or 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. This message transferred to substrate can be removed by hand rubbing or by solvent wiping.
	Dispensing	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.
	Surface Preparation	Wet the application surface with a mild solvent such as isopropyl alcohol (rubbing alcohol) or heptane and wipe thoroughly. Dry the surface with a lint free cloth before the solvent evaporates from the surface.
	Application Pressure	Sufficient application pressure is required to develop adhesion to assure “void” message appears both on facestock and substrate upon removal or upon attempted removal through tampering. Higher initial bonds can be achieved through increased application pressure such as firm hand or squeegee pressure.
	Minimum Dwell Time	24 hours at room temperature or 72°F (22°C) before testing.

Note: 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 labels or 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 of 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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Printing	Incoming Label Materials Every slit roll has been tested for the presence of the “void” message. The leading edge of every slit roll is tabbed with a 1-1/2" strip to stimulate tampering, thereby indicating that the “void” message is functional on the leading edge of that roll. Thermal Transfer Printing Caution should be exercised to avoid covering the surface of the label with opaque graphics to the extent that the “void” message is hidden, and the effectiveness of the label or seal is lessened.
Packaging	Finished labels should be stored in plastic bags.
Die Cutting/ Converting	The compact “void” message permits manufacture of labels as small as 1/2" x1-1/4" (13 mm x 12 mm). It is recommended that the converter test for the presence of the “void” message on every roll of labels or seals as the converter processes them, to insure the product quality and consistency. This can be done by laminating a label or seal to an untreated polyester film test surface. The label or 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 converter test each lot of labels or seals on the actual application surface to assure the function of the “void” message.

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Storage the	Store under normal conditions of 72°F (22°C) and 50% relative humidity in original container.
Shelf Life	To obtain best performance, use this product within two years from date of manufacture.
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ISO 9001

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

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