

May, 2017

## 3M™ Thermal Transfer Polyester Label Material 7876

### Product Description

3M™ Thermal Transfer Polyester Label Material 7876 is a clear polyester label material that offers premium durability and moisture resistance. This label product utilizes 3M™ High Performance Acrylic Adhesive 350, it offers excellent chemical resistance and holding strength even at high temperatures.



### Product Features

- Facestock is topcoated for thermal transfer printing. Resin ribbons are recommended for optimum durability. The topcoat also provides improved ink anchorage for traditional forms of press printing.
- Adhesive can permanently bond to high surface energy (HSE) and low surface energy (LSE) plastics, textured and contoured surfaces, powder coatings, and slightly oily metals.
- Thick adhesive caliper provides for stronger bond on textured surfaces.
- 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.
- UL listing includes approval for use on powder coated surfaces.

## Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

## Typical Physical Properties

Property	Values	
Facestock	Clear Polyester Gloss TC	
Facestock Thickness	0.051 mm	2 mil
Adhesive	350 Acrylic	
Adhesive Thickness	0.046 mm	1.8 mil
Liner	55# Densified Kraft	
Liner Thickness	0.081 mm	3.2 mil
Adhesive Coat Weight	2.70 to 3.24 g/100 in <sup>2</sup>	

## Convertability

In order to capture the superior performance properties of 3M™ High Holding Acrylic Adhesive 350, thicker calipers are utilized for LSE or textured substrates. Its higher caliper, while desirable for the end use applications, may require extra care during processing. 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.

## Note

Calipers are nominal values

## Typical Performance Characteristics

Property	Values		Method	Notes
Service Temperature Range	-40 to 125 °C	-40 to 257 °F		
Minimum Application Temperature	10 °C	50 °F		
Liner Release Range	5 to 70 g/2 in		TLMI	180° removal, 300 in/min

180° Peel Adhesion		Dwell/Cure Time	Substrate
8.8 N/cm	79 oz/in	10 min @ Room Temperature	Stainless Steel
8.9 N/cm	81 oz/in	10 min @ Room Temperature	Polycarbonate (PC)
7.1 N/cm	65 oz/in	10 min @ Room Temperature	Polypropylene (PP)
9.1 N/cm	83 oz/in	10 min @ Room Temperature	Glass

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## Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Substrate
5.0 N/cm	46 oz/in	10 min @ Room Temperature	High Density Polyethylene (HDPE)
5.0 N/cm	46 oz/in	10 min @ Room Temperature	Low Density Polyethylene (HDPE)
8.0 N/cm	73 oz/in	10 min @ Room Temperature	**Smooth Powder Coating
4.6 N/cm	42 oz/in	10 min @ Room Temperature	**Finely Textured Powder Coating
9.8 N/cm	90 oz/in	72 hr @ Room Temperature	Stainless Steel
9.4 N/cm	88 oz/in	72 hr @ Room Temperature	Polycarbonate (PC)
8.1 N/cm	74 oz/in	72 hr @ Room Temperature	Polypropylene (PP)
9.7 N/cm	89 oz/in	72 hr @ Room Temperature	Glass
5.6 N/cm	51 oz/in	72 hr @ Room Temperature	High Density Polyethylene (HDPE)
5.4 N/cm	49 oz/in	72 hr @ Room Temperature	Low Density Polyethylene (LDPE)
8.4 N/cm	77 oz/in	72 hr @ Room Temperature	**Smooth Powder Coating
4.6 N/cm	44 oz/in	72 hr @ Room Temperature	**Finely Textured Powder Coating
10.6 N/cm	97 oz/in	72 hr @ 120°F(49°C)	Stainless Steel
6.9 N/cm	63 oz/in	72 hr @ 120°F(49°C)	Polycarbonate (PC)
8.6 N/cm	79 oz/in	72 hr @ 120°F(49°C)	Polypropylene (PP)
10.5 N/cm	96 oz/in	72 hr @ 120°F(49°C)	Glass
5.2 N/cm	48 oz/in	72 hr @ 120°F(49°C)	High Density Polyethylene (HDPE)
1.5 N/cm	14 oz/in	72 hr @ 120°F(49°C)	Low Density Polyethylene (LDPE)
9.1 N/cm	83 oz/in	72 hr @ 120°F(49°C)	**Smooth Powder Coating
5.4 N/cm	49 oz/in	72 hr @ 120°F(49°C)	**Finely Textured Powder Coating
10.2 N/cm	93 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Stainless Steel
7.4 N/cm	68 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Polycarbonate (PC)
7.4 N/cm	68 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Polypropylene (PP)
8.8 N/cm	80 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Glass
4.6 N/cm	42 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	High Density Polyethylene (HDPE)
4.2 N/cm	38 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Low Density Polyethylene (LDPE)
8.4 N/cm	77 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	**Smooth Powder Coating

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## Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Substrate
4.9 N/cm	45 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	**Finely Textured Powder Coating

Property: 180° Peel Adhesion  
Method: ASTM D3330

90° Peel Adhesion		Dwell/Cure Time	Substrate
6.1 N/cm	56 oz/in	10 min @ Room Temperature	Stainless Steel
6.7 N/cm	61 oz/in	10 min @ Room Temperature	Polycarbonate (PC)
3.3 N/cm	30 oz/in	10 min @ Room Temperature	Polypropylene (PP)
7.1 N/cm	65 oz/in	10 min @ Room Temperature	Glass
3.1 N/cm	28 oz/in	10 min @ Room Temperature	High Density Polyethylene (HDPE)
3.2 N/cm	29 oz/in	10 min @ Room Temperature	Low Density Polyethylene (HDPE)
5.2 N/cm	48 oz/in	10 min @ Room Temperature	**Smooth Powder Coating
3.0 N/cm	27 oz/in	10 min @ Room Temperature	**Finely Textured Powder Coating
8.5 N/cm	78 oz/in	72 hr @ Room Temperature	Stainless Steel
7.3 N/cm	67 oz/in	72 hr @ Room Temperature	Polycarbonate (PC)
3.2 N/cm	29 oz/in	72 hr @ Room Temperature	Polypropylene (PP)
8.2 N/cm	75 oz/in	72 hr @ Room Temperature	Glass
3.5 N/cm	32 oz/in	72 hr @ Room Temperature	High Density Polyethylene (HDPE)
3.8 N/cm	35 oz/in	72 hr @ Room Temperature	Low Density Polyethylene (HDPE)
5.5 N/cm	50 oz/in	72 hr @ Room Temperature	**Smooth Powder Coating
2.8 N/cm	26 oz/in	72 hr @ Room Temperature	**Finely Textured Powder Coating
10.3 N/cm	94 oz/in	72 hr @ 120°F(49°C)	Stainless Steel
3.6 N/cm	33 oz/in	72 hr @ 120°F(49°C)	Polycarbonate (PC)
3.7 N/cm	34 oz/in	72 hr @ 120°F(49°C)	Polypropylene (PP)
9.1 N/cm	83 oz/in	72 hr @ 120°F(49°C)	Glass
3.3 N/cm	30 oz/in	72 hr @ 120°F(49°C)	High Density Polyethylene (HDPE)
1.4 N/cm	13 oz/in	72 hr @ 120°F(49°C)	Low Density Polyethylene (LDPE)
6.6 N/cm	60 oz/in	72 hr @ 120°F(49°C)	**Smooth Powder Coating
3.6 N/cm	33 oz/in	72 hr @ 120°F(49°C)	**Finely Textured Powder Coating
8.8 N/cm	80 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Stainless Steel

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**Typical Performance Characteristics (continued)**

90° Peel Adhesion		Dwell/Cure Time	Substrate
6.2 N/cm	57 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Polycarbonate (PC)
4.6 N/cm	42 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Polypropylene (PP)
7.7 N/cm	70 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Glass
4.0 N/cm	37 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	High Density Polyethylene (HDPE)
4.2 N/cm	38 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	Low Density Polyethylene (LDPE)
6.3 N/cm	58 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	**Smooth Powder Coating
3.1 N/cm	28 oz/in	24 hr @ 90°F(32°C) at 90% Relative Humidity	**Finely Textured Powder Coating

Property: 90° Peel Adhesion  
Method: ASTM D3330

**Available Sizes****Packaging**

Finished labels should be stored in plastic bags.

**Typical Environmental Performance****Chemical and Environmental Exposure**

The properties defined are based on four hour immersions at room temperature (72°F/22°C) unless otherwise noted. Samples were applied to stainless steel panels 24 hours prior to immersion and were evaluated one hour after removal from the solution for peel adhesion. Adhesion measured at 180° peel angle (ASTM D 3330) at 12 inches/minute.

Chemical	Adhesion to Stainless Steel		Appearance	Edge Penetration
	Oz./in.	N/100 mm	Visual	Millimeters
Isopropyl Alcohol	82	90	No change	0.9
Detergent 1% Alconox® Cleaner	85	93	No change	0.8
Engine Oil (10W30) @ 250°F (121°C)	96	105	No change	0.6
Water for 48 hours	61	67	No change	0.3
pH 4	79	86	No change	0.4
pH 10	74	81	No change	0.8
Formula 409® Cleaner	82	90	No change	0.9
Toluene	41	45	No change	6.3
Acetone	52	57	No change	5.6
Brake Fluid	85	93	No change	0.1
Gasoline	50	55	No change	4.8
Diesel Fuel	80	88	No change	0.8
Mineral Spirits	68	74	No change	2.4
Hydraulic Fluid	83	91	No change	0.0

**Humidity Resistance**

24 hours at 100°F (38°C) and 100% relative humidity: No significant change in appearance or adhesion

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## Typical Environmental Performance (continued)

### Temperature Resistance

300°F (149°C) for 24 hours: Some yellowing of facestock  
-40°F (-40°C) for 10 days: No significant visual change

Accelerated Aging		Notes
0.05 N/cm	13 g/in	180° Removal of Liner from Facestock at 90 in/min
8.3 N/cm	76 oz/in	180° Peel Adhesion from Stainless Steel at 12 in/min

Property: Accelerated Aging  
Method: ASTM D3611  
Test Condition : 96 hr @ 150°F (65°C) and 80% relative humidity

## Handling/Application Information

### Application Ideas

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

### Application Techniques

For maximum bond strength, the surface should be clean and dry. Typical cleaning solvents are heptane and isopropyl alcohol.\*  
For best bonding conditions, application surface should be at room temperature or higher. Low temperature surfaces, below 50°F (10°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.  
\*When using solvents, read and follow the manufacturer's precautions and directions for use.

## Printing

Facestock is topcoated for improved ink receptivity and is designed for thermal transfer printing. It is printable by all standard roll processing methods including flexography, hot stamp, letterpress, and screen printing. Refer to UL Listing for specific ribbons.

## Converting

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.

## Storage and Shelf Life

Store at room temperature conditions of 72°F (22°C) and 50% relative humidity.  
If stored under proper conditions, product retains its performance and properties for 24 months from date of manufacture.

## Industry Specifications

UL Recognized (File MH16411)  
CSA Accepted (File 99316)

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## Information

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## References

### Safety Data Sheet (SDS)

[https://www.3m.com/3M/en\\_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en\\_US&co=ptn&q=7876](https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=7876)

## ISO Statement

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

