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.

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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	
Adhesive Thickness	0.046 mm	1.8 mil
Facestock	Clear Polyester Gloss TC	
Facestock Thickness	0.051 mm	2 mil
Adhesive Type	350 Acrylic	
Liner	55# Densified Kraft	
Liner Thickness	0.081 mm	3.2 mil
Adhesive Coat Weight	2.70 to 3.24 g/100 in²	

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	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Conditions	Substrate	Backing	Notes	Test Condition
90° Peel Adhesion Polypropylene (PP)	3.2 N/cm	29 oz/in	ASTM D3330	90° Peel Adhesion	72	hr	23C	72F	50%RH	Polypropylene (PP)	2 mil PET	12 in/min (300 mm/min)	
Long Term Temperature Resistance	125 °C	257 °F											Long Term (day, weeks)

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Typical Performance Characteristics (continued)

Property	Values		Method	Test Name	Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Backing	Notes	Test Condition
Minimum Long Term Temperature Resistance	-40 °C	-40 °F											Long Term (day, weeks)
Minimum Application Temperature	10 °C	50 °F											
90° Peel Adhesion Stainless Steel	78 oz/in	8.5 N/cm	ASTM D3330	90° Peel Adhesion	72	hr	23C	72F	50%RH	Stainless Steel	2 mil PET	12 in/min (300 mm/min)	
90° Peel Adhesion Glass	8.2 N/cm	75 oz/in	ASTM D3330	90° Peel Adhesion	72	hr	23C	72F	50%RH	Glass	2 mil PET	12 in/min (300 mm/min)	
90° Peel Adhesion Polycarbonate (PC)	7.3 N/cm	67 oz/in	ASTM D3330	90° Peel Adhesion	72	hr	23C	72F	50%RH	Polycarbonate (PC)	2 mil PET	12 in/min (300 mm/min)	
Liner Release	1970-05-01 00:00:00 g/2 in		TLMI									180° removal, 300 in/min	

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate
8.8 N/cm	79 oz/in	10	min	23C	72F	50%RH	Stainless Steel
8.9 N/cm	81 oz/in	10	min	23C	72F	50%RH	Polycarbonate (PC)
7.1 N/cm	65 oz/in	10	min	23C	72F	50%RH	Polypropylene (PP)

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Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate
9.1 N/cm	83 oz/in	10	min	23C	72F	50%RH	Glass
8 N/cm	73 oz/in	10	min	23C	72F	50%RH	**Smooth Powder Coating
4.6 N/cm	42 oz/in	10	min	23C	72F	50%RH	**Finely Textured Powder Coating
9.4 N/cm	88 oz/in	72	hr	23C	72F	50%RH	Polycarbonate (PC)
8.1 N/cm	74 oz/in	72	hr	23C	72F	50%RH	Polypropylene (PP)
9.7 N/cm	89 oz/in	72	hr	23C	72F	50%RH	Glass
5.6 N/cm	51 oz/in	72	hr	23C	72F	50%RH	High Density Polyethylene (HDPE)
5.4 N/cm	49 oz/in	72	hr	23C	72F	50%RH	Low Density Polyethylene (LDPE)
8.4 N/cm	77 oz/in	72	hr	23C	72F	50%RH	**Smooth Powder Coating
4.6 N/cm	44 oz/in	72	hr	23C	72F	50%RH	**Finely Textured Powder Coating
10.6 N/cm	97 oz/in	72	hr	49C	120F	50%RH	Stainless Steel
6.9 N/cm	63 oz/in	72	hr	49C	120F	50%RH	Polycarbonate (PC)
8.6 N/cm	79 oz/in	72	hr	49C	120F	50%RH	Polypropylene (PP)
5.2 N/cm	48 oz/in	72	hr	49C	120F	50%RH	High Density Polyethylene (HDPE)
1.5 N/cm	14 oz/in	72	hr	49C	120F	50%RH	Low Density Polyethylene (LDPE)
9.1 N/cm	83 oz/in	72	hr	49C	120F	50%RH	**Smooth Powder Coating
5.4 N/cm	49 oz/in	72	hr	49C	120F	50%RH	**Finely Textured Powder Coating
9.8 N/cm	90 oz/in	72	hr	23C	72F	50%RH	Stainless Steel
10.5 N/cm	96 oz/in	72	hr	49C	120F	50%RH	Glass
10.2 N/cm	93 oz/in	24	hr	32C	90F	90%RH	Stainless Steel

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Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate
7.4 N/cm	68 oz/in	24	hr	32C	90F	90%RH	Polycarbonate (PC)
7.4 N/cm	68 oz/in	24	hr	32C	90F	90%RH	Polypropylene (PP)
8.8 N/cm	80 oz/in	24	hr	32C	90F	90%RH	Glass
4.6 N/cm	42 oz/in	24	hr	32C	90F	90%RH	High Density Polyethylene (HDPE)
4.2 N/cm	38 oz/in	24	hr	32C	90F	90%RH	Low Density Polyethylene (LDPE)
8.4 N/cm	77 oz/in	24	hr	32C	90F	90%RH	**Smooth Powder Coating
4.9 N/cm	45 oz/in	24	hr	32C	90F	90%RH	**Finely Textured Powder Coating
5 N/cm	46 oz/in	10	min	23C	72F	50%RH	High Density Polyethylene (HDPE)
5 N/cm	46 oz/in	10	min	23C	72F	50%RH	Low Density Polyethylene (LDPE)

Property: 180° Peel Adhesion
Method: ASTM D3330
notes: 12 in/min (300 mm/min)

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Notes	Backing
5.2 N/cm	48 oz/in	10	min	23C	72F	50%RH	**Smooth Powder Coating	12 in/min (300 mm/min)	
3 N/cm	27 oz/in	10	min	23C	72F	50%RH	**Finely Textured Powder Coating	12 in/min (300 mm/min)	
3.5 N/cm	32 oz/in	72	hr	23C	72F	50%RH	High Density Polyethylene (HDPE)	12 in/min (300 mm/min)	2 mil PET
35 oz/in	3.8 N/cm	72	hr	23C	72F	50%RH	Low Density Polyethylene (LDPE)	12 in/min (300 mm/min)	2 mil PET
5.5 N/cm	50 oz/in	72	hr	23C	72F	50%RH	**Smooth Powder Coating		

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Typical Performance Characteristics (continued)

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Notes	Backing
2.8 N/cm	26 oz/in	72	hr	23C	72F	50%RH	**Finely Textured Powder Coating		
10.3 N/cm	94 oz/in	72	hr	49C	120F	50%RH	Stainless Steel	12 in/min (300 mm/min)	
3.6 N/cm	33 oz/in	72	hr	49C	120F	50%RH	Polycarbonate (PC)	12 in/min (300 mm/min)	
3.7 N/cm	34 oz/in	72	hr	49C	120F	50%RH	Polypropylene (PP)	12 in/min (300 mm/min)	
9.1 N/cm	83 oz/in	72	hr	49C	120F	50%RH	Glass	12 in/min (300 mm/min)	
3.3 N/cm	30 oz/in	72	hr	49C	120F	50%RH	High Density Polyethylene (HDPE)	12 in/min (300 mm/min)	
1.4 N/cm	13 oz/in	72	hr	49C	120F	50%RH	Low Density Polyethylene (LDPE)	12 in/min (300 mm/min)	
6.6 N/cm	60 oz/in	72	hr	49C	120F	50%RH	**Smooth Powder Coating	12 in/min (300 mm/min)	
3.6 N/cm	33 oz/in	72	hr	49C	120F	50%RH	**Finely Textured Powder Coating	12 in/min (300 mm/min)	
8.8 N/cm	80 oz/in	24	hr	32C	90F	90%RH	Stainless Steel	12 in/min (300 mm/min)	
6.2 N/cm	57 oz/in	24	hr	32C	90F	90%RH	Polycarbonate (PC)	12 in/min (300 mm/min)	
4.6 N/cm	42 oz/in	24	hr	32C	90F	90%RH	Polypropylene (PP)	12 in/min (300 mm/min)	
7.7 N/cm	70 oz/in	24	hr	32C	90F	90%RH	Glass	12 in/min (300 mm/min)	
4 N/cm	37 oz/in	24	hr	32C	90F	90%RH	High Density Polyethylene (HDPE)	12 in/min (300 mm/min)	
4.2 N/cm	38 oz/in	24	hr	32C	90F	90%RH	Low Density Polyethylene (LDPE)	12 in/min (300 mm/min)	
6.3 N/cm	58 oz/in	24	hr	32C	90F	50%RH	**Smooth Powder Coating	12 in/min (300 mm/min)	

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Typical Performance Characteristics (continued)

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Notes	Backing
3.1 N/cm	28 oz/in	24	hr	32C	90F	50%RH	**Finely Textured Powder Coating	12 in/min (300 mm/min)	
6.1 N/cm	56 oz/in	10	min	23C	72F	50%RH	Stainless Steel	12 in/min (300 mm/min)	
6.7 N/cm	61 oz/in	10	min	23C	72F	50%RH	Polycarbonate (PC)	12 in/min (300 mm/min)	
3.3 N/cm	30 oz/in	10	min	23C	72F	50%RH	Polypropylene (PP)	12 in/min (300 mm/min)	
7.1 oz/in	65 oz/in	10	min	23C	72F	50%RH	Glass	12 in/min (300 mm/min)	
3.1 N/cm	28 oz/in	10	min	23C	72F	50%RH	High Density Polyethylene (HDPE)	12 in/min (300 mm/min)	
3.2 N/cm	29 oz/in	10	min	23C	72F	50%RH	Low Density Polyethylene (LDPE)	12 in/min (300 mm/min)	

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.

	Adhesion to Stainless Steel		Appearance	Edge Penetration
Chemical	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

Typical Environmental Performance (continued)

Humidity Resistance

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

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	Substrate
0.05 N/cm	13 g/in	180° Removal of Liner from Facestock at 90 in/min	
8.3 N/cm	76 oz/in	12 in/min (300 mm/min)	Stainless Steel

Property: Accelerated Aging
Method: ASTM D3611
Dwell/Cure Time: 96
Dwell Time Units: hr
Temp C: 65C
Temp F: 150F
Environmental Condition: 80%RH

Handling/Application Information

Application Examples

- 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)

Trademarks

References

Property	Values
3m.com Product Page	https://www.3m.com/3M/en_US/company-us/search/?Ntt=7876
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

ISO Statement

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

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