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3M™ Thermal Transfer Polyester Label Material 7868

Product Description

3M™ Thermal Transfer Polyester Label Material 7868 is a gloss white polyester label stock that offers premium durability and moisture resistance. This label product utilizes 3M™ High Holding Acrylic Adhesive 350, which is a universal adhesive for label material that offers excellent chemical resistance and holding strength even at high temperatures.



Product Features

- 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.
- 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.
- 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.
- Meets British Standard BS-5609.

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	White Polyester Gloss TC	
Facestock Thickness	0.051 mm	2.1 mil
Adhesive	#350 Acrylic	
Adhesive Thickness	0.028 mm	1.1 mil
Liner	55# Densified kraft	
Liner Thickness	0.081 mm	3.2 mil
Adhesive Coat Weight	1.75 to 2.02 g/100 in ²	

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

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Backing
2.2 N/cm	20 oz/in	72	hr	22C	72F	52%RH	Polypropylene (PP)	2 mil PET
73 oz/in	8.0 N/cm	72	hr	22C	72F	52%RH	Stainless Steel	2 mil PET
2.1 N/cm	19 oz/in	72	hr	22C	72F	52%RH	High Density Polyethylene (HDPE)	2 mil PET
31 oz/in	3.4 N/cm	72	hr	22C	72F	52%RH	Low Density Polyethylene (LDPE)	2 mil PET
9.1 N/cm	83 oz/in	72	hr	49C	120F	52%RH	Stainless Steel	
2.7 N/cm	25 oz/in	72	hr	49C	120F	52%RH	Polycarbonate (PC)	
2.4 N/cm	22 oz/in	72	hr	49C	120F	52%RH	Polypropylene (PP)	
8.1 N/cm	74 oz/in	72	hr	49C	120F	52%RH	Glass	

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Typical Performance Characteristics (continued)

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Backing
2.4 N/cm	22 oz/in	72	hr	49C	120F	52%RH	High Density Polyethylene (HDPE)	
1.2 N/cm	11 oz/in	72	hr	49C	120F	52%RH	Low Density Polyethylene (LDPE)	
7.6 N/cm	69 oz/in	72	hr	22C	72F	52%RH	Glass	2 mil PET
5.7 N/cm	52 oz/in	72	hr	22C	72F	52%RH	Polycarbonate (PC)	2 mil PET
8.9 N/cm	81 oz/in	24	hr	32C	90F	90%RH	Stainless Steel	
3.4 N/cm	31 oz/in	24	hr	32C	90F	90%RH	Polycarbonate (PC)	
2.7 N/cm	25 oz/in	24	hr	32C	90F	90%RH	Polypropylene (PP)	
7.4 N/cm	68 oz/in	24	hr	32C	90F	90%RH	Glass	
2.8 N/cm	26 oz/in	24	hr	32C	90F	90%RH	High Density Polyethylene (HDPE)	
3.6 N/cm	33 oz/in	24	hr	32C	90F	90%RH	Low Density Polyethylene (LDPE)	
5.1 N/cm	47 oz/in	10	min	22C	72F	52%RH	Stainless Steel	
5.0 N/cm	46 oz/in	10	min	22C	72F	52%RH	Polycarbonate (PC)	
1.3 N/cm	12 oz/in	10	min	22C	72F	52%RH	Polypropylene (PP)	
6.7 oz/in	61 oz/in	10	min	22C	72F	52%RH	Glass	
1.4 N/cm	13 oz/in	10	min	22C	72F	52%RH	High Density Polyethylene (HDPE)	
2.4 N/cm	22 oz/in	10	min	22C	72F	52%RH	Low Density Polyethylene (LDPE)	

Property: 90° Peel Adhesion
 Method: ASTM D3330
 notes: 12 in/min (300 mm/min)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate
7.9 N/cm	72 oz/in	10	min	22C	72F	52%RH	Stainless Steel
7.7 N/cm	70 oz/in	10	min	22C	72F	52%RH	Polycarbonate (PC)

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Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate
4.5 N/cm	41 oz/in	10	min	22C	72F	52%RH	Polypropylene (PP)
8.2 N/cm	75 oz/in	10	min	22C	72F	52%RH	Glass
7.1 N/cm	65 oz/in	10	min	22C	72F	52%RH	**Smooth Powder Coating
3.8 N/cm	35 oz/in	10	min	22C	72F	52%RH	**Finely Textured Powder Coating
8.2 N/cm	75 oz/in	72	hr	22C	72F	52%RH	Polycarbonate (PC)
5.5 N/cm	50 oz/in	72	hr	22C	72F	52%RH	Polypropylene (PP)
8.8 N/cm	80 oz/in	72	hr	22C	72F	52%RH	Glass
4.4 N/cm	40 oz/in	72	hr	22C	72F	52%RH	High Density Polyethylene (HDPE)
3.8 N/cm	35 oz/in	72	hr	22C	72F	52%RH	Low Density Polyethylene (LDPE)
7.2 N/cm	66 oz/in	72	hr	22C	72F	52%RH	**Smooth Powder Coating
3.9 N/cm	36 oz/in	72	hr	22C	72F	52%RH	**Finely Textured Powder Coating
9.6 N/cm	88 oz/in	72	hr	49C	120F	52%RH	Stainless Steel
5.9 N/cm	54 oz/in	72	hr	49C	120F	52%RH	Polycarbonate (PC)
5.5 N/cm	50 oz/in	72	hr	49C	120F	52%RH	Polypropylene (PP)
4.3 N/cm	39 oz/in	72	hr	49C	120F	52%RH	High Density Polyethylene (HDPE)
1.2 N/cm	11 oz/in	72	hr	49C	120F	52%RH	Low Density Polyethylene (LDPE)
7.8 N/cm	71 oz/in	72	hr	49C	120F	52%RH	**Smooth Powder Coating
7.0 N/cm	64 oz/in	72	hr	49C	120F	52%RH	**Finely Textured Powder Coating
9.1 N/cm	83 oz/in	72	hr	22C	72F	52%RH	Stainless Steel
9.2 N/cm	84 oz/in	72	hr	49C	120F	52%RH	Glass

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Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate
10.1 N/cm	92 oz/in	24	hr	32C	90F	90%RH	Stainless Steel
5.8 N/cm	53 oz/in	24	hr	32C	90F	90%RH	Polycarbonate (PC)
3.9 N/cm	36 oz/in	24	hr	32C	90F	90%RH	Polypropylene (PP)
8.9 N/cm	81 oz/in	24	hr	32C	90F	90%RH	Glass
4.3 N/cm	39 oz/in	24	hr	32C	90F	90%RH	High Density Polyethylene (HDPE)
2.7 N/cm	25 oz/in	24	hr	32C	90F	90%RH	Low Density Polyethylene (LDPE)
3.7 N/cm	34 oz/in	24	hr	32C	90F	90%RH	**Smooth Powder Coating
3.7 N/cm	34 oz/in	24	hr	32C	90F	90%RH	**Finely Textured Powder Coating
4.0 N/cm	37 oz/in	10	min	22C	72F	52%RH	High Density Polyethylene (HDPE)
3.8 N/cm	35 oz/in	10	min	22C	72F	52%RH	Low Density Polyethylene (LDPE)

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

Property	Values		Method	Notes
Service Temperature Range	-40 to 149 °C	-40 to 300 °F		
Minimum Application Temperature	10 °C	50 °F		
Liner Release	5 to 70 g/2 in		TLMI	180° removal, 300 in/min

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	71	78	No change	0.5
Detergent 1% Alconox® Cleaner	82	90	No change	1.6
Engine Oil (10W30) @ 250°F (121°C)	82	90	No change	1.4
Water for 48 hours	83	91	No change	1.2
pH 4	77	84	No change	5.0
pH 10	77	84	No change	5.0
409® Formula	84	92	No change	3.0
Toluene	38	42	No change	5.0
Acetone	53	58	No change	5.0
Brake Fluid	93	102	No change	0.6
Gasoline	48	52	No change	5.0
Diesel Fuel	80	88	No change	1.0
Mineral Spirits	69	76	No change	3.0
Hydraulic Fluid	88	96	No change	0.0

Humidity Resistance

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

Temperature Resistance

When applied to stainless steel. Other substrates should be tested per application.

300°F (149°C) for 24 hours: no significant visual change, 0.4% MD shrinkage, 0.6% CD shrinkage

-40°F (-40°C) for 10 days: no significant visual change

Accelerated Aging		Notes
0.046 N/cm	12 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.

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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.

UL Recognized thermal transfer ribbons

Advent: 301 Black; 303 Black; 501 Black; 501 Red; 501 Blue; 501 Green

Armor: AXR-7; AXR-7+; AXR-600

Astromed: R5

CP: 5440 Red; 5640 Blue; 5940 Black

Dasco: DR-74; DR-84

Great Ribbon: SDR

ICS: ICS-CC-4099.1

limak: SH-36; SP-330; PrimeMark Intermec: 053258-2; 054048-4

ITW: B324

Japan Pulp and Paper: JP Resin 1; JP Resin 2 Blue; JP Resin 2 Red (suitable for indoor use only); JP Resin 2 Green (suitable for indoor use only)

Kurz: K500; K501

Markem: 716 (suitable for indoor use only) Mid City Columbia: CGL-80; CGL-80HE

NCR: Matrix Resin; Matrix; PaceSetter; Promark II; Ultra V

Pelikan: T016

Ricoh: B110A; B110C; B110CX

Sato: Premier 1

Sony: 4070; 4072; 4075; 4085; 5070; Signature Series Resin; Signature Series Wax

UBI: HRO3; HRO4

Zebra: 5095; 5099; 5100; 5175

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

3M is a trademark of 3M Company.

Alconox is a registered trademark of Alconox, Inc.

409 is a registered trademark of Clorox.

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=7868

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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