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3M™ Thermal Transfer Polyester Label Material 7871

Product Description

3M™ Thermal Transfer Polyester Label Material 7871 is a gloss 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

- 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.
- 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.
- 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.
- 3M™ Thermal Transfer Polyester Label Material 7871 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	
Adhesive Thickness	0.046 mm	1.8 mil
Facestock	White 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		Test Condition	Method	Notes
Long Term Temperature Resistance	149 °C	300 °F	Long Term (day, weeks)		
Minimum Long Term Temperature Resistance	-40 °C	-40 °F	Long Term (day, weeks)		
Minimum Application Temperature	10 °C	50 °F			
Liner Release	5 to 70 g/2 in			TLMI	180° removal, 300 in/min

Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Substrate	Temp C	Temp F	Environmental Condition	Notes
8.4 N/cm	77 oz/in	20	min	Stainless Steel				
8.5 N/cm	77 oz/in	20	min	Polycarbonate (PC)				
7.4 N/cm	68 oz/in	20	min	Polypropylene (PP)				
9.2 N/cm	83 oz/in	72	hr	Polycarbonate (PC)	23C	72F	50%RH	12 in/min (300 mm/min)
8 N/cm	73 oz/in	72	hr	Polypropylene (PP)	23C	72F	50%RH	12 in/min (300 mm/min)
9.6 N/cm	87 oz/in	72	hr	Stainless Steel	23C	72F	50%RH	12 in/min (300 mm/min)
7 N/cm	63 oz/in	72	hr	Stainless Steel	37C	100F	100%RH	
6.6 N/cm	60 oz/in	72	hr	Polycarbonate (PC)	37C	100F	100%RH	
7.7 N/cm	70 oz/in	72	hr	Polypropylene (PP)	37C	100F	100%RH	

Property: 180° Peel Adhesion
Method: ASTM D3330

Available Sizes

Packaging

Finished labels should be stored in plastic bags.

Note

**Calculated using averages of different powder coated surfaces.

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.

Typical Environmental Performance (continued)

Chemical	Adhesion to Stainless Steel		Appearance	Edge Penetration
	Oz./in.	N/100 mm	Visual	Millimeters
Isopropyl Alcohol	88	96	No change	0.6
Detergent 1% Alconox® Cleaner	92	101	No change	1.3
Engine Oil (10W30) @ 250°F (121°C)	102	112	No change	0.6
Water for 48 hours	67	73	No change	0.1
pH 4	88	96	No change	0.7
pH 10	83	91	No change	1.4
409® Formula	92	101	No change	1.3
Toluene	50	55	No change	5.2
Acetone	59	65	No change	4.9
Brake Fluid	98	107	No change	0.1
Gasoline	56	61	No change	4.6
Diesel Fuel	93	102	No change	0.7
Mineral Spirits	80	88	No change	2.2
Hydraulic Fluid	96	105	No change	0.0

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

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

Property	Values		Method	Dwell/ Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Notes
Humidity Resistance	24 hours at 100°F (38°C) and 100% relative humidity; no significant change in appearance or adhesion									
Accelerated Aging	1000 N/cm	100 oz/in	ASTM D3611	96	hr	65C	150F	80%RH	Stainless Steel	12 in/min (300 mm/min)

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

Handling/Application Information (continued)

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 PGJ12.MH16411, Printing Materials - Component, ANSI/UL 969
CSA Group Certified, File 99316, Class 7922, Adhesive-Type Labels - Label Stock, CSA-C22.2 N0. 0.15-15 Update No. 1; CSA Group Certified, File 99316, Class 7924, Adhesive-Type Labels - Label Stock, CSA-C22.2 N0. 0.15-15 Update No. 1
BS-5609

Trademarks

3M is a trademark of 3M Company.
Alconox is a registered trademark of Alconox, Inc.
Formula 409 Cleaner is a registered trademark of Clorox, Inc.

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=7871

Family Group

	7871	7872	7873	7871FL	7872FL
Long Term Temperature Resistance (°C) Test Condition: Long Term (day, weeks)	149	149	149	149	149
Minimum Long Term Temperature Resistance (°C) Test Condition: Long Term (day, weeks)	-40	-40	-40	-40	-40

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Family Group (continued)

	7871	7872	7873	7871FL	7872FL
Adhesive Thickness (mm)	0.046	0.046	0.046	0.046	0.046
Facestock	White Polyester Gloss TC	Matte Platinum Polyester Gloss TC	Bright Silver Polyester Gloss TC	White Polyester Gloss TC	Matte Platinum Polyester Gloss TC
Facestock Thickness (mm)	0.051	0.051	0.051	0.051	0.051
Adhesive Type	350 Acrylic	350 Acrylic	350 Acrylic	350 Acrylic	350 Acrylic
Liner	55# Densified Kraft	55# Densified Kraft	55# Densified Kraft	Clear Polyester	Clear Polyester
Liner Thickness (mm)	0.081	0.081	0.081	0.038	0.038

ISO Statement

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

Information

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