



Screen Printable Sheet Polyester Label Material 7920

Technical Data

November, 2007

Product Description 3M™ Screen Printable Sheet Polyester Label Material 7920 is a durable, high performance material that offers excellent thermal stability, moisture resistance and chemical resistance. 3M™ Adhesive 400 offers excellent low temperature performance and long term aging for resistance to yellowing in outdoor applications.

Construction

(Calipers are nominal values.)

Facestock	Adhesive	Liner
.001 in. White Polyester Gloss TC (25 microns)	400 Acrylic 0.8 mil (20 microns)	90# Polycyd. 6.7 mil bleached kraft sheet polyethylene coated on two sides. (170 microns)

Features

- Facestock is topcoated for improved ink anchorage. Variable information can be added by the end-user as the material is thermal transfer printable.
- Liner provides easy sheet processing and is designed for layflat. The backside of the liner is not printable.
- UL recognized (File MH11410) and CSA accepted (File 99316). See the UL and CSA listings for details.

Application Ideas

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

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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	10 to 70 g/2 in.	TLMI Method, 180° removal, 300 in./min.
Service Temperature	-60°F to 250°F (-51°C to 121°C) See Environmental Section	
Minimum Application Temperature	10°F (-12°C)	
Convertability	Low temperature, high clarity 3M™ Acrylic Adhesive 400 is specifically designed to be compatible with a variety of print methods and overlaminate applications. When converting labels for thermal transfer applications, care should be taken with regard to proper roll tensions, handling and storage conditions. 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

Adhesion: 180° peel test procedure is ASTM D 3330.
90° peel test procedure is ASTM D 3330 modified for the angle change.

	Initial (10 Minute Dwell/RT)				Conditioned for 3 Days at Room Temperature 72°F (22°C)			
	180° Peel		90° Peel		180° Peel		90° Peel	
Surface	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	29	32	23	25	41	45	32	35
Polycarbonate	33	36	28	31	39	43	37	40
Polypropylene	27	30	19	21	29	32	26	28
Glass	32	35	24	26	40	44	40	44
HD Polyethylene	12	13	8	9	14	15	12	13
LD Polyethylene	11	12	9	10	14	15	17	19

	Conditioned for 3 Days at 120F (49°C)				Conditioned for 24 hours at 90°F (32°C) at 90% Relative Humidity			
	180° Peel		90° Peel		180° Peel		90° Peel	
Surface	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	46	50	38	42	67	73	33	36
Polycarbonate	26	28	27	30	34	37	33	36
Polypropylene	32	35	25	27	28	31	21	23
Glass	50	55	38	42	47	51	26	28
HD Polyethylene	21	23	15	16	17	19	15	16
LD Polyethylene	5	6	7	8	10	11	17	19

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Environmental Performance

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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 Resistance:

Chemical	Adhesion to Stainless Steel		Appearance	Edge Penetration
	Oz./in.	N/100 mm	Visual	Millimeters
Isopropyl Alcohol	39	43	No change	0.0
Detergent 1% Alconox® Cleaner	42	46	No change	0.0
Engine Oil (10W30) @ 250°F (121°C)	53	58	No change	2.0
Water for 48 hours	62	68	No change	0.0
pH 4	43	47	No change	0.0
pH 10	44	48	No change	0.0
409® Formula	45	49	No change	0.0
Toluene	23	25	No change	7.0
Acetone	28	31	No change	5.0
Brake Fluid	54	59	No change	0.0
Gasoline	24	26	No change	6.0
Diesel Fuel	39	43	No change	1.5
Mineral Spirits	34	37	No change	3.0
Hydraulic Fluid	43	47	No change	0.0

Temperature Resistance:

300°F (149°C) for 24 hours:

no significant visual change

-40°F (-40°C) for 10 days:

no significant visual change

Humidity Resistance:

24 hours at 100°F (38°C) and 100% relative humidity:

no significant change in appearance or adhesion

Accelerated Aging:

ASTM D 3611:

96 hours at 150°F (65°C) and 80% relative humidity

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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

Material has a topcoating which is receptive to many inks including UV and conventional ink systems. The converter should verify that their ink systems are compatible with the topcoating on the polyester film by testing beforehand. The topcoating is also receptive to other forms of printing including hot stamping and thermal transfer printing. The converter should verify that the method of printing is compatible with the topcoating by testing beforehand.

Die Cutting / Converting

Die cut with steel rule or flatbed dies. The 90# lay-flat liner also allows kiss cutting and back splitting. The converter can cut through the polyester facestock without cutting through the liner. Sheet label materials are not recommended for rotary die cutting and stripping operations.

Packaging

Finished labels should be stored in plastic bags.

Storage

Store at room temperature conditions of 72°F (22°C) and 50% relative humidity.

Shelf Life

If stored under proper conditions, product retains its performance and properties for two years from date of manufacture.

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Product Use

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