Sheet Polyester Label Material

7909

Technical Data **March 1, 1999**

Supersedes March 9. 1998

Construction

(Calipers are nominal values.)

Facestock	Adhesive	Liner
2.0 mil (51 micron) Brushed silver polyester	1.8 mil (46 micron) #350 Acrylic	6.7 mil (170 micron) 90# Polycoated kraft

Features

- Facestock is topcoated for improved ink anchorage. Variable information can be added by the end-user as the material is thermal transfer printable.
- #350 adhesive is 3M's most universal adhesive for label materials. It can permanently bond to high surface energy (HSE) and low surface energy (LSE) plastics, textured and contoured surfaces, powder coatings, and slightly oily metals. It has excellent chemical resistance and holding strength even at high temperatures. Thick adhesive caliper provides for stronger bond on textured surfaces.
- 90# lay-flat polycoated kraft liner provides easy sheet processing.
- 3M™ Label Material 7909 is 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.

Application Ideas

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

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.

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	88	96	63	69	96	105	75	82
Polycarbonate	90	98	65	71	94	103	69	76
Polypropylene	73	80	29	32	83	91	31	34
Glass	93	102	69	76	99	108	77	84
LD Polyethylene	54	59	27	30	58	63	32	35
HD Polyethylene	53	58	30	32	56	61	37	40
Smooth Powder Coating	85	93			89	97		
Finely Textured Powder Coating.	49	54			52	57		

	Conditioned for 3 Days at 120°F (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	108	118	96	105	99	108	81	89
Polycarbonate	66	72	34	37	77	84	59	64
Polypropylene	81	89	33	16	78	85	47	51
Glass	106	116	86	94	89	97	72	79
LD Polyethylene	56	61	32	35	50	55	38	42
HD Polyethylene	15	16	14	15	43	47	40	44
Smooth Powder Coating	93	102			88	96		
Finely Textured Powder Coating.	56	61			50	55		

Liner Release: 180° Removal of Liner from Facestock

Rate of Removal	Grams/Inch Width	N/100 mm
90 inches/minute	20	0.77

Environmental Performance

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:

	Adhesion to Stainless Steel		Appearance	Edge Penetration
Chemical	Oz./in.	N/100 mm	Visual	Millimeters
Isopropyl Alcohol	88	96	No change	0.6
Detergent (1% Alconox®*)	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®* Cleaning solution	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

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 changes in appearance or adhesion

Accelerated Aging:

ASTM D 3611: 96 hours at 150°F (65°C) and 80% relative humidity

	Rate of Removal	Oz./In. Width	N/100 mm
180° Peel Adhesion from Stainless Steel	12 inches/minute	87	95

Shelf Life

Two years from date of manufacture of product when properly stored at 72°F (22°C) and 50% relative humidity.

Processing

Printing:
Material is print treated and is receptive to many inks including UV and conventional ink systems. The converter should verify that their ink systems are compatible with the polyester film by testing beforehand. The material 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 by testing beforehand.

Die Cutting:
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.

Special Considerations

For maximum bond strength, the surface should be clean and dry. Typical cleaning solvents are heptane and isopropyl alcohol.**

**NOTE: When using solvents, read and follow the manufacturer's precautions and directions for use.

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.

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Technical Information and Data

The technical information and data, recommendations, and other statements provided are based on tests or experience which 3M believes to be reliable, but the accuracy or completeness of such information is not guaranteed.

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