



Polypropylene Label Material

7776

FOD# 1716
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Technical Data

September 1, 1999

Construction

(Calipers are nominal values.)

Facestock

2.6 mil (66 micron)
White Label-Lyte multi-layer BOPP

Adhesive

0.8 mil (20 micron)
#310 Acrylic

Liner

3.2 mil (81 micron)
55# Densified kraft

Features

- Corona-treated facestock for improved ink receptivity.
 - Good film stiffness allows easy die cutting and dispensing for automatic applications.
 - Bright white and high opacity facestock.
 - #310 adhesive is a firm adhesive which resists oozing and provides high strength on a variety of surfaces including high surface energy (HSE) plastics and metals.
 - 55# densified kraft liner assures consistent die cutting.
 - UL and CSA approvals are pending. After approval, see UL (File MH16411) and CSA (File 99316) listings for details.
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Application Ideas

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

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.

Surface	Initial (10 Minute Dwell/RT)				Conditioned for 3 Days at Room Temperature 72°F (22°C)			
	180° Peel		90° Peel		180° Peel		90° Peel	
	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	38	42	35	38	49	54	53	58
Polycarbonate	45	49	38	42	48	52	53	58
Polypropylene	22	24	11	12	25	27	16	18
Glass	41	45	34	37	50	55	50	55
HD Polyethylene	21	23	9	10	25	27	7	8
LD Polyethylene	21	23	8	9	21	23	8	9

Surface	Conditioned for 3 Day at 158°F (70°C)				Conditioned for 24 Hours at 90°F (32°C) at 90% Relative humidity			
	180° Peel		90° Peel		180° Peel		90° Peel	
	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	Film split	Film split	49	54	62	68	46	50
Polycarbonate	Film split	Film split	19	21	48	52	50	55
Polypropylene	26	28	14	15	30	33	14	15
Glass	Film split	Film split	48	52	45	49	41	45
HD Polyethylene	19	21	9	10	25	27	15	16
LD Polyethylene	18	20	12	13	23	25	13	14

Liner Release: 180° Removal of Liner from Facestock

Rate of Removal	Grams/Inch Width	N/100 mm
90 inches/minute	11	0.42
300 inches/minute	12	0.46

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 90° 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	42	46	No change	0.7
Detergent (1% Alconox®*)	51	56	No change	0
Engine Oil (10W30) @ 250°F (121°C)	2	2	Color nearly transparent	Total
Water for 48 hours	38	42	No change	0
pH 4	49	54	No change	0
pH 10	47	51	No change	0
409®* Cleaning Solution	44	48	No change	0.7
Toluene	0	0	Wrinkling; shrinkage; color nearly transparent	Total
Acetone	25	27	No change	4.8
Brake Fluid	43	47	No change	0
Gasoline	2	2	Wrinkling; color nearly transparent	Total
Diesel Fuel	36	39	No change	1
Mineral Spirits	13	14	Wrinkling	5.7
Hydraulic Fluid	47	51	No change	0

Temperature Resistance:

300°F (149°C) for 24 hours: Slight discoloration; 8% shrinkage MD; 14% shrinkage CD

250°F (121°C) for 24 hours: 4% shrinkage MD; 4% shrinkage CD

175°F (79°C) for 24 hours: No significant visual change

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

Humidity Resistance:

24 hours at 90°F (32°C) and 90% 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

	Rate of Removal	Grams/Inch Width	N/100 mm
180° Removal of Liner from Facestock	90 inches/minute	9	0.35
	Rate of Removal	Oz./In. Width	N/100 mm
180° Peel Adhesion from Stainless Steel	12 inches/minute	36	39

Shelf Life	Two years from date of manufacture of product when properly stored at 72°F (22°C) and 50% relative humidity.
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Processing	<p>Printing:</p> <p>Facestock is corona treated for improved ink receptivity. While not specifically designed for thermal transfer printing, acceptable performance is found for a number of applications. As always, the customer should test to confirm acceptability for their application.</p> <p>Facestock is printable by all standard roll processing methods including flexography, hot stamp, letterpress, and screen printing. Refer to the Graphic Ink Selection Guide or call 3M Customer Service at 1-800-223-7427 for additional information.</p> <p><u>*The following thermal transfer ink ribbons are suggested for possible use with 7776.</u></p> <p>Armor: AXR-7+; AXR-600 Dai Nippon: R-300; R-316; M-230 ICS: 4099-1 Iimak™: SP-330; PrimeMark Intermec: Premium Mid City Columbia™: CGL-80; CGL-80HE Ricoh™: B110A; B110C Sony™: TR4070; TR5070 Zebra™: 4065; 5094</p> <p>Die Cutting:</p> <p>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.</p> <p>Packaging:</p> <p>Finished labels should be stored in plastic bags.</p>
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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.

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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