



Label Material 7983

Sheet Polyester Label Material

Product Data Sheet

Updated : May 2000
Supersedes : August 1999

Physical Properties

Not for specification purposes
(Calipers are nominal values)

Facestock	84 micron (3.3 thou) Matte Silver Polyester
Adhesive	20 micron (0.8 thou) #300 Acrylic
Liner	170 micron (6.7 thou), 147 g/m ² (90#) Polycoated Kraft
Shelf Life	24 months from date of manufacture of product when properly stored between 22°C and 50% relative humidity.

Features:

- Matte coating is compatible with screen printing and resists degradation from scuffing, chemicals, moisture, and wide temperature fluctuations. Variable information can be added by the end user, as the material is dot matrix printable and hand writeable.
- #300 adhesive bonds well to a variety of substrates including metals, high surface energy (HSE) plastics, and low surface energy (LSE) plastics. It is ideal for applications requiring high initial adhesion to LSE plastic surfaces.
- 147 g/m² lay-flat polycoated kraft liner provides easy sheet processing.
- 3M™ Label Material 7983 is UL recognised (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 labelling.
- Warning, instruction, and service labels for durable goods.
- Nameplates for durable goods.

Performance

Characteristics

Not 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)			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
Stainless Steel	6.1	56	4.6	24
Polycarbonate	6.7	59	4.8	44
Polypropylene	5.8	53	4.2	38
Glass	6.6	60	4.6	42
HD Polyethylene	3.8	35	3.1	28
LD Polyethylene	3.5	32	2.7	25

Surface	Conditioned for 3 Days at Room Temperature 22°C			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
Stainless Steel	7.3	67	5.0	46
Polycarbonate	6.7	61	5.0	46
Polypropylene	6.1	56	4.2	38
Glass	7.8	71	5.2	48
HD Polyethylene	4.4	40	3.1	28
LD Polyethylene	4.6	42	3.7	34

Surface	Conditioned for 3 Days at 49°C			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
Stainless Steel	7.7	70	5.5	50
Polycarbonate	3.3	30	1.9	17
Polypropylene	5.9	54	4.6	42
Glass	7.7	70	5.5	50
HD Polyethylene	4.4	40	3.2	29
LD Polyethylene	1.0	9	1.1	10

Surface	Conditioned for 24 hours at 32°C At 90% Relative Humidity			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
Stainless Steel	7.4	68	5.8	53
Polycarbonate	6.0	55	3.9	36
Polypropylene	7.2	66	4.8	44
Glass	7.3	67	4.8	44
HD Polyethylene	4.9	45	3.5	32
LD Polyethylene	3.9	36	3.3	30

Performance Characteristics Contd...
Not for specification purposes

Liner Release	180° Removal of Liner from Facestock		
	Rate of Removal	N/10mm	Gms/25mm Width
	2.3 m / min	3.1	8
	7.6 m / min	3.5	9

Environmental Performance	The properties defined are based on four hour immersions at room temperature 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 D3330) at 305 mm/min.			
Chemical Resistance	Adhesion to Stainless Steel		Appearance	Edge Penetration
Chemical	N/10mm	Oz/In	Visual	Millimetres
Isopropyl Alcohol	6.6	60	No change	0.8
Detergent (1% Alconox®*)	7.0	64	No change	0
Engine Oil (10W30) @ 250°F (121°C)	7.0	64	No change	1
Water for 48 hours	7.2	66	No change	0
pH 4	7.1	65	No change	0
PH10	7.0	64	No change	0
409 ^B * Cleaning solution	7.0	64	No change	0
Toluene	3.6	33	Topcoat damaged	6.5
Acetone	5.1	47	Topcoat damaged or gone	4.32
Brake Fluid	8.1	74	No change	0
Gasoline	3.9	36	No change	5.8
Diesel Fuel	6.8	62	No change	1
Mineral Spirits	5.9	54	No change	2.4
Hydraulic Fluid	7.2	66	No change	0

Temperature Resistance	149°C for 24 hours:	no significant visual change
	-40°C for 3 days:	no significant visual change
Humidity Resistance	24 hours at 38°C and 100% relative humidity	No significant changes in appearance or adhesion

Accelerated Ageing			
ASTM D3611 : 96 hours at 65°C & 80% relative humidity			
	Rate of Removal	N/10mm	Oz / Inch Width
180° Peel Adhesion from Stainless Steel	305 mm / min	5.9	54

Processing**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 dot matrix printing. The converter should verify that the method of printing is compatible with the topcoating by testing beforehand.

The following dot matrix ribbons are recommended for use with this material.

- CGL-79™ from Mid City Columbia, 800-462-2336 or 800-996-4656
- Ranger 288 from Herbert Dehinton & Co., 847-998-8150

3M does not recommend the Ranger 288 ribbon for bar code printing.

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 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.

Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

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