



Screen Printable Sheet Polyester Label Material

7903 • 7905 • 7908 • 7909 • 7903FL • 7908FL

Technical Data

October, 2009

Product Description

3M™ Screen Printable Sheet Polyester Label Materials are durable, high performance materials that offer excellent thermal stability, moisture resistance and chemical resistance. These materials utilize 3M™ Adhesive 350, which is designed to permanently bond to high and low surface energy plastics, textured and contoured surfaces, powder coatings, and slightly oily metals.

Construction

(Calipers are nominal values.)

Product	Facestock	Adhesive	Liner
3M™ Screen Printable Sheet Polyester Label Material 7903	.002 in. Bright Silver Polyester PT (51 microns)	350 Acrylic 1.8 mils (46 microns)	90# Polycyd. 6.7 mil bleached kraft sheet polyethylene coated on two sides. (170 microns)
3M™ Screen Printable Sheet Polyester Label Material 7905	.002 in. Clear Polyester Gloss TC (51 microns)	350 Acrylic 1.8 mils (46 microns)	90# Polycyd. 6.7 mil bleached kraft sheet polyethylene coated on two sides. (170 microns)
3M™ Screen Printable Sheet Polyester Label Material 7908	.002 in. White Polyester Gloss TC (51 microns)	350 Acrylic 1.8 mils (46 microns)	90# Polycyd. 6.7 mil bleached kraft sheet polyethylene coated on two sides. (170 microns)
3M™ Screen Printable Sheet Polyester Label Material 7909	.002 in. Brushed Silver Polyester PT (51 microns)	350 Acrylic 1.8 mils (46 microns)	90# Polycyd. 6.7 mil bleached kraft sheet polyethylene coated on two sides. (170 microns)
3M™ Screen Printable Sheet Polyester Label Material 7903FL	.002 in. Bright Silver Polyester PT (51 microns)	350 Acrylic 1.8 mils (46 microns)	.004 in. Clear Polyester Liner (102 microns)
3M™ Screen Printable Sheet Polyester Label Material 7908FL	.002 in. White Polyester Gloss TC (51 microns)	350 Acrylic 1.8 mils (46 microns)	.004 in. Clear Polyester Liner (102 microns)

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Features

- Facestock for 3M™ Screen Printable Sheet Polyester Label Materials 7905, 7908, and 7908FL is topcoated for improved ink anchorage. Variable information can be added by the end-user as the material is thermal transfer printable.
- Facestock for 3M™ Screen Printable Sheet Polyester Label Materials 7903, 7903FL, and 7909 is print treated for ink anchorage.
- Liner for 3M screen printable sheet polyester label materials 7903, 7905, 7908, and 7909 provides easy sheet processing and is designed for layflat. The backside of the liner is not printable.
- Liner for 3M screen printable sheet polyester label materials 7903FL and 7908FL provides easy sheet processing and is designed for layflat applications that require domed decal molding. The backside of the liner is not printable. Polyester liner contributes to improved diecutting by allowing for deeper diecuts than paper without the added concern of exposing paper fibers. The film liner resists breakage during high speed dispensing. The polyester liner is recommended for clean room applications.
- 3M screen printable sheet polyester label materials 7903, 7903FL, 7905, and 7909 are UL recognized (File MH11410) and CSA accepted (File 99316). See the UL and CSA listings for details.
- 3M screen printable sheet polyester label materials 7908 and 7908FL are UL recognized (File MH16411) 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.
- 3M screen printable sheet polyester label materials 7903, 7903FL, and 7909 are suitable as substitutes for stamped metal, riveted plates.
- 3M screen printable sheet polyester label materials 7903FL and 7908FL are suitable for domed decals.

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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	2.70 to 3.24 g/100 in. ²	TM-2279
Release Range	5 to 70 g/2 in.	TLMI Method, 180° removal, 300 in./min.
Service Temperature	-40°F to 302°F (-40°C to 149°C) See Environmental Section	
Minimum Application Temperature	50°F (10°C)	
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.	

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.

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	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
HD Polyethylene	54	59	27	30	58	63	32	35
LD Polyethylene	53	58	30	32	56	61	37	40
Smooth Powder Coating*	85	93	–	–	89	97	–	–
Finely Textured Powder Coating*	49	54	–	–	52	57	–	–

*Calculated using averages of different powder coated surfaces.

Surface	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	
	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
HD Polyethylene	56	61	32	35	50	55	38	42
LD Polyethylene	15	16	14	15	43	47	40	44
Smooth Powder Coating*	93	102	–	–	88	96	–	–
Finely Textured Powder Coating*	56	61	–	–	50	55	–	–

*Calculated using averages of different powder coated surfaces.

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Environmental Performance

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

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	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:

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

3M™ Screen Printable Sheet Polyester Label Materials 7905, 7908, and 7908FL 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.

3M™ Screen Printable Sheet Polyester Label Materials 7903, 7903FL, and 7909 Printing:

Print treated material 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. The converter should verify that the method of printing is compatible with the topcoating by testing beforehand.

Die Cutting / Converting

Die Cutting 3M screen printable sheet polyester label materials 7903FL and 7908FL:

Die cut with steel rule, flatbed or rotary dies.

Die Cutting 3M screen printable sheet polyester label materials 7903, 7905, 7908, and 7909:

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.

Doming 3M screen printable sheet polyester label materials 7903FL and 7908FL:

The 4.0 mil polyester liner does not deform and provides a smooth surface during the doming process.

Packaging

Finished labels should be stored in plastic bags.

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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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