



# Label Material 7909

## Sheet Polyester Label Material

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### Product Data Sheet

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Updated : May 2000  
Supersedes : February 1999

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#### Physical Properties

Not for specification purposes  
(Calipers are nominal values)

<b>Facestock</b>	51 micron (2.0 thou) Brushed Silver Polyester
<b>Adhesive</b>	46 micron (1.8 thou) #350 Acrylic
<b>Liner</b>	170 micron (6.7 thou), 147 g/m <sup>2</sup> (90#) Polycoated Kraft
<b>Shelf Life</b>	24 months from date of manufacture of product when properly stored between 22°C and 50% relative humidity.

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#### 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.
- 147 g/m<sup>2</sup> lay-flat polycoated kraft liner provides easy sheet processing.
- 3M™ Label Material 7909 is UL recognised (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.

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#### Application Ideas:

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

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**Performance Characteristics**  
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Surface	Initial (10 Minute Dwell/RT)			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
	<b>Adhesion</b>	180° peel test procedure is ASTM D 3330 90° peel test procedure is ASTM D 3330 modified for the angle change		
<b>Stainless Steel</b>	9.6	88	6.9	63
<b>Polycarbonate</b>	9.8	90	7.1	65
<b>Polypropylene</b>	8.0	73	3.2	29
<b>Glass</b>	10.2	93	7.6	69
<b>HD Polyethylene</b>	5.9	54	3.0	27
<b>LD Polyethylene</b>	5.8	53	3.2	30
<b>Smooth Powder Coating</b>	9.3	85		
<b>Finely Textured Powder Coating</b>	5.4	49		

Surface	Conditioned for 3 Days at Room Temperature 22°C			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
<b>Stainless Steel</b>	10.5	96	8.2	75
<b>Polycarbonate</b>	10.3	94	7.6	69
<b>Polypropylene</b>	9.1	83	3.4	31
<b>Glass</b>	10.8	99	8.4	77
<b>HD Polyethylene</b>	6.3	58	3.5	32
<b>LD Polyethylene</b>	6.1	56	4.0	37
<b>Smooth Powder Coating</b>	9.7	89		
<b>Finely Textured Powder Coating</b>	5.7	52		

Surface	Conditioned for 3 Days at 49°C			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
<b>Stainless Steel</b>	11.8	108	10.5	96
<b>Polycarbonate</b>	7.2	66	3.7	34
<b>Polypropylene</b>	8.9	81	1.6	33
<b>Glass</b>	11.6	106	9.4	86
<b>HD Polyethylene</b>	6.1	56	3.5	32
<b>LD Polyethylene</b>	1.6	15	1.5	14
<b>Smooth Powder Coating</b>	10.2	93		
<b>Finely Textured Powder Coating</b>	6.1	56		

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Surface	Conditioned for 24 hours at 32°C At 90% Relative Humidity			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
<b>Stainless Steel</b>	10.8	99	8.9	81
<b>Polycarbonate</b>	8.4	77	6.4	59
<b>Polypropylene</b>	8.5	78	5.1	47
<b>Glass</b>	9.7	89	7.9	72
<b>HD Polyethylene</b>	5.5	50	4.2	38
<b>LD Polyethylene</b>	4.7	43	4.4	40
<b>Smooth Powder Coating</b>	9.6	88		
<b>Finely Textured Powder Coating</b>	5.5	50		

**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	0.077	20

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
<b>Isopropyl Alcohol</b>	9.6	88	No change	0.6
<b>Detergent (1% Alconox®*)</b>	10.1	92	No change	1.3
<b>Engine Oil (10W30) @ 250°F (121°C)</b>	11.2	102	No change	0.6
<b>Water for 48 hours</b>	7.3	67	No change	0.1
<b>pH 4</b>	9.6	88	No change	0.7
<b>PH10</b>	9.1	83	No change	1.4
<b>409<sup>st</sup>* Cleaning solution</b>	10.1	92	No change	1.3
<b>Toluene</b>	5.5	50	No change	5.2
<b>Acetone</b>	6.5	59	No change	4.9
<b>Brake Fluid</b>	10.7	98	No change	0.1
<b>Gasoline</b>	6.1	56	No change	4.6
<b>Diesel Fuel</b>	10.2	93	No change	0.7
<b>Mineral Spirits</b>	8.8	80	No change	2.2
<b>Hydraulic Fluid</b>	10.5	96	No change	0

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<b>Temperature Resistance</b>	149°C for 24 hours:	no significant visual change 0.4% MD shrinkage 0.6% CD shrinkage
	-40°C for 3 days:	no significant visual change
<b>Humidity Resistance</b>	24 hours at 38°C and 100% relative humidity	No significant changes in appearance or adhesion

<b>Accelerated Ageing</b> ASTM D3611 : 96 hours at 65°C & 80% relative humidity			
	<b>Rate of Removal</b>	<b>N/10mm</b>	<b>Oz / In Width</b>
180° Peel Adhesion from Stainless Steel	305 mm / min	9.5	87

## 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 thermal transfer printing. The converter should verify that the method of printing is compatible with the topcoating by testing beforehand.

### Die Cutting:

Die cut with steel rule or flatbed dies. The 127 g/m<sup>2</sup> lay-flat also allows kiss cutting and back splitting. The converter can cut through the polyester facestock without cutting through the liner. Sheetable 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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