

# Label Material 7830

## Thermal Transfer Polyester Label Material

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### Product Data Sheet

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Updated : May 2000  
Supersedes : March 1999

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**Physical Properties**  
Not for specification purposes  
(Calipers are nominal values)

<b>Facestock</b>	25 micron (1.0 thou) Gloss Radiant White Polyester
<b>Adhesive</b>	20 micron (0.8 thou) #400 Acrylic
<b>Liner</b>	81 micron (3.2 thou) 90 g/m <sup>2</sup> 55# Densified 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 thermal transfer printing. Resin ribbons are recommended for optimum durability. The topcoat also provides improved ink anchorage for traditional forms of press printing.
- #400 adhesive offers excellent low temperature performance and peel adhesion to a wide variety of substrates. It has excellent long term ageing that resists yellowing.
- 90 g/m<sup>2</sup> densified kraft liner assures consistent die cutting.
- 3M™ Label Material 7830 is UL recognised (File MH16411) and CSA accepted (File 99316). See the UL and CSA listings for details.

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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.
- Substitutes for stamped metal, riveted plates

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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
Stainless Steel	3.2	29	2.5	23
Polycarbonate	3.6	33	3.1	28
Polypropylene	3.0	27	2.1	19
Glass	3.5	32	2.6	24
HD Polyethylene	1.3	12	0.9	8
LD Polyethylene	1.2	11	1.0	9

Surface	Conditioned for 3 Days at Room Temperature 22°C			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
Stainless Steel	4.5	41	3.5	32
Polycarbonate	4.3	39	4.0	37
Polypropylene	3.2	29	2.8	26
Glass	4.4	40	4.4	40
HD Polyethylene	1.5	14	1.3	12
LD Polyethylene	1.5	14	1.9	17

Surface	Conditioned for 3 Days at 49°C			
	180° Peel		90° Peel	
	N/10mm	Oz/In	N/10mm	Oz/In
Stainless Steel	5.0	46	4.2	38
Polycarbonate	2.8	26	3.0	27
Polypropylene	3.5	32	2.7	25
Glass	5.5	50	4.2	38
HD Polyethylene	2.3	21	1.6	15
LD Polyethylene	0.5	5	0.8	7

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	7.3	67	3.6	33
Polycarbonate	3.7	34	3.6	33
Polypropylene	3.1	28	2.3	21
Glass	5.1	47	2.8	26
HD Polyethylene	1.9	17	1.6	15
LD Polyethylene	1.1	10	1.9	17

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**Performance Characteristics Contd...**  
 Not for specification purposes

<b>Liner Release</b>	180° Removal of Liner from Facestock		
	Rate of Removal	N/10mm	Gms/25mm Width
	2.3 m / min	0.090	28
	7.6 m / min	0.139	36

<b>Environmental Performance</b>	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.			
<b>Chemical Resistance</b>	<b>Adhesion to Stainless Steel</b>		<b>Appearance</b>	<b>Edge Penetration</b>
<b>Chemical</b>	<b>N/10mm</b>	<b>Oz/In</b>	<b>Visual</b>	<b>Millimetres</b>
<b>Isopropyl Alcohol</b>	4.3	39	No change	0
<b>Detergent (1% Alconox®*)</b>	4.6	42	No change	0
<b>Engine Oil (10W30) @ 250°F (121°C)</b>	5.8	53	No change	2
<b>Water for 48 hours</b>	6.8	62	No change	0
<b>pH 4</b>	4.7	43	No change	0
<b>PH10</b>	4.8	44	No change	0
<b>409®* Cleaning solution</b>	4.9	45	No change	0
<b>Toluene</b>	2.5	23	No change	7
<b>Acetone</b>	3.1	28	No change	5
<b>Brake Fluid</b>	5.9	54	No change	0
<b>Gasoline</b>	2.6	24	No change	6
<b>Diesel Fuel</b>	4.3	39	No change	1.5
<b>Mineral Spirits</b>	3.7	34	No change	3
<b>Hydraulic Fluid</b>	4.7	43	No change	0

<b>Temperature Resistance</b>	149°C for 24 hours:	no significant visual change
	-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

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<b>Accelerated Ageing</b>			
<b>ASTM D3611 : 96 hours at 65°C &amp; 80% relative humidity</b>			
	<b>Rate of Removal</b>	<b>N/10mm Width</b>	<b>Oz/Inch</b>
180° Peel Adhesion from Stainless Steel	305 mm / minute	3.2	29

## Processing

### Printing:

Facestock is topcoated for improved ink receptivity and is designed for thermal transfer printing. It is printable by all standard roll processing methods including flexography, hot stamp, letterpress, and screen printing.

### Die Cutting:

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.

### 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.

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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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