



# Aluminum Foil Label Material

7800 • 7801 • 7804 • 7940 • 7941 • 7942

Technical Data

June, 2002

## Product Description

3M™ Aluminum Foil Label Materials with 3M™ Adhesives 200 and 320 are a unique group of products that can meet a wide range of difficult nameplate application requirements.

- Facestock is 1145 H19 aluminum.
- Excellent adhesion to a wide range of surfaces: For textured high-energy surfaces, use Label Material 7804 or 7941. For low surface energy plastics use Label Material 7800, 7801, 7940 or 7942.
- Ink receptive vinyl top-coating.

## Construction

	Facestock	Adhesive	Liner
<b>7800</b>	2.0 mil (51 microns) matte silver aluminum foil	1.7 mil (43 microns) 320 high tenacity acrylic	3.3 mil (84 microns) 60# densified kraft
<b>7801</b>	2.0 mil (51 microns) bright silver aluminum foil	1.7 mil (43 microns) 320 high tenacity acrylic	3.3 mil (84 microns) 60# densified kraft
<b>7804</b>	2.0 mil (51 microns) matte silver aluminum foil	3.5 mil (89 microns) 200 high-performance acrylic	3.3 mil (84 microns) 60# densified kraft
<b>7940</b>	2.0 mil (51 microns) matte silver aluminum foil	1.7 mil (43 microns) 320 high tenacity acrylic	6.7 mil (170 microns) 90# polycoated kraft
<b>7941</b>	2.0 mil (51 microns) matte silver aluminum foil	3.5 mil (89 microns) 200 high-performance acrylic	6.7 mil (170 microns) 90# polycoated kraft
<b>7942</b>	2.0 mil (51 microns) bright silver aluminum foil	1.7 mil (43 microns) 320 high tenacity acrylic	6.7 mil (170 microns) 90# polycoated kraft

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## Typical Physical Properties and Performance Characteristics

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

<b>Printing</b>	Flexographic, letterpress and screen printing with conventional or UV inks or embossing with dot matrix impact printers.
<b>Temperature Range</b> 7800, 7801, 7940, 7942 7804, 7941	-40°F (-40°C) to 250°F (121°C) -40°F (-40°C) to 300°F (149°C)
<b>Minimum Application Temperature</b>	50°F (10°C)
<b>Die-Cutting</b> 7800, 7801, 7804 7940, 7941, 7942	Rotary Flatbed, matched metal dies, steel rule
<b>Dispensing</b>	Manual or semi-automatic Note: When removing the facestock from the liner, keep the facestock flat (do not bend). Pull the liner away from the facestock.

## Adhesion

**Note:** Peel test procedure is ASTM D-3330 (modified)

Surface	Initial (10 Minute Dwell/RT)		Conditioned for 3 Days at Room Temperature 72°F (22°C)	
	90° Peel		90° Peel	
	oz/in	N/100 mm	oz/in	N/100 mm
Stainless Steel – 7800 7801, 7940, 7942, 7804, 7941	58 60	63 66	69 112	75 123
ABS – 7800 7801, 7940, 7942, 7804, 7941	71 84	78 92	73 95	80 104
Polypropylene – 7800 7801, 7940, 7942, 7804, 7941	39 12	43 13	53 17	58 18
Glass – 7800 7801, 7940, 7942, 7804, 7941	63 89	69 97	73 108	80 118
Aluminum – 7800 7801, 7940, 7942, 7804, 7941	51 81	56 89	62 115	68 126

## Liner Release

**Note:** 180° peel of liner from facestock

<b>90"/minute grams/1" width</b>
10- 40

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## Environmental Performance

Samples were applied to aluminum panels and allowed to dwell for 24 hours prior to exposures.

Liquid	Dwell Time/Exposure Condition	Results
Isopropyl Alcohol @ Room Temperature	4 hours Long term (days)	No change Not recommended
Isopropyl Alcohol @ Room Temperature	3 days	4 mm edge penetration
Engine Oil @ Room Temperature	3 days	No change
Weak Acid (pH4) @ Room Temperature	3 days	No change
Weak Base (pH10) @ Room Temperature	3 days	No change
Water @ Room Temperature	3 days	No change
Acetone, gasoline and mineral spirits	4 hours Long term (days)	1-3 mm edge penetration Not recommended

### Temperature Resistance:

100°F (38°C) for 1 day:	No change
300°F (149°C) for 1 day:	Some yellowing of top-coat
-40°F (-40°C) for 1 day:	No change

### Humidity Resistance:

3 days at 90°F (32°C) and 90% relative humidity:	No change
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## Application Ideas

- Inexpensive metal nameplate alternative for appliance, electronics, automotive and aircraft industries
- Durable OEM decals
- Serialized rating plates where extremely high bond and long term stability are needed
- Embossed seals

## Application Techniques

- While the aluminum foil has excellent abrasion resistance, the use of overlaminating films can enhance performance.
- Foil nameplates should be as flat as possible before application. Any curl in the plate prior to application will remain in the metal memory and could lead to lifting at the edges. It is desirable to remove the liner from the nameplate by peeling it back at 180° and allowing the nameplate to project in a flat plane.
- For maximum bond strength, surface should be clean and dry. A typical cleaning solvent is heptane or isopropyl alcohol. **Note:** Consult the manufacturer's MSDS for proper handling and storage of solvents. For best 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 are achieved through increased rub down pressure.

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**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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**Agency Approvals** UL Recognized, File MH11410 ([www.ul.com](http://www.ul.com) under certifications)  
CSA Accepted, File 099316 (<http://directories.csa-international.org>)

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**For Additional Information** To request additional product information or to arrange for sales assistance, call toll free 1-800-223-7427 or visit [www.3M.com/converter](http://www.3M.com/converter). Address correspondence to: 3M Engineered Adhesives Division, 3M Center, Building 220-8E-05, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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ISO 9002

This Engineered Adhesives Division product was manufactured under a 3M quality system registered to ISO 9002 standards.



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