



Aluminum Foil Label Material

7800 • 7801 • 7804 • 7940 • 7941 • 7942

Technical Data

January, 2007

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.

Features

- Facestock is 1145 H19 aluminum.
- Excellent adhesion to a wide range of surfaces: For textured high-energy surfaces, use 3M™ Aluminum Foil Label Material 7804 or 7941. For low surface energy plastics use 3M™ Aluminum Foil Label Material 7800, 7801, 7940 or 7942.
- Ink receptive vinyl top-coating.

Construction

3M™ Aluminum Foil Label Material	Facestock	Adhesive	Liner
7800	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
7801	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
7804	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
7940	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
7941	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
7942	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.

Printing	Flexographic, letterpress and screen printing with conventional or UV inks or embossing with dot matrix impact printers.
Temperature Range 3M™ Aluminum Foil Label Material 7800, 7801, 7940, 7942 3M™ Aluminum Foil Label Material 7804, 7941	-40°F (-40°C) to 250°F (121°C) -40°F (-40°C) to 300°F (149°C)
Minimum Application Temperature	50°F (10°C)
Die-Cutting 3M aluminum foil label material 7800, 7801, 7804 3M aluminum foil label material 7940, 7941, 7942	Rotary Flatbed, matched metal dies, steel rule
Dispensing	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)

3M™ Aluminum Foil Label Material	Initial (10 Minute Dwell/RT)		Conditioned for 3 Days at Room Temperature 72°F (22°C)	
	90° Peel		90° Peel	
Surface	oz/in	N/100 mm	oz/in	N/100 mm
Stainless Steel – 7800, 7801, 7490, 7942 (320) 7804, 7941 (200)	58	63	69	75
	60	66	112	123
ABS – 7800, 7801, 7490, 7942 (320) 7804, 7941 (200)	71	78	73	80
	84	92	95	104
Polypropylene – 7800, 7801, 7490, 7942 (320) 7804, 7941 (200)	39	43	53	58
	12	13	17	18
Glass – 7800, 7801, 7490, 7942 (320) 7804, 7941 (200)	63	69	73	80
	89	97	108	118
Aluminum – 7800, 7801, 7490, 7942 (320) 7804, 7941 (200)	51	56	62	68
	81	89	115	126

Liner Release

Note: 180° peel of liner from facestock

90"/minute grams/1" width
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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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.

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

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