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# 3M™ Aluminum Foil Label Material 7940

## Product Description

3M™ Aluminum Foil Label Materials are durable, thin gauge aluminum designed to meet a wide range of difficult nameplate application requirements. 3M™ Aluminum Foil Label Materials 7940 utilizes 3M™Adhesive 320 which offers excellent adhesion to a variety of surfaces including high surface energy (HSE) and low surface energy (LSE) plastics.

## Product Features

- The liner for 3M label material 7940 provides easy sheet processing and is designed for layflat. The backside of the liner is not printable.
- UL Recognized (File MH11410) and CSA Accepted (File 099316).

# 3M™ Aluminum Foil Label Material 7940

## Technical Information Note

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

## Typical Physical Properties

| Property | Values | |
|---|---|---|
| Adhesive Thickness | 0.043 mm | 1.7 mil |
| Facestock | Matte Silver Aluminum Foil Vinyl TC | |
| Facestock Thickness | 0.051 mm | 2 mil |
| Adhesive | 320 High Tenacity Acrylic | |
| Liner | 90# Polyctd. bleached kraft sheet polyethylene coated on two sides | |
| Liner Thickness | 0.17 mm | 6.7 mil |

## Convertability

3M™ High Tenacity Acrylic Adhesive 320 is specifically designed to be compatible with flexographic and thermal transfer technologies. Its aggressive tack properties, while desirable for the end use application, 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.

## Note

Calipers are nominal values

## Typical Performance Characteristics

| Property | Values | |
|---|---|---|
| Minimum Application Temperature | 10 °C | 50 °F |
| Service Temperature Range | -40 to 121 °C | -40 to 250 °F |

| 90° Peel Adhesion | | Dwell/Cure Time | Substrate |
|---|---|---|---|
| 6.3 N/cm | 58 oz/in | 10 min @ Room Temperature | Stainless Steel |
| 4.3 N/cm | 39 oz/in | 10 min @ Room Temperature | Polypropylene (PP) |
| 6.9 N/cm | 63 oz/in | 10 min @ Room Temperature | Glass |
| 7.8 N/cm | 71 oz/in | 10 min @ Room Temperature | ABS |
| 5.6 N/cm | 51 oz/in | 10 min @ Room Temperature | Aluminum |
| 7.5 N/cm | 69 oz/in | 72 hr @ Room Temperature | Stainless Steel |

**Table continued on next page**

## Typical Performance Characteristics (continued)

| 90° Peel Adhesion | | Dwell/Cure Time | Substrate |
|---|---|---|---|
| 5.8 N/cm | 53 oz/in | 72 hr @ Room Temperature | Polypropylene (PP) |
| 8.0 N/cm | 73 oz/in | 72 hr @ Room Temperature | Glass |
| 8.0 N/cm | 73 oz/in | 72 hr @ Room Temperature | ABS |
| 6.8 N/cm | 62 oz/in | 72 hr @ Room Temperature | Aluminum |

Property: 90° Peel Adhesion
Method: ASTM D3330

## Typical Environmental Performance

## Chemical and Environmental Exposure

| Liquid | Dwell Time/Exposure | Condition Results |
|---|---|---|
| Isopropyl Alcohol @ Room Temperature | 4 hours | No change |
| | Long term (days) | 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 | 1-3 mm edge penetration |
| | Long term (days) | Not recommended |

## Humidity Resistance

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

## 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

## Handling/Application Information

## 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.

## Handling/Application Information (continued)

### 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 thoroughly 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 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 are achieved through increased rubdown pressure.

### Printing

All versions of 3M™Aluminum Foil Label Materials are equipped, print-ready, with a vinyl topcoating. This topcoating is printable with conventional or UV inks using flexographic, letterpress, or screen printing processes. It is also capable of embossing with dot matrix impact printers. Whenever printing for the first time, with a different ink system or on a new machine, we strongly recommend carrying out proofing trials to validate ink adhesion and durability prior to a full production run.

### Converting

Die Cutting:
3M™Aluminum Foil Label Materials 7940 : Flatbed, matched metal dies,steel rule
Dispensing:
The liners for 3M™ Aluminum Foil Label Materials are designed for manual or semi-automatic. Be sure to properly test the materials in the particular process to determine suitability. Note that when manually dispensing, pull the liner away from the face to avoid bending the foil face into a permanent shape.

### Storage and Shelf Life

Store at room temperature conditions of 72°F (22°C) and 50% relative humidity.
If stored under proper conditions, product retains its performance and properties for two years from date of manufacture.

### Industry Specifications

UL Recognized (File MH11410)
CSA Accepted (File 099316)

### Family Group

| | 7800 | 7800 | 7940 |
|---|---|---|---|
| Adhesive Thickness (mm) | 0.043 | 0.043 | 0.043 |
| Facestock | Matte Silver Aluminum Foil<br>Vinyl TC | Matte Silver Aluminum Foil<br>Vinyl TC | Matte Silver Aluminum Foil<br>Vinyl TC |
| Facestock Thickness (mm) | 0.051 | 0.051 | 0.051 |
| Adhesive | 320 High Tenacity Acrylic | 320 High Tenacity Acrylic | 320 High Tenacity Acrylic |
| Liner | 60# Densified Kraft | 60# Densified Kraft | 90# Polyctd. bleached kraft sheet polyethylene coated on two sides |
| Liner Thickness (mm) | 0.084 | 0.084 | 0.17 |

## References

1. Safety Data Sheet
   Url: https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=7940

## ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

## Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

## Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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