# Technical Data Sheet

3M™ Screen Printable Extended Life Vinyl Performance Durable Label Material 7049

Additional Info

Regulatory Info/SDS

## Product Description

3M™ Screen Printable Extended Life Vinyl Performance Durable Label Materials are high performance materials that offer conformability and moisture resistance. These vinyl label stocks utilize 3M™ Adhesive P1400 which is a high performance tackified acrylic designed for use in demanding environments, including outdoor applications.

## Product Features

• Offers up to five years outdoor durability. • Adhesive offers UV resistance and adhesion to a wide variety of substrates, including polyolefins. • Liner provides easy sheet processing and is designed for the ultimate in layflat. The backside of this liner is not printable. • UL recognized (File MH11410). See the UL listings for details. • Meets EU RoHS Directive (e.g.) means that the product or part does not contain any of the following substances in excess of the following maximum concentration values in any homogeneous material, unless the substance is in an application that is exempt under RoHS: (a) 0.1% (by weight) for lead, mercury, hexavalent chromium polybrominated biphenyls or polybrominated diphenyl ethers; or (b) 0.01% (by weight) for cadmium. Unless otherwise stated by 3M in writing, this information represents 3M's knowledge and belief based on information provided by third party suppliers to 3M.

## 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

| Attribute Name | Value |
|---|---|
| Adhesive Type | P1400 Perm. |
| Facestock | Soft White XL Vinyl NTC |
| Adhesive Coat Weight | 1.6 — 1.96 g/100 in² |

| Attribute Name | Value |
|---|---|
| Adhesive Thickness | 0.023 mm (0.9 mil) |
| Facestock Thickness | 0.097 mm (3.8 mil) |
| Liner | 90# Polyctd. bleached kraft sheet polyethylene coated on two sides |
| Liner Thickness | 0.18 mm (7 mil) |

| Attribute Name | Value |
|---|---|
| Convertability | 3M™ Outdoor Acrylic Adhesive P1400 is specifically designed to be compatible with a variety of print methods and end use applications. Adhesive processing issues are not anticipated when proper roll tensions, handling and storage conditions are used. 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. |

## Construction Tested

Adhesion properties determined per TLMI Method using 1.0 mil polyester with 1.0 mil of adhesive on a polished stainless steel panel.

## Typical Performance Characteristics

### 180° Peel Adhesion

Temperature: 23 °C (73 °F)
Test Method: TLMI

| Substrate | Value |
|---|---|
| High Density Polyethylene (HDPE) | 2.62 N/cm (24 oz/in) [1] |
| Polycarbonate (PC) | 6.12 N/cm (56 oz/in) [1] |
| Polypropylene (PP) | 5.28 N/cm (48 oz/in) [1] |
| Stainless Steel | 7.04 N/cm [1] |

[1] 300 mm/min (12 in/min)

Test Method: TLMI

| Attribute Name | Temperature | Value |
|---|---|---|
| Liner Release | 23 °C (73 °F) | 3 — 39 g/cm (15 — 200 g/2 in) [1] |
| Shear Adhesion | | 4 h [2] |
| Loop Tack | | 3.16 N/cm (28 oz/in) [3] |

[1] 180° removal, 300 in/min
[2] 0.25 in² x 500g
[3] 300 mm/min (12 in/min)

| Attribute Name | Value |
|---|---|
| Application Temperature | 5 — 49 °C (40 — 120 °F) |
| Long Term Temperature Resistance | 60 °C (140 °F) [1] |
| Minimum Long Term Temperature Resistance | -29 °C (-20 °F) [1] |

[1] Long Term (day, weeks)

| Attribute Name | Value |
|---|---|
| Note | Calipers are nominal values |

## Printing

A non-topcoated print surface designed for use with solvent screen ink systems.

**Solvent Screen Inks:**
3M™ Screen Printing UV Ink Series 9800
Nazdar's 7700 and System 2
Sericol's Polyplast PY, GVYL, VYL, TMI and Techmark

Please be aware that our current production specifications for these materials are primarily qualified for printers who use flexographic, screen printing, and thermal transfer printing processes. 3M has neither done profile work with these products for printing by digital inkjet processes, nor engaged in any lot variation studies, nor taken any special measures in manufacturing or handling of these products with the intent of recommending these products for printing by digital inkjet methods.

## Converting

Die cut with steel rule or flatbed dies. The 90# lay-flat liner also allows kiss cutting and back splitting. The converter can cut through the vinyl facestock without cutting through the liner. Sheet label materials are not recommended for rotary die cutting and stripping operations.

## Handling/Application Information

### Application Examples

• Nameplates and product ID labels.
• Rating plates.
• Property identification and asset labeling.
• Warning, instruction, and service labels for durable goods, equipment/machinery and lawn and garden.

### Application Techniques

For maximum bond strength, the surface should be clean and dry. Typical cleaning solvents are heptane and isopropyl alcohol.*

For best bonding conditions, application surface should be at room temperature or higher. Low temperature surfaces, below 40°F (5°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.

*When using solvents, read and follow the manufacturer's precautions and directions for use.

## Industry Specifications

UL Recognized (File MH11410)

### FDA Statement

This product might be suitable for use in indirect food contact applications. Please see the applicable Regulatory Data Sheet for more information relating to FDA compliance.

## Durability Statement

Based on 2000 hours Xenon arc test exposure, these materials are expected to have up to five year outdoor durability.

## Storage and Shelf Life

Store under normal conditions of 16° to 27°C (60° to 80°F) and 40 to 60% relative humidity in the original packaging, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

## Available Sizes

| Attribute Name | Value |
|---|---|
| Packaging | Finished labels should be stored in plastic bags. |

## Information

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## ISO Statement

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

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