Technical Data Sheet

3M™ Screen Printable Sheet Polyester Label Material 7983

Product Details

Product Description

3M™ Screen Printable Sheet Polyester Label Material 7983 is a durable, high performance material that offers excellent thermal stability, moisture resistance and chemical resistance. This material utilizes 3M™ Adhesive 300, which has excellent quick tack and also bonds well to a variety of surfaces including LSE plastics.

Product Features

• Matte coating is compatible with screen printing and resists degradation from scuffing, chemicals, moisture, and wide temperature fluctuations. Variable information can be added by the end user, as the material is dot matrix printable and hand writable.
• 3M adhesive 300 bonds well to a wide variety of substrates including metals, high surface energy (HSE) plastics and low surface energy (LSE) plastics. It is ideal for applications requiring high initial adhesion especially to LSE plastic surfaces.
• Liner 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 99316). See the UL and CSA listings for details.

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	300 Acrylic
Facestock	Matte Silver Polyester TC
Adhesive Coat Weight	1.21 — 1.49 g/100 in²

Attribute Name	Value
Adhesive Thickness	0.02 mm (0.8 mil)
Facestock Thickness	0.083 mm (3.3 mil)
Liner	90# Polyctd. bleached kraft sheet polyethylene coated on two sides
Liner Thickness	0.17 mm (6.7 mil)

Attribute Name	Value
Convertability	3M™ High Strength Acrylic Adhesive 300 is designed to be compatible with a variety of print methods and end use applications. Due to the quick flowing aggressive nature of this adhesive, care should be taken when converting labels for thermal transfer applications. 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.

Typical Performance Characteristics

Temperature: 23 °C (73 °F)

Attribute Name	Test Method	Value
Liner Release	TLMI	5 — 35 g/2 in [1]

[1] 180° removal, 300 in/min

Attribute Name	Value
Minimum Application Temperature	10 °C (50 °F)
Long Term Temperature Resistance	149 °C (302 °F) [1]
Minimum Long Term Temperature Resistance	-40 °C (-40 °F) [1]

[1] Long Term (day, weeks)

180° Peel Adhesion

Temperature: 23 °C (73 °F)
Dwell Time: 72 h
Test Method: ASTM D3330

Substrate	Value
Polycarbonate (PC)	6.7 N/cm (61 oz/in) [1]
Polypropylene (PP)	6.1 N/cm (56 oz/in) [1]
Stainless Steel	7.3 N/cm (67 oz/in) [1]

[1] 304 mm/min (12 in/min)

Attribute Name	Value
Note	Calipers are nominal values

Typical Environmental Characteristics

Humidity Resistance

24 hours at 100°F (38°C) and 100% relative humidity: no significant change in appearance or adhesion

Temperature Resistance

300°F (149°C) for 24 hours: no significant visual change
-40°F (-40°C) for 10 days: no significant visual change

Printing

Material has a topcoating which is receptive to many inks including UV and conventional ink systems. The converter should verify that their ink systems are compatible with the topcoating on the polyester film by testing beforehand.

The topcoating is also receptive to other forms of printing including hot stamping and dot matrix printing. The converter should verify that the method of printing is compatible with the topcoating by testing beforehand.

The following dot matrix ribbons are recommended for use with this material:
• CGL-79 from Mid City Columbia, 800-462 or 800-996-4656
• Ranger 288 from Herbert Dehinton & Co., 847-998-8150
3M does not recommend the Ranger 288 ribbon for bar code printing.

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 polyester facestock without cutting through the liner. Sheet label materials are not recommended for rotary die cutting and stripping operations.

Handling/Application Information

Application Examples

• Barcode labels and rating plates.
• Property identification and asset labeling.
• Warning, instruction, and service labels for durable goods.
• Nameplates for durable goods.
• 3M screen printable sheet polyester label material 7983 is suitable for stamped metal, riveted plates.

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 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 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)
CSA Accepted (File 99316)

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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3M Center, St. Paul, MN 55144-1000
3M.com/iatd

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