



# Technical Data Sheet

## 3M™ Versatile Print Label Material 7816V



Additional Info

### **Product Description**

3M™ Versatile Print Label Material 7816V is a gloss polyester label material that offers durability and moisture resistance. The topcoat is formulated to print with multiple technologies, including UV inkjet, water flexo, UV flexo, thermal transfer, and screen printing. This label product utilizes 3M™ Acrylic Adhesive 310 which is a firm adhesive which resists oozing and provides high strength on a variety of surfaces including high surface energy (HSE) plastics and metals.

### **Product Features**

- Adhesive can permanently bond to high surface energy (HSE) and metals.
- 55# densified kraft liner assures consistent die cutting.
- Facestock is topcoated for high quality and durable printing with multiple print technologies including UV inkjet, water and UV flexo, thermal transfer, and screen.
- UL Recognized file MH16411, CSA Group Certified file 99316

### **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	310 Acrylic
Facestock	White Polyester Versatile TC
Adhesive Coat Weight	1.05 — 1.21 g/100 in <sup>2</sup>

Attribute Name	Value
Adhesive Thickness	0.02 mm (0.8 mil)
Facestock Thickness	0.051 mm (2 mil)
Liner	55# Densified Kraft
Liner Thickness	0.081 mm (3.2 mil)

Attribute Name	Value
Convertability	The firmness of 3M™ Acrylic Adhesive 310 is specifically designed to be compatible with thermal transfer and laser technologies. 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.

## Typical Performance Characteristics

### 180° Peel Adhesion

Temperature: 23 °C (73 °F)

Test Method: ASTM D3330

Dwell Time	Substrate	Value
20 min	Polycarbonate (PC)	5.7 N/cm (52 oz/in) <sup>1</sup>
20 min	Polypropylene (PP)	4.4 N/cm (40 oz/in) <sup>1</sup>
20 min	Stainless Steel	4.9 N/cm (45 oz/in) <sup>1</sup>
72 h	Polycarbonate (PC)	6.3 N/cm (58 oz/in) <sup>1</sup>
72 h	Polypropylene (PP)	5 N/cm (45 oz/in) <sup>1</sup>
72 h	Stainless Steel	6.1 N/cm (55 oz/in) <sup>1</sup>

<sup>1</sup> 300 mm/min (12 in/min)

Temperature: 23 °C (73 °F)

Attribute Name	Test Method	Value
Liner Release	TLMI	1 — 9.8 g/cm (5 — 50 g/2 in) <sup>1</sup>

<sup>1</sup> 180° removal, 300 in/min

Attribute Name	Value
Minimum Application Temperature	10 °C (50 °F)
Long Term Temperature Resistance	149 °C (300 °F) <sup>1</sup>
Minimum Long Term Temperature Resistance	-40 °C (-40 °F) <sup>1</sup>

<sup>1</sup> Long Term (day, weeks)

Attribute Name	Value
Note	Calipers are nominal values

## Typical Environmental Performance

### 180° Peel Adhesion

Temperature: 37 °C (100 °F)

Dwell Time: 72 h

Test Method: ASTM D3330

Environmental Condition: 100 %RH

Substrate	Value
Polycarbonate (PC)	2.7 N/cm (25 oz/in) <sup>1</sup>
Polypropylene (PP)	4.3 N/cm (39 oz/in) <sup>1</sup>
Stainless Steel	6.4 N/cm (58 oz/in) <sup>1</sup>

<sup>1</sup> 300 mm/min (12 in/min)

Substrate: Stainless Steel

Temperature: 65 °C (150 °F)

Dwell Time: 96 h

Environmental Condition: 80 %RH

Attribute Name	Test Method	Value
Accelerated Aging	ASTM D3611	8 N/cm (73 oz/in) <sup>1</sup>

<sup>1</sup> 300 mm/min (12 in/min)

## **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**

When applied to stainless steel. Other substrates should be tested per application.  
300°F (149°C) for 24 hours: no significant visual change

1 % CD shrinkage  
-40°F (-40°C) for 10 days: no significant visual change

## **Printing**

Facestock is topcoated for improved ink receptivity and is designed for UV Inkjet, water flexo, UV flexo, screen, and thermal transfer printing.

### **UL /CSA Approved Inks:**

Actega Actexact  
Actega Optafilm  
Flint Hydrofilm Ace  
Flint Flexocure Force  
Domino N610i  
Durst Tau RSC  
EFI Jetrion 4830  
INX Prodigy  
Mark Andy Digital Series  
Stork DSI Digital UV

### **UL Approved Thermal Transfer Ribbons (evaluated in black only):**

Armor AXR 7+, AXR 8, AXR EL  
Dainippon R300, R550, R600, TR4070, V300  
Fujicopian FTX 308  
ITW Thermal Films B324  
Imak SP330  
NCR K3  
Ricoh B110CR, B125CS  
Zebra Technologies Corp. 5100

## **Converting**

Rotary die cutting is recommended. Fanfolding of labels is not recommended. Small labels should be evaluated carefully. Winding tensions should be kept at a minimum to help prevent the adhesive from oozing.

## **Handling/Application Information**

### **Application Examples**

- Barcode labels and rating plates
- Property identification and asset labeling
- Warning, instruction, and service labels for durable goods
- Nameplates and durable goods

### **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 PGJ12.MH16411, Printing Materials - Component, ANSI/UL 969  
CSA Group Certified, File 99316, Class 7922, Adhesive-Type Labels - Label Stock, CSA-C22.2 No. 0.15-01  
CSA Group Certified, File 99316, Class 7924, Adhesive-Type Labels - Electronic Printing Technologies, CSA-C22.2 No. 0.15-01

## **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**

<b>Attribute Name</b>	<b>Value</b>
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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