

# Technical Data Sheet

3M™ VHB™ Adhesive Transfer Tape F9469PC



[Product Details](#)



[Regulatory Info/SDS](#)

## Product Description

Finite Element Analysis (FEA) data is available for this product at: [3m.com/FEA](https://3m.com/FEA)

3M™ VHB™ Adhesive Transfer Tape F9469PC utilizes the 3M™ High Performance Acrylic Adhesive 100MP, which has excellent long term holding power with much higher adhesion strength than typical pressure sensitive adhesive systems. This 3M™ VHB™ Adhesive Transfer Tape is transparent and is ideal for use in many interior and exterior industrial applications to replace rivets, spot welds, liquid adhesives, and other permanent fasteners.

## Product Features

- Thin profile combined with our high strength acrylic adhesive for a long-lasting bond
- High short term temperature tolerance
- High operating temperature tolerance
- Conforms to a variety of indoor and outdoor applications
- 58# polycoated kraft paper liner printed with 3M™ VHB™ branding
- Durable adhesive is chemical, UV and solvent resistant
- Ease of application increases productivity

## 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       | Test Method | Value  |
|----------------------|-------------|--|
| Adhesive Type        |             | Acrylic  |
| Density              |             | 1.012 g/cm <sup>3</sup> (0.04 lb/in <sup>3</sup> ) |
| Total Tape Thickness | ASTM D3652  | 0.13 mm (5.2 mil)                                  |
| Liner                |             | 58# Polycoated Kraft Paper (PCK)                   |
| Liner Print          |             | 3M VHB   |
| Liner Thickness      |             | 0.106 mm (4.2 mil)                                 |

## Typical Performance Characteristics

Temperature: 23 °C (73 °F)

Backing: 2 mil Aluminum Foil

| Attribute Name     | Test Method | Value                            |
|--------------------|-------------|----------------------------------|
| 180° Peel Adhesion | ASTM D3330  | 14 N/cm (128 oz/in) <sup>1</sup> |

<sup>1</sup> 304 mm/min (12 in/min)

| Attribute Name         | Test Method          | Temperature   | Substrate       | Value                             |
|------------------------|----------------------|---------------|-----------------|-----------------------------------|
| Overlap Shear Strength | ASTM D1002, ISO 4587 |               | Stainless Steel | 550 kPa (80 lb/in <sup>2</sup> )  |
| Normal Tensile         | ASTM D897            | 23 °C (73 °F) | Aluminum        | 690 kPa (100 lb/in <sup>2</sup> ) |

## Static Shear

Test Method: ASTM D3654

| Temperature     | Value                |
|-----------------|----------------------|
| 23 °C (73 °F)   | 1,000 g <sup>1</sup> |
| 66 °C (150 °F)  | 1,000 g <sup>1</sup> |
| 93 °C (200 °F)  | 1,000 g <sup>1</sup> |
| 121 °C (250 °F) | 1,000 g <sup>1</sup> |
| 149 °C (300 °F) | 500 g <sup>1</sup>   |
| 177 °C (350 °F) | 500 g <sup>1</sup>   |

<sup>1</sup> Static shear measured at various temperatures and gram loadings on stainless steel. Will hold listed weight for 10,000 minutes.

| Attribute Name                    | Value                        |
|-----------------------------------|------------------------------|
| Short Term Temperature Resistance | 260 °C (500 °F) <sup>1</sup> |
| Long Term Temperature Resistance  | 149 °C (300 °F) <sup>2</sup> |

<sup>1</sup> Short Term (minutes, hour)

<sup>2</sup> Long Term (day, weeks)

| Attribute Name        | Value   |
|-----------------------|---|
| Additional Test notes | 3M™ VHB™ Adhesive Transfer Tapes F9460PC, F9469PC, and F9473PC are made from the same adhesive system and are thermoplastic in nature, becoming softer as temperature increases and firmer as temperature decreases. As the adhesive becomes firmer, the adhesion performance generally increases. At low temperatures (lower than -40°F [-40°C]), the 3M™ VHB™ Adhesive Transfer Tape becomes very firm and glassy |

## Typical Environmental Performance

| Attribute Name     | Value   |
|--------------------|---|
| Solvent Resistance | No apparent degradation when exposed to splash testing of many common solvents and fluids including gasoline, JP-4 fuel, mineral spirits, motor oil, ammonia cleaner, acetone and methyl ethyl ketone.<br>(3 splash testing cycles: 20 seconds submersion, & 20 seconds air dry.) |
| UV Resistance      | Excellent UV resistance through outdoor weathering tests and weather-O-meter tests.   |

## Electrical and Thermal Properties

| Attribute Name       | Test Method | Value   |
|----------------------|-------------|---|
| Thermal Conductivity | ASTM C177   | 0.16 W/m/K (1.1 (btu-in)/(h-ft <sup>2</sup> -°F)) |

| Attribute Name      | Test Method | Temperature     | Test Condition | Value   |
|---------------------|-------------|-----------------|----------------|---------|
| Dielectric Constant | ASTM D150   | 23 °C (73 °F)   | 1 KHz          | 4.08    |
| Dielectric Strength | ASTM D149   | 125 °C (257 °F) |                | 2,600 V |
| Dielectric Strength | ASTM D149   | 177 °C (350 °F) |                | 1,900 V |
| Dielectric Strength | ASTM D149   | 23 °C (73 °F)   |                | 3,000 V |

| Attribute Name        | Test Method | Temperature | Test Condition | Value                                    |
|-----------------------|-------------|-------------|----------------|--|
| Insulation Resistance | ASTM D1000  |             |                | > 1 x 10 <sup>6</sup> MΩ/in <sup>2</sup> |

### **Weight Loss and Outgassing Performance**

| Attribute Name                 | Test Method        | Value   |
|--------------------------------|--------------------|---|
| Total Mass Loss                | ASTM E595-77/84/90 | 1.29 %  |
| Volatile Condensable Materials | ASTM E595-77/84/90 | 0.02 %  |
| Note                           |                    | The testing was done per ASTM E595-77/84/90 as indicated in the NASA Reference Publication 1124, Revision 4, "Outgassing Data for Selecting Spacecraft Materials", June 1997. The results are reported as percentage of total mass loss (TML) and percentage of Volatile Condensable Materials (VCM), respectively, as shown below. |

### **Handling/Application Information**

#### **Application Techniques**

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improve bond strength.

To obtain optimum adhesion, the bonding surfaces must be clean, dry, and well unified. Some typical surface cleaning solvents are isopropyl alcohol/water mixture or heptane.\*

Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

\*Note: Be sure to follow the manufacturer's precautions and directions for use when using solvents.

### **Industry Specifications**

UL 746C  
UL 879 (File E65361)

### **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            | Width                   | Value                                 |
|---------------------------|-------------------------|---------------------------------------|
| Maximum Length            | 1/4 in to 3/8 in widths | 55 m (60 yd)                          |
| Maximum Length            | 3/8 in to 1 in widths   | 220 m (240 yd)                        |
| Maximum Length            | 1 in to 3 in            | 330 m (360 yd)                        |
| Maximum Length            | 3 in and wider          | 330 m (360 yd)                        |
| Normal Slitting Tolerance |                         | 0.8 mm (±1/32 in)                     |
| Note                      |                         | Subject to Minimum Order Requirements |
| Standard Roll Length      |                         | 55 m (60 yd)                          |

## **Recognition/Certification**

**TSCA:**This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements

**MSDS:**3M has not prepared a MSDS for this product which is not subjected to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R.1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, this product should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect its performance and present potential health and safety hazards.

**UL:**These products have been recognized by Underwriters Laboratories, Inc. under UI 746C and UL 969. For more information on the UL Certification, please visit the website at <http://www.3M.com/converter>, select UL Recognized Materials, then select the specific product area.

**Note:**One of 3M's core values is to respect our social and physical environment. 3M is committed to comply with ever-changing, global, regulatory and consumer environmental, health, and safety (EHS) requirements. As a service to our customers, 3M is providing information on the regulatory status of many 3M products. Further regulation information including that for OSHA, USCPSP, California Proposition 65, READY and RoHS, can be found at [3M.com/regs](http://3M.com/regs).

## **Automotive Disclaimer**

### **Select Automotive Applications:**

This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3). Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

## **Information**

**Technical Information:** The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

**Product Selection and 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. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

**Warranty, Limited Remedy, and Disclaimer:** Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price. Warranty claims must be made within one (1) year from the date of 3M's shipment.

**Limitation of Liability:** Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

**Disclaimer:** 3M industrial and occupational products are intended, labeled, and packaged for sale to trained industrial and occupational customers for workplace use. Unless specifically stated otherwise on the applicable product packaging or literature, these products are not intended, labeled, or packaged for sale to or use by consumers (e.g., for home, personal, primary or secondary school, recreational/sporting, or other uses not described in the applicable product packaging or literature), and must be selected and used in compliance with applicable health and safety regulations and standards (e.g., U.S. OSHA, ANSI), as well as all product literature, user instructions, warnings, and limitations, and the user must take any action required under any recall, field action or other product use notice. Misuse of 3M industrial and occupational products may result in injury, sickness, or death. For help with product selection and use, consult your on-site safety professional, industrial hygienist, or other subject matter expert. For additional product information, visit [www.3M.com](http://www.3M.com).

## **ISO Statement**

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

3M™ Industrial Adhesives and Tapes Division  
3M Center, St. Paul, MN 55144-1000  
[3M.com/iatd](http://3M.com/iatd)

3M and VHB are trademarks of 3M.  
©3M 2024 (9/24)