SNAPSHOOT
ENGINEERED FOR A SAFER TOMORROW

# 현장을 이해하고, 필요한 솔루션을 연결합니다.

산업안전 · 추락방지 시스템
산업용 소재 · 건축자재
제품 제안부터 공급·시공·설치·교육까지




COMPANY INFORMATION

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TECHNICAL DOCUMENTS

## 인증서 · 데이터시트 · 기술자료

제품의 규격과 성능, 인증 및 적용 조건을 확인하기 위한 자료입니다.

ABOUT SNAPSHOOT

### 제품 공급을 넘어, 현장에 맞는 해결책으로

스냅슛은 산업현장의 작업 환경과 요구 조건을 바탕으로
적합한 제품과 시스템을 제안합니다. 현장 실사를 통해 설치 조건을 확인하고,
공급부터 시공·설치 및 사용 교육까지 필요한 과정을 함께합니다.

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English-US

**Last Revision Date:** April, 2025

**Supersedes:** September, 2024

# Technical Data Sheet

3M™ VHB™ Adhesive Transfer Tape F9469PC

Product Details

Regulatory Info/SDS

## Product Description

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/cm³ (0.04 lb/in³) |
| 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) [1] |

[1] 300 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/in²) |
| Normal Tensile | ASTM D897 | 23 °C (73 °F) | Aluminum | 690 kPa (100 lb/in²) |

### Static Shear

Test Method: ASTM D3654

| Temperature | Value |
|---|---|
| 23 °C (73 °F) | 1,000 g [1] |
| 66 °C (150 °F) | 1,000 g [1] |

| Temperature | Value |
|---|---|
| 93 °C (200 °F) | 1,000 g [1] |
| 121 °C (250 °F) | 1,000 g [1] |
| 149 °C (300 °F) | 500 g [1] |
| 177 °C (350 °F) | 500 g [1] |

[1] 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) [1] |
| Long Term Temperature Resistance | 149 °C (300 °F) [2] |

[1] Short Term (minutes, hour)

[2] 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-ft²-°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 |
| Insulation Resistance | ASTM D1000 | | | > 1 x $10^6$ MΩ/in² |

## Weight Loss and Outgassing Performance

| Attribute Name | Test Method | Value |
|---|---|---|
| Total Mass Loss | ASTM E595-77/84/90 | 1.29 % |
| Volatile Condensible 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 Condensible 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 Ul 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, USCPSI, California Proposition 65, READY and RoHS, can be found at 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

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## ISO Statement

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

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