



Technical Data Sheet

3M™ VHB™ Tape 5981-040



[Product Details](#)

Product Description

3M™ VHB™ Tapes 5981-040 is an integrated bonding solution for electronic device manufacturers who value robust impact-resistant bonding performance but desire improved ease of use over typical foam bonding tape constructions and liquid adhesives. The 5981 series 3M™ VHB™ Tapes feature a thin film carrier in combination with two layers of a high-performance modified acrylic foam adhesive. This layered construction enables improved handling and proven capability to convert into narrow bond lines while preserving adhesion, impact resistance, anti-lifting, push-out, waterproofing and improved reworkability performance.

Product Features

- Narrow bond line converting capability to 0.5 mm
- Good reworkability/removal characteristics
- High bond strength
- Thin foam pressure sensitive adhesive (PSA) on both sides of a thin carrier film
- Good impact resistance and conformability

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
Color		Black
Adhesive Type		Modified Acrylic
Density	ASTM D3574	965 kg/m ³ (60.2 lb/ft ³) ¹
Total Tape Thickness	ASTM D3652	0.40 mm (16 mil)
Liner		Clear polyester on both sides
Primary Liner Color		Clear
Primary Liner Thickness		0.05 mm (0.002 in)
Secondary Liner Color		Clear
Secondary Liner Thickness		0.075 mm (0.003 in)
Thickness Tolerance		±15 %

¹ Foam with adhesive

Typical Performance Characteristics

180° Peel Adhesion

Temperature: 23 °C (73 °F)

Dwell Time: 72 h

Test Method: ASTM D3330

Substrate	Value
Acrylic (PMMA)	145 N/100mm (130 oz/in) ¹
Glass	165 N/100mm (150 oz/in) ¹
Polycarbonate (PC)	180 N/100mm (165 oz/in) ¹
Stainless Steel	165 N/100mm (150 oz/in) ¹

¹ 300 mm/min (12 in/min)

Static Shear

Substrate: Stainless Steel

Dwell Time: 72 h

Backing: 2 mil Aluminum Foil

Test Method: ASTM D3654

Temperature	Test Condition	Value
23 °C (73 °F)	1000 g	>10,000 min ¹
70 °C (158 °F)	500 g	>10,000 min ¹

¹ 25 x 25 mm (1 in x 1 in) sample area, test terminated after 10,000 minutes

Attribute Name	Dwell Time	Temperature	Value
Anti-Lift Testing	24 h	70 °C (158 °F)	0 mm ¹
IPX Water Resistance			IPX8 Waterproof Characteristics: 1 mm Wide Tape Bonding Polycarbonate to Stainless Steel. No leaks after 30 minute duration at 30 m H ₂ O depth simulation (42.7 psi)

¹ Flat substrates w/forced curvature: anodized aluminum to polycarbonate

Attribute Name	Value
Note	The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Final product specifications and testing methods will be outlined in the product's Certificate of Analysis (COA) that is shipped with the product.

Handling/Application Information

Application Examples

- Lens and back cover bonding
- LCM attachment
- Touch panel bonding
- Bezel bonding

Application Techniques

For maximum bond strength the substrate surfaces should be thoroughly cleaned with a 50:50 mixture of isopropyl alcohol and water. Consult manufacturer's directions for use and precautions when using cleaning solvents and adhesion promoters. Ideal tape application is accomplished when temperature is between 21° and 38°C (70° and 100°F) and the bond is allowed to dwell 72 hours. Initial tape application to surfaces at temperatures below 10°C (50°F) is not recommended.

Storage and Shelf Life

Store in original cartons at 4-38°C (40-100°F) and 0-95% relative humidity. Optimum storage conditions are 22°C (72°F) and 50% relative humidity. When stored under proper conditions, product retains its performance and properties for 24 months from date of manufacture.

Available Sizes

Attribute Name	Value
Core Size (ID)	76.2 mm (3 in)
Normal Slitting Tolerance	±0.8 mm (±1/32 in)
Standard Roll Length	66 m (72.2 yd)
Standard Width	560 mm (22 in)

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: 3M warrants for 24 months from the date of 3M manufacture that 3M™ VHB™ Tape will be free of defects in material and manufacture. 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. This warranty does not cover damage resulting from the use or inability to use 3M™ VHB™ Tape due to misuse, workmanship in application, or application or storage not in accordance with 3M recommended procedures (except to the extent 3M approves and issues a specific application warranty, for which the customer must apply, receive 3M approval, and meet all applicable warranty and process requirements, the additional details, terms, and conditions of which are available from 3M). 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.

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.

ISO Statement

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