English-US

Last Revision Date: September, 2024

Supersedes: June, 2024

Technical Data Sheet

3M™ Double Coated Tape 9731-050

Product Details

Regulatory Info/SDS

Product Description

3M™ Double Coated Tape 9731-050 features 3M™ High Performance Acrylic Adhesive 350 on the acrylic adhesive side which provides a combination of high wet grab and initial adhesion to a wide variety of materials including LSE plastics. This tape features a silicone adhesive on the other side which provides adhesion to many difficult to bond to substrates including silicone rubbers and low surface energy(LSE) plastics.

Product Features

• Silicone adhesive provides good bond to silicone rubber, strong holding power to various silicone surfaces, good temperature performance and good solvent resistance. • 3M™ Adhesive 350 provides very high adhesion to a wide variety of materials, excellent shear holding power, high temperature resistance and excellent UV resistance. • A thin polyester carrier provides dimensional stability and improved handling with ease of die cutting and lamination compared to adhesive transfer tapes.

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	Test Condition	Value
Adhesive Type		Faceside	350 Acrylic Adhesive [1]
Adhesive Type		Backside	Silicone Adhesive [2]
Adhesive Carrier			Clear PET (Polyester)
Total Tape Thickness	ASTM D3652		0.05 mm (2 mil)
Carrier Thickness			0.014 mm (0.56 mil)
Adhesive Thickness		Faceside	0.02 mm (0.8 mil) [1]
Adhesive Thickness		Backside	0.015 mm (0.6 mil) [2]

[1] Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.

[2] Backside adhesive is on the exterior of the roll, exposed when liner is removed.

Attribute Name	Value
Primary Liner Type	58# Polycoated Kraft [1]
Secondary Liner Type	Fluoropolymer non-Silicone [1]
Primary Liner Thickness	0.074 mm (2.9 mil)
Secondary Liner Thickness	0.107 mm (4.2 mil)
Primary Liner Color	Tan
Secondary Liner Color	Clear

[1] Inner liner is primary (stays with die-cut part); Outer liner is secondary (removed first)

Typical Performance Characteristics

180° Peel Adhesion

Backing: 2 mil Aluminum Foil
Test Method: ASTM D3330

Dwell Time	Temperature	Test Condition	Substrate	Value
15 min	23 °C (73 °F)	Silicone Side	Stainless Steel	2.81 N/cm (25.7 oz/in) [1]
15 min	23 °C (73 °F)	Acrylic Side	Stainless Steel	5.4 N/cm (49.3 oz/in) [1]
72 h	23 °C (73 °F)	Acrylic Side	ABS	4,88 N/cm (44.6 oz/in) [1]
72 h	23 °C (73 °F)	Acrylic Side	Polycarbonate (PC)	5,47 N/cm (50 oz/in) [1]
72 h	23 °C (73 °F)	Acrylic Side	Polypropylene (PP)	3,39 N/cm (31 oz/in) [1]
72 h	23 °C (73 °F)	Silicone Side	Stainless Steel	2,96 N/cm (27 oz/in) [1]
72 h	23 °C (73 °F)	Acrylic Side	Stainless Steel	6,26 N/cm (57.2 oz/in) [1]
72 h	23 °C (73 °F)	Silicone Side	ABS	2,76 N/cm (25.2 oz/in) [1]
72 h	23 °C (73 °F)	Silicone Side	Polycarbonate (PC)	2,74 N/cm (25 oz/in) [1]
72 h	23 °C (73 °F)	Silicone Side	Polypropylene (PP)	2,61 N/cm (23.8 oz/in) [1]
72 h	70 °C (158 °F)	Silicone Side	Stainless Steel	3,11 N/cm (28.4 oz/in) [1]
72 h	70 °C (158 °F)	Acrylic Side	Stainless Steel	6,59 N/cm (60.2 oz/in) [1]

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

Attribute Name	Value
Short Term Temperature Resistance	177 °C (350 °F) [1]
Long Term Temperature Resistance	93 °C (200 °F) [2]

[1] Short Term (minutes, hour)
[2] Long Term (day, weeks)

Electrical and Thermal Properties

Attribute Name	Test Method	Temperature	Test Condition	Value
Dielectric Strength	ASTM D1000			8,000 V [1]
Surface Resistivity (350 Acrylic)	ASTM D257	23 °C (73 °F)	Acrylic Side	7.4×10^{15} Ω-cm [2]
Surface Resistivity (Silicone)	ASTM D257	23 °C (73 °F)		2.6×10^{15} Ω-cm [3]
Volume Resistivity	ASTM D257	23 °C (73 °F)		3.4×10^{15} Ω-cm

[1] RMS Voltage/Thickness
[2] 350 Acrylic
[3] Silicone

Handling/Application Information

Application Examples

- Bonding dissimilar materials.
- Silicone gasket bonding.
- Bond silicone rubber materials to other substrates.

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improves bond strength.
To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or acetone.

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.

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 18 months from date of manufacture.

Recognition/Certification

MSDS:3M has not prepared a MSDS for these products which are not subject 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, these products should not present a health and safety hazard. However, use or processing of these products in a manner not in accordance with the directions for use may affect their performance and present potential health and safety hazards.

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.

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.

3M™ Industrial Adhesives and Tapes Division
3M Center, St. Paul, MN 55144-1000
3M.com/iatd