Double Coated Tapes with Adhesive 350 and Silicone Adhesive

9731-100 • 9731-085 • 9731-050

Technical Data **March, 2013**

Product Description

3M™ Silicone/Acrylic Double Coated Tapes 9731-050, 9731-085, and 9731-100 feature 3M™ Hi 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.

3M™ Silicone/Acrylic Double Coated Tapes 9731-050, 9731-085, and 9731-100 feature a silicone adhesive on the other side which provides adhesion to many difficult to bond to substrates including silicone rubbers and low surface energy plastics.

Construction Information



Adhesive 1 Type: Silicone

Adhesive 2 Type: 3M™ High Performance Acrylic Adhesive 350

Acrylic adhesive is on the interior of the roll

Silicone adhesive is on the exterior of the roll

Product	Adhesive 1 Thickness	Carrier Type Carrier Thickness	Adhesive 2 Thickness	Liner 1 Type Liner 1 Thickness	Liner 1 Color	Liner 2 Type Liner 2 Thickness	Liner 2 Color	Total Tape Thickness (without liners)
9731-050	Silicone 0.8 mils (.020 mm)	Polyester 0.56 mils (.014 mm)	Acrylic 0.6 mils (.015 mm)	Polyester 2.9 mils (.074 mm)	Transparent	58# PCK 4.2 mils (.107 mm)	Brown	50 microns (0.050 mm)
9731-085	Silicone 1.7 mils (.043 mm)	Polyester 0.56 mils (.014 mm)	Acrylic 1.1 mils (.029 mm)	Polyester 2.9 mils (.074 mm)	Transparent	58# PCK 4.2 mils (.107 mm)	Brown	85 microns (0.085 mm)
9731-100	Silicone 2.1 mils (.053 mm)	Polyester 0.56 mils (.014 mm)	Acrylic 1.3 mils (.033 mm)	Polyester 2.9 mils (.074 mm)	Transparent	58# PCK 4.2 mils (.107 mm)	Brown	100 microns (0.100 mm)

3M™ Double Coated Tapes with Adhesive 350 and Silicone Adhesive

9731-100 • 9731-085 • 9731-050

Typical Physical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Adhesion to Steel ASTM D3330 Back adhesive specimens w/2 mil Al Foil							
		15 min @ RT		72 hr @ RT		72 hr @ 158°F	
Product	Adhesive Type	12 in/min @ 180°		12 in/min @ 180°		12 in/min @ 180°	
		oz/in	N/mm	oz/in	N/mm	oz/in	N/mm
9731-100	Silicone	32.8	0.359	34.2	0.374	36.7	0.402
9731-100	Acrylic	69.1	0.756	72.3	0.791	78.7	0.861
9731-085	Silicone	30.9	0.338	32.5	0.356	32.8	0.359
9731-085	Acrylic	63.6	0.696	73.0	0.799	75.3	0.824
9731-050	Silicone	25.7	0.281	27.0	0.296	28.4	0.311
9731-050	Acrylic	49.3	0.540	57.2	0.626	60.2	0.659

Adhesion to Various Substrates ASTM D3330, 24 hr @ RT, 12 in/min @ 180° Back adhesive specimens w/2 mil Al Foil													
Product	Adhesive Type	Stainless Steel		ABS		Polycarbonate		Polypropylene		Silicone Rubber		HD Polyethylene	
		oz/in	N/mm	oz/in	N/mm	oz/in	N/mm	oz/in	N/mm	oz/in	N/mm	oz/in	N/mm
9731-100	Silicone	33.0	0.361	32.6	0.357	33.0	0.361	33.9	0.371	54.2	0.593	33.9	0.371
9731-100	Acrylic	72.2	0.790	67.4	0.738	70.9	0.776	64.1	0.702	2.1	0.023	28.4	0.311
9731-085	Silicone	29.8	0.326	31.4	0.344	31.1	0.340	31.5	0.345	54.5	0.597	31.8	0.348
9731-085	Acrylic	79.4	0.869	62.7	0.686	68.1	0.745	55.4	0.606	2.0	0.22	26.5	0.290
9731-050	Silicone	23.5	0.257	25.2	0.276	25.0	0.274	23.8	0.261	43.4	0.475	24.2	0.265
9731-050	Acrylic	51.2	0.560	44.6	0.488	50.0	0.547	31.0	0.339	1.9	0.021	19.1	0.209

Environmental Performance

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Humidity Resistance – High humidity has a minimal effect on adhesive performance. Bond strength (is generally higher/shows no significant reduction) after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

UV Resistance – When properly applied, nameplates and decorative trim parts are not adversely affected by outdoor exposure.

Water Resistance – Immersion in water has no appreciable effect on the bond strength. After 100 hours at room temperature, the high bond strength is maintained.

Chemical Resistance – When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including oil, mild acids and alkalis.

Bond Build-up: The bond strength of 3M™ Adhesive 350 increases as a function of time and temperature

Temperature/Heat Resistance: Adhesive 350 is usable for short periods (minutes, hours) at temperatures up to 350°F (177°C) and for intermittent longer periods (days, weeks) up to 200°F (93°C).

Lower Temperature Service Limit: -40°F (-40°C).

Application Ideas

- 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.

3M™ Double Coated Tapes with Adhesive 350 and Silicone Adhesive

9731-100 • 9731-085 • 9731-050

Storage

Store at room temperature conditions of 65°F to 75°F (21°C to 24°C) and 40% to 60% relative humidity.

Shelf Life

If stored properly, product retains its performance and properties for 18 months from date of shipment.

Recognition/ Certification/ Specification

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.

Note: Further information can be found at 3M.com/regs

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product 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. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer

Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 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 OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 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 where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

ISO 9001

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

3M

Industrial Adhesives and Tapes Division
Converter Markets

3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-223-7427 • 651-778-4244 (fax)
www.3M.com/converter

Recycled Paper
40% pre-consumer
10% post-consumer

3M is a trademark of 3M Company.
Printed in U.S.A.
©3M 2013 (3/13)