



Technical Data Sheet

3M™ Adhesive Transfer Tape 9442



Additional Info

Product Description

3M™ Adhesive Transfer Tape 9442 with 3M™ Adhesive 350 is a modified acrylic adhesive ideal for very high-bond strength to many surfaces. It offers excellent shear and peel resistance even at elevated temperatures. This tape is reinforced with discrete glass fibers, which limits elongation, provides structure and is important for roll stability in narrow widths and resists edge oozing. 3M™ 9442 is designed for temperature exposure to 177 °C (350 °F) for short periods of time and up to 149 °C (300 °F) over long time frames.

Product Features

- Intended for metal, high surface energy and low surface energy plastics.
- Designed for chemical resistance and shear and peel strength even at elevated temperatures.
- Reinforced with (or contains) discrete glass fibers, which limits elongation, provide structure and is important for roll stability in narrow widths and resists edge oozing.
- Low odor for improved working environment.
- Additional constructions and thicknesses available using 350 adhesive.

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		350 Fibered Acrylic
Total Tape Thickness	ASTM D3652	0.051 mm (2 mil)
Liner		54# Super Calendered Kraft paper
Liner Thickness		0.08 mm (3.2 mil)
Primary Liner Color		Tan

Typical Performance Characteristics

180° Peel Adhesion

Backing: 2 mil Aluminum Foil

Test Method: ASTM D3330

Dwell Time	Temperature	Environmental Condition	Substrate	Value
20 min	23 °C (73 °F)		Stainless Steel	8.0 N/cm (73 oz/in) ¹
72 h	23 °C (73 °F)		Stainless Steel	9.2 N/cm (84 oz/in) ¹
72 h	23 °C (73 °F)		ABS	8.2 N/cm (75 oz/in) ¹
72 h	23 °C (73 °F)		Polypropylene (PP)	8.5 N/cm (78 oz/in) ¹
72 h	70 °C (158 °F)		Stainless Steel	11.6 N/cm (102 oz/in) ¹
72 h	32 °C (90 °F)	90 %RH	Stainless Steel	11.0 N/cm (100 oz/in) ¹

¹ 300 mm/min (12 in/min)

90° Peel Adhesion

Backing: 2 mil Aluminum Foil
Test Method: ASTM D3330

Dwell Time	Temperature	Substrate	Value
20 min	23 °C (73 °F)	Stainless Steel	6.4 N/cm (58 oz/in) ¹
72 h	23 °C (73 °F)	Stainless Steel	6.8 N/cm (63 oz/in) ¹
72 h	23 °C (73 °F)	ABS	6.5 N/cm (59 oz/in) ¹
72 h	23 °C (73 °F)	Polypropylene (PP)	6.0 N/cm (55 oz/in) ¹
72 h	70 °C (158 °F)	Stainless Steel	10.2 N/cm (93 oz/in) ¹

¹ 300 mm/min (12 in/min)

Substrate: Stainless Steel
Test Condition: 500 g
Test Method: ASTM D3654

Attribute Name	Value
Long Term Temperature Resistance	149 °C (300 °F) ¹
Short Term Temperature Resistance	177 °C (350 °F) ²

¹ Maximum temperature where tape supports indicated load per 6.5cm² (1 in²) in static shear for 10,000 minutes.

² Maximum temperature where tape supports indicated load per 6.5cm² (1 in²) in static shear for 60 minutes.

Substrate: Stainless Steel
Temperature: 23 °C (73 °F)
Test Condition: 1000 g
Dwell Time: 72 h
Backing: 2 mil Aluminum Foil

Attribute Name	Test Method	Value
Static Shear	ASTM D3654	10,000 min ¹

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

Shear Adhesion Failure Test - SAFT

Substrate: Stainless Steel
Dwell Time: 72 h
Backing: 2 mil Aluminum Foil
Test Method: PSTC 17

Test Condition	Value
500 g	205 °C (401 °F) ¹
1000 g	122 °C (251 °F) ¹

¹ 25 x 25 mm (1 in x 1 in) Area Contact

Typical Environmental Performance

90° Peel Adhesion

Substrate: Stainless Steel
Backing: 2 mil Aluminum Foil
Test Method: ASTM D3330

Dwell Time	Temperature	Environmental Condition	Value
72 h	23 °C (73 °F)	Control	100 % ¹
1 h	23 °C (73 °F)	Isopropyl alcohol	89 % of control ¹

Dwell Time	Temperature	Environmental Condition	Value
1 h	23 °C (73 °F)	Acetone	73 % of control ¹
1 h	23 °C (73 °F)	Gasoline	75 % of control ¹
4 h	23 °C (73 °F)	Weak Acid (pH 4)	89 % of control ¹
4 h	23 °C (73 °F)	Weak Base (pH 10)	87 % of control ¹
72 h	23 °C (73 °F)	Water	102 % of control ¹
72 h	23 °C (73 °F)	Salt Water (5% by weight)	80 % of control ¹
72 h	32 °C (90 °F)	90 %RH	106 % of control ¹
72 h	49 °C (120 °F)	Oil (10W30)	146 % of control ¹
96 h		Temperature Cycling: 4 Hours at 70 °C (158 °F). 4 Hours at -29 °C (-20 °F). 16 Hours at 23 °C (73 °F). Repeat four times	140 % of control ¹

¹ 300 mm/min (12 in/min)

Electrical and Thermal Properties

ASTM - E1356
(Reporting Midpoint Tg)

Attribute Name	Value
Glass Transition Temperature (Tg)	-28 °C ¹

¹ Glass Transition Temperature (Tg) determined using DSC Analyzer with a heating rate of 10 °C per minute. Second heat values given.

Handling/Application Information

Application Examples

Ideal adhesive application temperature range is 21 °C to 38 °C (70 °F to 100 °F). Initial application to surfaces at temperatures below 10 °C (50 °F) is not recommended for most pressure sensitive adhesives because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is satisfactory. For more specific information, contact our toll free 3M sales assistance number at 1-800-362-3550.

0.05 mm (2 mil) thick tapes may generally be used for joining materials that are relatively smooth, thin and have low residual stress. For materials with a rough or textured surface, the thicker adhesive film of the 0.127 mm (5 mil) tapes would be more appropriate for evaluation.

Application Techniques

For maximum bond strength the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Consult manufacturer's Material Safety Data Sheet for proper handling and storage instructions. Bond strength can also be improved with firm application pressure and moderate heat (for metal surfaces only), from 38 °C (100 °F) to 54 °C (130 °F), promoting intimate contact with the bonding surfaces.

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	Value
Core Size (ID)	76.2 mm (3 in)
Maximum Available Width	1220 mm (48 in)
Minimum Available Width	12.7 mm (0.50 in)
Normal Slitting Tolerance	± 0.8 mm (± 1/32 in)
Note	Subject to Minimum Order Requirements

Recognition/Certification

TSCA: These products are defined as articles under the Toxic Substances Control Act and therefore, are exempt from inventory listing requirements.

MSDS: These products 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.

UL: Tapes 9442 and 9445 have been recognized by Underwriters Laboratories Inc. under Standard UL 969 Marking and Labeling in File MH26206. Tapes 9482PC and 9485PC have been recognized by Underwriters Laboratories Inc. under Standard UL

746C Polymeric Adhesives Systems, Electrical Equipment Component in File MH17478. If you require official recognition of any 350 adhesive under either UL 969 or UL 746C, please contact 3M-customer service at 1-800-362-3550.

For more information on the UL Certification, please visit the website at <http://www.3m.com/converter>, select UL Recognized Materials, and 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, FDA, California Proposition 65, REACH 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

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ISO Statement

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

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-362-3550 or visit www.3m.com/converter.