

March, 2016

## 3M™ Adhesive Transfer Tape 9471

### Product Description

3M™ Adhesive Transfer Tapes with 3M™ Adhesive 300 offer excellent adhesion to a wide variety of surfaces, including low surface energy plastics and foam. This pressure sensitive medium firm acrylic adhesive family features very high initial adhesion with good holding power and is available in several thicknesses for a wide variety of surface bonding and provides a variety of liner configurations to help ensure excellent process flexibility.



**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**

Property	Values		Notes
Adhesive Thickness	0.05 mm	2 mil	The thickness listed is based on a calculation from manufacturing controlled adhesive coat weights using a density of 1.012 g/cc. While past data pages have listed nominal thicknesses, the coat weight (and theoretical caliper) has not changed.
Liner	60# Densified Kraft, tan with green "3M" print		
Liner Thickness	0.09 mm	3.5 mil	
Liner Color	Tan, Green Print, "3M"		

**Typical Performance Characteristics**

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Substrate	Notes
5.7 N/cm		15	min	Stainless Steel	
52 oz/in		15	min	Stainless Steel	12 in/min (300 mm/min)
3.4 N/cm	31 oz/in	15	min	ABS	12 in/min (300 mm/min)
4.9 N/cm	45 oz/in	15	min	Polypropylene (PP)	12 in/min (300 mm/min)
6.5 N/cm	59 oz/in	72	hr	Stainless Steel	12 in/min (300 mm/min)
3.7 N/cm	34 oz/in	72	hr	ABS	12 in/min (300 mm/min)
5.7 N/cm	52 oz/in	72	hr	Polypropylene (PP)	12 in/min (300 mm/min)

Property: 90° Peel Adhesion  
 Method: ASTM D3330  
 Temp C: 22C  
 Temp F: 72F  
 Environmental Condition: 52%RH  
 Backing: 2 mil Aluminum Foil

**Available Sizes**

**Master Width:** 48 in

**Additional Information**

Notes: More sizes may be available. Please call 800-223-7427 or talk to your local 3M representative for more information.

## Electrical and Thermal Properties

Property	Values	Method	Test Condition
Dielectric Constant	3.21	ASTM D150	1 KHz, Room Temperature
Dissipation Factor	0.04		
Dielectric Strength	340 V/mil	ASTM D149	500 vac, rms[60 hz/sec]
Coefficient of Thermal Expansion	$20 \times 10^{-5}$ m/m/°C	ASTM D696	First Heat
Coefficient of Thermal Expansion	$58 \times 10^{-5}$ m/m/°C	ASTM D696	Second Heat

## Environmental Resistance

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 (increases/is maintained).

Temperature Cycling Resistance – High bond strength (is maintained /increases) after cycling four times through:

4 hours at 158°F (70°C)

4 hours at -20°F (-29°C)

4 hours at 73°F (22°C)

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 300 increases as a function of time and temperature

Temperature/Heat Resistance: Adhesive 300 is usable for short periods (minutes, hours) at temperatures up to 250°F (120°C) and for intermittent longer periods (days, weeks) up to 150°F (65°C).

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

## Handling/Application Information

### Application Ideas

- Long term bonding of graphic nameplates and overlays to surfaces such as metal and low surface energy plastics in the aerospace, medical and industrial equipment, automotive, appliance and electronic markets.
- Bonding metal nameplates and rating plates in the aerospace, medical and industrial equipment, automotive, appliance and electronic markets.
- Lamination to foam for gasket application.

## Handling/Application Information (continued)

### Application Techniques

For maximum bond strength (during installation of the final part) the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane (for oily surfaces) or isopropyl alcohol for plastics. Use reagent grade solvents since common household materials like rubbing alcohol frequently contain oils to minimize the drying effect on skin. These oils can interfere with the performance of a pressure-sensitive adhesive. Consult solvent manufacturers MSDS for proper handling and storage instructions. Also, use disposable wipes that do not contain oils, to remove the cleaning solvents. It is necessary to provide pressure during lamination (1.5-20 PLI recommended) and during final part installation (10-15 PLI) to allow adhesive to come into direct contact with the substrate. Using a hard edged plastic tool, which is the full width of the laminated part, helps to provide the necessary pressure at the point of lamination. Heat can increase bond strength when bonding to metal parts (generally this same increase is observed at room temperature over longer times, weeks). For plastic parts, the bond strength is not enhanced with the addition of heat. The ideal adhesive application temperature range is 70°F (21°C) to 100°F (38°C). Application is not recommended if the surface temperature is below 50°F (10°C) because the adhesive becomes too firm to adhere readily. Once properly applied, at the recommended application temperature, low temperature holding is generally satisfactory (please refer to the Typical Physical Properties and Performance Characteristics section). When bonding a thin, smooth, flexible material to a smooth surface, it is generally acceptable to use 2 mils of adhesive. If a texture is visible on one or both surfaces, the 5 mil adhesive would be suggested. If both materials are rigid, it may be necessary to use a thicker adhesive to successfully bond the components. 3M™ VHB™ Acrylic Foam Tapes may be required (please refer to data page 70-0709-3863-7).

### Application Equipment

To apply adhesives in a wide web format, lamination equipment is required to ensure acceptable quality. To learn more about working with pressure-sensitive adhesives please refer to technical bulletin, Lamination Techniques for Converters of Laminating Adhesives (70-0704-1430-8). For additional dispenser information, contact your local 3M sales representative, or the toll free 3M sales assistance number at 1-800-362-3550.

### Storage and Shelf Life

It is suggested that products are stored at room temperature conditions of 70°F (21°C) and 50% relative humidity. If stored properly, product retains its performance and properties for 24 months from date of manufacture.

### Trademarks

3M is a trademark of 3M Company

### References

Property	Values
3m.com Product Page	<a href="https://www.3m.com/3M/en_US/company-us/all-3m-products/~//3M-Adhesive-Transfer-Tape-9471?N=5002385+3293241832&amp;rt=rud">https://www.3m.com/3M/en_US/company-us/all-3m-products/~//3M-Adhesive-Transfer-Tape-9471?N=5002385+3293241832&amp;rt=rud</a>
Safety Data Sheet (SDS)	<a href="https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&amp;msdsLocale=en_US&amp;co=ptn&amp;q=9471">https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&amp;msdsLocale=en_US&amp;co=ptn&amp;q=9471</a>

**Family Group**

	927	950	950EK	9458	9471	9472	9671	9672	9459W
Adhesive Thickness (mm)	0.05	0.13	0.13	0.025	0.05	0.13	0.05	0.13	0.0375
Liner	60# Densified Kraft	60# Densified Kraft	78# Extensible Kraft	55# Densified Kraft	60# Densified Kraft, tan with green "3M" print	60# Densified Kraft, tan with green "3M" print	83# Polycoated Kraft, tan with green "3M" print	83# Polycoated Kraft, tan with green "3M" print	55# Densified Kraft
Liner Thickness (mm)	0.09	0.09	0.13	0.08	0.09	0.09	0.15	0.15	0.08
Liner Color	Tan, No Print	Tan, No Print	White, No Print	White, No Print	Tan, Green Print, "3M"	Tan, Green Print, "3M"	Tan, Green Print, "3M"	Tan, Green Print, "3M"	

**ISO Statement**

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

**Bottom Matter Images**

[Image 4]

[Image 5]

**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  
 SDS: 3M has not prepared a SDS for this product which is not subjected to the SDS 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 969, Marking and Labeling Systems Materials Component. 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.  
 Military: Meets Mil-P 19834B Type 1.

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, USCPIS, FDA, California Proposition 65, READY and RoHS, can be found at [3M.com/regs](http://3M.com/regs).

## 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.

