



Adhesive Transfer Tape with 300LSE Adhesive

9453FL • 9471FL • 9472FL

Technical Data

August, 2001

Product Description

- 3M™ High-Strength Acrylic Adhesive 300LSE provides very high bond strength to most surfaces.
- Excellent bond to low surface energy plastics such as polypropylene and powder coatings.
- Excellent adhesion to lightly oiled surfaces typical of machine parts.
- Thicknesses of 2 mils, 3.5 mils and 5 mils for use on smooth, and textured surfaces.
- Extremely smooth adhesive for excellent graphic appearances.
- Polyester film liner is ideal for rotary die-cutting, high speed processing, automatic dispensing and clean room environments.
- Polyester film liner resists breakage for one piece liner removal.
- Polyester film liner resists curling or wrinkling in high humidity.

Construction

Product	Tape 9453FL	Tape 9471FL	Tape 9472FL
Adhesive:	3.5 mils (88 microns) 3M 300LSE High Strength Acrylic Adhesive	2 mils (50 microns) 3M 300LSE High Strength Acrylic Adhesive	5 mils (127 microns) 3M 300LSE High Strength Acrylic Adhesive
Liner:	2 mils (50 microns) Polyester Film	2 mils (50 microns) Polyester Film	2 mils (50 microns) Polyester Film

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Typical Physical Properties and Performance Characteristics

Typical Adhesion Properties

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

Peel Adhesion - ounces/inch (Newtons/100 mm) ASTM D3330, modified 90° peel, 2 mil aluminum backing.

Typical Adhesion Chart

	Tape	15 Minute Room Temperature		72 Hour Room Temperature	
		Oz./In.	N/100 mm	Oz./In.	N/100 mm
Stainless Steel	9453FL	90	98	100	109
	9471FL	71	78	75	82
	9472FL	109	119	140	153
ABS	9453FL	80	88	113	124
	9471FL	70	77	79	86
	9472FL	102	112	128	140
Polypropylene	9453FL	89	97	103	113
	9471FL	69	75	74	81
	9472FL	115	126	136	149

Bond Build-up: The bond strength of 3M™ High-Strength Acrylic Adhesive 300LSE increases as a function of time and temperature, and has very high initial adhesion.

Humidity Resistance: High humidity has a minimal effect on adhesive performance. No significant reduction in bond strength is observed after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

U.V. Resistance: When properly applied, adhesive bond is not adversely affected by 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.

Temperature Cycling Resistance: High bond strength is maintained after cycling four times through the following conditions:

- 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, adhesive bond will hold securely after exposure to numerous chemicals including oil, mild acids and alkalis.

Temperature Resistance: 3M high-strength acrylic adhesive 300LSE is usable for short periods (minutes, hours) at room temperatures up to 300°F (148°C) and for intermittent longer periods of time (days, weeks) up to 200°F (93°C).

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

Shelf Life: Product retains its performance properties for two years from date of manufacture if properly stored at room temperature conditions of 72°F (22°C) and 50% relative humidity. Storage in plastic bag is recommended.

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Available Sizes:

Width and Length (subject to minimum order requirements):

Limitations:	1/2 in. to 63/64 in.: Maximum 180 yards 1 in. to 54 in.: Maximum 360 yards
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Minimum Slit Width:	1/2 in.
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Maximum Slit Width:	54 in.
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Normal Slitting Tolerance:	± 1/32 in.
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Core	3 in.
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Application Techniques:

For maximum bond strength, the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Carefully read and follow manufacturer's precautions and directions for use when using cleaning solvents. This cleaning recommendation may not be compliant with the rules of certain Air Quality Management Districts in California; consult applicable rules before use.

Bond strength can also be improved with firm application pressure and moderate heat, from 100°F (38°C) to 130°F (54°C) which causes the adhesive to develop improved contact with the bonding surface.

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 for most pressure-sensitive adhesives because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

General Information

Processing:

Slitting and die-cutting: This adhesive is very aggressive and may be difficult to convert depending on your application requirements. Chilling the adhesive between 35 and 50°F will improve the processability. In addition, dies can be lubricated with Laminoleum evaporative stamping oil, which is available from Metal Lubricants Company (708-333-8900) or with Lubri-Blade 907 from Ceramic Technologies Inc. (800-258-8495). You may also refer to our **Guide to Converting 3M Laminating Adhesive 300LSE Technical Bulletin**.

Roll Laminating: A combination of metal and rubber rollers with moderate pressure (approx. 14 psi) is recommended.

Note: Please refer to the **3M Slitting/Die-cutting Technical Bulletin** for further details.

Application Ideas

- Nameplates and graphic overlays printed and die-cut by rotary processing techniques.
- Labels engineered for performance with protected graphics for environmental durability (e.g., automotive under hood labels).
- Gaskets and other die-cut parts for use on difficult to bond to surfaces.
- Graphics and die-cut parts for application to oily metals, powder coatings or low surface energy plastics.

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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/bonding. Address correspondence to: 3M Engineered Adhesives Division, 3M Center, Building 220-7E-01, St. Paul, MN 55144-1000. Our fax number is 651-733-9175. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

Recognition/Certification

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

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

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ISO 9002

This Engineered Adhesives Division product was manufactured under a 3M quality system registered to ISO 9002 standards.



Engineered Adhesives Division

3M Center, Building 220-7E-01
St. Paul, MN 55144-1000



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