Technical Data Sheet

3M™ Adhesive Transfer Tape 9453FL

English-US
Last Revision Date: June, 2024
Supersedes: May, 2022

Regulatory Info/SDS

Product Description

Finite Element Analysis (FEA) data is available for this product at: **3m.com/FEA**

3M™ Adhesive Transfer Tapes with 3M™ Low Surface Energy Acrylic Adhesive 300LSE provides high bond strength to most surfaces, including many low surface energy plastics such as polypropylene and powder coated paints. The acrylic adhesive also provides excellent adhesion to surfaces contaminated lightly with oil typically used with machine parts.

Product Features

• Bonding to low surface energy substrates including powder coatings and plastics such as polypropylene (PP) • High adhesion to metals and high surface energy materials, making it suitable for bonding dissimilar substrates • Adhesive provides holding power and anti-lifting properties • Resistance to industrial chemicals, consumer chemicals, moisture and humidity • Solution for general purpose attachment and assemblies of wide variety of materials • Meets a wide variety of automotive and OEM specifications

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.

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		3M 300LSE High Strength Acrylic Adhesive
Total Tape Thickness	ASTM D3652	0.088 mm (3.5 mil)
Liner		Polyester Film
Liner Thickness		0.05 mm (2 mil)

Typical Performance Characteristics

90° Peel Adhesion

Temperature: 22 °C (72 °F)
Backing: 2 mil Aluminum Foil
Test Method: ASTM D3330

Dwell Time	Substrate	Value
15 min	ABS	8.8 N/cm (80 oz/in) [1]
15 min	Polypropylene (PP)	9.7 N/cm (89 oz/in) [1]
15 min	Stainless Steel	9.8 N/cm (90 oz/in) [1]
72 h	ABS	12.4 N/cm (113 oz/in) [1]

Dwell Time	Substrate	Value
72 h	Polypropylene (PP)	11.3 N/cm (103 oz/in) [1]
72 h	Stainless Steel	10.9 N/cm (100 oz/in) [1]

[1] 12 in/min (300 mm/min)

Attribute Name	Value
Short Term Temperature Resistance	149 °C (300 °F) [1]
Long Term Temperature Resistance	93 °C (200 °F) [2]
Minimum Long Term Temperature Resistance	-40 °C (-40 °F) [2]

[1] Short Term (minutes, hour)

[2] Long Term (day, weeks)

Typical Environmental Characteristics

Environmental Resistance

Bond Build-up: The bond strength of 3MTM 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.

UV 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.

Handling/Application Information

Application Examples

• Nameplates and graphic overlays printed and die-cut by rotary processing techniques.
• Labels engineers 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.

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 for 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.

The 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 (100°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.

Industry Specifications

FDA Statement

This product might be suitable for use in indirect food contact applications. Please see the applicable Regulatory Data Sheet for more information relating to FDA compliance.

Storage and Shelf Life

Store under normal conditions of 16° to 27°C (60° to 80°F) and 40 to 60% relative humidity in a sealed plastic bag, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

Available Sizes

Attribute Name	Width	Value
Core Size (ID)		76.2 mm (3 in)
Maximum Length	1/2 in to 63/64 in	165 m (180 yd)
Maximum Length	1 in to 54 in	329 m (360 yd)
Maximum Slit Width		1372 mm (54 in)
Minimum Slit Width		12.7 mm (1/2 in)
Normal Slitting Tolerance		± 0.8 mm (± 1/32 in)
Note		Subject to Minimum Order Requirements

Recognition/Certification

MSDS:3M has not prepared an 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 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.

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/bonding.

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