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## 3M™ Adhesive Transfer Tape 467MP

### Product Description

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

3M™ High Performance Acrylic Adhesive 200MP is a popular choice for graphic attachment and general industrial joining applications. It provides outstanding adhesion to metal and high surface energy plastics. This adhesive provides some initial repositionability for placement accuracy when bonding to plastics. It also performs well after exposure to humidity and hot/cold cycles.

### Product Features

- Up to 400°F short-term heat resistance
- Excellent solvent resistance
- Excellent shear strength to resist slippage and edge lifting



**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		Test Name
Adhesive Thickness	0.06 mm	2.3 mil	
Liner	58# Polycoated Kraft Paper (PCK)		
Liner Color	Tan		Primary
Liner Thickness	0.11 mm	4.2 mil	

**Typical Performance Characteristics**

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Backing	Notes
5.4 N/cm		15	min	23C	72F	50%RH	Stainless Steel	2 mil Aluminum Foil	
49 oz/in		15	min	23C	72F	50%RH	Stainless Steel	2 mil Aluminum Foil	12 in/min (300 mm/min)
10 N/cm								2 mil Aluminum Foil	12 in/min (300 mm/min) Stainless Steel 72 hr dwell @ 72 °F (23 °C) & 50% RH
92 oz/in		72	hr	23C	72F	50%RH	Stainless Steel	2 mil Aluminum Foil	12 in/min (300 mm/min)
16.7 N/cm	153 oz/in	72	hr	70C	158F	50%RH	Stainless Steel	2 mil Aluminum Foil	12 in/min (300 mm/min)
7 N/cm	64 oz/in	72	hr	23C	72F	50%RH	Aluminum	2 mil Aluminum Foil	12 in/min (300 mm/min)
2.4 N/cm	22 oz/in	72	hr	23C	72F	50%RH	ABS	2 mil Aluminum Foil	12 in/min (300 mm/min)
7 N/cm	64 oz/in	72	hr	23C	72F	50%RH	Acrylic (PMMA)	Aluminum Foil	
9.9 N/cm	90 oz/in	72	hr	23C	72F	50%RH	Glass	2 mil Aluminum Foil	12 in/min (300 mm/min)
4.4 N/cm	40 oz/in	72	hr	23C	72F	50%RH	Polyvinyl chloride (PVC)	Aluminum Foil	

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Typical Performance Characteristics (continued)

90° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition	Substrate	Backing	Notes
7.8 N/cm	71 oz/in	72	hr	23C	72F	50%RH	Polycarbonate (PC)	2mil Aluminum Foil	12 in/min (300 mm/min)

Property: 90° Peel Adhesion  
Method: ASTM D3330

Static Shear	Test Condition
10000+ min	1000 g load @ Room Temperature
10000+ min	1000 g load @ 70°C (158°F)
10000+ min	1000 g load @ 93°C (200°F)
10000+ min	500 g load @ 177°C (350°F)
2284 min	400 g load @ 232°C (450°F)
10000+ min	200 g load @ 232°C (450°F)

Property: Static Shear  
notes: 1in x 1in size; test terminated after 10,000 minutes

Environmental Resistance		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition
9.5 N/cm	87 oz/in	24	hr	23C	72F	Control
7.9 N/cm	72 oz/in	1	hr	23C	72F	Gasoline
7.7 N/cm	70 oz/in	1	hr	23C	72F	MEK
7.7 N/cm	70 oz/in	1	hr	23C	72F	Weak Acid
7.2 N/cm	66 oz/in	1	hr	23C	72F	Weak Base
13.9 N/cm	127 oz/in	72	hr	49C	120F	Oil (10W30)
9.5 N/cm	87 oz/in	100	hr	23C	72F	Water
9.5 N/cm	87 oz/in	72	hr	49C	120F	Salt Water (5%)
11.9 N/cm	109 oz/in	7	day	32C	90F	90%RH
11.4 N/cm	104 oz/in	2000	hr			UV Conditions - ASTM G-154 Cycle 1

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**Typical Performance Characteristics (continued)**

Environmental Resistance		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Environmental Condition
12.3 N/cm	112 oz/in	72	hr			Temperature Cycling: 4 Hours at 158°F (70°C). 4 Hours at -20°F (-29°C). 16 Hours at Room Temperature. Repeat three times

Property: Environmental Resistance

Test Name: 90o Peel

Substrate: Stainless Steel

Backing: 2 mil Aluminum Foil

notes: 90° peel, 12 ipm; 2 mil foil backing. Adhesion values above 80 oz/1" is considered to be a permanent bond. All Bonds dwelled for 24 hrs @ 23C before conditioning.

Property	Values		Method	Substrate	Notes	Dwell/Time	Dwell Units	Temp C	Temp F	Environmental Condition	Backing
Tensile Lap Shear – Peak Load	164 lb		ASTM D1002	#6061 Aluminum	0.5 in <sup>2</sup>						
180° Peel Adhesion	8.4 N/cm	77 oz/in	ASTM D3330	Stainless Steel	12 in/min (300 mm/min)	72	hr	23C	72F	50%RH	Aluminum Foil

**Electrical and Thermal Properties**

Property	Values		Method	Test Condition	Temp C	Temp F	Notes
Breakdown Voltage	1760 V						
Insulation Resistance	>2.5 × 10 <sup>16</sup> Ω		Mil-I-46058C	test voltage = 100 VDC			
Dielectric Constant 1KHz	2.72		ASTM D150	1 KHz	23C	72F	
Dissipation Factor	0.017						

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**Electrical and Thermal Properties (continued)**

Property	Values		Method	Test Condition	Temp C	Temp F	Notes
Dielectric Strength	690 V/mil		ASTM D149	500 vac, rms[60 hz/sec]			
Thermal Conductivity	0.18 W/m/K	1.21 (btu-in)/(h-ft <sup>2</sup> -°F)	ASTM C518	109°F(43°C)			results listed are at 109°F
Coefficient of Thermal Expansion	618 ppm/°C						

**Environmental Resistance**

Humidity Resistance – High humidity has a minimal effect on adhesive performance. Bond strength 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.

Temperature Cycling Resistance – High bond strength is maintained 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™ High Performance Acrylic Adhesive 200MP increases as a function of time and temperature

Temperature/Heat Resistance: 3M™ High Performance Acrylic Adhesive 200MP is usable for short periods (minutes, hours) at temperatures up to 400°F (204°C) and for intermittent longer periods (days, weeks) up to 300°F (149°C).

Lower Temperature Service Limit: The glass transition temperature for 3M™ High Performance Acrylic Adhesive 200MP is -31°F (-35°C). Many applications survive below this temperature (factors affecting successful applications include: materials being bonded, dwell at RT before cold exposure, and stress below the TG [i.e. expansion/contraction stresses, impact]). Optimum conditions are: bonding high surface energy materials, longer time at RT before cold exposure, and little or no stress below the TG. The lowest service temperature is -40°F (-40°C).

**Handling/Application Information****Application Ideas**

- Long term bonding of graphic nameplates and overlays (“subsurface” printed polycarbonate or polyester) to metal and high surface energy plastics in the aerospace, medical and industrial equipment, automotive, appliance and electronics markets.
- Bonding metal nameplates and rating plates in the aerospace, medical and industrial equipment, automotive, appliance and electronics markets.
- Bonding graphic overlays for membrane switches and for bonding the complete switch to the equipment surface.
- High speed processing of parts in the medical, telecommunications and electronics markets (medical components, durable labels, and flexible circuits).
- Lamination to industrial foams for rotary die-cutting of small gaskets for industrial and electronics markets.

## 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 affect on skin and can interfere with the performance of a pressure-sensitive adhesive.

\*Note: Carefully read and follow the manufacturer's precautions and directions for use when working with solvents. These cleaning recommendations may not be in compliance with the rules of certain air quality management districts in California; consult applicable rules before use.

It is necessary to provide pressure during lamination (1.5-20 pli recommended) and during final part installation (10-15 psi) to allow the 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 60°F (15.6°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 section VII of the Typical Physical Properties and Performance Characteristics).

When bonding a thin, smooth, flexible material to a smooth surface, it is generally acceptable to use 2 mils of 3M™ Adhesive 200MP. If a texture is visible on one or both surfaces, the 5 mil 3M adhesive 200MP 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 the data page 70-0709-3830-6).

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

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### References

#### Safety Data Sheet (SDS)

[https://www.3m.com/3M/en\\_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en\\_US&co=ptn&q=467MP](https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=467MP) in

#### Methods

ASTM D3652

### ISO Statement

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

## 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

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