

November, 2011

3M™ Double Coated Tape 9690

Product Description

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

3M™ Double Coated Tapes with 3M™ Laminating Adhesive 300MP feature a thin polyester film for dimensional stability and improved handling with ease of die cutting and laminating. 3M adhesive 300MP offers excellent adhesion to many plastics and good shear strength and provides exceptional temperature and chemical resistance that withstands tough application environments.



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		Method	Test Name
Total Tape Thickness	0.14 mm	5.5 mil	ASTM D3652	
Carrier Thickness	0.013 mm	0.5 mil		
Adhesive Type	Acrylic			
Adhesive Carrier	Clear PET (Polyester)			
Liner	83# Polycoated Kraft, "3M" print			
Liner Print	None			
Liner Color	Tan			Primary
Liner Thickness	0.16 mm	6.2 mil		

Adhesive Thickness		Test Name	Notes
0.058 mm		Backside	The caliper listed is based on a calculation from manufacturing controlled adhesive coat weight. While past data pages have listed nominal thicknesses of 1 and 2 mils, the coat weight (and theoretical caliper) has not changed.
2.3 mil		Backside	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
0.071 mm	2.8 mil	Faceside	Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.

Property: Adhesive Thickness

Typical Performance Characteristics

90° Peel Adhesion		Temp C	Temp F	Substrate	Backing	Notes
115 oz/in	12.6 N/cm	70C	158F	Stainless Steel	2 mil Aluminum Foil	12 in/min (300 mm/min)
6 N/cm	55 oz/in	23C	72F	ABS	2 mil Aluminum Foil	12 in/min (300 mm/min)
5.5 N/cm	50 oz/in	23C	72F	Polycarbonate (PC)	2 mil Aluminum Foil	12 in/min (300 mm/min)

Table continued on next page

3M™ Double Coated Tape 9690

Typical Performance Characteristics (continued)

90° Peel Adhesion		Temp C	Temp F	Substrate	Backing	Notes
5.5 N/cm	50 oz/in	23C	72F	Polyester (PET)	Aluminum Foil	

Property: 90° Peel Adhesion
 Method: ASTM D3330
 Dwell/Cure Time: 72
 Dwell Time Units: hr
 Environmental Condition: 50%RH

90° Peel Adhesion Stainless Steel		Dwell/Cure Time	Dwell Time Units
115 oz/in	12.6 N/cm	72	hr
4.9 N/cm	45 oz/in	15	min

Property: 90° Peel Adhesion Stainless Steel
 Method: ASTM D3330
 Test Name: 90° Peel Adhesion
 Temp C: 23C
 Temp F: 72F
 Environmental Condition: 50%RH
 Substrate: Stainless Steel
 Backing: 2 mil PET
 notes: 12 in/min (300 mm/min)

Property	Values		Test Condition	Method	Notes	Dwell Time	Dwell Units	Temp C	Temp F	Environmental Condition	Substrate	Backing
Short Term Temperature Resistance	121 °C	250 °F	Short Term									
			(minutes, hour)									
Long Term Temperature Resistance	93 °C	200 °F	Long Term									
			(day, weeks)									
Static Shear	1500 min		1000 g @ Room Temperature	ASTM D3654	0.5 in² sample size							
Static Shear	500 min		500 g @ 70°C (158°F)	ASTM D3654	0.5 in² sample size							
180° Peel Adhesion	13.7 N/cm	125 oz/in		ASTM D3330	12 in/min (300 mm/min)	72	hr	23C	72F	50%RH	Stainless Steel	Aluminum Foil

3M™ Double Coated Tape 9690

Available Sizes

Property	Values		Test Name
Note	Subject to minimum order requirements		
Minimum Available Width	12.7 mm	2021-01-02 00:00:00 in	
Maximum Available Width	1372 mm	54 in	
Normal Slitting Tolerance	± 0.8 mm	± 1/32 in	
Core Size	76.2 mm	3 in	ID

Maximum Length		Width
164 m	180 yd	1/2 in to 63/64 in
329 m	360 yd	1 in to 54 in

Property: Maximum Length

Electrical and Thermal Properties

Breakdown Voltage: 5700 V

Typical Environmental Performance

Environmental Resistance

Humidity Resistance: High humidity has minimal effect on adhesive performance. No significant reduction in bond strength is observed after exposure for seven 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 exposure to direct sunlight.

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.

Handling/Application Information

Application Examples

- Cellular phone lens attachment
- Foam Lamination
- Nameplates
- Appliques
- Decorate Trim
- Thermal and sound dampening applications in the electronics and appliance industry.

Handling/Application Information (continued)

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure and moderate heat, from 100°F (38°C) to 130°F (54°C), will assist the adhesive in developing intimate contact with the bonding surface.

To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane.* 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 because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

*Note: Carefully read and follow the manufacturer’s precautions and directions for use when working with solvents. These cleaning recommendations may not be compliant with the rules of certain Air Quality Management Districts in California; consult applicable rules before use.

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 1-800-251-8634.

Directions for Use

Adding Liners to 3M™ Double Coated Tapes with 3M™ Laminating Adhesive 300MP

1. Rotary processing, tape only, on a densified (outside of #4994) kraft liner. In this process the tape waste will stay with the 83# PCK liner, leaving adhesive die-cuts dispensable from the #4994 (densified kraft) liner.
2. Current process limitations prevent the supply of 3M™ Laminating Adhesive 300MP on a DK liner

Storage and Shelf Life

Store in original cartons at 70°F (21°C) and 50% relative humidity.

If stored under proper conditions, 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	https://www.3m.com/3M/en_US/p/d/b00027159/
Safety Data Sheet SDS	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=9690

Family Group

	9690	9690B	9609
Adhesive Thickness (mm) Test Name: Faceside	0.071	0.071	0.089
Liner Color Test Name: Primary	Tan	Tan	Tan

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3M™ Double Coated Tape 9690

Family Group (continued)

	9690	9690B	9609
Short Term Temperature Resistance (°C) Test Condition: Short Term (minutes, hour)	121	121	149
Adhesive Thickness (mm) Test Name: Backside	0.058	0.058	0.089
Long Term Temperature Resistance (°C) Test Condition: Long Term (day, weeks)	93	93	93
Total Tape Thickness (mm)	0.14	0.14	0.23
Carrier Thickness (mm)	0.013	0.013	0.051
Adhesive Type	Acrylic	Acrylic	
Adhesive Carrier	Clear PET (Polyester)	Black PET (Polyester)	Clear PET (Polyester)
Liner	83# Polycoated Kraft, "3M" print	83# Polycoated Kraft, "3M" print	83# Polycoated Kraft, no print
Liner Thickness (mm)	0.16	0.16	0.16

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to: 3M, Electronics Markets Materials Division, 3M Center, Building 225-3S-06, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. 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 a MSDS for this product which is 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, the 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.

TSCA: This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements.

RoHs Complaint/REACH Compliant: This product complies with the European Union's "Restriction of Hazardous Substances" (RoHs) initiative and with European REACH regulations 2002/95/EC and 2005/618/EC

Information

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