

September, 2008

3M™ Double Coated Tape 444PC

Product Description

3M™ Double Coated Tapes with 3M™ Adhesive 300 feature a thin polyester film for dimensional stability and improved handling with ease of die cutting and laminating. The high tack adhesive provides relatively high initial adhesion and good shear holding power to a variety of surfaces. The carrier also provides easier handling during slitting and die cutting.

Product Features

- 3M™ Double Coated Tape 444PC is provided on a polycoated kraft liner that provides moisture stability for large part converting.
- 3M™ Adhesive 300 is a medium-firm acrylic adhesive system featuring both high initial adhesion and good high temperature holding power.



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		Attribute Modifier	Notes
Total Tape Thickness without liner	0.1 mm	3.9 mil		
Carrier Thickness	0.013 mm	0.5 mil		
Adhesive Type	300		Faceside	Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.
Adhesive Type	300		Backside	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
Adhesive Carrier	Clear PET (Polyester)			
Liner	58# Polycoated Kraft			
Liner Color	Tan		Primary	
Liner Thickness	0.1 mm	4 mil		

Adhesive Thickness		Attribute Modifier	Notes
0.036 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.
1.4 mil		Backside	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
0.051 mm	2 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		Dwell/Cure Time	Dwell Time Units	Temp C	Temp F	Substrate	Backing	Notes
3.5 N/cm		15	min	22C	72F	Stainless Steel	2 mil Aluminum Foil	
32 oz/in		15	min	22C	72F	Stainless Steel	2 mil Aluminum Foil	12 in/min (300 mm/min)
6.6 N/cm	61 oz/in	72	hr	22C	72F	Stainless Steel	2 mil Aluminum Foil	12 in/min (300 mm/min)
9.4 N/cm	86 oz/in	72	hr	70C	158F	Stainless Steel	2 mil Aluminum Foil	12 in/min (300 mm/min)
6 N/cm	55 oz/in	72	hr	22C	72F	ABS	2 mil Aluminum Foil	12 in/min (300 mm/min)
4.7 N/cm	43 oz/in	72	hr	22C	72F	Polypropylene (PP)	2 mil Aluminum Foil	12 in/min (300 mm/min)
7 N/cm	64 oz/in	72	hr	22C	72F	Polycarbonate (PC)	2 mil Aluminum Foil	12 in/min (300 mm/min)
6.6 N/cm	61 oz/in	72	hr	22C	72F	Polyester (PET)	Aluminum Foil	

Property: 90° Peel Adhesion
 Method: ASTM D3330
 Environmental Condition: 52%RH

Relative High Temperature Operating Ranges	Test Condition
121 °C	250 °F Short Term (minutes, hours)
82 °C	180 °F Long Term (days, weeks)

Property: Relative High Temperature Operating Ranges

Property	Values	Method	Test Condition	Notes	Dwell Time	Dwell Units	Temp C	Temp F	Environmental Condition	Substrate	Backing
Static Shear	813 min	ASTM D3654	1000 g @ Room Temperature	0.5 in² sample size							
Static Shear	3 min	ASTM D3654	500 g @ 70°C (158°F)	0.5 in² sample size							

Table continued on next page

Typical Performance Characteristics (continued)

Property	Values	Method	Test Conditions	Notes	Dwell Time	Dwell Units	Temp C	Temp F	Environmental Conditions	Substrate	Backing
Solvent Resistance	Medium-Low										
UV Resistance	Medium										
180° Peel Adhesion	12.5 N/cm 115 oz/in	ASTM D3330		12 in/min (300 mm/min)	72	hr	22C	72F	52%RH	Stainless Steel	Aluminum Foil

Available Sizes

Property	Values	Attribute Modifier
Note	Subject to Minimum Order Requirements	
Standard Roll Length	33 m	36 yd
Minimum Available Width	6.35 mm	1/4 in
Maximum Available Width	1219 mm	48 in
Normal Slitting Tolerance	± 0.8 mm	± 1/32 in
Core Size	76.2 mm	3 in
		ID

Maximum Length	Width
165 m	180 yd
329 m	360 yd
	1/4in - 1/2in
	1/2 in - 48in

Property: Maximum Length

Handling/Application Information

Application Ideas

- Medical/non-medical diagnostic test strips
- Plastic film lamination/bonding
- Splicing
- Foam lamination
- Cell phone lens attachment
- Gasket attachment in hand held devices and laptops

Handling/Application Information (continued)

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improves bond strength.

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.

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.

Liner Configure Guide

General purpose steel rule die cutting	58# PCK (Polycoated Kraft)
Steel rule cutting many nameplates on common sheet	86# PCK
Kiss cutting, steel rule	86# PCK
Rotary die-cutting	Densified Kraft, PET
Selective die-cutting (cut adhesive before laminate)	Double-lined
Thermoforming	HDPE (High density Polyethylene)
Part inspection	HDPE, PET
Embossed metal parts	White PP (polypropylene), HDPE
Metal parts (punch press)	PET

Conditions

Width: 1/2 to 2 in widths

Storage and Shelf Life

Store in original carton 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/company-us/all-3m-products/-/3M-Double-Coated-Tape-444PC?N=5002385+3293242026&rt=rud
Safety Data Sheet (SDS)	https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=444PC

3M™ Double Coated Tape 444PC

Family Group

	444	444PC	9009	9019	9039
Adhesive Type Attribute Modifier: Faceside	300	300	300	300	300
Adhesive Thickness (mm) Attribute Modifier: Faceside	0.051	0.051	0.02	0.0084	0.038
Relative High Temperature Operating Ranges (°C) Test Condition: Long Term (days, weeks)	82	82	82	82	82
Adhesive Thickness (mm) Attribute Modifier: Backside	0.036	0.036	0.02	0.0084	0.038
Liner Color Attribute Modifier: Primary	White	Tan	White	White	Clear
Adhesive Type Attribute Modifier: Backside	300	300	300	300	300
Relative High Temperature Operating Ranges (°C) Test Condition: Short Term (minutes, hours)	121	121	121	121	121
Total Tape Thickness without liner (mm)	0.1	0.1	0.05	0.03	0.09
Carrier Thickness (mm)	0.013	0.013	0.013	0.013	0.013
Adhesive Carrier	Clear PET (Polyester)	Clear PET (Polyester)	Clear PET (Polyester)	Clear PET (Polyester)	PET (Polyester)
Liner	55# Densified Kraft	58# Polycoated Kraft	55# Densified Kraft	55# Densified Kraft	55# Densified Kraft
Liner Thickness (mm)	0.076	0.1	0.076	0.076	0.076

ISO Statement

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

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.

