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		Notes
Total Tape Thickness without liner	0.1 mm	3.9 mil	
Faceside Adhesive Thickness	0.051 mm	2 mil	Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.
Backside Adhesive Thickness	0.036 mm	1.4 mil	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
Carrier Thickness	0.013 mm	0.5 mil	
Faceside Adhesive Type	300		Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.
Backside Adhesive Type	300		Backside adhesive is on the exterior of the roll, exposed when liner is removed.
Adhesive Carrier	Clear PET (Polyester)		
Liner	58# Polycoated Kraft		
Liner Thickness	0.1 mm	4 mil	
Liner Color	Tan		

Typical Performance Characteristics

90° Peel Adhesion		Dwell/Cure Time	Substrate
3.5 N/cm	32 oz/in	15 min @ Room Temperature	Stainless Steel
6.6 N/cm	61 oz/in	72 hr @ Room Temperature	Stainless Steel
9.4 N/cm	86 oz/in	72 hr @ 158°F(70°C)	Stainless Steel
6 N/cm	55 oz/in	72 hr @ Room Temperature	ABS
4.7 N/cm	43 oz/in	72 hr @ Room Temperature	Polypropylene (PP)
7 N/cm	64 oz/in	72 hr @ Room Temperature	Polycarbonate (PC)

Table continued on next page

Typical Performance Characteristics (continued)

90° Peel Adhesion		Dwell/Cure Time	Substrate
6.6 N/cm	61 oz/in	72 hr @ Room Temperature	Polyester (PET)

Property: 90° Peel Adhesion
Method: ASTM D3330
Backing: Aluminum Foil

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/Cure Time	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			
Solvent Resistance	Medium-Low							
UV Resistance	Medium							
180° Peel Adhesion	12.5 N/cm	115 oz/in	ASTM D3330			72 hr @ Room Temperature	Stainless Steel	Aluminum Foil

Available Sizes

Property	Values	
Note	Subject to Minimum Order Requirements	
Standard 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 (ID)	76.2 mm	3 in

Available Sizes (continued)

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

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-linered
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.

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.

Trademarks

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=444PC

Family Group

	444	444PC	9009	9019	9039
Relative High Temperature Operating Ranges (°C) Test Condition: Short Term (minutes, hours)	121	121	121	121	121
Relative High Temperature Operating Ranges (°C) Test Condition: Long Term (days, weeks)	82	82	82	82	82
Total Tape Thickness without liner (mm)	0.1	0.1	0.05	0.03	0.09

Table continued on next page

Family Group (continued)

	444	444PC	9009	9019	9039
Faceside Adhesive Thickness (mm)	0.051	0.051	0.02	0.0084	0.038
Backside Adhesive Thickness (mm)	0.036	0.036	0.02	0.0084	0.038
Carrier Thickness (mm)	0.013	0.013	0.013	0.013	0.013
Faceside Adhesive Type	300	300	300	300	300
Backside Adhesive Type	300	300	300	300	300
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
Liner Color	White	Tan	White	White	Clear

ISO Statement

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

Industrial Adhesives and Tapes Division
3M Center
St. Paul, MN 55144-1000
800-362-3550
www.3M.com