

January, 2011

## 3M™ Double Coated Tape 94210

### Product Description

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



3M™ Double Coated Tapes with 3M™ Adhesive 420 are high tack film tapes that feature a polyester film carrier for dimensional stability and improved handling with ease of die cutting and laminating. The high tack acrylic 3M adhesive 420 provides both high performance at a wide temperature range and excellent adhesion to many plastics.

### Product Features

- A polyester carrier in the products provides dimensional stability and improved handling with ease of die cutting and lamination compared to adhesive transfer tapes.
- 3M™ Adhesive 420 provides good temperature and chemical resistance and withstands tough application environments.
- 3M™ Adhesive 420 provides good shock resistance when dropped at various temperatures.
- 3M™ Adhesive 420 provides good adhesion to both HSE and LSE substrates.

### 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	0.012 mm	0.5 mil		
Adhesive Type	420		Faceside	Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.
Adhesive Type	420		Backside	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
Adhesive Carrier	Clear Polyester			
Liner	58# Polycoated Kraft			
Liner Color	Tan		Primary	
Liner Thickness	0.11 mm	4.2 mil		

Adhesive Thickness		Attribute Modifier	Notes
0.044 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.
1.7 mil		Backside	Backside adhesive is on the exterior of the roll, exposed when liner is removed.
0.044 mm	1.7 mil	Faceside	Faceside adhesive is on the interior of the roll, exposed when unwound and liner removed.

Property: Adhesive Thickness

### Typical Performance Characteristics

Relative High Temperature Operating Ranges		Test Condition
149 °C	300 °F	Short Term (minutes, hours)
121 °C	250 °F	Long Term (days, weeks)

Property: Relative High Temperature Operating Ranges

## Typical Performance Characteristics (continued)

180° Peel Adhesion		Dwell/Cure Time	Dwell Time Units	Substrate
4.4 N/cm	40 oz/in	15	min	Stainless Steel
4.9 N/cm	45 oz/in	15	min	Polycarbonate (PC)
4.4 N/cm	40 oz/in	15	min	ABS
2.7 N/cm	25 oz/in	15	min	Polypropylene (PP)
5.5 N/cm	50 oz/in	72	hr	Stainless Steel
6.6 N/cm	60 oz/in	72	hr	Polycarbonate (PC)
5.5 N/cm	50 oz/in	72	hr	ABS
3.3 N/cm	30 oz/in	72	hr	Polypropylene (PP)

Property: 180° Peel Adhesion  
Method: ASTM D3330  
Temp C: 22C  
Temp F: 72F  
Environmental Condition: 52%RH  
Backing: Aluminum Foil  
notes: 12 in/min (300 mm/min)

Property	Values	Method	Test Condition	Notes
Static Shear	>10,000 min	ASTM D3654	1000 g @ Room Temperature	1 in <sup>2</sup> sample size
Static Shear	>10,000 min	ASTM D3654	500 g @ 70°C (158°F)	1 in <sup>2</sup> sample size
UV Resistance	Adhesive is resistant to oxidation and ozone when exposed to air or ultraviolet light.			

## Available Sizes

Property	Values		Attribute Modifier
Note	Subject to Minimum Order Requirements		
Minimum Available Width	12.7 mm	1/2 in	
Maximum Available Width	1372 mm	54 in	
Normal Slitting Tolerance	±0.08 mm	±1/32 in	
Core Size	76.2 mm	3 in	ID

**Available Sizes (continued)**

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

**Typical Environmental Performance**

**Humidity Resistance**

No adverse effect on the bond after exposed to 100% relative humidity at 100°F (38°C).

**Environmental Resistance**

Humidity Resistance: High humidity has 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, nameplates and decorative trim parts are 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:

- 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 Techniques**

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

\*Note: Carefully read and follow the manufacturer’s precautions and directions for use when using solvents. 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.

**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.

**Storage and Shelf Life**

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

If stored under proper conditions, these products retain their performance and properties for 24 months from date of manufacture.

**Trademarks**

3M is a trademark of 3M Company.

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## References

Property	Values
3m.com Product Page	<a href="https://www.3m.com/3M/en_US/company-us/all-3m-products/-/3M-Double-Coated-Tape-94210?N=5002385+3293242584&amp;rt=rud">https://www.3m.com/3M/en_US/company-us/all-3m-products/-/3M-Double-Coated-Tape-94210?N=5002385+3293242584&amp;rt=rud</a>
Safety Data Sheet (SDS)	<a href="https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&amp;msdsLocale=en_US&amp;co=ptn&amp;q=94210">https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&amp;msdsLocale=en_US&amp;co=ptn&amp;q=94210</a>

## Family Group

	94210	94215	94220
Adhesive Type Attribute Modifier: Faceside	420	420	420
Relative High Temperature Operating Ranges (°C) Test Condition: Short Term (minutes, hours)	149	149	149
Relative High Temperature Operating Ranges (°C) Test Condition: Long Term (days, weeks)	121	121	121
Adhesive Thickness (mm) Attribute Modifier: Backside	0.044	0.069	0.095
Liner Color Attribute Modifier: Primary	Tan	Tan	Tan
Adhesive Type Attribute Modifier: Backside	420	420	420
Adhesive Thickness (mm) Attribute Modifier: Faceside	0.044	0.069	0.095
Total Tape Thickness without liner (mm)	0.1	0.15	0.2
Carrier Thickness (mm)	0.012	0.012	0.012
Adhesive Carrier	Clear Polyester	Clear Polyester	Clear Polyester
Liner	58# Polycoated Kraft	58# Polycoated Kraft	58# Polycoated Kraft
Liner Thickness (mm)	0.11	0.11	0.11

## ISO Statement

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

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