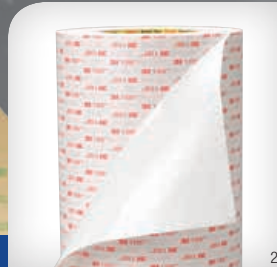
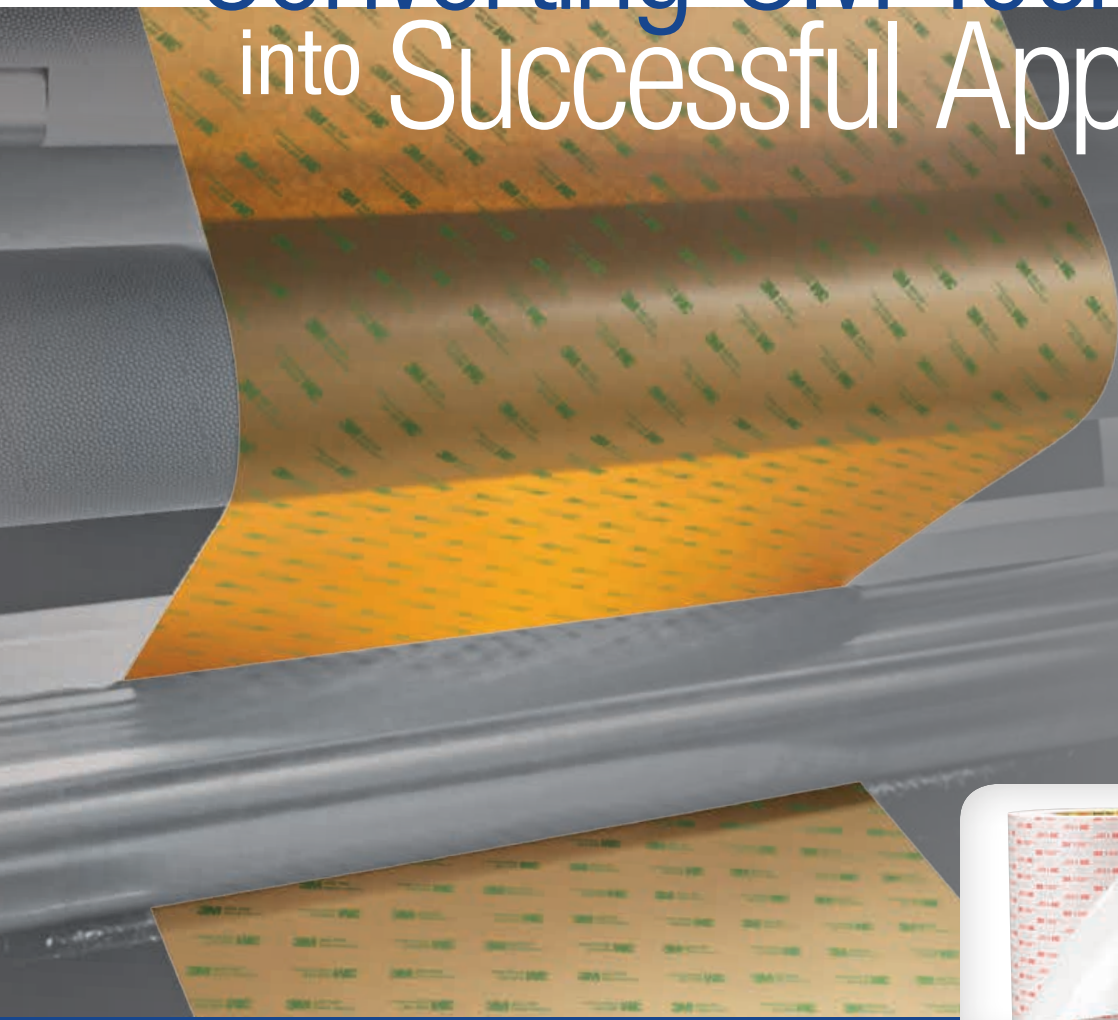


# Converting 3M Technology into Successful Applications



## Selection Guide



# More Than 50 Years of Experience

## in Developing Innovative Pressure Sensitive Adhesives, Labeling Materials and Specialty Products

3M has helped countless customers around the globe increase their production efficiency and improve product performance, appearance and identification.

If you're in the converting industry, look to 3M Converter Markets as your trusted source for a versatile, comprehensive line of practical products and solutions — from tapes, labeling materials and graphic solutions to release liners and films, reclosable fasteners, flexographic mounting systems and more.





# Custom Program

## Rapid | Responsive | Reliable

### 3M™ Custom Adhesive Transfer and Double-Coated Tapes

In today's fast-paced converting marketplace, you've got to react quickly and effectively to keep pace with your customer's changing needs and special requirements.

Through our Custom Program, 3M can help you rapidly respond with reliable custom solutions for jobs ranging from gasketing and durable graphic attachment to laminating in high temperature electronics applications.

You can more readily meet your customer specifications and expectations with custom combinations of 3M components you know and trust. And 3M adhesives, liners, and carriers are stocked in depth and backed with the experience to get what you need right and fast. How fast?

- Pricing and feasibility in 1 day
- Customized sample rolls up to 10" wide shipped within 7 days\*
- Order shipped in 21 days

Minimum orders start at only 1.5 million square inches or five master rolls by 180 yards.

If you don't see what you want, just consult with your 3M representative and the technical team will start on the right solution right away.

\*14 days for wider rolls



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# Fundamentals of Adhesion

Selecting the proper adhesives for a nameplate, label or membrane switch application requires consideration of environmental, surface, appearance and other performance requirements. Our purpose here is to cover some of the principles of adhesion.

Surface contact is fundamental to adhesive performance. To maximize adhesive contact on a surface:

- It must be dry and free of contaminants.
- Firm pressure must be applied to increase the flow and contact of the adhesive with the substrate.
- Time and temperature will increase the surface contact and adhesion values.
- Oil contaminated materials may be addressed with the 3M™ Adhesive 300LSE or 350 families.

Adhesion is the molecular force of attraction between unlike materials. The strength of attraction is determined by the surface energy of the material. The higher the surface energy, the greater the molecular attraction. The lower the surface energy, the weaker the attractive forces.

Greater molecular attraction results in increased contact between an adhesive and substrate. In other words, for a high surface energy material, the adhesive can flow (or “wet-out”) to assure a stronger bond.

Consider an automobile that has not been waxed for a long time. When water contacts the surface, it spreads in large puddles. The unwaxed car surface exhibits high surface energy — the molecular attraction allows the water to flow.

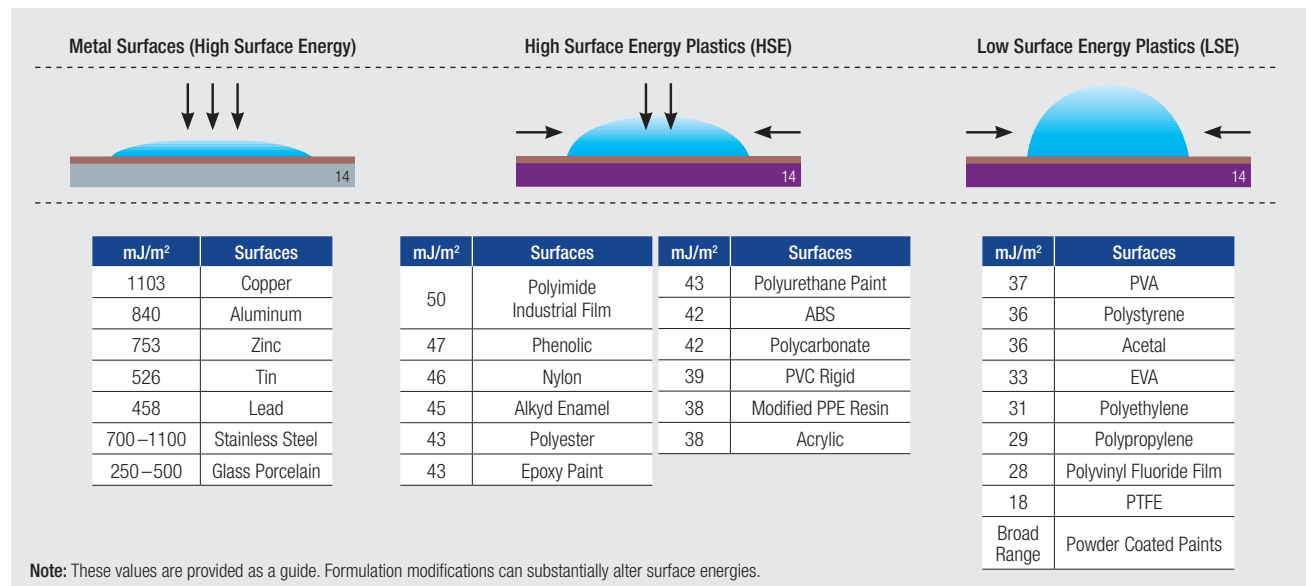
In comparison, water beads up into small spheres on a freshly waxed car. It is an example of low surface energy — the liquid (or adhesive) does not flow out.

Surface energy is measured by dynes per centimeter. The dyne level is the actual reading of the critical surface tension.

Modified acrylic and synthetic adhesives with better flow (or “wet-out”) characteristics have been developed to adhere to low surface energy substrates. The Surface Energy Chart below compares the relative surface energy of commonly used substrates.

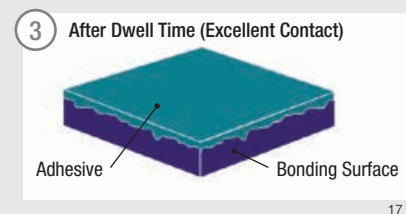
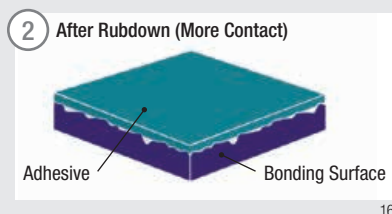
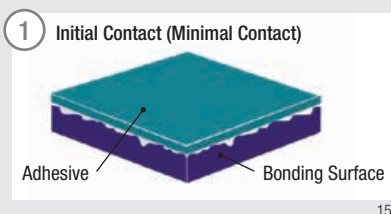
3M™ High Performance Acrylic Adhesive 200MP will not readily adhere to substrates categorized as having “low surface energy.” However, 3M acrylic adhesives have been designed to adhere to low surface energy plastics, and should be considered for those applications.

## Surface Energy Chart



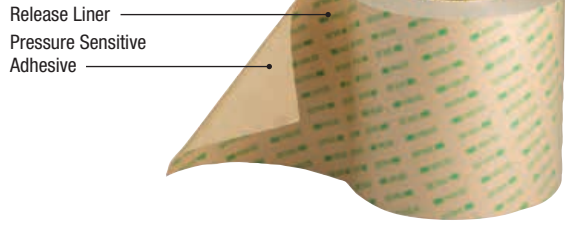
## Adhesive Surface Contact

Applying firm pressure to the bond increases adhesive flow and contact for more secure bonding. Time and temperature will typically further increase contact and adhesion values.



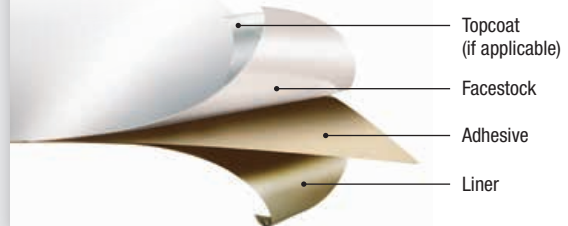
# Product Constructions

## 3M™ Adhesive Transfer Tapes



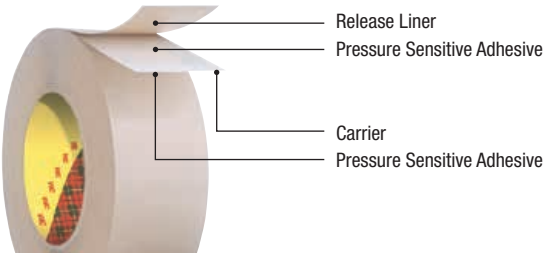
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## 3M™ Performance Label Materials



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## 3M™ Double Coated Tapes



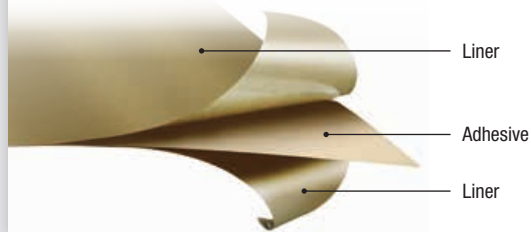
19

## 3M™ Single Coated Tapes



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## 3M™ Double-lined Adhesive Transfer Tapes — Sheets



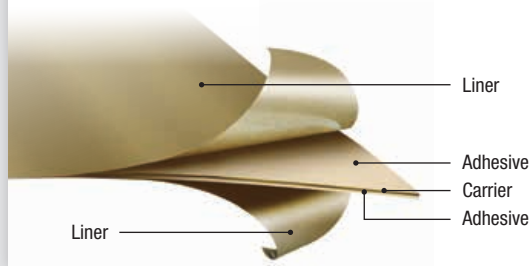
20

## 3M™ Reclosable Fasteners — Hook and Loop



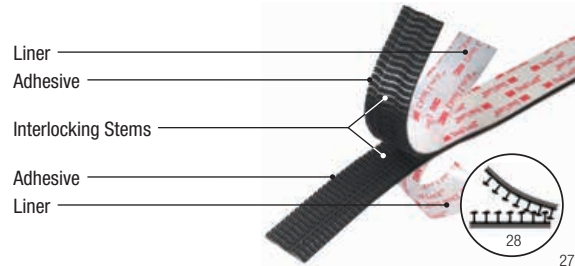
25

## 3M™ Double Coated Spacers — Sheets



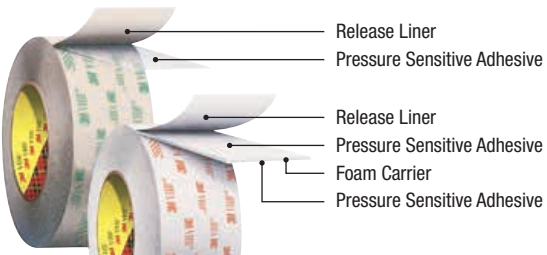
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## 3M™ Dual Lock™ Reclosable Fasteners



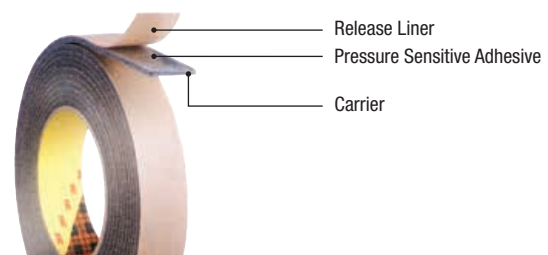
27

## 3M™ VHB™ and Double Coated Foam Tapes



22

## 3M™ Single Coated Foam Tapes



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## Bonding Tapes

# Improve Your Products' Appearance, Performance and Process

When it comes to bonding tapes, you need comprehensive and versatile solutions that are convenient and easy to use. 3M offers a full line of innovative tapes with pressure-sensitive adhesive on two sides for attaching various substrates with a variety of strengths — from permanent to repositionable.

Choose from thousands of material combinations to improve your products' appearance, performance and process.



# Considerations When Selecting the Right 3M™ Bonding Tapes for Your Product and Process

## What materials are you bonding? How will the assembly be used?

- Type of substrate or hard-to-bond materials
- Bonding dissimilar materials
- Configuration of your part (design/shape)
- Appearance and aesthetic considerations
- Need for disassembly for maintenance or service

## How the product will be processed?

- Need high-speed bonding
- Need to be able to reposition
- Will be subjected to vibration
- Requires heat and/or pressure for bonding
- Desire to cut costs/increase production/simplify operation

## How do you need the adhesive to perform?

- Match strength to stresses/combination of stresses: Tensile, Shear, Cleavage and Peel
- Flexibility
- Maintain surface integrity
- Permanent bond
- Resist heat and/or moisture
- Bond and seal
- Reduce risk of bimetallic corrosion and/or rust

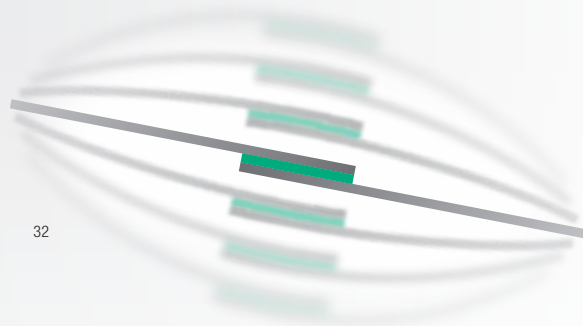
## Will the assembly be exposed to harsh environmental conditions?

- Very low or very high temperatures
- High humidity
- Chemicals
- Water
- Dirt/dust



### Aesthetics and Surface Integrity

With uniform stress distribution of adhesives and tapes, lighter, thinner materials can be used without concerns about distortion, splitting, or crazing at the mechanically fastened site. Elimination of holes in metal also reduces the chances for rust and corrosion.

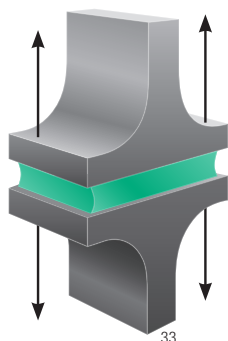


### Bonds Subjected to Vibration

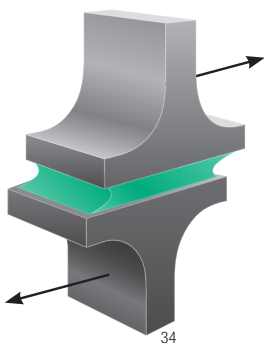
The viscoelasticity of many 3M adhesives and tapes improves resistance to vibration fatigue by imparting flexibility to a joint or bonded area.



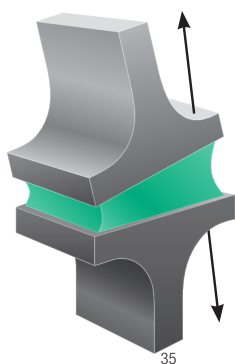
## Different design challenges require different solutions. Illustration of potential stress on bonded joints.



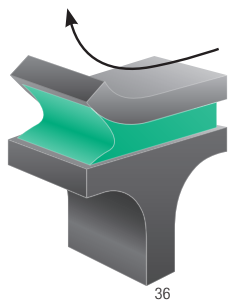
**Tensile** is pull exerted equally over the entire joint. Pull direction is straight and away from the adhesive bond.



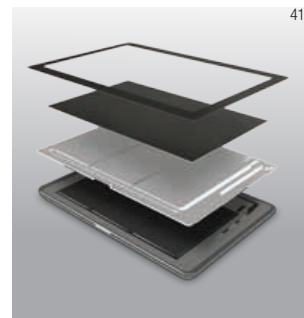
**Shear** is pull directed across the adhesive, forcing the substrates to slide over each other.



**Cleavage** is pull concentrated at one edge of the joint, exerting a prying force on the bond. The other edge of the joint is theoretically under zero stress.



**Peel** is concentrated along a thin line at the edge of the bond where one substrate is flexible. The line is the exact point where an adhesive would separate if the flexible surface were peeled away from its mating surface. Once peeling has begun, the stress line stays out in front of the advancing bond separation.



## Adhesive Families Adhesive families have been color coded to make cross referencing between charts easier.

100

### 100 High Temperature Acrylic

- Up to 450°F short-term heat resistance and excellent solvent resistance.
- High peel strength compared to other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.
- Exhibits low outgassing characteristics.

▶ 100MP

### ▶ 100MP High Performance Acrylic

- Up to 500°F short-term heat resistance and outstanding solvent resistance.
- Higher peel strength than most other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.

▶ 100HT

### ▶ 100HT Ultra High Temperature Acrylic

- Up to 550°F short-term heat resistance and outstanding solvent resistance.
- Higher peel strength than most other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.

▶ 200MP

### ▶ 200MP High Performance Acrylic

- Up to 400°F short-term heat resistance and excellent solvent resistance.
- Outstanding adhesion to metal and high surface energy plastics.
- Excellent shear strength to resist slippage and edge lifting.
- Short term repositionability for placement accuracy.

220

### 220 Industrial Acrylic

- Up to 350°F short-term heat resistance and good chemical resistance.
- Good shear strength and chemical resistance for general purpose industrial applications.
- Good adhesion to most metal and high surface energy plastics.

290

### 290 Low Outgassing Acrylic

- Up to 450°F short-term heat resistance.
- Exceeds most OEM specifications for outgassing and long-term performance.
- High peel strength compared to other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.

300

### 300 High Strength Acrylic

- Up to 250°F short-term heat resistance.
- High initial adhesion especially to low surface energy plastics.
- Quick flowing to speed lamination of textured plastics, foams, fabrics and coated papers.

▶ 300FR

### ▶ 300FR Flame Retardant

- Meets various flame retardancy standards such as UL94 V-O/2, F.A.R. 25.853, and FMVSS 302.
- Similar adhesive properties to adhesive 300 family.
- Good adhesion to a wide variety of surfaces including LSE plastics, foams and fabrics.

▶ 300LSE

### ▶ 300LSE Low Surface Energy Acrylic

- Up to 300°F short-term heat resistance.
- Outstanding adhesion to low surface energy plastics, powder coated paints and lightly oiled metals.
- Good chemical and humidity resistance.

▶ 300MP

### ▶ 300MP High Tack Acrylic

- Up to 250°F short-term heat resistance for automotive interior applications.
- Designed especially to bond most plastics and foams.
- Economical attachment of graphics.

▶ 300SF

### ▶ 300SF Solventless

- Excellent initial adhesion.
- Ideal for use on coated papers and other smooth surface materials.
- Manufactured using a solventless adhesive coating process.

▶ 320

### ▶ 320 High Tenacity Acrylic

- Designed for use with 3M™ Label Component Systems for protected graphics printing of polyester films.
- Can also be used in constructing custom tamper-indicating labels.
- Offers excellent flagging resistance and adhesion to a variety of substrates.

▶ 340

### ▶ 340 High Tack Acrylic

- Up to 180°F short-term heat resistance.
- Excellent bonding to foam and other substrates.
- High tack adhesive.
- Medium shear strength.

▶ 350

### ▶ 350 High Performance Acrylic

- Up to 450°F short-term heat resistance.
- Excellent solvent resistance and adhesion to LSE materials.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

375

**375 High Performance Double Coated**

- Up to 450°F short-term heat resistance.
- Good adhesion to both high and low surface energy substrates.
- Excellent initial tack.

400

**400 Acrylic Adhesive**

- Up to 250°F short-term heat resistance.
- Good low temperature performance and peel strength on many surfaces.
- Excellent adhesion to uncoated papers.
- Clarity and UV resistance for window label applications.

420

**420 Acrylic Adhesive**

- Up to 300°F short-term heat resistance.
- High tack adhesive.

430

**430 Acrylic Adhesive**

- Up to 350°F short-term heat resistance.
- Lead for high temperature splicing.

563

**563 Low Outgassing Permanent Bond Acrylic (High Shear)**

- Provides permanent bond strength to a wide variety of surfaces.
- Because the adhesive level neither builds nor degrades over time, it will remove cleanly from most HSE materials.

573

**573 Permanent Low Outgassing Acrylic**

- High shear strength even at 350°F temperature.
- High peel strength.
- Low outgassing, exceeds most OEM specifications for outgassing performance.

700 Series

**700 Series Synthetic Rubber**

- Up to 200°F short-term heat resistance.
- Good adhesion to low surface energy substrates.
- For indoor and room temperature applications.

800 Series

**800 Series Natural Rubber**

- Up to 200°F short-term heat resistance.
- Offers good adhesion to a variety of surfaces.
- For indoor and room temperature applications.

900/900R

**900/900R Miscellaneous Rubber Adhesive Group**

- Excellent initial adhesion and high bond to a variety of foams.
- Utility rubber-based adhesive ideal for the foam fabricating industry.

1000 Series

**1000 Series Repositionable Acrylic**

- Good holding to many surfaces.
- Clean removal.

2000MP

**2000MP Optically Clear Acrylic**

- Visual accuracy — light transmission > 99%, free of birefringence, refractive index of 1.47.
- High cohesive and peel strengths.
- High temperature, humidity and UV light resistance.
- Long-term durability without yellowing, delaminating or degrading.

Electric

**Electronically Conductive**

- Good initial tack.
- Non-corrosive adhesive.
- Built-in conductive fibers.
- Helps reinforce tape.
- Low electrical resistance with good conductivity.

Thermal

**Thermally Conductive**

- High performance acrylic adhesive with highly conductive ceramic particles.
- For an extremely reliable thermal interface.
- Highly conformable.

Screen Print

**Screen Printable Adhesive**

- For selective placement of pressure sensitive adhesive using screen print technology.
- Either UV curable or water-based are available.

Silicone

**Silicone Adhesive**

- High temperature resistance up to 500°F
- Reliable solvent resistance
- Good damping performance
- Good adhesion to silicone rubbers and silicone foams

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.



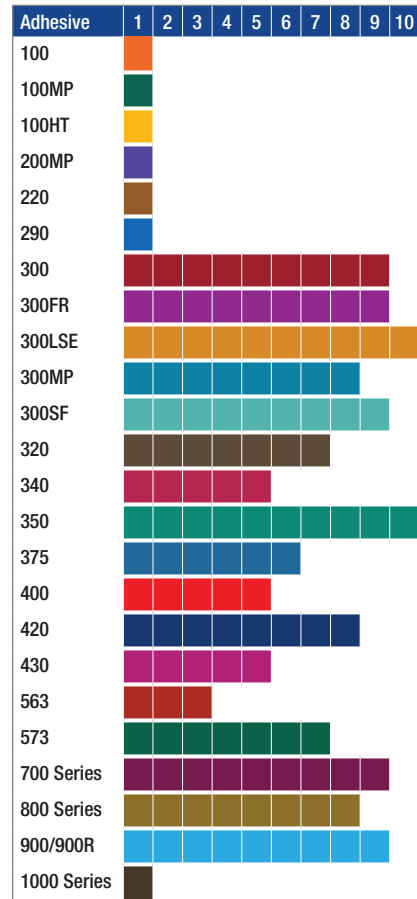
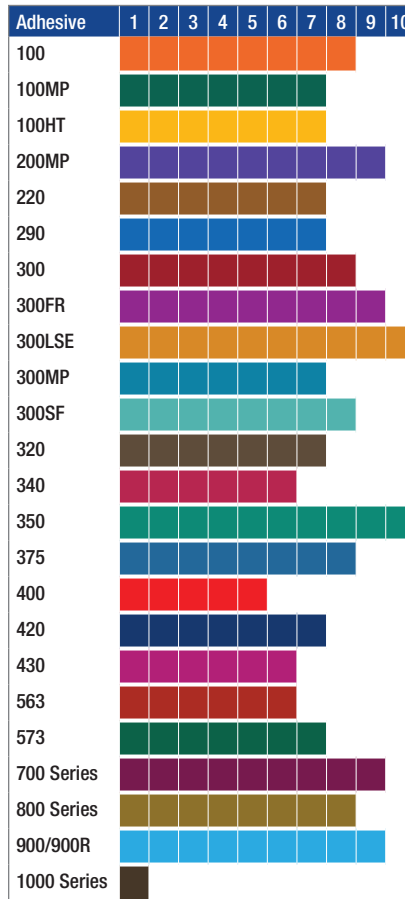
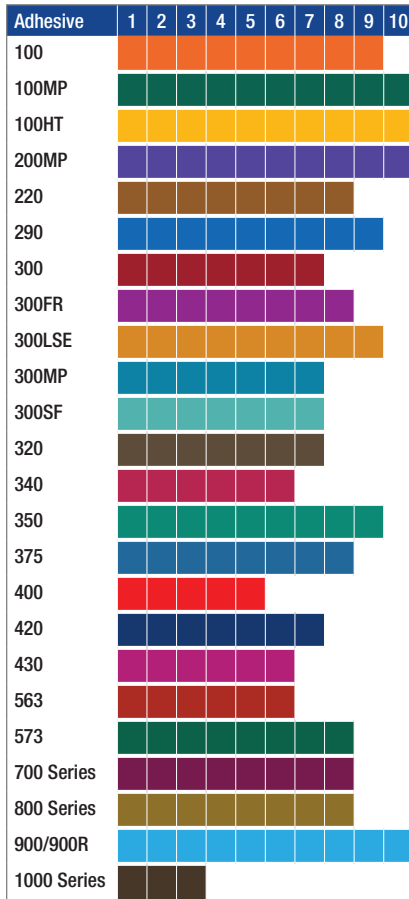
## 3M™ Bonding Tapes Selection Guide Based on Surface Energy

These charts are based on relative adhesion within each given surface energy category.

| Metals   | Surface Energy (Dynes/cm) |
|----------|---------------------------|
| Copper   | 1103                      |
| Aluminum | 840                       |
| Zinc     | 753                       |
| Tin      | 526                       |
| Lead     | 543                       |

| High Surface Energy (HSE) Plastics | Surface Energy (Dynes/cm) |
|------------------------------------|---------------------------|
| Polyimide                          | 50                        |
| Phenolic                           | 47                        |
| Nylon®                             | 46                        |
| Alkyd Enamel                       | 45                        |
| Polyester                          | 43                        |
| Epoxy Paint                        | 43                        |
| Polyurethane                       | 43                        |
| ABS                                | 42                        |
| Polycarbonate                      | 42                        |
| PVC                                | 39                        |
| Modified PPE Resin                 | 38                        |
| Acrylic                            | 38                        |

| Low Surface Energy (LSE) Plastics | Surface Energy (Dynes/cm) |
|-----------------------------------|---------------------------|
| PVA                               | 37                        |
| Polystyrene                       | 36                        |
| Acetal                            | 36                        |
| EVA                               | 33                        |
| Polyethylene                      | 31                        |
| Polypropylene                     | 29                        |
| PVF                               | 28                        |
| PTFE                              | 18                        |
| Powder Coatings                   | Broad Range               |



Values: 1 – Lowest Performance; 10 – Highest Performance

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Bonding Tapes Selection Guide Based on Surface Combinations

This matrix gives you a few of our most commonly used tapes for various surface combinations. Products shown represent only a small part of the total line.

| +   | Steel<br>Aluminum<br>Glass*<br>Ceramics* |                            |                             | ABS*, Acrylic*, Enamel*<br>and Epoxy Paints*;<br>Polyimide*, Modified<br>PPE*, Nylon**,<br>Polycarbonate*,<br>Polyester*, Rigid Vinyl* |                           |                             | Polystyrene*<br>Polypropylene*<br>Polyethylene*<br>Powder Paints* |                          |                             | Plasticized Vinyl                             |        |         | Paper and Paperboard        |                          |                             | Foam, Textiles |                  |                             | Rubber*<br>(primer is required for<br>long term durability) |                          |                             |   |
|---|--|----------------------------|-----------------------------|--|---------------------------|-----------------------------|---|--------------------------|-----------------------------|---|--------|---------|-----------------------------|--------------------------|-----------------------------|----------------|------------------|-----------------------------|---|--------------------------|-----------------------------|---|
|   | Thin                                     | Thick                      | Foam                        | Thin   | Thick                     | Foam                        | Thin  | Thick                    | Foam                        | Thin  | Thick  | Foam    | Thin                        | Thick                    | Foam                        | Thin           | Thick            | Foam                        | Thin  | Thick                    | Foam                        |   |
| Rubber* (primer is required for long term durability)   | Transfer                                 | 467MP<br>9471LE            | 468MP<br>9472LE             | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45  | 467MP<br>9471LE           | 468MP<br>9472LE             | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45                     | 467MP<br>9471LE          | 468MP<br>9472LE             | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45 | F9467U | F9465PC | 3M™<br>VHB™<br>Tape<br>4941 | 467MP<br>9471LE          | 468MP<br>9472LE             | —              | 467MP<br>9471LE  | 468MP<br>9472LE             | —   | 467MP<br>9471LE          | 468MP<br>9472LE             | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45 |
|   | Double Coated                            | 92015<br>9832<br>93010LE   | 93015LE<br>93020LE<br>99786 | —  | 92015<br>9832<br>93010LE  | 93015LE<br>93020LE          | —   | 92015<br>9832<br>93010LE | 99786<br>93015LE<br>93020LE | —   | —      | —       | —                           | 92015<br>9832<br>93010LE | 99786<br>93015LE<br>93020LE | —              | 92015<br>9832    | 99786                       | —   | 92015<br>9832<br>93010LE | 99786<br>93015LE<br>93020LE | —   |
| Foam, Textiles  | Transfer                                 | 9772WL<br>9471LE           | 9775WL<br>9472LE            | —  | 9772WL<br>9471LE          | 9775WL<br>9472LE<br>99786   | —   | 9772WL<br>9471LE         | 9775WL<br>9472LE            | —   | F9467U | F9465PC | —                           | 9772WL<br>9471LE         | 9775WL<br>9472LE            | —              | 9772WL<br>9471LE | 9775WL<br>9472LE            | —   | 9772WL<br>9471LE         | 9775WL<br>9472LE            | —   |
|   | Double Coated                            | 9832<br>93010LE            | 93015LE<br>93020LE<br>99786 | —  | 9832<br>93010LE           | 93015LE<br>93020LE<br>99786 | —   | 9832<br>93010LE          | 93015LE<br>93020LE<br>99786 | —   | —      | —       | —                           | 9832<br>93010LE          | 93015LE<br>93020LE<br>99786 | —              | 9832<br>93010LE  | 93015LE<br>93020LE<br>99786 | —   | 9832<br>93010LE          | 93015LE<br>93020LE<br>99786 | —   |
| Paper and Paperboard  | Transfer                                 | 467MP<br>9772WL<br>9471LE  | 468MP<br>9775WL<br>9472LE   | —  | 467MP<br>9772WL<br>9471LE | 468MP<br>9775WL<br>9472LE   | —   | 9772WL<br>9471LE         | 9775WL<br>9472LE            | —   | F9467U | F9465PC | —                           | XT2105<br>950<br>465     | XT2112<br>950               | —              | —                | —                           | —   | —                        | —                           | —   |
|   | Double Coated                            | 9832<br>92015<br>93010LE   | 93015LE<br>93020LE<br>99786 | —  | 9832<br>92015<br>93010LE  | 93015LE<br>93020LE<br>99786 | —   | 9832<br>93010LE          | 93015LE<br>93020LE<br>99786 | —   | ☎      | ☎       | —                           | XG6110<br>XG6110<br>415  | XT6110<br>444               | —              | —                | —                           | —   | —                        | —                           | —   |
| Plasticized Vinyl   | Transfer                                 | F9467U                     | F9465PC                     | 3M™<br>VHB™<br>Tape<br>4941  | F9467U                    | F9465PC                     | 3M™<br>VHB™<br>Tape<br>4941                                       | F9467U                   | F9465PC                     | 3M™<br>VHB™<br>Tape<br>4941                   | F9467U | F9465PC | 3M™<br>VHB™<br>Tape<br>4941 | —                        | —                           | —              | —                | —                           | —   | —                        | —                           | —   |
|   | Double Coated                            | ☎                          | ☎                           | —  | ☎                         | ☎                           | —   | ☎                        | ☎                           | —   | ☎      | ☎       | —                           | —                        | —                           | —              | —                | —                           | —   | —                        | —                           | —   |
| Polystyrene*, Polypropylene*,<br>Polyethylene*, Powder Paints*                                      | Transfer                                 | 9772WL<br>9471LE           | 9775WL<br>9472LE            | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45  | 9772WL<br>9471LE          | 9775WL<br>9472LE            | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45                     | 9772WL<br>9471LE         | 9775WL<br>9472LE            | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45 | —      | —       | —                           | —                        | —                           | —              | —                | —                           | —   | —                        | —                           |   |
|   | Double Coated                            | 9832<br>93010LE            | 93015LE<br>93020LE<br>99786 | —  | 9832<br>93010LE           | 93015LE<br>93020LE<br>99786 | —   | 9832<br>93010LE          | 93015LE<br>93020LE<br>99786 | —   | —      | —       | —                           | —                        | —                           | —              | —                | —                           | —   | —                        | —                           | —   |
| ABS*, Acrylic*, Enamel*, and Epoxy Paints*,<br>Polyimide*, Polycarbonate*, Polyester*, Rigid Vinyl* | Transfer                                 | 467MP<br>9471LE            | 468MP<br>9472LE             | —  | 467MP<br>9471LE           | 468MP<br>9472LE             | —   | —                        | —                           | —   | —      | —       | —                           | —                        | —                           | —              | —                | —                           | —   | —                        | —                           |   |
|   | Double Coated                            | 92015<br>9832<br>93010LE   | 93015LE<br>93020LE<br>99786 | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45  | 92015<br>9832<br>93010LE  | 93015LE<br>93020LE<br>99786 | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45                     | —                        | —                           | —   | —      | —       | —                           | —                        | —                           | —              | —                | —                           | —   | —                        | —                           | —   |
| Steel, Aluminum,<br>Glass*, Ceramics*   | Transfer                                 | 467MP<br>9471LE<br>F9460PC | 468MP<br>9472LE<br>F9473PC  | 3M™<br>VHB™<br>Tape<br>4941,<br>5952,<br>RP45  | —                         | —                           | —   | —                        | —                           | —   | —      | —       | —                           | —                        | —                           | —              | —                | —                           | —   | —                        | —                           |   |
|   | Double Coated                            | 92015<br>9832<br>93010LE   | 93015LE<br>93020LE<br>99786 | —  | 92015<br>9832<br>93010LE  | 93015LE<br>93020LE<br>99786 | —   | —                        | —                           | —   | —      | —       | —                           | —                        | —                           | —              | —                | —                           | —   | —                        | —                           | —   |

**Note:** The technical information and data provided here should be considered representative or typical only and should not be used for specification purposes. User should evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of application.

\*Primer may be required for long term durability or highest strength, especially with applications using 3M™ VHB™ Tape that often have high strength requirements. Refer to 3M™ Primers Selection Guide on page 12.

## 3M™ Primers Selection Guide

For some applications, it is important to use a primer to provide the highest level of performance possible — or in the case of difficult substrates like EPDM. Examples include: using 3M™ VHB™ Tape for glazing in exterior façade, assembling metal cargo vans with 3M™ VHB™ Tape, and bonding durably to EPDM. The information below is a general guideline on primers by substrate. Evaluation of these primers should be completed on the exact substrate being used in the application to ensure that the final bond meets all of the requirements of the application.

| +                       | Plastics: LSE (Polyethylene)  | Plastics: HSE, MSE, LSE (ABS, Acrylic, Polycarbonate, Nylon, TPO, Polypropylene) | Rubber (EPDM, Santoprene®)   | Glass  | Paints (Powder Coat, Painted Metal, Composite Panel)                            | Metals (Aluminum, Steel, Stainless, Galvanized) |
|-------------------------|---|--|--|--|---|---|
| Metals                  | <b>Primer Options:</b><br>AP-111 or P94 metal side;<br>Flame treat then P94 polyethylene side | <b>Primer Options:</b><br>AP-111 or P94 metal side;<br>P94 plastic side          | <b>Primer Options:</b><br>AP-111, P94 metal side;<br>P94 rubber side   | <b>Primer Options:</b><br>AP-111 or P94 metal side;<br>AP-115 glass side | <b>Primer Options:</b><br>AP-111 or P94 metal side;<br>AP-111 or P94 paint side | <b>Primer Options:</b><br>AP-111 or P94         |
| Paints                  | <b>Primer Options:</b><br>AP-111 or P94 paint side;<br>Flame treat then P94 polyethylene side | <b>Primer Options:</b><br>AP-111 or P94 paint side;<br>P94 plastic side          | <b>Primer Options:</b><br>AP-111 or P94 paint side;<br>P94 rubber side | <b>Primer Options:</b><br>AP-111 or P94 paint side;<br>AP-115 glass side | <b>Primer Options:</b><br>AP-111 or P94   |   |
| Glass                   | <b>Primer Options:</b><br>AP-115 glass side;<br>Flame treat then P94 polyethylene side        | <b>Primer Options:</b><br>AP-115 glass side;<br>P94 plastic side                 | <b>Primer Options:</b><br>AP-115 glass side;<br>P94 rubber side        | <b>Primer Options:</b><br>AP-115   |   |   |
| Rubber                  | <b>Primer Options:</b><br>P94 rubber side;<br>Flame treat then P94 polyethylene side          | <b>Primer Options:</b><br>P94 rubber side;<br>P94 plastic side                   | <b>Primer Options:</b><br>P94  |  |   |   |
| Plastics: HSE, MSE, LSE | <b>Primer Options:</b><br>P94 plastic side;<br>Flame treat then P94 polyethylene side         | <b>Primer Options:</b><br>P94  |  |  |   |   |
| Plastics: LSE           | <b>Primer Options:</b><br>Flame treat then P94 polyethylene                                   |  |  |  |   |   |



# Adhesive Properties

| Adhesive Family          | Adhesive Properties |          |            |       | Adhesion to |             |             | Environmental Performance Resistance to: |              |               |          | Temperature (°F)    |                          |                           | Products  |
|--------------------------|---------------------|----------|------------|-------|-------------|-------------|-------------|--|--------------|---------------|----------|---------------------|--------------------------|---------------------------|---|
|                          | Peel                |          | Shear      |       | Metal       | HSE Plastic | LSE Plastic | Chemical                                 | Ultra Violet | Plasti-cizers | Humidity | Minimum Application | Service Low <sup>†</sup> | Service High <sup>†</sup> |   |
|                          | Initial             | Ultimate | Room Temp. | 150°F |             |             |             |  |              |               |          |                     |                          |                           |   |
| <b>Acrylic Adhesives</b> |                     |          |            |       |             |             |             |  |              |               |          |                     |                          |                           |   |
| 100                      | 3                   | 9        | 10         | 10    | 9           | 8           | 1           | 9  | 10           | 5             | 10       | 50                  | -40                      | 450                       | 941, 965, 966, 4004, 4008, 4026, 4032, 4052, 4056, 4658F, 4921, 9379, 9380, 9462FT, 9461P, 9462P  |
| ▶ 100MP                  | 4                   | 10       | 10         | 10    | 10          | 7           | 1           | 10                                       | 10           | 5             | 10       | 50                  | -40                      | 500                       | F9460PC, F9473PC, F9469PC, 9437   |
| ▶ 100HT                  | 4                   | 10       | 10         | 10    | 10          | 7           | 1           | 10                                       | 10           | 5             | 10       | 50                  | -40                      | 550                       | 9082, 9085, 9085UV  |
| ▶ 200MP                  | 4                   | 10       | 10         | 10    | 10          | 9           | 1           | 9  | 10           | 5             | 10       | 50                  | -40                      | 400                       | 467MC, 467MCF, 467MP, 467MPF, 468MC, 468MCF, 468MP, 468MPF, 7945MP, 7952MP, 7953MP, 7953SL, 7955MP, 7956MP, 7956MWS, 7956WDL, 7957MP, 7959MP, 7961MP, 7962MP, 7965MP, 7966MWS, 7966WDL, 7992MP, 7992MPW, 7993MP, 7995MP, 7997MP, 9045MP, 9056MP, 9059MP, 9061MP, 9172MP, 9185MP, 9667MP, 9668MP, 9668MPL, 92015 |
| ▶ 220                    | 4                   | 8        | 10         | 9     | 8           | 7           | 1           | 8  | 10           | 4             | 8        | 50                  | -40                      | 350                       | 9502, 9505, 9552, 9555  |
| ▶ 300                    | 6                   | 7        | 4          | 1     | 7           | 9           | 9           | 6  | 7            | 3             | 8        | 50                  | -40                      | 250                       | 444, 444PC, 927, 950, 950EK, 992U, 9009, 9019, 9039, 9458, 9459W, 9466B, 9471, 9471PC, 9472, 9653, 9671, 9672, 9673   |
| ▶ 300FR                  | 6                   | 7        | 4          | 1     | 8           | 9           | 9           | 6  | 7            | 3             | 8        | 50                  | -40                      | 250                       | 9372W, 9372DKW, 9375W   |
| ▶ 300LSE                 | 7                   | 9        | 8          | 8     | 9           | 9           | 10          | 8  | 7            | 4             | 9        | 50                  | -40                      | 300                       | 8132LE, 8153LE, 9453FL, 9453LE, 9471FL, 9471LE, 9472LE, 9472FL, 9653LE, 9671LE, 9672LE, 93005LE, 93010LE, 93015LE, 93020LE  |
| ▶ 300MP                  | 6                   | 7        | 8          | 8     | 7           | 7           | 8           | 7  | 7            | 3             | 9        | 50                  | -40                      | 250                       | 6035PC, 6035PL, 6038PC, 6038PL, 7951, 9772WL, 9773WL, 9774WL, 9775WL, 9784, 9687C, 9832, 9832HL, 99687, 99786, 99786NP  |
| ▶ 300SF                  | 5                   | 7        | 3          | 1     | 6           | 9           | 9           | 5  | 6            | 3             | 8        | 50                  | -40                      | 200                       | XT2105, XT2112, XT2105 ATG, XT2112 ATG  |
| ▶ 320                    | 7                   | 7        | 4          | 1     | 7           | 7           | 7           | 6  | 6            | 3             | 8        | 50                  | -40                      | 250                       | 9447  |
| ▶ 340                    | 6                   | 7        | 6          | 5     | 6           | 6           | 5           | 8  | 7            | 4             | 9        | 50                  | -40                      | 180                       | 9456, 9824, 9828, 9828PC  |
| ▶ 350                    | 7                   | 9        | 8          | 8     | 9           | 10          | 10          | 8  | 7            | 4             | 9        | 50                  | -40                      | 450                       | 3028EK, 9442, 9445, 9482PC, 9485EK, 9485PC, 9500B, 9500PC, 9675, 9731   |
| ▶ 360                    | 10                  | 10       | 8          | 6     | 10          | 10          | 10          | 8  | 7            | 4             | 8        | 50                  | -40                      | 300                       | 9626, 9627, 9629PC, 9628FL, 9628B, 9629B, 9629FL  |
| ▶ 375                    | 6                   | 8        | 8          | 8     | 8           | 8           | 6           | 7  | 7            | 5             | 8        | 50                  | -10                      | 300 <sup>**</sup>         | 9086, 9087, 9088, 9088FL  |
| ▶ 400                    | 4                   | 5        | 5          | 4     | 5           | 5           | 5           | 5  | 10           | 4             | 8        | 50                  | -60                      | 250                       | 415, 463, 465, 465XL, 665, 666, 920XL, 9420, 9457, 9464, 9665   |
| ▶ 420                    | 5                   | 6        | 10         | 10    | 7           | 7           | 8           | 6  | 10           | 2             | 9        | 32                  | -40                      | 300                       | 94210, 94215, 94220, F9752PC, F9755PC   |
| ▶ 430                    | 3                   | 4        | 10         | 10    | 6           | 6           | 5           | 5  | 10           | 4             | 10       | 50                  | -40                      | 350                       | 4492, 4496, 9497, 9499  |

<sup>†</sup>Reflects lowest service temperature that bond holds and highest temperature for short periods (minutes, hours).

<sup>\*\*</sup>Service temperature dependent on carrier. See technical data page for further information.

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## Adhesive Properties (cont.)

| Adhesive Family         | Adhesive Properties   |          |            |       | Adhesion to |             |             | Environmental Performance Resistance to: |              |               |          | Temperature (°F)    |                          |                           | Products   |
|-------------------------|---|----------|------------|-------|-------------|-------------|-------------|--|--------------|---------------|----------|---------------------|--------------------------|---------------------------|--|
|                         | Peel  |          | Shear      |       | Metal       | HSE Plastic | LSE Plastic | Chemical                                 | Ultra Violet | Plasti-cizers | Humidity | Minimum Application | Service Low <sup>†</sup> | Service High <sup>†</sup> |  |
|                         | Initial   | Ultimate | Room Temp. | 150°F |             |             |             |  |              |               |          |                     |                          |                           |  |
| <b>Rubber Adhesives</b> |   |          |            |       |             |             |             |  |              |               |          |                     |                          |                           |  |
| <b>700 Series</b>       | 7   | 9        | 10         | 2     | 8           | 9           | 9           | 2  | 4            | 1             | 9        | 50                  | -40                      | 200                       | 4085, 4462, 4466, 4492, 4496, 9443NP, 9579, 9589                               |
| <b>800 Series</b>       | 9   | 10       | 6          | 2     | 8           | 8           | 8           | 1  | 1            | 1             | 1        | 50                  | -40                      | 180                       | 401M, 410M   |
| <b>900</b>              | Individual product performance differs — see page 19 (91022) and page 25 (900 Series, 9731, 96042). |          |            |       |             |             |             |  |              |               |          |                     |                          |                           | 9737, 9737R, 9738, 9738R, 9740, 9741, 9816L, 9816M, 9816H, 9817L, 9817M, 9817H |
| <b>900R</b>             | 10  | 10       | 5          | 4     | 10          | 9           | 9           | 4  | 4            | 3             | 1        | 50                  | -40                      | 200                       | 9851   |
| <b>Other Adhesives</b>  |   |          |            |       |             |             |             |  |              |               |          |                     |                          |                           |  |
| <b>1000 Series</b>      | 2   | 3        | 3          | 3     | 3           | 1           | 1           | 2  | 7            | 3             | 4        | 50                  | -20                      | 250                       | 665, 666, 9425, 9449S  |

<sup>†</sup>Reflects lowest service temperature that bond holds and highest temperature for short periods (minutes, hours).

### Values: 1 = Lowest Performance; 10 = Highest Performance

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

# Liner Reference Chart

3M offers paper and film release liners in a number of different constructions and weights to meet various process requirements.

- Paper** liners include **polycoated kraft (PCK)** for moisture stability to resist wrinkling and curling; and **densified kraft (DK)** to reduce the edge burr on metal plates and for rotary processing. **Extended DK liners (XL)** are also available on selected tapes. With the liner wider than the adhesive, you can more easily grip the liner edge for removal.
- Film** liners add strength in high speed processing and dispensing, and are available for clean room processing. They also offer high clarity for graphic inspection.

| Basis Weight        | Caliper Mils | Liner Type                             | Description   | High Tensile Strength | Humidity Resistance | Rotary Processing | Kiss Cutting | Steel Rule |
|---------------------|--------------|--|---|-----------------------|---------------------|-------------------|--------------|------------|
| <b>Paper Liners</b> |              |  |   |                       |                     |                   |              |            |
| 43#                 | 2.5          | Densified Kraft (DK)                   | Silicone treated on one side for use as a second liner to protect adhesive during selective die-cutting. Printable. |                       |                     | ■                 |              |            |
| 55#                 | 3.2          | Densified Kraft (DK)                   | Caliper-controlled hard liner for consistent base in rotary printing and die-cutting of labels.                     |                       |                     | ■                 | ■            | ■          |
| 60#                 | 3.5          | Densified Kraft (DK)                   | Hard dense liner reduces edge burr in hand tool processing of metal plates.   |                       |                     | ■                 | ■            | ■          |
| 62#                 | 3.7          | Densified Kraft (DK)                   | Heavier version of 60#.   |                       |                     | ■                 | ■            | ■          |
| 78#                 | 6.0          | Extensible Polycoated Kraft (EK)       | Extra tough liner for tear resistance. Conformable for EMI/RFI shielding applications.                              | ■                     | ■                   |                   | ■            | ■          |
| 58#                 | 4.2          | Polycoated Kraft (PCK)                 | Moisture stable. Flat-bed die-cutting.  |                       | ■                   |                   |              | ■          |
| 83#                 | 6.2          | Polycoated Kraft (PCK)                 | Excellent moisture stability for lay-flat processing. Thicker caliper for kiss-cutting and steel rule die-cutting.  |                       | ■                   |                   | ■            | ■          |
| 94#                 | 7.0          | Polycoated Kraft (PCK)                 | Excellent liner for lay-flat processing.  |                       | ■                   |                   | ■            | ■          |
| <b>Film Liners</b>  |              |  |   |                       |                     |                   |              |            |
| —                   | 2.0          | Clear Polyester (PET)                  | High strength reduces breakage during die-cutting and dispensing.   | ■                     | ■                   | ■                 | ■            | ■          |
| —                   | 3.0          |  |   |                       |                     |                   |              |            |
| —                   | 4.0          |  |   |                       |                     |                   |              |            |
| —                   | 3.0          | Clear High Density Polyethylene (HDPE) | Silicone treated for easy release. Clarity for see-through applications.  | ■                     | ■                   | ■                 |              | ■          |

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.



# 3M™ Adhesive Transfer Tapes

| Adhesive Family <sup>1</sup>                   | Product | Description/Application Ideas   | Adhesive Caliper (mils) | Liner <sup>2</sup> |                | Master Size  | Specs             | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|--|---------|---|-------------------------|--------------------|----------------|--------------|-------------------|----------|-------------|-------------|------|---------------|-------------|-----------|
|  |         |   |                         | Type               | Caliper (mils) |              |                   | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| <b>100</b><br>High Temperature Acrylic         | 941     | Graphic attachment for low odor appliance applications.   | 2                       | 58# PCK            | 4.2            | 48" x 180 yd | UL                | 9        | 8           | 1           | 2    | 9             | -40         | 450       |
|  | 965     | Fuel line labels. Excellent chemical resistance. Aerospace.   | 2                       | 55# DK             | 3.2            | 48" x 180 yd | —                 |          |             |             |      |               |             |           |
|  | 966     | Meets NASA low volatility specs. Flex circuit attachment. High temp.  | 2                       | 62# DK             | 3.5            | 48" x 180 yd | UL M <sup>H</sup> |          |             |             |      |               |             |           |
|  | 9461P   | Thinner version of laminating adhesive 9462P.   | 1                       | 55# DK             | 3.2            | 48" x 360 yd | —                 |          |             |             |      |               |             |           |
|  | 9462P   | Laminating adhesive 966 on a caliper-controlled liner for rotary die-cutting.   | 2                       | 55# DK             | 3.2            | 48" x 360 yd | UL                |          |             |             |      |               |             |           |
| <b>100MP*</b><br>High Performance Acrylic      | F9460PC | High performance industrial joining and metal fabrication.  | 2                       | 58# PCK            | 4.2            | 60" x 180 yd | M <sup>H</sup>    | 10       | 7           | 1           | 2    | 10            | -40         | 500       |
|  | F9469PC | High performance industrial joining and metal fabrication.  | 5                       | 58# PCK            | 4.2            | 60" x 180 yd | M <sup>H</sup>    |          |             |             |      |               |             |           |
|  | F9473PC | High performance industrial joining and metal fabrication.  | 10                      | 58# PCK            | 4.2            | 60" x 180 yd | M <sup>H</sup>    |          |             |             |      |               |             |           |
| <b>100HT</b><br>Ultra High Temperature Acrylic | 9082    | Excellent heat resistance in high temp environments. For applications that require both higher processing and operating temperatures. | 2                       | White DK Liner     | 3.2            | 48" x 180 yd | —                 | 10       | 7           | 1           | 2    | 10            | -40         | 550       |
|  | 9085    | Thicker version of 9082.  | 5                       | White DK Liner     | 3.2            | 48" x 180 yd | —                 |          |             |             |      |               |             |           |
|  | 9085UV  | Same as 9085 but with UV light detectable adhesive.   | 5                       | 58# PCK            | 4.2            | 48" x 360 yd | —                 |          |             |             |      |               |             |           |
| <b>200MP</b><br>High Performance Acrylic       | 467MC   | Same as 467MP with a paper MicroChannel liner to aid in bubble- and wrinkle-free graphic attachment.                                  | 2                       | 58# PCK            | 4.2            | 54" x 180 yd | —                 | 10       | 9           | 1           | 3    | 9             | -40         | 400       |
|  | 467MCF  | Same as 467MP with a polyester MicroChannel liner to aid in bubble- and wrinkle-free graphic attachment.                              | 2                       | PET                | 4.2            | 54" x 180 yd | —                 |          |             |             |      |               |             |           |
|  | 467MP   | Graphic attachment and general industrial joining. Industry standard. 60 in. width master also available.                             | 2                       | 58# PCK            | 4.2            | 48" x 180 yd | UL M <sup>H</sup> |          |             |             |      |               |             |           |
|  | 467MPF  | Polyester liner for rotary processing of graphic and die cut parts.   | 2                       | PET                | 2.0            | 54" x 180 yd | UL                |          |             |             |      |               |             |           |
|  | 468MC   | Same as 468MP with a paper MicroChannel liner to aid in bubble- and wrinkle-free graphic attachment.                                  | 5                       | 58# PCK            | 4.0            | 54" x 180 yd | —                 |          |             |             |      |               |             |           |
|  | 468MCF  | Same as 468MP with a polyester MicroChannel liner to aid in bubble- and wrinkle-free graphic attachment.                              | 5                       | PET                | 4.0            | 54" x 180 yd | —                 |          |             |             |      |               |             |           |
|  | 468MP   | Industry standard for graphic attachment and die cut parts. 60 in. width master also available.                                       | 5                       | 58# PCK            | 4.2            | 48" x 180 yd | UL M <sup>H</sup> |          |             |             |      |               |             |           |
|  | 468MPF  | Thicker version of 467MPF.  | 5                       | PET                | 2.0            | 54" x 180 yd | UL                |          |             |             |      |               |             |           |
|  | 9667MP  | Same as 467MP on heavy, lay-flat liner for kiss-cutting. 48 in. width master also available.  | 2                       | 83# PCK            | 6.2            | 54" x 180 yd | UL                |          |             |             |      |               |             |           |
|  | 9668MP  | Same as 468MP on heavy, lay-flat liner. 48 in. width master also available.   | 5                       | 83# PCK            | 6.2            | 54" x 180 yd | UL M <sup>H</sup> |          |             |             |      |               |             |           |
|  | 9668MPL | Better lay-flat properties.   | 5                       | 94# PCK            | 7.0            | 60" x 180 yd | —                 |          |             |             |      |               |             |           |

1 – More information on pages 8–9. 2 – More information on page 15. \*Products in this platform are 3M™ VHB™ Tapes offering our highest strength. M<sup>H</sup> meets Mil-P-19834B Type I.

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

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# 3M™ Adhesive Transfer Tapes (cont.)

| Adhesive Family <sup>1</sup> | Product                            | Description/Application Ideas   | Adhesive Caliper (mils) | Liner <sup>2</sup> |                | Master Size       | Specs             | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|------------------------------|------------------------------------|---|-------------------------|--------------------|----------------|-------------------|-------------------|----------|-------------|-------------|------|---------------|-------------|-----------|
|                              |                                    |   |                         | Type               | Caliper (mils) |                   |                   | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| 220 Industrial Acrylic       | 9502                               | Economical attachment of graphics and industrial joining. 60 in. width master also available. | 2                       | 58# PCK            | 4.2            | 48" x 180 yd      | UL                | 8        | 7           | 1           | 2    | 8             | -40         | 350       |
|                              | 9505                               | Thicker version of 9502 for textured surfaces. 60 in. width master also available.            | 5                       | 58# PCK            | 4.2            | 48" x 180 yd      | UL                |          |             |             |      |               |             |           |
| 290 Low Outgassing Acrylic   | 501FL                              | Ultra-clean adhesive for low outgassing applications.   | 1                       | PET                | 2.0            | 54" x 180 yd      | —                 | 9        | 7           | 1           | 2    | 9             | -40         | 450       |
|                              | 502FL                              | Ultra-clean adhesive for low outgassing applications.   | 2                       | PET                | 2.0            | 54" x 180 yd      | —                 |          |             |             |      |               |             |           |
| 300 High Strength Acrylic    | 927                                | Attach gaskets and a variety of industrial foam materials.                                    | 2                       | 60# DK             | 3.5            | 48" x 180 yd      | —                 | 7        | 9           | 9           | 9    | 6             | -40         | 250       |
|                              | 950                                | Thicker version of 927.   | 5                       | 60# DK             | 3.5            | 48" x 180 yd      | UL                |          |             |             |      |               |             |           |
|                              | 950EK                              | Thicker version of 927 with extensible Kraft liner.   | 5                       | 78# EK             | 6.0            | 48" x 180 yd      | —                 |          |             |             |      |               |             |           |
|                              | 992U                               | For performance-engineered labels. UV indicator in adhesive.                                  | 2                       | 55# DK             | 3.2            | 48" x 180 yd      | UL                |          |             |             |      |               |             |           |
|                              | 9458                               | Thin, high tack adhesive for rotary processing HSE and LSE parts.                             | 1                       | 55# DK             | 3.2            | 54" x 360 yd      | UL                |          |             |             |      |               |             |           |
|                              | 9459W                              | White version of laminating adhesive.   | 1.5                     | 55# DK             | 3.2            | 48" x 360 yd      | UL                |          |             |             |      |               |             |           |
|                              | 9471                               | For smooth LSE plastics.  | 2                       | 60# DK             | 3.5            | 48" x 180 yd      | UL M <sup>H</sup> |          |             |             |      |               |             |           |
|                              | 9471PC                             | Same as 9471 on moisture-stable liner.  | 2                       | 61# DK             | 4.2            | 48" x 180 yd      | —                 |          |             |             |      |               |             |           |
|                              | 9472                               | 5.0 mil version of 9471; for textured surfaces.   | 5                       | 60# DK             | 3.5            | 48" x 180 yd      | UL M <sup>H</sup> |          |             |             |      |               |             |           |
|                              | 9653                               | A 3.5 mil version of 9471 on a heavy, lay-flat liner for kiss-cutting.                        | 3.5                     | 83# PCK            | 6.2            | 48" x 180 yd      | UL                |          |             |             |      |               |             |           |
|                              | 9671                               | Heavier lined version of 9471 for easy handling, lay-flat properties.                         | 2                       | 83# PCK            | 6.2            | 48" x 180 yd      | UL M <sup>H</sup> |          |             |             |      |               |             |           |
|                              | 9672                               | Heavier lined version of 9472 for easy handling, lay-flat properties.                         | 5                       | 83# PCK            | 6.2            | 48" x 180 yd      | UL                |          |             |             |      |               |             |           |
| 9673                         | Same as 9671 with unprinted liner. | 2   | 83# PCK                 | 6.2                | 48" x 180 yd   | UL M <sup>H</sup> |                   |          |             |             |      |               |             |           |
| 300FR Flame Retardant        | 9372W                              | Flame retardant transfer tape with moisture stable liner.                                     | 2                       | 83# PCK            | 6.2            | 60" x 180 yd      | UL                | 8        | 9           | 9           | 9    | 6             | -40         | 250       |
|                              | 9372DKW                            | Flame retardant transfer tape with rotary die-cuttable liner.                                 | 2                       | 55# DK             | 3.2            | 60" x 180 yd      | UL                |          |             |             |      |               |             |           |
|                              | 9375W                              | Flame retardant transfer tape with moisture stable liner.                                     | 5                       | 83# PCK            | 6.2            | 60" x 180 yd      | UL                |          |             |             |      |               |             |           |

1 – More information on pages 8–9.

2 – More information on page 15.

M<sup>H</sup> meets Mil-P-19834B Type I.

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# 3M™ Adhesive Transfer Tapes (cont.)

| Adhesive Family <sup>1</sup>                | Product | Description/Application Ideas   | Adhesive Caliper (mils) | Liner <sup>2</sup> |                | Master Size  | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|---|---------|---|-------------------------|--------------------|----------------|--------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|   |         |   |                         | Type               | Caliper (mils) |              |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| <b>300LSE</b><br>Low Surface Energy Acrylic | 9453FL  | Film lined version of 9453LE for rotary processing.   | 3.5                     | PET                | 2.0            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9453LE  | A 3.5 mil version of 9471LE for application to rough surfaces. 48 in. master width available. | 3.5                     | 58# PCK            | 4.2            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9471FL  | Film lined version of 9471LE for rotary processing.   | 2                       | PET                | 2.0            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9471LE  | Bonds graphics to powder coatings, LSE plastics and oily materials.                           | 2                       | 58# PCK            | 4.2            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9472FL  | A 5 mil version of 9471LE with film liner for textured surfaces.                              | 5                       | PET                | 2.0            | 54" x 180 yd | UL    | 9        | 9           | 10          | 1    | 8             | -40         | 300       |
|   | 9472LE  | Thicker adhesive for textured LSE plastics and powder coatings.                               | 5                       | 58# PCK            | 4.2            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9653LE  | Heavy lined 9453LE for easy handling and lay-flat properties.                                 | 3.5                     | 83# PCK            | 6.2            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9671LE  | Heavy lined 9471LE for easy handling and lay-flat properties.                                 | 2                       | 83# PCK            | 6.2            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9672LE  | Heavy lined 9472LE for easy handling and lay-flat properties.                                 | 5                       | 83# PCK            | 6.2            | 54" x 180 yd | UL    |          |             |             |      |               |             |           |
| <b>300MP</b><br>High Tack Acrylic           | 6035PC  | Resists fogging for automotive interior fabric joining applications.                          | 5                       | 58# PCK            | 4.2            | 60" x 180 yd | —     |          |             |             |      |               |             |           |
|   | 6035PL  | Heavy lined version of 6035PC for easy handling, lay-flat properties.                         | 5                       | 83# PCK            | 6.2            | 60" x 180 yd | —     |          |             |             |      |               |             |           |
|   | 6038PC  | Low fogging. Automotive fabric and carpet attachment.   | 8                       | 58# PCK            | 4.2            | 60" x 180 yd | —     |          |             |             |      |               |             |           |
|   | 6038PL  | Low fogging. For rough embossed surfaces with heavy liner for steel rule die-cutting.         | 8                       | 83# PCK            | 6.2            | 60" x 180 yd | —     | 7        | 7           | 8           | 8    | 7             | -40         | 250       |
|   | 9772WL  | Provides excellent bond to various fabricated foams, fabrics and substrates.                  | 2                       | 96# PCK            | 7.0            | 60" x 180 yd | —     |          |             |             |      |               |             |           |
|   | 9773WL  |   | 3                       |                    |                |              |       |          |             |             |      |               |             |           |
|   | 9774WL  |   | 4                       |                    |                |              |       |          |             |             |      |               |             |           |
| 9775WL                                      | 5       |   |                         |                    |                |              |       |          |             |             |      |               |             |           |
| <b>320</b><br>High Tenacity Acrylic         | 9447    | Designed for use with 3M™ Label Component Systems.  | 1                       | 55# DK             | 3.2            | 54" x 360 yd | —     | 5        | 5           | 1           | 1    | 5             | -60         | 250       |
| <b>350</b><br>High Performance Acrylic      | 9442    | Excellent temperature and solvent resistance. High bond to low surface energy substrates.     | 2                       | 55# DK             | 3.2            | 48" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9445    | Thicker version of 9442.  | 5                       | 55# DK             | 3.2            | 48" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9482PC  | High tack and shear strength. Excellent adhesion to plastics and foams.                       | 2                       | 58# PCK            | 4.2            | 48" x 180 yd | UL    | 9        | 10          | 10          | 9    | 8             | -40         | 450       |
|   | 9485EK  | Thicker version of 9482PC with an extensible Kraft liner.                                     | 5                       | 78# EK             | 6.0            | 48" x 180 yd | —     |          |             |             |      |               |             |           |
|   | 9485PC  | A 5 mil version of 9482PC.  | 5                       | 58# PCK            | 4.2            | 48" x 180 yd | UL    |          |             |             |      |               |             |           |
|   | 9675    | Heavy lined version of 9485PC for easy handling, lay-flat properties.                         | 5                       | 83# PCK            | 6.2            | 48" x 180 yd | —     |          |             |             |      |               |             |           |

1 – More information on pages 8–9.  
2 – More information on page 15.

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# 3M™ Adhesive Transfer Tapes (cont.)

| Adhesive Family <sup>1</sup> | Product | Description/Application Ideas   | Adhesive Caliper (mils) | Liner <sup>2</sup> |                | Master Size  | Specs          | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|------------------------------|---------|---|-------------------------|--------------------|----------------|--------------|----------------|----------|-------------|-------------|------|---------------|-------------|-----------|
|                              |         |   |                         | Type               | Caliper (mils) |              |                | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| 400 Acrylic Adhesive         | 463     | High tack and excellent adhesion to most paper stocks. For automatic dispensing.  | 2                       | 60# DK             | 3.5            | 48" x 180 yd | —              | 5        | 5           | 5           | 4    | 5             | -60         | 250       |
|                              | 465     | Same as 463, but with easy liner release for manual or hand application.  | 2                       | 60# DK             | 3.5            | 48" x 180 yd | —              |          |             |             |      |               |             |           |
|                              | 465XL   | Extended liner for easy removal and dispensing.   | 2                       | 60# DK             | 3.5            | 1" x 600 yd  | —              |          |             |             |      |               |             |           |
|                              | 9457    | Adhesive with long term stability, excellent outdoor performance and UV resistance. Adhesive 400 is best if necessary to apply at cooler temperatures.                                    | 1                       | 55# DK             | 3.2            | 54" x 360 yd | UL             |          |             |             |      |               |             |           |
|                              | 9665    | Thicker version of 9457.  | 2                       | 58# PCK            | 4.2            | 48" x 180 yd | —              |          |             |             |      |               |             |           |
| 420 Acrylic Adhesive         | F9752PC | High tack. Can be applied in temperatures as low as 32°F.   | 2                       | 58# PCK            | 4.2            | 54" x 360 yd | —              | 7        | 7           | 8           | 4    | 6             | -60         | 300       |
|                              | F9755PC | Thicker version of F9752PC for textured surfaces.   | 5                       | 58# PCK            | 4.2            | 54" x 360 yd | —              |          |             |             |      |               |             |           |
| 430 Acrylic Adhesive         | 9497    | Pink tinted high temperature splicing tape.   | 2                       | 60# DK             | 3.5            | 48" x 360 yd | —              | 6        | 6           | 5           | 4    | 5             | -40         | 350       |
|                              | 9499    | Transparent version of 9497.  | 2                       | 60# DK             | 3.5            | 48" x 360 yd | —              |          |             |             |      |               |             |           |
| Specialty Acrylic            | 9379    | Jet fuel and hydraulic fluid resistant adhesive transfer tape.  | 2                       | PET                | 2              | 48" x 200 yd | M <sup>h</sup> | 9        | 8           | 1           | 2    | 9             | -40         | 350       |
|                              | 9380    | Thicker version on 9379.  | 5                       | PET                | 2              | 48" x 200 yd | M <sup>h</sup> |          |             |             |      |               |             |           |
|                              | F9465PC | Vinyl plasticizer resistant adhesive.   | 5                       | 58# PCK            | 4.2            | 54" x 360 yd | —              | 10       | 10          | 7           | 5    | 5             | -40         | 200       |
|                              | F9467U  | Vinyl plasticizer resistant adhesive.   | 3.5                     | 58# PCK            | 4.2            | 54" x 180 yd | —              |          |             |             |      |               |             |           |
| Misc.                        | 97053   | Micro scrim reinforced adhesive transfer tape has excellent quick stick for permanent bond applications on plastics, metals, non-wovens, felts and foams. 60" wide master also available. | 2.5                     | 50# DK             | 3.0            | 54" x 250 yd | —              | 6        | 6           | 5           | 5    | 5             | -40         | 175       |
| Silicone                     | 91022   | Silicone attachment. Single lingers for easier processing.  | 2                       | White PET          | 2              | 48" x 180 yd | —              | 9        | 8           | 7           | 6    | 10            | -60         | 500       |

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# 3M™ Double Lined Adhesive Transfer Tapes

| Adhesive Family <sup>1</sup>                  | Product  | Description/Application Ideas   | Adhesive Caliper (mils) | Liner <sup>2</sup> |                | Master Size  | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|---|--|---|-------------------------|--------------------|----------------|--------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|   |  |   |                         | Type               | Caliper (mils) |              |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| ▶ <b>100MP*</b><br>High Performance Acrylic   | 9437   | Excellent rotary die-cutting.   | 2                       | 58# PCK            | 4.2            | 48" x 180 yd | —     | 10       | 7           | 1           | 2    | 10            | -40         | 500       |
|   |  |   |                         | 58# PET            | 1.4            |              |       |          |             |             |      |               |             |           |
| <b>200MP</b><br>High Performance Acrylic      | 7952MP   | Double lined laminating adhesive 467MP.   | 2                       | 58# PCK            | 4.2            | 48" x 360 yd | UL    | 10       | 9           | 1           | 3    | 9             | -40         | 400       |
|   |  |   |                         | 58# PCK            | 4.2            | 24" x 36"    |       |          |             |             |      |               |             |           |
|   | 7955MP   | Double lined laminating adhesive 468MP. For selective die-cutting.                                  | 5                       | 58# PCK            | 4.2            | 48" x 360 yd | UL    |          |             |             |      |               |             |           |
|   |  |   |                         | 58# PCK            | 4.2            | 24" x 36"    |       |          |             |             |      |               |             |           |
|   | 7962MP   | Laminating adhesive 7952MP on a lay-flat liner for kiss-cutting and and selective die-cutting.      | 2                       | 83# PCK            | 6.2            | 48" x 360 yd | UL    |          |             |             |      |               |             |           |
|   |  |   |                         | 58# PCK            | 4.2            | 24" x 36"    |       |          |             |             |      |               |             |           |
|   | 7965MP   | Laminating adhesive 7955MP on a lay-flat liner for kiss-cutting and selective die-cutting.          | 5                       | 83# PCK            | 6.2            | 48" x 360 yd | UL    |          |             |             |      |               |             |           |
| 58# PCK                                       |  |   |                         | 4.2                | 24" x 36"      |              |       |          |             |             |      |               |             |           |
| 9172MP  | Laminating adhesive 467MP with transparent liner for graphic inspection. Strong liner for one piece removal. | 2   | 58# PCK                 | 4.2                | 48" x 180 yd   | UL           |       |          |             |             |      |               |             |           |
| 9185MP  | 5 mil version of laminating adhesive 9172MP.   | 5   | 58# PCK                 | 4.2                | 48" x 180 yd   | UL           |       |          |             |             |      |               |             |           |
|   |  |   | 58# HDPE                | 3.0                |                |              |       |          |             |             |      |               |             |           |
| <b>220</b><br>Industrial Acrylic              | 9552   | Economical attachment of graphics and industrial joining. Double lined version of 9502.             | 2.3                     | 58# PCK            | 4.2            | 48" x 360 yd | UL    | 8        | 7           | 1           | 2    | 8             | -40         | 350       |
|   | 9555   | Thicker version of 9552 for textured surfaces. Double lined version of 9505.                        | 4.9                     | 58# PCK            | 4.2            | 48" x 360 yd | UL    |          |             |             |      |               |             |           |
| <b>300</b><br>High Strength Acrylic           | 9428   | Double lined version laminating adhesive 9458. Printable liner for application instructions.        | 1                       | 55# DK             | 3.2            | 54" x 360 yd | —     | 7        | 9           | 9           | 9    | 6             | -40         | 250       |
|   |  |   |                         | 43# DK             | 2.5            |              |       |          |             |             |      |               |             |           |
| <b>300/400</b><br>Acrylic                     | 9466B  | Piggy-back adhesive for producing label sets. For photographic bar-code labels.                     | 2                       | White PP           | 3.5            | 48" x 180 yd | —     | 7        | 9           | 9           | 9    | 6             | -40         | 250       |
|   |  |   |                         | 1                  | 60# DK         |              |       |          |             |             |      |               |             |           |
| ▶ <b>300LSE</b><br>Low Surface Energy Acrylic | 8132LE   | Double lined laminating adhesive 9471LE. For selective die-cutting. Application to smooth surfaces. | 2                       | 58# PCK            | 4.2            | 48" x 360 yd | UL    | 9        | 10          | 10          | 1    | 7             | -40         | 300       |
|   |  |   |                         | 83# PCK            | 6.2            | 24" x 36"    |       |          |             |             |      |               |             |           |
|   | 8153LE   | Double lined laminating adhesive 9453LE. For selective die-cutting. Application to rough surfaces.  | 3.5                     | 58# PCK            | 4.2            | 48" x 360 yd | UL    |          |             |             |      |               |             |           |
|   |  |   |                         | 83# PCK            | 6.2            | 24" x 36"    |       |          |             |             |      |               |             |           |

1 – More information on pages 8–9.

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# 3M™ Double Lined Adhesive Transfer Tapes (cont.)

| Adhesive Family <sup>1</sup>                   | Product  | Description/<br>Application Ideas   | Adhesive Caliper (mils) | Liner <sup>2</sup> |                  | Master Size  | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|--|----------|---|-------------------------|--------------------|------------------|--------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|  |          |   |                         | Type               | Caliper (mils)   |              |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| ▶ <b>300MP</b><br>High Tack<br>Acrylic         | 7951     | Double lined laminating adhesive 9770. For selective die-cutting. Excellent adhesion to LSE plastics. | 2                       | 58# PCK            | 4.2              | 48" x 360 yd | UL    | 7        | 7           | 8           | 8    | 7             | -40         | 250       |
|  |          | 58# PCK   |                         | 4.2                | 24" x 36" sheets |              |       |          |             |             |      |               |             |           |
|  | 9784     | For see-through graphic inspection. A film lined version of laminating adhesive 9774.                 | 4                       | 58# PCK            | 4.2              | 48" x 180 yd | —     | 7        | 7           | 8           | 8    | 7             | -40         | 250       |
|  |          | 58# HDPE  |                         | 3.0                | 48" x 180 yd     |              |       |          |             |             |      |               |             |           |
| <b>2000MP</b><br>Optically<br>Clear<br>Acrylic | 8211     | General purpose, high adhesion optically clear adhesive.  | 1                       | PET/PET            | 2.0/2.0          | 60" x 180 yd | —     | 9        | 9           | —           | —    | 9             | -40         | 350       |
|  | 8212     |   | 2                       | PET/PET            | 2.0/2.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 8213*    |   | 3                       | PET/PET            | 2.0/2.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 8214*    |   | 4                       | PET/PET            | 2.0/2.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 8215*    |   | 5                       | PET/PET            | 2.0/2.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 8141KCL* | Very soft, optically clear adhesive.  | 1                       | PET/PET            | 3.0/3.0          | 60" x 180 yd | —     | 9        | 9           | —           | —    | 6             | -40         | 185       |
|  | 8142KCL* | Very soft, optically clear adhesive.  | 2                       | PET/PET            | 3.0/3.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 8171PCL* | UV blocking, optically clear adhesive.  | 1                       | PET/PET            | 2.0/2.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 8172PCL* | UV blocking, optically clear adhesive.  | 2                       | PET/PET            | 2.0/2.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 8173KCL* | Double sided, optically clear adhesive.   | 3                       | PET/PET            | 2.0/2.0          | 60" x 180 yd |       |          |             |             |      |               |             |           |
|  | 9483     | Optically clear adhesive.   | 5                       | PET/PP             | 3.0/3.0          | 48" x 180 yd |       |          |             |             |      |               |             |           |

1 – More information on pages 8–9.

2 – More information on page 15.

\*Made to order. Longer lead time required.

Note: All optically clear adhesives can be manufactured in a single coated or double coated tape format upon special request.

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

**Disclaimer:** Adhesives should be tested with actual components to ensure acceptable performance.

# 3M™ Double Coated Tapes

| Adhesive Family <sup>1</sup>                  | Product   | Description/<br>Application Ideas   | Tape Cal. (mils)  | Carrier Type | Liner <sup>2</sup>  |                | Master Size  | Specs            | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|---|---|---|---|--------------|---------------------|----------------|--------------|------------------|----------|-------------|-------------|------|---------------|-------------|-----------|
|   |   |   |   |              | Type                | Caliper (mils) |              |                  | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| ▶ <b>200MP</b><br>High Performance Acrylic    | 92015   | Double coat with thin polyester film carrier for dimensional stability and improved handling.               | 5.9   | PET          | 58#                 | 4.2            | 54" x 180 yd | —                | 10       | 9           | 1           | 2    | 9             | -40         | 400       |
|   | ▶ <b>200MP/300LSE</b><br>Differential Adhesive            | 9496LE  | Differential double coated tape featuring High Performance Acrylic Adhesive 200MP and Low Surface Energy Acrylic Adhesive 300LSE. | 6.7          | PET                 | 58# PCK        | 4.2          | 24" x 36" sheets | —        | 10          | 9           | 1    | 2             | 9           | -40       |
| 9   |   |   |   |              |                     |                |              |                  |          | 9           | 10          | 1    | 8             | -40         | 300       |
| ▶ <b>300LSE</b><br>Low Surface Energy Acrylic | 93005LE   | Very thin double coated polyester tape with good anti-lifting properties.                                   | 2.0   | PET          | 58# PCK/<br>83# PCK | 4.2/<br>6.2    | 48" X 60 yd  | —                | 9        | 9           | 10          | 1    | 8             | -40         | 300       |
|   | 93010LE   | Extremely smooth adhesive for excellent graphic appearances. Good chemical and humidity resistance.         | 3.9   | PET          | 58# PCK             | 4.2            | 54" X 180 yd | —                |          |             |             |      |               |             |           |
|   | 93015LE   | Extremely smooth adhesive for excellent graphic appearances. Good chemical and humidity resistance.         | 5.9   | PET          | 58# PCK             | 4.2            | 54" X 180 yd | —                |          |             |             |      |               |             |           |
|   | 93020LE   | Extremely smooth adhesive for excellent graphic appearances. Good chemical and humidity resistance.         | 7.9   | PET          | 58# PCK             | 4.2            | 54" X 180 yd | —                |          |             |             |      |               |             |           |
| <b>300</b><br>High Strength Acrylic           | 444   | Foam lamination. Gasket attachment.   | 3.9   | PET          | 55# DK              | 3.2            | 48" x 108 yd | —                | 7        | 9           | 9           | 9    | 6             | -40         | 250       |
|   | 444PC   | Foam lamination. Gasket attachment.   | 3.9   | PET          | 58# PCK             | 4.2            | 48" x 108 yd | —                |          |             |             |      |               |             |           |
|   | XT6110  | Attaching porous fabrics, flock, foams and heavy cardstocks.  | 3.9   | PET          | 55# DK              | 3.2            | 48" x 36 yd  | —                |          |             |             |      |               |             |           |
|   | 9009  | Thin double coat for applications where thickness is critical.  | 2.1   | PET          | 55# DK              | 3.2            | 54" x 180 yd | —                |          |             |             |      |               |             |           |
|   | 9019  | Ultra-thin double coat for applications where thickness is critical.  | 1.1   | PET          | 55# DK              | 3.2            | 54" x 180 yd | —                |          |             |             |      |               |             |           |
| 9039  | Thin double coat where application thickness is critical. | 3.5   | PET   | 55# DK       | 3.2                 | 54" x 180 yd   | —            |                  |          |             |             |      |               |             |           |
| ▶ <b>300MP</b><br>High Tack Acrylic           | 9687C   | Thick double coat for bonding to foam. Provided on 6 in. core only.   | 12.0  | Clear PET    | Clear PET           | 2.0            | 54" x 180 yd | —                | 7        | 7           | 8           | 9    | 7             | -40         | 250       |
|   | 99786   | Thin non-woven carrier for dimensional stability and improved handling. Temperature resistance up to 300°F. | 5.5   | Non-Woven    | 58# PCK Printed     | 4.2            | 48" x 180 yd | —                |          |             |             |      |               |             |           |
|   | 99786NP   | Same as 9786 except an unprinted liner.   | 5.5   | Non-Woven    | 58# PCK Unprinted   | 4.2            | 54" x 180 yd | —                |          |             |             |      |               |             |           |
|   | 9832  | General purpose tape with improved temperature resistance.  | 4.8   | PET          | 58# PCK             | 4.2            | 54" x 250 yd | —                |          |             |             |      |               |             |           |
|   | 9832HL  | Same as 9832 except with a heavier liner.   | 4.8   | PET          | 58# PCK             | 6.2            | 54" x 250 yd | —                |          |             |             |      |               |             |           |

1 – More information on pages 8–9.  
2 – More information on page 15.

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Double Coated Tapes (cont.)

| Adhesive Family <sup>1</sup>                 | Product | Description/<br>Application Ideas   | Tape Cal. (mils) | Carrier Type | Liner <sup>2</sup>  |                | Master Size  | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|--|---------|---|------------------|--------------|---------------------|----------------|--------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|  |         |   |                  |              | Type                | Caliper (mils) |              |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| <b>340</b><br>High Tack Acrylic              | 9456    | High tack acrylic adhesive with good adhesion to many plastics.                   | 5.0              | Tissue       | 55# DK              | 3.2            | 54" x 180 yd | —     | 6        | 6           | 5           | 4    | 8             | -40         | 180       |
|  | 9824    | Foam lamination.<br>Gasket attachment.  | 3.1              | PET          | 55# DK              | 3.2            | 54" x 250 yd | —     |          |             |             |      |               |             |           |
|  | 9828    |   | 4.0              | PET          | 55# DK              | 3.2            | 54" x 250 yd | —     |          |             |             |      |               |             |           |
|  | 9828PC  | High tack acrylic adhesive with good adhesion to many foams.                      | 4.0              | PET          | 74# PCK             | 5.6            | 54" x 250 yd | —     |          |             |             |      |               |             |           |
| <b>350</b><br>High Performance Acrylic       | 9500PC  | High performance with good chemical resistance.                                   | 5.6              | PET          | 61.5 PCK            | 4.5            | 48" x 108 yd | —     | 9        | 10          | 10          | 9    | 8             | -40         | 450       |
|  | 3028EK  | Same as 9500PC with an extensible kraft liner which facilitates narrow slitting.  | 5.6              | PET          | Extensible Kraft    | 5.5            | 48" x 108 yd | —     |          |             |             |      |               |             |           |
| <b>375</b><br>High Performance Double Coated | 9086    | Easy tearing, easy handling.  | 7.5              | Tissue       | Glassine Black Logo | 3.0            | 54" x 750 yd | —     | High     | High        | Med         | Low  | Good          | -10         | 250       |
|  | 9087    | Thick adhesive to bond rough surfaces.  | 10.2             | PVC          | Glassine Green Logo | 3.0            | 54" x 750 yd | —     |          |             |             |      |               |             | 185       |
|  | 9088    | High temperature resistance with paper liner.                                     | 8.3              | PET          | Glassine Red Logo   | 3.0            | 54" x 750 yd | —     |          |             |             |      |               |             | 300       |
|  | 9088FL  | High temperature resistance with film liner.                                      | 8.3              | PET          | Red PP, No Print    | 3.1            | 54" x 750 yd | —     |          |             |             |      |               |             | 300       |
| <b>400</b><br>Acrylic Adhesive               | 415     | Splice papers, films and foils.   | 4.0              | PET          | 60# DK              | 4.0            | 48" x 108 yd | —     | 5        | 5           | 5           | 5    | 5             | -60         | 250       |
|  | 9420    |   | 4.0              | Red PET      | 60# DK              | 4.0            | 48" x 108 yd | —     |          |             |             |      |               |             |           |
|  | 9576    |   | 4.0              | Clear PP     | 60# DK              | 4.0            | 27" x 360 yd | —     |          |             |             |      |               |             |           |
|  | 9576Y   | Splice papers, films and foils.   | 4.0              | Yellow PP    | 60# DK              | 4.0            | 27" x 360 yd | —     |          |             |             |      |               |             |           |
|  | 9578    | For core starting, miscellaneous joining and bonding. Hand tearable for easy use. | 4.0              | Transluc. PP | 60# DK              | 4.0            | 27" x 360 yd | —     |          |             |             |      |               |             |           |
| <b>420</b><br>Acrylic Adhesive               | 94210   | High tack adhesive offering good shock resistance.                                | 3.9              | PET          | 58# PCK             | 4.2            | 54" x 180 yd | —     | 7        | 7           | 8           | 4    | 6             | -60         | 300       |
|  | 94215   | Thicker version of 94210.   | 5.9              | PET          | 58# PCK             | 4.2            | 54" x 180 yd | —     |          |             |             |      |               |             |           |
|  | 94220   | Thicker version of 94215.   | 7.9              | PET          | 58# PCK             | 4.2            | 54" x 180 yd | —     |          |             |             |      |               |             |           |

1 – More information on pages 8–9.

2 – More information on page 15.

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Double Coated Tapes (cont.)

| Adhesive Family <sup>1</sup>           | Product      | Description/<br>Application Ideas   | Tape Cal. (mils) | Carrier Type     | Liner <sup>2</sup>       |                | Master Size    | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|--|--------------|---|------------------|------------------|--------------------------|----------------|----------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|  |              |   |                  |                  | Type                     | Caliper (mils) |                |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| Silicone/<br>Acrylic<br>Differential   | 9731         | Differential adhesive. Ideal for attaching silicone materials to HSE or LSE materials.  | 5.5              | PET              | Clear PET/54#<br>Tan PCK | 3.0/5.4        | 48" x 180 yd   | —     | 10       | 10          | 9           | 8    | 8             | -40         | 300       |
| Silicone                               | 96042        | Silicone attachment. Single lined for easier processing.  | 5                | PET              | White PET                | 2              | 48" x 180 yd   | —     | 9        | 8           | 7           | 6    | 10            | -40         | 350       |
| 700/745/<br>760<br>Synthetic<br>Rubber | 9443NP       | High tack rubber adhesive with good adhesion to most plastics.  | 6.0              | HDPE             | 60# DK                   | 3.7            | 27" x 120 yd   | —     |          |             |             |      |               |             |           |
|  | 9579         | Core starting on metal cores.   | 9.0              | HDPE             | 62# DK                   | 3.7            | 27" x 144 yd   | —     | 8        | 9           | 9           | 2    | 2             | -40         | 200       |
|  | 9589         | Carpet attachment.  | 9.0              | HDPE             | 60# DK                   | 3.7            | 26" x 144 yd   | —     |          |             |             |      |               |             |           |
| 830/850/<br>860<br>Natural<br>Rubber   | 401M         | Used for mounting rubber or photopolymer printing plates.   | 9.0              | Paper            | 54# DK                   | 3.0            | 22" x 108 yd   | —     | 8        | 8           | 8           | 5    | 1             | -40         | 180       |
|  | 410M         | Core starting/end tabbing of papers, films and foils.   | 6.0              | Paper            | 54# DK                   | 3.0            | 23.5" x 108 yd | —     | 8        | 8           | 8           | 5    | 1             | -40         | 200       |
| 900<br>Miscellaneous                   | 9737         | Clear, thin PET carrier. Aggressive and versatile splicing tape.  | 3.5              | PET              | 55# DK White             | 3.5            | 54" x 180 yd   | —     |          |             |             |      |               |             |           |
|  | 9737R        | Red, thin PET carrier. Aggressive and versatile splicing tape.  | 3.5              | PET              | 55# DK White             | 3.5            | 54" x 180 yd   | —     |          |             |             |      |               |             |           |
|  | 9738         | Clear, non-woven tissue carrier. Aggressive and versatile splicing tape.  | 4.3              | Non-Woven Tissue | 55# DK White             | 4.3            | 54" x 180 yd   | —     | 5        | 5           | 2           | 5    | 7             | -10         | 300       |
|  | 9738R        | Red, non-woven tissue carrier. Aggressive and versatile splicing tape.  | 4.3              | Non-Woven Tissue | 55# DK White             | 4.3            | 54" x 180 yd   | —     |          |             |             |      |               |             |           |
|  | 9740         | Clear, high peel, tack and shear strength. Performance grade splicing tape for corrugators.   | 3.5              | PET              | 55# DK                   | 3.5            | 54" x 180 yd   | —     | 6        | 6           | 2           | 3    | 6             | 10          | 425       |
|  | 9741         | Clear, thick, super aggressive tape. Adheres to a wide variety of substrates for splicing applications.   | 6.5              | PET              | 55# Glassine             | 6.5            | 54" x 180 yd   | —     | 7        | 7           | 3           | 7    | 5             | -40         | 200       |
|  | 9816L        | General purpose, high tack, rubber-based adhesive.  | 3.5              | PET              | 60# Kraft                | 3.5            | 54" x 200 yd   | —     |          |             |             |      |               |             |           |
|  | 9816M        |   |                  |                  | 74# Kraft                | 3.5            | 54" x 200 yd   | —     | 8        | 8           | 7           | 7    | 3             | -40         | 150       |
|  | 9816H        |   |                  |                  | 14 pt. board             | 3.5            | 54" x 200 yd   | —     |          |             |             |      |               |             |           |
|  | 9817L        | Exposed side is acrylic, liner side is rubber-based. Excellent quick stick and adhesion to high and low energy surfaces.  | 3.3              | PET              | 60# Kraft                | 3.5            | 54" x 200 yd   | —     | 8        | 7           | 6           | 7    | 3             |             |           |
| 9817M                                  | 74# Kraft    |   |                  |                  | 3.5                      | 54" x 200 yd   | —              |       |          |             |             |      |               | -40         | 175       |
| 9817H                                  | 14 pt. board |   |                  |                  | 3.5                      | 54" x 200 yd   | —              | 8     | 8        | 7           | 6           | 3    |               |             |           |
| Specialty<br>Acrylic                   | 9599         | Acrylic adhesive for high adhesion to a variety of materials including metals and HSE plastics; low-VOC properties suitable for interior automotive applications. | 5.0              | Non-Woven Tissue | DK White                 | 4.5            | 40" x 55 yd    | —     | 9        | 8           | 7           | 4    | 7             | -40         | 275       |

1 – More information on pages 8–9.  
2 – More information on page 15.

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## 3M™ Differential Double Coated Tapes

| Adhesive Family <sup>1</sup>                               | Product | Description/<br>Application Ideas  | Tape Cal. (mils) | Carrier Type | Liner <sup>2</sup> |                | Master Size  | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|--|---------|--|------------------|--------------|--------------------|----------------|--------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|  |         |  |                  |              | Type               | Caliper (mils) |              |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| <b>300/400</b><br>Acrylic                                  | 9466B   | Piggy-back adhesive laminating system designed to attach bar-code labels to blood bags and pharmaceutical containers.  | 2                | —            | White PP           | 3.5            | 48" x 180 yd | —     | 7        | 9           | 9           | 9    | 6             | -40         | 250       |
|  |         |  | 1                | —            | 60# DK             | 3.7            |              | —     | 5        | 5           | 5           | 5    | 5             |             |           |
| <b>350/</b><br>Silicone<br>Differential<br>Adhesive        | 9731    | Differential adhesive-silicone adhesive on back side. Silicone keypad attachment, printer toner cartridge refurbishing.  | 5.5              | PET          | PET/PCK            | 2.9/<br>5.0    | 38" x 108 yd | —     | 9        | 10          | 10          | 9    | 8             | -40         | 250       |
| <b>200MP/</b><br><b>300LSE</b><br>Differential<br>Adhesive | 9496LE  | Adhesive 200MP provides excellent bond strength to a variety of high surface energy substrates. 300LSE bonds to powder coated metals, oily metals and LSE plastic. | 6.7              | PET          | 58#/58#            | 4.2/<br>4.2    | —            | —     | 10       | 9           | 1           | 3    | 9             | -40         | 250       |
|  |         |  |                  |              |                    |                |              |       | 9        | 10          | 10          | 1    | 7             |             |           |
| Acrylic/<br>Rubber<br>Differential<br>Adhesive             | 9817L   | Exposed side is acrylic, liner side is rubber-based. Excellent quick stick and adhesion to high and low energy surfaces.   | 3.3              | PET          | 60# Kraft          | 3.5            | 54" x 200 yd | —     | 8        | 7           | 6           | 7    | 3             | -40         | 175       |
|  | 9817M   |  | 4.3              | PET          | 74# Kraft          |                | 54" x 200 yd | —     | 8        | 8           | 7           | 6    |               |             |           |
|  | 9817H   |  | 5.3              | PET          | 14 pt. Board       |                | 54" x 200 yd | —     | 8        | 8           | 7           | 6    |               |             |           |
|  | 9377    | Flame retardant double coated tape for carpet installation to bond carpet to interior floorboards.   | 11.0             | PP           | 58# PCK            | 4.2            | 24" x 25 yd  | —     | 4/10     | —           | —           | —    | 8             | 40          | 250       |

## 3M™ Removable/Repositionable Tapes

| Adhesive Family <sup>1</sup>                 | Product | Description/<br>Application Ideas   | Tape Cal. (mils) | Carrier Type | Liner <sup>2</sup> |                | Master Size                      | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|--|---------|---|------------------|--------------|--------------------|----------------|----------------------------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|  |         |   |                  |              | Type               | Caliper (mils) |                                  |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| <b>400/1000*</b><br>Differential<br>Adhesive | 9415PC  | Differential adhesive. Polyester film carrier.  | 2                | PET          | 78# PCK            | 6.0            | 48" x 216 yd                     | —     | 5        | 5           | 5           | 4    | 5             | -20         | 150       |
|  | 9416    | Differential adhesive. Tissue carrier.  | 1                | Tissue       | 70# PCK            | 5.6            | 48" x 216 yd                     | —     | 3        | 1           | 1           | —    | 2             |             |           |
|  | 928 ATG | Reverse wound ATG version of 9416 on 1" core. Used with ATG700 Applicator.  | 1                | Tissue       | 70# PCK            | 5.6            | Width to 3/4"<br>Length to 36 yd | —     | 3        | 1           | 1           | —    | 2             |             |           |
| <b>420/1050*</b><br>Differential<br>Adhesive | 9425    | High tack/medium tack for repositionable parts.   | 5.5              | UPVC         | 58# PCK            | 4.2            | 48" x 144 yd                     | —     | 8        | 7           | 1           | 4    | 2             | -20         | 125       |
|  | 9425HT  | High tack/medium tack acrylic adhesive offers permanent adhesion to one substrate with removability to the other. | 5                | PET          | 58# PCK            | 4.2            | 48" x 144 yd                     | —     | 8        | 7           | 1           | 4    | 2             |             |           |
| <b>400/1070</b><br>Repositionable<br>Acrylic | 665     | Differential adhesive. Linerless.   | 3.5              | UPVC         | None               | —              | 46" x 108 yd                     | —     | 5        | 5           | 5           | 4    | 5             | -60         | 125       |
|  | 666     | Differential adhesive. Lined.   |                  | UPVC         | LDPE               | 4.0            |                                  | —     |          |             |             |      |               |             |           |
| Differential<br>Acrylic                      | 97027   | High tack/low tack acrylic adhesive with polyester carrier (formerly Venture 4447).                               | 2.9              | PET          | 74# PCK            | 3.5            | 54" x 250 yd                     | —     | 8        | 7           | 6           | 5    | 3             | -40         | 250       |
|  | 97042   | High tack/medium tack acrylic adhesive with polyester film carrier (formerly Venture 523).                        | 3.8              |              | 55# DK             | 3              | 54" x 250 yd                     | —     | 7        | 6           | 4           | 3    | 6             |             |           |
| <b>1000</b><br>Repositionable<br>Acrylic     | 9449S   | Laminates to various substrates to make them repositionable.  | 0.4              | None         | 55# DK             | 2.5            | 48" x 360 yd                     | —     | 3        | 1           | 1           | —    | 2             | -20         | 250       |
| <b>100</b><br>High Temp.<br>Acrylic          | 9658F   | Clear, closed foam acrylic foam tape. Initially repositionable, but will create permanent bond.                   | 31.0             | None         | PET                | 2.0            | 47" x 175 yd                     | —     | 9        | 8           | 1           | —    | 9             | -40         | 450       |
| <b>800</b><br>Natural Rubber                 | 401M    | Temporary positioning or fixturing of parts during machining operations and plate mounting.                       | 9.0              | Paper        | 54# DK             | 3              | 22" x 108 yd                     | —     | 8        | 8           | 8           | 5    | 1             | -40         | 180       |
|  | 410M    |   | 6.0              |              | 23.5" x 108 yd     |                | -40                              |       |          |             |             |      |               | 200         |           |

1 – More information on pages 8–9.

2 – More information on page 15.

\*Second number reflects removable adhesive side.

### Values: 1 = Lowest Performance; 10 = Highest Performance

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# 3M™ Extended Liner Tapes

| Adhesive Family <sup>1</sup> | Product             | Tape Thickness w/o liner mils (mm) | Liner Type <sup>2</sup>       | Description   | Temperature Resistance °F (°C)  |            | Solvent Resistance | Relative Adhesion |   | Application Ideas   |  |
|------------------------------|---------------------|------------------------------------|-------------------------------|---|---|------------|--------------------|-------------------|---|---|--|
|                              |                     |                                    |                               |   | Minutes Hours   | Days Weeks |                    | HSE               | LSE   |   |  |
| 340                          | 466XL               | 2.0 (0.05)                         | 62# DK White with Black Print | High tack; permanent  | 180 (82)  | 150 (65)   | Med                | High              | High  | Coated papers and low surface energy (LSE) plastics. Overnight envelopes. Features an end-of-roll indicator tab for automated dispensing.   |  |
|                              | 400                 | 465XL                              | 2.0 (0.05)                    | 60# DK Tan with Green Print   | General purpose   | 250 (121)  | 180 (82)           | Med               | Med   | Low   | Seal flaps on overnight envelopes. Pressure sensitive edging on business forms. General commercial joining applications. For attaching materials that require more adhesive thickness. Larger outsert attachments. |
|                              |                     | 450EK                              | 1.0 (0.025)                   | 78# Extensible Kraft White without Print                                |   |            |                    |                   |   |   | Pharmaceutical outsert attachment. For applications requiring a more tear resistant liner.   |
|                              |                     | 450XL                              | 1.0 (0.025)                   | 60# DK Tan with Green Print   |   |            |                    |                   |   |   | Pharmaceutical outsert attachment. General paper attachment.   |
|                              |                     | 920XL                              | 1.0 (0.025)                   | 40# DK White with Red Print   | Seal flaps on poly-bags and envelopes. Pressure sensitive edging on business forms, literature, photos, posters and labels. |            |                    |                   |   |   |  |
| 9926XL                       | 1.0 (0.025)         | 40# DK White with Red Print        | General purpose               | 180 (82)  | 150 (65)  | Med        | Med                | Low               | Economical alternative for general paper-to-paper applications. |   |  |
| 600                          | 9934XL              | 4.0 (0.10)                         | 60# DK Tan without Print      | High tack to LSE materials  | 150 (65)  | 120 (49)   | Med                | High              | High  | P.O.P. displays. Difficult splicing applications, shelf talkers, price tags, polyethylene foam bonding, indirect food-contact applications. <sup>3</sup> High tack to LSE materials.  |  |
| ▶ 760                        | 476XL               | 6.0 (0.16)                         | 62# DK White with Red Print   | High tack, double coated film   | 150 (65)  | 120 (49)   | Med                | High              | High  | Heavy-duty sealing. Mounting of promotional items. Core starting. Closure of overnight boxes, tubes and envelopes. Indirect food-contact applications. <sup>3</sup>   |  |
| 770                          | 9925XL <sup>4</sup> | 2.5 (0.065)                        | 43# DK White with Black Print | Tissue reinforced; High initial adhesion to a wide variety of materials | 150 (65)  | 100 (41)   | Low                | Med               | Med   | General mounting. P.O.P. items. Attaching tags and labels. Core starting. Permanent bonding paper-to-paper, business forms, traffic tickets, novelty items and literature. Indirect food-contact applications. <sup>3</sup> |  |

1 – More information on pages 8–9.

2 – More information on page 15.

3 – FDA acceptable dry ingredients listed as indirect food-contact additives when used in food packing with minimal opportunity for exposure.

4 – Non-liner side is adhesive coated full width.

**Relative Adhesion:**

HSE – High Surface Energy

LSE – Low Surface Energy

# 3M™ Membrane Switch Spacers — Double Coated Spacers

| Adhesive Family <sup>1</sup>                     | Product | Description/<br>Application Ideas   | Construction                 |   |                   | Sheet Size<br>Master Roll | Specs |
|--|---------|---|------------------------------|---|-------------------|---------------------------|-------|
|  |         |   | Total<br>Thickness<br>(mils) | Top Liner<br>Adhesive Type<br>Carrier<br>Adhesive Type<br>Bottom Liner  | Caliper<br>(mils) |                           |       |
| ▶ <b>100MP</b><br>High<br>Performance<br>Acrylic | 7979    | Premium adhesive for harsh chemical and high temperature resistance. High shear strength withstands repeated stresses from switch actuation. Both liners are printed.   | 9                            | 58# PCK<br>100 MP*<br>Polyester<br>100 MP*<br>58# PCK                   | 2<br>5<br>2       | 24" x 36"<br>48" x 360 yd | —     |
|  | 7945MP  | Excellent temperature, chemical and UV resistance. High shear strength withstands repeated stresses of switch actuation. Designed to separate switch circuitry until actuation. Both liners are printed.              | 5                            | 58# PCK<br>200MP<br>Polyester<br>200MP<br>58# PCK                       | 2<br>1<br>2       | 24" x 36"<br>48" x 360 yd | UL    |
|  | 7953MP  | Same characteristics as 7945MP. Primary liner is printed. Also used for graphic attachment.   | 3.5                          | 58# PCK<br>200MP<br>Polyester<br>200MP<br>58# PCK                       | 1.5<br>0.5<br>1.5 | 24" x 36"<br>48" x 360 yd | UL    |
|  | 7953HL  | Same characteristics as 7953MP with a single liner.   | 3.5                          | 83# PCK<br>200MP<br>Polyester<br>200MP                                  | 1.5<br>0.5<br>1.5 | 48" x 360 yd              | —     |
|  | 7956MP  | Same characteristics as 7945MP. Both liners are printed.  | 6                            | 58# PCK<br>200MP<br>Polyester<br>200MP<br>58# PCK                       | 2<br>2<br>2       | 24" x 36"<br>48" x 360 yd | UL    |
|  | 7956MWS | For use in graphic and non-graphic applications. Metallized vapor coat and white color provide strong opacity for facilitating backlighting and eliminating floodcoats. Single liner.                                 | 6                            | 58# PCK<br>200MP<br>Polyester (white, vapor coated)<br>200MP            | 2<br>2<br>2       | 48" x 360 yd              | UL    |
|  | 7956WDL | Same characteristics as 7956MWS except in sheets.   | 6                            | 58# PCK<br>200MP<br>Polyester (white, vapor coated)<br>200MP<br>58# PCK | 2<br>2<br>2       | 24" x 36"<br>48" x 360 yd | UL    |
|  | 7957MP  | Same characteristics as 7945MP, except thicker polyester. Both liners are printed.  | 7                            | 58# PCK<br>200MP<br>Polyester<br>200MP<br>58# PCK                       | 2<br>3<br>2       | 24" x 36"<br>48" x 360 yd | UL    |
|  | 7959MP  | Same characteristics as 7945MP, except thicker polyester. Both liners are printed.  | 9                            | 58# PCK<br>200MP<br>Polyester<br>200MP<br>58# PCK                       | 2<br>5<br>2       | 24" x 36"<br>48" x 360 yd | UL    |
|  | 7961MP  | Same characteristics as 7945MP, except thicker polyester. Both liners are printed.  | 11                           | 58# PCK<br>200MP<br>Polyester<br>200MP<br>58# PCK                       | 2<br>7<br>2       | 24" x 36"<br>48" x 360 yd | UL    |
|  | 7966MWS | For use in graphic and non-graphic applications. Metallized vapor coat and white color provide strong opacity for facilitating backlighting and eliminating floodcoats.   | 9                            | 58# PCK<br>200MP<br>Polyester (white)<br>200MP                          | 2<br>2<br>5       | 48" x 360 yd              | UL    |
|  | 7966WDL | Same characteristics as 7966MWS except in sheets.   | 9                            | 58# PCK<br>200MP<br>Polyester (white, vapor coated)<br>200MP<br>58# PCK | 2<br>2<br>5       | 24" x 36"<br>48" x 360 yd | UL    |
|  | 9045MP  | Excellent high temperature, chemical, and UV resistance. High cohesive strength withstands repeated stresses of switch actuation. Heavy liner for improved handling and lay-flat properties. Both liners are printed. | 5                            | 94# PCK<br>200MP<br>Polyester<br>200MP<br>94# PCK                       | 2<br>1<br>2       | 24" x 36"<br>48" x 360 yd | UL    |

1 – More information on pages 8–9. \*Products in this platform are 3M™ VHB™ Tapes offering our highest strength.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Membrane Switch Spacers — Double Coated Spacers (cont.)

| Adhesive Family <sup>1</sup>                          | Product       | Description/<br>Application Ideas  | Construction           |  |                | Sheet Size<br>Master Roll | Specs |
|---|---------------|--|------------------------|--|----------------|---------------------------|-------|
|   |               |  | Total Thickness (mils) | Top Liner Adhesive Type<br>Carrier Adhesive Type<br>Bottom Liner | Caliper (mils) |                           |       |
| ▶ <b>200MP</b><br>High Performance Acrylic<br>(cont.) | <b>9056MP</b> | Same characteristics as 9045MP, except thicker polyester. Both liners are printed. | 6                      | 94# PCK<br>200MP<br>Polyester<br>200MP<br>94# PCK                | 2<br>2<br>2    | 24" x 36"<br>48" x 360 yd | UL    |
|   | <b>9057MP</b> | Same characteristics as 9045MP, except thicker polyester. Both liners are printed. | 7                      | 94# PCK<br>200MP<br>Polyester<br>200MP<br>94# PCK                | 2<br>3<br>2    | 24" x 36"<br>48" x 360 yd | UL    |
|   | <b>9059MP</b> | Same characteristics as 9045MP, except thicker polyester. Both liners are printed. | 9                      | 94# PCK<br>200MP<br>Polyester<br>200MP<br>94# PCK                | 2<br>5<br>2    | 24" x 36"<br>48" x 360 yd | UL    |
|   | <b>9061MP</b> | Same characteristics as 9045MP, except thicker polyester. Both liners are printed. | 11                     | 94# PCK<br>200MP<br>Polyester<br>200MP<br>94# PCK                | 2<br>7<br>2    | 24" x 36"<br>48" x 360 yd | UL    |

1 – More information on pages 8–9.

## 3M™ Membrane Switch Spacers — Single Coated Spacers

| Adhesive Family <sup>1</sup>               | Product        | Description/<br>Application Ideas  | Construction           |  |                | Sheet Size<br>Master Roll | Specs |
|--|----------------|--|------------------------|--|----------------|---------------------------|-------|
|  |                |  | Total Thickness (mils) | Carrier Adhesive Type<br>Bottom Liner    | Caliper (mils) |                           |       |
| ▶ <b>200MP</b><br>High Performance Acrylic | <b>7992MP</b>  | Adhesive 200MP on one side of a clear polyester carrier.   | 4                      | Polyester Film<br>200MP<br>94# PCK       | 2<br>2         | 24" x 36"<br>48" x 360 yd | —     |
|  | <b>7992MPW</b> | Adhesive 200MP on one side of a white polyester carrier. Ideal for providing keypad light management in membrane switch circuit.           | 4                      | White Polyester Film<br>200MP<br>94# PCK | 2<br>2         | 24" x 36"<br>48" x 360 yd | UL    |
|  | <b>7993MP</b>  | Excellent temperature, chemical, and UV resistance. Used for lead protection, dome retainer sheets, and for printing conductive circuitry. | 3                      | Polyester Film<br>200MP<br>94# PCK       | 1<br>2         | 24" x 36"<br>48" x 360 yd | UL    |
|  | <b>7995MP</b>  | Same characteristics as 7993MP, except with thicker polyester.   | 5                      | Polyester<br>200MP<br>94# PCK            | 3<br>2         | 24" x 36"<br>48" x 360 yd | UL    |
|  | <b>7997MP</b>  | Same characteristics as 7993MP, except with thicker polyester.   | 7                      | Polyester<br>200MP<br>94# PCK            | 5<br>2         | 24" x 36"<br>48" x 360 yd | UL    |

1 – More information on pages 8–9.

## 3M™ Screen Printable Adhesives

| Product Group              | Product       | Description/<br>Application Ideas  | Adhesion Specs    | Size   |
|----------------------------|---------------|--|-------------------|--|
| Screen Printable Adhesives | <b>SP7533</b> | Water-dispersed, pressure sensitive. Excellent balance of peel and shear strength. High heat resistance. | Process dependent | 1 liter (6/case)<br>5 liters (2/case)<br>1 gallon (4/case) |
|                            | <b>SP7555</b> | UV curable.  | Process dependent | 1 liter (6/case)   |

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Industrial Attachment Tapes — X-Series

| Product                        | Description/Application Ideas   | Adhesive Caliper (mils) | Carrier Type | Liner <sup>2</sup> |                | Master Size   | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|--------------------------------|---|-------------------------|--------------|--------------------|----------------|---------------|----------|-------------|-------------|------|---------------|-------------|-----------|
|                                |   |                         |              | Type               | Caliper (mils) |               | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| <b>Adhesive Transfer Tapes</b> |   |                         |              |                    |                |               |          |             |             |      |               |             |           |
| XG2105                         | Used for paper attachment.  | 2                       | n/a          | 55# DK             | 3.2            | 48" x 60 yd   | 5        | 5           | 5           | 4    | 5             | -60         | 250       |
| XT2105                         | Attach coated papers and plastics.  | 2                       | n/a          | 55# DK             | 3.2            | 48" x 60 yd   | 6        | 9           | 9           | 4    | 5             | -40         | 200       |
| XT2112                         | Attach paperboard and plastics.   | 5                       | n/a          | 55# DK             | 3.2            | 48" x 60 yd   |          |             |             |      |               |             |           |
| XP2112                         | Ideal for hanging posters and signs, trophy and recognition placards, and nameplates and emblems; securely attach smooth surface moldings and trim. | 5                       | n/a          | 55# DK             | 3.2            | 48" x 36 yd   | 9        | 10          | 10          | 9    | 8             | -40         | 450       |
| <b>Double Coated Tapes</b>     |   |                         |              |                    |                |               |          |             |             |      |               |             |           |
| XG5110                         | Attach papers and plastic films in print, graphics and specialty packaging applications.  | 4                       | Clear PP     | 55# DK             | 3.2            | 27" x 60 yd   | 5        | 5           | 5           | 5    | 5             | -60         | 250       |
| XG6110                         | Used to attach papers and plastic film in print, graphic and specialty packaging applications.  | 4                       | Clear PET    | 55# DK             | 3.2            | 48" x 60 yd   | 5        | 5           | 5           | 5    | 5             | -60         | 250       |
| XP6114                         | High shear strength tape for mounting plastic and metal trim.   | 5.6                     | PET          | 58# PCK            | 4.2            | 48" x 36 yd   | 9        | 10          | 10          | 9    | 8             | -40         | 450       |
| XR4115                         | Aggressive rubber adhesive for superior quick stick adhesion. Clean removal from solid surfaces.  | 6                       | HDPE         | 58# DK             | 4              | 27" x 60 yd   | 8        | 9           | 9           | 2    | 2             | -40         | 200       |
| XR4123                         | Aggressive rubber adhesive with tough carrier for clean removal from solid surfaces.  | 9                       | HDPE         | 58# DK             | 4              | 27" x 36 yd   | 8        | 9           | 9           | 2    | 2             | -40         | 200       |
| XR8115                         | Hand tearable double coated paper tape for temporary holding and clean removal.   | 6                       | Paper        | 54# DK             | 3              | 23.5" x 36 yd | 8        | 8           | 8           | 5    | 1             | -40         | 200       |
| XR8123                         | Hand tearable double coated paper tape with thick carrier for temporary holding and clean removal.  | 9.0                     | Paper        | 54# DK             | 3              | 22" x 36 yd   | 8        | 8           | 8           | 5    | 1             | -40         | 180       |
| XT6110                         | Attaching porous fabrics, flock, foams and heavy cardstocks.  | 3.9                     | PET          | 55# DK             | 3.2            | 48" x 36 yd   | 7        | 9           | 9           | 9    | 6             | -40         | 250       |

2 – More information on page 15.

### Values: 1 = Lowest Performance; 10 = Highest Performance

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

| Product                     | Tape Thickness w/o liner (mils) | Description  | Temperature Resistance |              | Solvent Resistance | Relative Adhesion |      | Application Ideas  | Adhesive Transfer Tape Equivalent |
|-----------------------------|---------------------------------|--|------------------------|--------------|--------------------|-------------------|------|--|-----------------------------------|
|                             |                                 |  | Minutes Hours          | Days Weeks   |                    | HSE               | LSE  |  |                                   |
| <b>ATG Adhesive Systems</b> |                                 |  |                        |              |                    |                   |      |  |                                   |
| XT2105-ATG                  | 2                               | High tack. Excellent adhesion to coated papers, paperboard and plastics. | 200°F (93°C)           | 150°F (65°C) | Med                | High              | High | Attach coated papers and plastics in printing and graphic applications.  | XT2105                            |
| XT2112-ATG                  | 5                               |  |                        |              |                    |                   |      | Perfect for plastics assembly and for attaching heavy paperboards and corrugated in P.O.P. and packaging applications. | XT2112                            |

Relative Adhesion: HSE – High Surface Energy; LSE – Low Surface Energy

### Scotch® ATG Applicator 700

Used for 3/4" and 1/2" wide tape



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### Scotch® ATG Applicator 714

Used for 1/4" wide tape



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Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# Scotch® ATG Adhesive Transfer Tapes

| Adhesive Family <sup>1</sup>               | Product | Tape Thickness w/o liner mils (mm) | Description   | Temperature Resistance |               | Solvent Resistance | Relative Adhesion |         | Application Ideas   | Adhesive Transfer Tape Equivalent |
|--|---------|------------------------------------|---|------------------------|---------------|--------------------|-------------------|---------|---|-----------------------------------|
|  |         |                                    |   | Minutes Hours          | Days Weeks    |                    | HSE               | LSE     |   |                                   |
| <b>300</b><br>High Tack Acrylic            | 976     | 2.0 (0.05)                         | High tack. Excellent adhesion to most plastics.                 | 250°F (121°C)          | 150°F (65°C)  | Med                | High              | High    | Attach fabric swatches in sample books.   | 927                               |
|  | 969     | 5.0 (0.13)                         |   |                        |               |                    |                   |         | Assemble P.O.P. displays. Bond trim strips to furniture or luggage. Bond labels to plastic toys. Attach gaskets or foams.   | 950                               |
| <b>350</b><br>High Performance Acrylic     | 926     | 5.0 (0.13)                         | High performance. Excellent temperature and solvent resistance. | 450°F (232°C)          | 300°F (149°C) | High               | High              | High    | Bond fabric or trim to window blinds. Splice aluminum coils. Bond foam insulation. Mount nameplates on award plaques.       | F9485PC                           |
| <b>400</b><br>General Purpose Adhesive     | 970XL   | 1.0 (0.025)                        | General purpose. Excellent adhesion to most paper stocks.       | 250°F (121°C)          | 180°F (82°C)  | Med                | Med               | Low     | Attach photos to layouts. Attach labels.  | 920XL                             |
|  | 924     | 2.0 (0.05)                         |   |                        |               |                    |                   |         | Seal pocket in folders. Bond mat board in picture frames. Splice paper, films and foils. General purpose bindery attaching. | 465                               |
|  | 987*    | 1.7 (0.040)                        |   |                        |               |                    |                   |         |   | 9498                              |
| <b>400/1000</b><br>Repositionable Adhesive | 928     | 2.0 (0.05)                         | Differential tack. Repositionable.                              | 180°F (82°C)           | 150°F (65°C)  | Med                | High/Low          | Low/Low | Attach credit card in mailer. Core start/end tab paper, films and foils. Attach temporary labels.                           | 9416                              |

1 – More information on pages 8–9.

\* 3M Brand

Relative Adhesion: HSE – High Surface Energy; LSE – Low Surface Energy

# 3M™ VHB™ Tapes

| Product Number          | Tape Thickness w/o Liner mils (mm) | Liner Type | Description   | Adhesive Type         | Temp. Resistance °F (°C) |            | Solvent Resistance | Relative Adhesion |     | Application Ideas  |
|-------------------------|------------------------------------|------------|---|-----------------------|--------------------------|------------|--------------------|-------------------|-----|--|
|                         |                                    |            |   |                       | Minutes Hours            | Days Weeks |                    | HSE               | LSE |  |
| <b>4941 Tape Family</b> |                                    |            |   |                       |                          |            |                    |                   |     |  |
| 4926                    | 15 (0.4)                           | A          | Gray, closed-cell acrylic foam carrier. Conformable. Good adhesion to many painted metals. Plasticizer resistant. UL 746C.        | Multi-purpose acrylic | 300 (149)                | 200 (93)   | High               | High              | Med | Bond and seal polycarbonate lens over LCD. Bond and seal plastic windows to pre-painted control panels/switch gear. Mount vinyl wiring ducts and conduit channels. Seam vinyl banners. |
| 4936                    | 25 (0.64)                          | A          |   |                       |                          |            |                    |                   |     |  |
| 4936F                   | 25 (0.64)                          | F          |   |                       |                          |            |                    |                   |     |  |
| 4941                    | 45 (1.1)                           | A          |   |                       |                          |            |                    |                   |     |  |
| 4941F                   | 45 (1.1)                           | D          |   |                       |                          |            |                    |                   |     |  |
| 4956                    | 62 (1.6)                           | A          |   |                       |                          |            |                    |                   |     |  |
| 4956F                   | 62 (1.6)                           | F          |   |                       |                          |            |                    |                   |     |  |
| 4991                    | 90 (2.3)                           | F          |   |                       |                          |            |                    |                   |     |  |
| 4991B                   | 90 (2.3)                           | F          |   |                       |                          |            |                    |                   |     |  |
| 4919F                   | 25 (0.64)                          | F          |   |                       |                          |            |                    |                   |     |  |
| 4947F                   | 45 (1.1)                           | F          |   |                       |                          |            |                    |                   |     |  |
| 4979F                   | 62 (1.6)                           | F          |   |                       |                          |            |                    |                   |     |  |
| <b>5952 Tape Family</b> |                                    |            |   |                       |                          |            |                    |                   |     |  |
| 5906                    | 6 (0.15)                           | G          | Black, closed-cell acrylic foam carrier. Good adhesion to many painted surfaces, including powder coated paint.                   | Modified Acrylic      | 300 (149)                | 250 (121)  | High               | High              | Med | Bond and seal polycarbonate lens over LCD. Lens and touch panel bonding. Logo attachment. P.O.P. and display construction.   |
| 5907                    | 8 (0.20)                           | G          |   |                       |                          |            |                    |                   |     |  |
| 5908                    | 10 (0.25)                          | G          |   |                       |                          |            |                    |                   |     |  |
| 5909                    | 12 (0.30)                          | G          |   |                       |                          |            |                    |                   |     |  |
| 5915                    | 16 (0.40)                          | F          | Black or white, closed-cell acrylic foam carrier. Good adhesion to many painted surfaces, including powder coated paint. UL 746C. | Modified Acrylic      | 300 (149)                | 250 (121)  | High               | High              | Med | Bonds to a variety of plastics and paint systems. Bond architectural signs to frames. Attach trim and extrusions. Hat channels and stiffeners.   |
| 5915P                   | 16 (0.40)                          | E          |   |                       |                          |            |                    |                   |     |  |
| 5915WF                  | 16 (0.40)                          | F          |   |                       |                          |            |                    |                   |     |  |
| 5925                    | 25 (0.60)                          | F          |   |                       |                          |            |                    |                   |     |  |
| 5925P                   | 25 (0.60)                          | E          |   |                       |                          |            |                    |                   |     |  |
| 5925WF                  | 25 (0.60)                          | F          |   |                       |                          |            |                    |                   |     |  |

**Liner Types:**

- A – 3 mil 54# Densified Kraft Paper
- B – 5 mil Clear Polyethylene Film
- C – 2 mil Polyester Film

- D – 5 mil Red Polyethylene Film
- E – 4 mil 58# Polycoated Kraft Paper
- F – 5 mil Red Printed Polyethylene Film
- G – 3 mil Clear PET

**Multi-purpose Acrylic:** Bonds to a wide range of materials including metals, glass, and high and medium surface energy plastics and paints. Resists migration of plasticizers in vinyl substrates.

**Modified Acrylic:** Bonds to medium low surface energy paints and plastics, including many powder coated paints in addition to the substrates listed with the multi-purpose acrylic adhesive (except plasticized vinyl).

**Relative Adhesion:**

HSE – High Surface Energy; LSE – Low Surface Energy

**Note:** The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.



## 3M™ VHB™ Tapes (cont.)

| Product Number                  | Tape Thickness w/o Liner mils (mm) | Liner Type | Description   | Adhesive Type         | Temp. Resistance °F (°C) |            | Solvent Resistance | Relative Adhesion |     | Application Ideas  |
|---------------------------------|------------------------------------|------------|---|-----------------------|--------------------------|------------|--------------------|-------------------|-----|--|
|                                 |                                    |            |   |                       | Minutes Hours            | Days Weeks |                    | HSE               | LSE |  |
| <b>5952 Tape Family (cont.)</b> |                                    |            |   |                       |                          |            |                    |                   |     |  |
| 5930                            | 32 (0.80)                          | F          | Black or white, closed-cell acrylic foam carrier. Good adhesion to many painted surfaces, including powder coated paint. UL 746C. | Modified Acrylic      | 300 (149)                | 250 (121)  | High               | High              | Med | Bonds to a variety of plastics and paint systems. Bond architectural signs to frames. Attach trim and extrusions. Hat channels and stiffeners.   |
| 5930P                           | 32 (0.80)                          | E          |   |                       |                          |            |                    |                   |     |  |
| 5930WF                          | 32 (0.80)                          | F          |   |                       |                          |            |                    |                   |     |  |
| 5952                            | 45 (1.1)                           | F          |   |                       |                          |            |                    |                   |     |  |
| 5952P                           | 45 (1.1)                           | E          |   |                       |                          |            |                    |                   |     |  |
| 5952WF                          | 45 (1.1)                           | F          |   |                       |                          |            |                    |                   |     |  |
| 5962                            | 62 (1.6)                           | F          |   |                       |                          |            |                    |                   |     |  |
| 5962P                           | 62 (1.6)                           | E          |   |                       |                          |            |                    |                   |     |  |
| 5962WF                          | 62 (1.6)                           | F          | Meets FAR 25.853 (a) 12 sec vertical burn Appendix F, Part 1 (a) (ii)   | Modified Acrylic      | 300 (149)                | 200 (93)   | High               | High              | Med | Overhead stow bins, signage, kick plates, galley modules, plastic and metal decorative trim, ceiling tile stiffeners, mirror mounting, air duct spuds, floor and wall panel attachment, clip attachment. |
| 5958FR                          | 40 (1.0)                           | F          |   |                       |                          |            |                    |                   |     |  |
| <b>RP Tape Family</b>           |                                    |            |   |                       |                          |            |                    |                   |     |  |
| RP16                            | 16 (0.4)                           | A          | Gray, closed-cell acrylic foam carrier. Conformable. Good adhesion to many painted metals.  | Multi-purpose Acrylic | 250 (121)                | 200 (93)   | High               | High              | Med | Panel bonding, stiffener attachment and trim attachment.   |
| RP16F                           | 16 (0.4)                           | F          |   |                       |                          |            |                    |                   |     |  |
| RP25                            | 25 (0.6)                           | A          |   |                       |                          |            |                    |                   |     |  |
| RP25F                           | 25 (0.6)                           | F          |   |                       |                          |            |                    |                   |     |  |
| RP32                            | 32 (0.8)                           | A          |   |                       |                          |            |                    |                   |     |  |
| RP32F                           | 32 (0.8)                           | F          |   |                       |                          |            |                    |                   |     |  |
| RP45                            | 45 (1.1)                           | A          |   |                       |                          |            |                    |                   |     |  |
| RP45F                           | 45 (1.1)                           | F          |   |                       |                          |            |                    |                   |     |  |
| RP62                            | 62 (1.6)                           | A          |   |                       |                          |            |                    |                   |     |  |
| RP62F                           | 62 (1.6)                           | F          |   |                       |                          |            |                    |                   |     |  |

**Liner Types:**

A – 3 mil 54# Densified Kraft Paper  
 B – 5 mil Clear Polyethylene Film  
 C – 2 mil Polyester Film

D – 5 mil Red Polyethylene Film  
 E – 4 mil 58# Polycoated Kraft Paper  
 F – 5 mil Red Printed Polyethylene Film  
 G – 3 mil Clear PET

**Multi-purpose Acrylic:** Bonds to a wide range of materials including metals, glass, and high and medium surface energy plastics and paints. Resists migration of plasticizers in vinyl substrates.

**Modified Acrylic:** Bonds to medium low surface energy paints and plastics, including many powder coated paints in addition to the substrates listed with the multi-purpose acrylic adhesive (except plasticized vinyl).

**Relative Adhesion:**

HSE – High Surface Energy; LSE – Low Surface Energy

## 3M™ Double Coated Foam Tapes

| Carrier      | Product | Liner Type | Tape Thickness mils (mm) | Description  | Adhesive Type | Temp. Resistance °F (°C) |            | Solvent Resistance | Relative Adhesion |     | Application Ideas   |                                 |
|--------------|---------|------------|--------------------------|--|---------------|--------------------------|------------|--------------------|-------------------|-----|---|---------------------------------|
|              |         |            |                          |  |               | Minutes Hours            | Days Weeks |                    | HSE               | LSE |   |                                 |
| Urethane     | 4004    | A          | 250 (6.4)                | Off-white, open-cell urethane foam carrier. High shear adhesive with high temperature resistance.            | 100           | 380 (193)                | 220 (104)  | Med                | High              | Low | Bond acoustic panels to walls. Mount air fresheners, soap dispensers, interior signs and nameplates. Attach wire clips to various surfaces. Mount electrical channel to wall. |                                 |
|              | 4026    | A          | 62 (1.6)                 |  |               |                          |            |                    |                   |     |   |                                 |
|              | 4052    | A          | 31 (0.8)                 |  |               |                          |            |                    |                   |     |   | Black version of 4032.          |
|              | 4056    | A          | 62 (1.6)                 |  |               |                          |            |                    |                   |     |   | Black version of 4016 and 4026. |
|              | 4085    | E          | 45 (1.1)                 | Off-white, open-cell urethane foam carrier. High tack adhesive.  | 740           | 200 (93)                 | 125 (52)   |                    |                   |     |   |                                 |
| Polyethylene | 4451    | C          | 32 (0.8)                 | Black, closed-cell high density polyethylene foam carrier.   | A135          | 150 (66)                 | 120 (49)   | Med                | High              | Low | Removable applications where good static is needed. Exhibits and trade shows. Nameplates.   |                                 |
|              | 4462    | B          | 31 (0.8)                 | White or black, closed-cell polyethylene foam carrier. High tack adhesive.                                   | 745           | 158 (70)                 | 120 (49)   | Med                | High              | Low | Attach hooks, wire clips and racks. Mount retail shelf price channels. Mount pen holders.   |                                 |
|              | 4466    | B          | 62 (1.6)                 |  |               |                          |            |                    |                   |     |   |                                 |
|              | 4492    | C          | 31 (0.8)                 | White or black, closed-cell polyethylene foam carrier. High shear adhesive with high temperature resistance. | 430           | 180 (82)                 | 158 (70)   | Med                | High              | Low | Mount nameplates on awards and novelties. P.O.P. displays and signs.  |                                 |
|              | 4496    | C          | 62 (1.6)                 |  |               |                          |            |                    |                   |     |   |                                 |
| Acrylic      | 4658F   | D          | 31 (0.8)                 | Clear, closed-cell acrylic foam tape. Clean removability from many substrates.                               | 100           | 212 (100)                | 175 (80)   | High               | High              | Low | Removable P.O.P. displays, signs, exhibits and trade shows, nameplates.   |                                 |

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Bonding Films

| Product Number | Caliper (mils) | Base Resin       | Color  | Bond/ Cure Time | Bondline Temp. (°F) | Description   | Size                                    |
|----------------|----------------|------------------|--------|-----------------|---------------------|---|---|
| 406            | 3.0            | EAA              | Clear  | 2–5 sec.        | 320                 | Flexible, light colored, thermoplastic bonding film exhibits good adhesion to a variety of substrates, especially metals.                                   | 48" x 180 yd                            |
| 583            | 2.0            | Nitrile Phenolic | Brown  | 2–5 sec.        | 250                 | Heat or solvent-activated dry film adhesive.  | 48" x 180 yd                            |
| 588            | 6.0            | Nitrile Phenolic | Yellow | 2–5 sec.        | 250                 | Heat or solvent-activated dry film adhesive.  | 21" x 180 yd                            |
| 615            | 2.5 or 4.0     | Polyester        | Tan    | 2–5 sec.        | 280                 | Flexible, light colored, thermoplastic bonding films exhibit good adhesion to a variety of substrates. 615 contains a non-woven scrim.                      | 0.6m x 155m                             |
| 615S           | 6.0 or 9.0     | Polyester        | Tan    | 2–5 sec.        | 280                 | Flexible, light colored, thermoplastic bonding films exhibit good adhesion to a variety of substrates. 615S contains a non-woven scrim.                     | 6 mil: 0.6m x 155m<br>9 mil: 0.6m x 80m |
| 668            | 2.5 or 4.0     | Polyamide        | Tan    | 2–5 sec.        | 320                 | Flexible, light colored, thermoplastic bonding film is tacky at room temperature and has good adhesion to a variety of substrates at elevated temperatures. | 0.6m x 155m                             |
| 690            | 8.0            | Polyester        | Tan    | 2–5 sec.        | 280                 | Flexible, light colored, thermoplastic bonding film is tacky at room temperature and has good adhesion to a variety of substrates at elevated temperatures. | 0.6m x 80m*                             |

\*MOQ is 2 rolls.

## 3M™ Tapes for Electronic Solutions

| Adhesive Family <sup>1</sup> | Product  | Description/ Application Ideas   | Adhesive Caliper (mils) | Liner <sup>2</sup>     |                | Master Size  | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|------------------------------|--|--|-------------------------|------------------------|----------------|--------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|                              |  |  |                         | Type                   | Caliper (mils) |              |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| Electrically Conductive      | 9703   | Z-axis only electrically conductive for interconnects, low outgassing version of 9705.   | 2.0                     | 58# PCK                | 4.0            | 24" x 108 yd | —     | 5        | 4           | 4           | —    | 6             | 20          | 160       |
|                              | 9705   | Z-axis only electrically conductive for interconnects, acrylic adhesive, Ag fillers.   | 2.0                     | 58# PCK                | 4.0            | 24" x 108 yd | —     |          |             |             |      |               |             |           |
|                              | 9706   | Z-axis only electrically conductive for interconnects, higher adhesion ECATT 9705 version, Ag fillers.                                   | 2.0                     | Dual Lined PET         | 2.0/ 2.0       | 24" x 108 yd | —     | 8        | 6           | 4           | —    | 6             | 20          | 160       |
|                              | 9709   | XYZ-axis conductive adhesive with inherent EMI shielding performance, Ag fillers.  | 2.0                     | Dual Lined PET         | 1.5/ 2.0       | 14" x 108 yd | —     | 5        | 5           | 4           | 4    | 6             | 20          | 160       |
|                              | 9709S  | XYZ-axis conductive adhesive with inherent EMI shielding performance, Ag fillers. Good grounding to stainless steel and plated surfaces. | 2.0                     | Dual Lined PET         | 1.5/ 2.0       | 14" x 108 yd | —     |          |             |             |      |               |             |           |
|                              | 9709SL   | Premium low release liner version of 9709S.  | 2.0                     | Dual Lined 58# PCK/PET | 2.0/ 4.0       | 14" x 108 yd | —     |          |             |             |      |               |             |           |
|                              | 9712   | XYZ-axis conductive adhesive for EMI shielding (acrylic adhesive, carbon scrim).   | 5.0                     | 58# PCK                | 4.0            | 24" x 108 yd | —     | 8        | 6           | 4           | —    | 6             | 20          | 185       |
|                              | 9713   | XYZ-axis conductive adhesive for EMI shielding (acrylic adhesive, Ni-carbon scrim).  | 3.0                     | 58# PCK                | 4.0            | 24" x 108 yd | —     |          |             |             |      |               |             |           |
| 9719                         | XYZ-axis conductive adhesive for EMI shielding (silicone adhesive, Ni-carbon scrim). | 4.0  | PET                     | 4.0                    | 14" x 108 yd   | —            |       |          |             |             |      |               |             |           |
| 8805                         | Improved adhesion ceramic-filled thermally conductive adhesive transfer tape.        | 5.0  | PET                     | 2.0                    | 14" x 36 yd    | —            |       |          |             |             |      |               |             |           |
| Thermally Conductive         | 8810   | 10 mil version of 8805.  | 10.0                    | PET                    | 2.0            | 14" x 36 yd  | —     | 8        | 6           | 4           | —    | 6             | 20          | 185       |
|                              | 8815   | 15 mil version of 8805.  | 15.0                    | PET                    | 2.0            | 14" x 36 yd  | —     |          |             |             |      |               |             |           |

1 – More information on pages 8–9.

2 – More information on page 15.

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Tapes for Electronic Solutions (cont.)

| Adhesive Family <sup>1</sup> | Product  | Description/<br>Application Ideas  | Adhesive Caliper (mils) | Liner <sup>2</sup> |                | Master Size | Specs | Adhesion |             |             |      | Chem. Resist. | Temp. Range |           |
|------------------------------|----------|--|-------------------------|--------------------|----------------|-------------|-------|----------|-------------|-------------|------|---------------|-------------|-----------|
|                              |          |  |                         | Type               | Caliper (mils) |             |       | Metal    | HSE Plastic | LSE Plastic | Foam |               | Low (°F)    | High (°F) |
| Thermally Conductive (cont.) | 8820     | 20 mil version of 8805.  | 20.0                    | PET                | 2.0            | 14" x 36 yd | —     | 8        | 6           | 4           | —    | 6             | 20          | 185       |
|                              | 8904-02  | Flame-retardant, ceramic-filled acrylic transfer tape. LED module/board bonding. | 8.0                     | PET                | 2.0            | 600mm x 40m | UL    |          |             |             |      |               |             |           |
|                              | 8904-02S | 10 mil version of 8904-02.   | 10.0                    | PET                | 2.0            | 600mm x 40m | UL    |          |             |             |      |               |             |           |
|                              | 8904-05  | 20 mil version of 8904-02.   | 20.0                    | PET                | 2.0            | 600mm x 40m | UL    |          |             |             |      |               |             |           |
|                              | 9882     | Ceramic-filled adhesive transfer tape.   | 2.0                     | PET                | 2.0            | 14" x 36 yd | UL    | 7        | 4           | 2           | —    | 6             | 20          | 160       |
|                              | 9885     | 5 mil version of 9882.   | 5.0                     | PET                | 2.0            | 14" x 36 yd | UL    | 5        | 5           | 4           | —    | 5             | 20          | 160       |
|                              | 9890     | Soft thermal tape.   | 40.0                    | PCK                | 5.5            | Call        | —     |          |             |             |      |               |             |           |
|                              | 9889FR*  | 10 mil version of 9882.  | 10.0                    | PET                | 2.0            | 14" x 36 yd | UL    | 7        | 4           | 2           | —    | 6             | 20          | 185       |

1 – More information on pages 8–9.

2 – More information on page 15.

\*9889FR is not available in the U.S.

### Values: 1 = Lowest Performance; 10 = Highest Performance

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

| Adhesive Family <sup>1</sup> | Product                     | Product Description     |                    |             |            | Thermal Performance                   |                       |                       | Dielectric Properties       |                             | UL Flammability Rating | Potential Operating Temperature Range (°C)*** |
|------------------------------|-----------------------------|-------------------------|--------------------|-------------|------------|---------------------------------------|-----------------------|-----------------------|-----------------------------|-----------------------------|------------------------|---|
|                              |                             | Base Material Type      | Thickness mil (mm) | Filler Type | Liner Type | Conductivity (W/m-K) 3M ASTM D5470 TM | Impedance             |                       | Dielectric Strength (KV/mm) | Volume Resistivity (ohm/cm) |                        |   |
|                              |                             |                         |                    |             |            |                                       | °C-in <sup>2</sup> /W | °C-cm <sup>2</sup> /W |                             |                             |                        |   |
| Thermally Conductive Pads    | 5516/<br>5516S*<br>Soft Pad | Filled Silicone Polymer | 20 (0.5)           | Ceramic     | PET        | 3.1                                   | 0.31                  | 2.0                   | 3.1                         | 6.9 x 10 <sup>14</sup>      | 3M V1 or VO TM**       | Short Term: 150<br>Long Term: 100–125         |
|                              |                             |                         | 40 (1.0)           |             |            |                                       | 0.53                  | 3.4                   |                             |                             |                        |   |
|                              |                             |                         | 60 (1.5)           |             |            |                                       | 0.76                  | 4.9                   |                             |                             |                        |   |
|                              |                             |                         | 80 (2.0)           |             |            |                                       | 0.98                  | 6.3                   |                             |                             |                        |   |
|                              | 5519/<br>5519S*<br>Soft Pad | Filled Silicone Polymer | 20 (0.5)           | Ceramic     | PET        | 4.1                                   | 0.29                  | 1.9                   | 3.1                         | 6.9 x 10 <sup>14</sup>      | 3M V1/VO or VO TM**    |   |
|                              |                             |                         | 40 (1.0)           |             |            |                                       | 0.48                  | 3.1                   |                             |                             |                        |   |
|                              |                             |                         | 60 (1.5)           |             |            |                                       | 0.65                  | 4.2                   |                             |                             |                        |   |
|                              |                             |                         | 80 (2.0)           |             |            |                                       | 0.82                  | 5.3                   |                             |                             |                        |   |
|                              | 5591S*<br>Ultra<br>Soft Pad | Filled Silicone Polymer | 20 (0.5)           | Ceramic     | PET        | 1.0                                   | 1.14                  | 7.3                   | 7.9                         | 2.0 x 10 <sup>12</sup>      | 3M V1 or VO TM**       |   |
|                              |                             |                         | 40 (1.0)           |             |            |                                       | 1.92                  | 12.4                  |                             |                             |                        |   |
|                              |                             |                         | 60 (1.5)           |             |            |                                       | 2.71                  | 17.5                  |                             |                             |                        |   |
|                              |                             |                         | 80 (2.0)           |             |            |                                       | 3.49                  | 22.5                  |                             |                             |                        |   |
|                              | 5592/<br>5592S*<br>Soft Pad | Filled Silicone Polymer | 20 (0.5)           | Ceramic     | PET        | 1.1                                   | 0.64                  | 4.1                   | 14.7                        | 3.0 x 10 <sup>12</sup>      | 3M V1 or VO TM**       |   |
|                              |                             |                         | 40 (1.0)           |             |            |                                       | 1.15                  | 7.4                   |                             |                             |                        |   |
|                              |                             |                         | 60 (1.5)           |             |            |                                       | 1.66                  | 10.7                  |                             |                             |                        |   |
|                              |                             |                         | 80 (2.0)           |             |            |                                       | 2.43                  | 15.7                  |                             |                             |                        |   |
|                              | 5595/<br>5595S*<br>Soft Pad | Filled Silicone Polymer | 20 (0.5)           | Ceramic     | PET        | 1.6                                   | 0.70                  | 4.5                   | 15.7                        | 5.0 x 10 <sup>12</sup>      | 3M V1 or VO TM**       |   |
|                              |                             |                         | 40 (1.0)           |             |            |                                       | 1.21                  | 7.8                   |                             |                             |                        |   |
|                              |                             |                         | 60 (1.5)           |             |            |                                       | 1.71                  | 11.0                  |                             |                             |                        |   |
|                              |                             |                         | 80 (2.0)           |             |            |                                       | 2.22                  | 14.3                  |                             |                             |                        |   |
| 5589H*<br>Soft Pad           | Filled Acrylic Polymer      | 40 (1.0)                | Ceramic            | PET         | 2.0        | 1.33                                  | 8.6                   | 21                    | 3.4 x 10 <sup>12</sup>      | UL VO                       |                        |   |
|                              |                             | 60 (1.5)                |                    |             |            | 1.67                                  | 1.67                  |                       |                             |                             |                        |   |
| 5590H*                       | Filled Acrylic Polymer      | 20 (0.5)                | Ceramic            | PET         | 3.0        | 0.46                                  | 3.0                   | 33                    | 2.7 x 10 <sup>12</sup>      | UL VO                       |                        |   |
|                              |                             | 40 (1.0)                |                    |             |            | 0.70                                  | 4.5                   |                       |                             |                             |                        |   |
|                              |                             | 60 (1.5)                |                    |             |            | 0.95                                  | 6.1                   |                       |                             |                             |                        |   |

\*The "S" version has a polymeric permanent film on one side to be used as a non-tacky surface for ease in reworking an assembly. Thermal Conductivity and Thermal Impedance are slightly changed with addition of the film, while Dielectric strength is improved. Optional thicknesses > 2.0mm. The "H" version has both a very low tack surface and a medium tack surface.

\*\*Test results based on 3M UL Test Method. The 3M V1 TM testing applies to the 0.5mm thick products in the "S" version.

\*\*\*Thermal impedance is measured with the test sample under a nominal 10 psi pressure to reflect a typical end use application. Short Term = Hours/Days. Long Term = Weeks/Months.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Tapes for Electronic Solutions (cont.)

## 3M™ Double Coated Tapes

| Adhesive Family <sup>1</sup>                      | Product        | Description/<br>Application Ideas  | Tape Cal. (mils) | Carrier Type | Liner <sup>2</sup> |                | Master Size  | Specs | Adhesion |             |             |        | Chem. Resist. | Temp. Range |            |
|---|----------------|--|------------------|--------------|--------------------|----------------|--------------|-------|----------|-------------|-------------|--------|---------------|-------------|------------|
|   |                |  |                  |              | Type               | Caliper (mils) |              |       | Metal    | HSE Plastic | LSE Plastic | Foam   |               | Low (°F)    | High (°F)  |
| <b>200MP</b><br>High Performance Acrylic          | <b>9492MP</b>  | 2.5 mil version of 9495MP.   | 2.5              | PET          | 58# PCK            | 4.2            | 48" x 180 yd | —     | 10       | 9           | 1           | 2      | 9             | -40         | 400        |
|   | <b>9495B</b>   | Black version of 9495MP.   | 5.7              | Black        | 58# PCK PET        | 4.2            | 54" x 180 yd | —     |          |             |             |        |               |             |            |
|   | <b>9495FL</b>  | Same as 9495MP with two liners; 3.0 mil opaque white HDPE.   | 5.7              | PET          | HDPE/<br>58# PCK   | 3.0/<br>4.2    | 48" x 180 yd | —     |          |             |             |        |               |             |            |
|   | <b>9495MP</b>  | Double-coated version of 468MP. Offers improved handling and ease of die-cutting.                                | 5.7              | PET          | 58# PCK            | 4.2            | 54" x 180 yd | UL    |          |             |             |        |               |             |            |
|   | <b>9495MPF</b> | 9495MP with a 2 mil polyester film liner.  | 5.7              | PET          | PET                | 2.0            | 54" x 180 yd | —     |          |             |             |        |               |             |            |
| <b>300LSE</b><br>Low Surface Energy Acrylic       | <b>9495LE</b>  | Double-coated version of 9472LE. Improved handling and ease of die-cutting.                                      | 6.7              | PET          | 58# PCK            | 4.2            | 54" x 180 yd | UL    | 9        | 10          | 10          | 1      | 7             | -40         | 300        |
| <b>300MP/<br/>300LSE</b><br>Differential Adhesive | <b>9490LE</b>  | Adhesive 300MP for foam laminating. Adhesive 300LSE bonds to powder coated metals, oily metals and LSE plastics. | 6.7              | PET          | 58# PCK            | 4.2            | 54" x 180 yd | —     | 7<br>9   | 7<br>10     | 8<br>10     | 8<br>1 | 7<br>7        | -40<br>-40  | 250<br>300 |
| <b>300MP</b><br>High Tack Acrylic                 | <b>9609</b>    | Thick double-coat for cell phone lens attachment. Provided on 6" core only.                                      | 9.0              | PET          | 83# PCK            | 6.2            | 48" x 180 yd | —     | 7        | 7           | 8           | 9      | 7             | -40         | 250        |
|   | <b>9690</b>    | Double-coated version of 9695 for foam lamination and graphic attachment.  | 5.6              | PET          | 83# PCK            | 6.2            | 54" x 180 yd | —     |          |             |             |        |               |             |            |
|   | <b>9690B</b>   | Black version of 9690. Ideal for LED lens attachment for pagers and cellular phones.                             | 5.6              | Black PET    | 83# PCK            | 6.2            | 54" x 180 yd | —     |          |             |             |        |               |             |            |
|   | <b>9786</b>    | Thin nonwoven carrier for dimensional stability and improved handling. Temperature resistance up to 300°F.       | 5.5              | Non-woven    | 58# PCK printed    | 4.2            | 48" x 180 yd | —     |          |             |             |        |               |             |            |
|   | <b>9786NP</b>  | Same as 9786 except an unprinted liner.  | 5.5              | Non-woven    | 58# PCK unprinted  | 4.2            | 54" x 180 yd | —     |          |             |             |        |               |             |            |
| <b>420</b><br>Acrylic Adhesive                    | <b>9795</b>    | Double coated version of F9755PC for foam lamination and graphic attachment.                                     | 5.6              | PET          | 83# PCK            | 6.2            | 54" x 180 yd | —     | 7        | 7           | 8           | 4      | 6             | -40         | 300        |
|   | <b>9795B</b>   | Thin polyester black film carrier for improved handling, die-cutting and laminating.                             | 5.6              | Black PET    | 83# PCK            | 6.2            | 54" x 180 yd | —     |          |             |             |        |               |             |            |

1 – More information on pages 8–9.

2 – More information on page 15.

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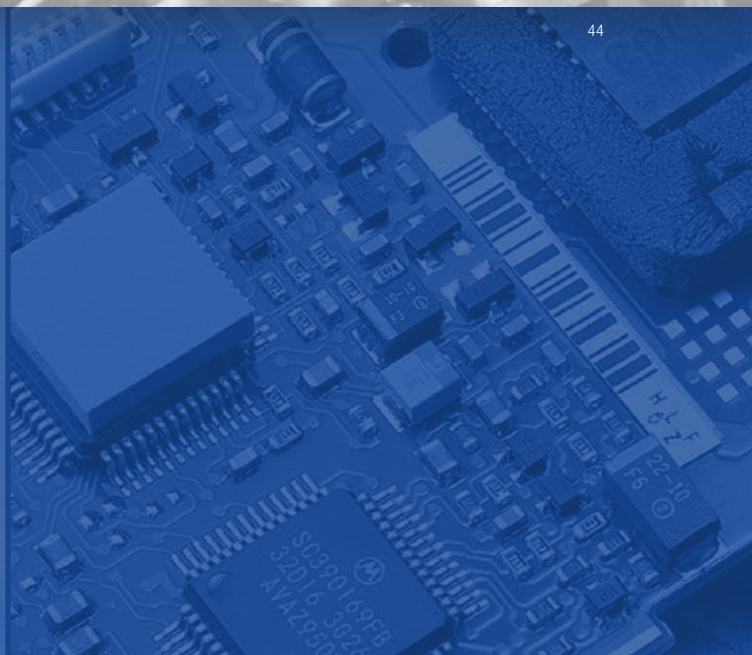


## Performance Label Materials

# Strengthen Your Competitive Advantage

As a premier durable label material supplier, 3M provides technical solutions and superior products that enhance your customers' confidence in their image, product and processes.

Today's printing world is more complex than ever. With more than 150,000 combinations of 3M adhesives, topcoats, facestocks and liners, 3M has the solutions you need to strengthen your competitive advantage.





## Adhesive Families — Label Materials

100

**100 High Temperature Acrylic**

- Up to 450°F short-term heat resistance and excellent solvent resistance.
- High peel strength compared to other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.
- Exhibits low outgassing characteristics.

150

**150 High Temperature Acrylic**

- Up to 450°F short-term heat resistance and excellent solvent resistance.
- High internal strength ideal for applications on high surface energy plastics and metals.

200MP

**200MP High Performance Acrylic**

- Up to 400°F short-term heat resistance and excellent solvent resistance.
- Outstanding adhesion to metal and high surface energy plastics.
- Excellent shear strength to resist slippage and edge lifting.
- Short term repositionability for placement accuracy.

300

**300 High Strength Acrylic**

- Up to 250°F short-term heat resistance.
- Greater initial adhesion especially to low surface energy plastics.
- Quick flowing to speed lamination of textured plastics, foams, fabrics and coated papers.

310

**310 High Precision Acrylic**

- Provides firmness and high precision strength on a variety of surfaces including HSE plastics and metals.
- Compatible with a variety of print technologies including thermal transfer and laser printing.

320

**320 High Tenacity Acrylic**

- Up to 250°F short-term heat resistance.
- High bond strength to a variety of surfaces.
- Excellent flagging resistance on small diameter surfaces.

350

**350 High-Holding Acrylic**

- Ideal for very high bond strength to many surfaces.
- Most universal adhesive — ideal for powder coatings, LSE plastics and oily metals.
- Up to 350°F short-term heat resistance and excellent solvent resistance.

400

**400 Low Temperature Acrylic**

- Good low temperature performance and peel strength on many surfaces.
- Up to 250°F short-term heat resistance.
- Excellent adhesion to uncoated papers.
- Clarity and UV resistance for window label applications.

500

**500 High Stability Acrylic**

- Cleanly removes from most surfaces up to one year after application.
- Excellent for die-cut masks needing outdoor performance and removability.
- For vinyl label stocks only.

1000 Series

**1000 Series Repositionable Acrylic**

- Good holding to many surfaces.
- Clean removal or numerous reapplications.
- Stain resistance on many surfaces.

F2201

**F2201 Freezer Acrylic**

- Low 0°F application temperature, high initial tack.
- Good moisture resistance.
- Good long-term adhesion.

G1120

**G1120 Rubber Based Tire Tread**

- Extremely aggressive.
- Designed for use in tire label applications.

P1110

**P1110 Permanent Rubber Based**

- Excellent ultimate adhesion.
- High initial tack.
- Good choice for labeling LSE or waxy surfaces.
- Good choice for toy labeling applications.

P1212

**P1212 General Purpose Acrylic**

- Excellent clarity, good initial tack.
- Excellent die-cutting properties.
- Good UV resistance.
- UL recognized for indoor use.

P1400

**P1400 High Performance Tackified Acrylic**

- Excellent UV and moisture resistance.
- Formulated for use in demanding environments.
- Excellent adhesion to wide variety of substrates.
- UL recognized for indoor/outdoor use.

P1410

**P1410 Tackified Acrylic**

- High tack.
- Neutral pH.
- Good adhesion to polyolefins.

P1425

**P1425 High Shear Acrylic**

- Good shear performance.
- Good plasticizer and chemical resistance.
- Adheres well to LSE plastics.

P1480

**P1480 High Performance Tackified Acrylic**

- High initial tack.
- Good ultimate adhesion on a wide variety of surfaces.
- Excellent choice for textured surfaces or powder coats.
- Designed to meet difficult automotive underhood battery specifications.

P1500

**P1500 Medical Acrylic**

- Excellent peel and tack.
- Suitable for direct skin contact or medical drapes.

P1650

**P1650 High Performance Acrylic**

- Designed to meet difficult automotive underhood specifications.
- Good chemical and moisture resistance.
- Excellent thermal stability.
- Resistance to many automotive and industrial fluids.

P1655

**P1655 White Opaque High Performance Acrylic**

- Excellent opacity.
- Designed to meet difficult automotive underhood specifications.
- Excellent thermal stability.

R3500

**R3500 Ultra Removable Adhesive**

- Good initial tack and long-term adhesion.
- Multi-repositionable, static cling alternative.
- Clean removability (no residue).

R3800

**R3800 Ultra Removable Adhesive**

- Lower tack version of adhesive R3500.
- Good initial tack and long-term adhesion.
- Clean removability (no residue).

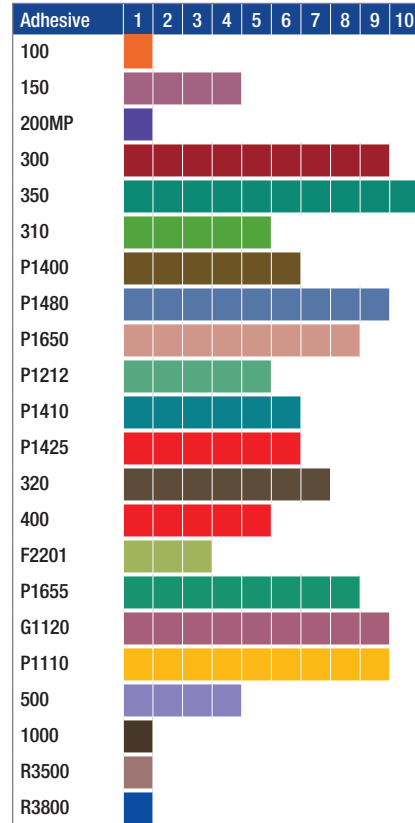
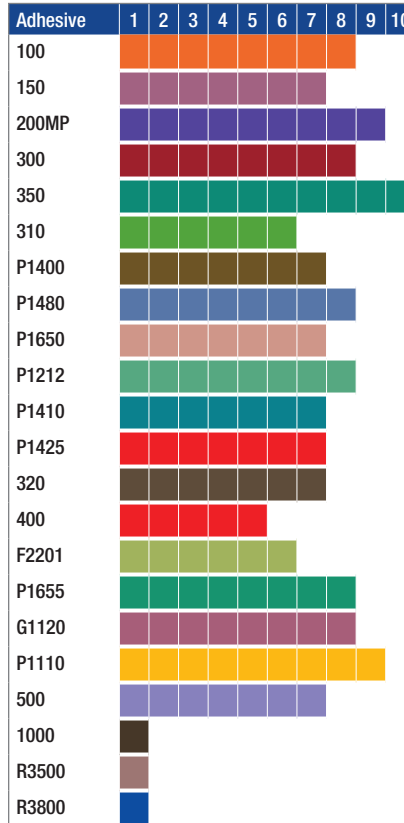
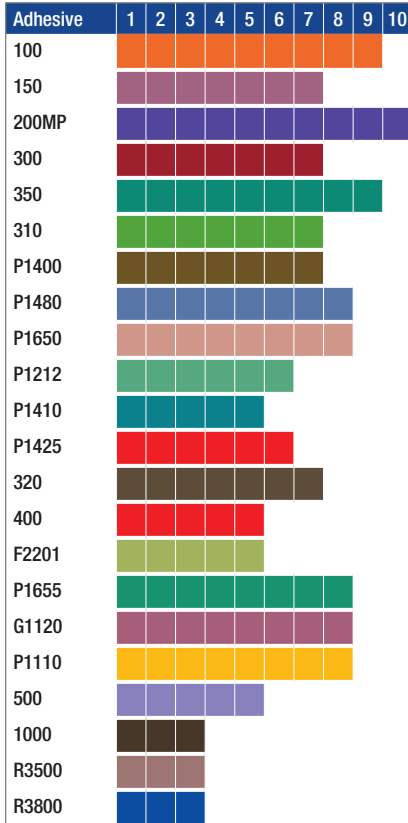
## Adhesive Selection Guide Based on Surface Energy

These charts are based on relative adhesion within each given surface energy category.

| Metals   | Surface Energy (Dynes/cm) |
|----------|---------------------------|
| Copper   | 1103                      |
| Aluminum | 840                       |
| Zinc     | 753                       |
| Tin      | 526                       |
| Lead     | 543                       |

| High Surface Energy (HSE) Plastics | Surface Energy (Dynes/cm) |
|------------------------------------|---------------------------|
| Polyimide                          | 50                        |
| Phenolic                           | 47                        |
| Nylon®                             | 46                        |
| Alkyd Enamel                       | 45                        |
| Polyester                          | 43                        |
| Epoxy Paint                        | 43                        |
| Polyurethane                       | 43                        |
| ABS                                | 42                        |
| Polycarbonate                      | 42                        |
| PVC                                | 39                        |
| Modified PPE Resin                 | 38                        |
| Acrylic                            | 38                        |
| Polane® Paint                      | 38                        |

| Low Surface Energy (LSE) Plastics | Surface Energy (Dynes/cm) |
|-----------------------------------|---------------------------|
| PVA                               | 37                        |
| Polystyrene                       | 36                        |
| Acetal                            | 36                        |
| EVA                               | 33                        |
| Polyethylene                      | 31                        |
| Polypropylene                     | 29                        |
| PVF                               | 28                        |
| PTFE                              | 18                        |
| Powder Coatings                   | Broad Range               |



Values: 1 – Lowest Performance; 10 – Highest Performance

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# Adhesive Properties

| Adhesive Family                   | Temperature (°F)    |             |              | Adhesive Properties |               |                | Adhesion to |             |             | Environmental Properties Resistance to: |              |          |  |
|-----------------------------------|---------------------|-------------|--------------|---------------------|---------------|----------------|-------------|-------------|-------------|---|--------------|----------|--|
|                                   | Minimum Application | Low Service | High Service | Initial Peel        | Ultimate Peel | Convertibility | Metal       | HSE Plastic | LSE Plastic | Chemical                                | Ultra Violet | Moisture |  |
| <b>High Temperature Adhesives</b> |                     |             |              |                     |               |                |             |             |             |   |              |          |  |
| 100                               | 50                  | -40         | 450          | 3                   | 9             | 10             | 9           | 8           | 1           | 10                                      | 10           | 10       | 8418, 7811, 7812, 8417   |
| 150                               | 50                  | -40         | 450          | 6                   | 7             | 10             | 7           | 7           | 4           | 5                                       | 10           | 9        | 3921, 76999  |
| 200                               | 50                  | -40         | 350          | 3                   | 10            | 10             | 10          | 9           | 1           | 7                                       | 8            | 8        | 3929, 3925   |
| 200MP                             | 50                  | -40         | 400          | 4                   | 10            | 10             | 10          | 9           | 1           | 10                                      | 10           | 10       | 9017FL, 9018 FL  |
| <b>High Performance Adhesives</b> |                     |             |              |                     |               |                |             |             |             |   |              |          |  |
| 300                               | 50                  | -40         | 300          | 6                   | 7             | 4              | 7           | 8           | 9           | 7                                       | 7            | 8        | 7331, 7860, 7331FL, 7810, 7880, 7880HL, 7350FL, 7350, 7861, 7881, 7222, 7865, 7813, 7883, 7883HL, 7887, 7323, 7863, 7604FP, 7004, 7380, 7381, 7384, 7866, 7935, 7937, 7902, 7931, 7980, 7950, 7924, 7925   |
| 350                               | 50                  | -40         | 350          | 7                   | 9             | 8              | 9           | 10          | 10          | 9                                       | 7            | 10       | 7051SA, 7214SA, 7220SA, 7868, 7871, 7871FL, 7340FL, 7850TL, 7874, 7876, 7879FL, 7873, 7872, 7872FL, 7605, 7779, 7847, 7613T, 7930T, 7046, 7904, 76716, 7053, 7035, 7037, 7907, 7908, 7908FL, 7905, 7026, 7028, 7033, 7903, 7903FL, 7246, 7247  |
| 310                               | 50                  | -40         | 300          | 5                   | 6             | 6              | 7           | 7           | 5           | 7                                       | 7            | 8        | 7816, 7816FL, 7815, 7815FL, 7840, 7840TL, 7845TL, 7818, 7897, 7875, 7841, 7776   |
| P1400                             | 40                  | -20         | 302          | 4                   | 6             | 6              | 7           | 7           | 6           | 5                                       | 8            | 7        | OFM03402, OFM2502, FM02511K, OFM3102, OFM2402, OFM2802, OFM2902, OFM3602, OFV0202, FP032002, OFM0102, OFM010N, FV02610N, OFL020N, 7045, 7043, 7029, 7025, 7032, 7027, 7034, 7291, 7777   |
| P1480                             | 40                  | -22         | 300          | 6                   | 8             | 4              | 8           | 8           | 9           | 7                                       | 5            | 7        | FM041902, FM047202, FM047302, FV0216R2, FV022702, FV023202, FP022102, FP022202, FPE06505, FPE06602   |
| P1650                             | 40                  | -40         | 302          | 6                   | 7             | 4              | 8           | 7           | 8           | 7                                       | 5            | 7        | FM033202, FM034602, FP035402   |
| <b>General Purpose</b>            |                     |             |              |                     |               |                |             |             |             |   |              |          |  |
| P1212                             | 40                  | -20         | 302          | 4                   | 5             | 6              | 6           | 8           | 5           | 4                                       | 5            | 6        | FM122, FM282, FM031902, FM1182, FM162, FM042, FM142, FM232, FM092, FM052, FM062, FM152, FM112, FV032, FV031705-60, FV102, FV122, FV01462, FV232, FV362, FV018602, FP010402, FP012602, FP018802, FP011, FP082, FS022, FS442, FA032, FAC00102, FM011, FM01N, FM022, FM1142, FM292, FM452, FM45N, FM071, FM3602, FM125, FM3605, FV02800N, FV02490N, FL01N, FL02N, FA102, FA112, 8524, FM852, FM1852 |
| P1410                             | 40                  | -20         | 302          | 6                   | 6             | 6              | 5           | 6           | 4           | 5                                       | —            | 5        | FV292, FV512, FV612, FP102, FMV01202, FMV01402, FMV02, FMV22   |

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## Adhesive Properties (cont.)

| Adhesive Family               | Temperature (°F)    |             |              | Adhesive Properties |               |                | Adhesion to |             |             | Environmental Properties Resistance to: |              |          |  |
|-------------------------------|---------------------|-------------|--------------|---------------------|---------------|----------------|-------------|-------------|-------------|---|--------------|----------|--|
|                               | Minimum Application | Low Service | High Service | Initial Peel        | Ultimate Peel | Convertibility | Metal       | HSE Plastic | LSE Plastic | Chemical                                | Ultra Violet | Moisture |  |
| <b>Specialty Adhesives</b>    |                     |             |              |                     |               |                |             |             |             |   |              |          |  |
| 320                           | 50                  | -40         | 250          | 7                   | 7             | 6              | 7           | 7           | 7           | 6                                       | 6            | 8        | 3690E, 3698E, 7800, 7801, 7002, 7000, 7000FL, 7011, 7110, 7940   |
| 400                           | 10                  | -60         | 250          | 5                   | 5             | 6              | 5           | 5           | 5           | 5                                       | 10           | 8        | 7120, 7733FL, 7830, 7864, 7831, 7730FL, 7731FL, 7741, 7732FL, 7742, 7744FL, 7745FL, 8041, 8042, 7735FL, 7737FL, 7738FL, 7920 |
| F2201                         | 0                   | -40         | 250          | 3                   | 4             | 5              | 5           | 6           | 3           | 3                                       | 5            | 4        | FM01961K, FV022902, FV100K, FV252, FP016102, FP024102  |
| P1655                         | 40                  | -40         | 302          | 1                   | 7             | 4              | 8           | 8           | 8           | 7                                       | 5            | 7        | FP032302   |
| <b>Rubber Based Adhesives</b> |                     |             |              |                     |               |                |             |             |             |   |              |          |  |
| G1120                         | 40                  | -20         | 140          | 7                   | 9             | 2              | 8           | 8           | 9           | 3                                       | 3            | 3        | FP028502, FPE004302  |
| P1110                         | 55                  | -40         | 155          | 6                   | 7             | 4              | 8           | 9           | 9           | 3                                       | 3            | 3        | FM53R2, FV052, FP027402, FS242   |
| <b>Removable Adhesives</b>    |                     |             |              |                     |               |                |             |             |             |   |              |          |  |
| 500                           | 50                  | -40         | 175          | 4                   | 5             | 3              | 5           | 7           | 4           | 5                                       | 10           | 10       | 7600, 7901   |
| 1000                          | 50                  | -20         | 250          | 2                   | 3             | 7              | 3           | 1           | 1           | 2                                       | 5            | 3        | 7113, 7142   |
| R3500                         | 40                  | -20         | 155          | 1                   | 3             | 6              | 3           | 1           | 1           | 2                                       | 7            | 3        | 7065, 7063, FM01972, FM1732R, FV1222, FV016402, FP016902, FP0862, FV1405   |
| R3800                         | 50                  | 20          | 155          | 1                   | 3             | 6              | 3           | 1           | 1           | 2                                       | 7            | 2        | FV010002, FP024502, FP024402   |

**Values: 1 = Lowest Performance; 10 = Highest Performance**

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

# Facestock Properties

| Facestock                           | Film Properties   | Processing Properties  |                | Environmental Resistance to: |          |            | Features  |  |
|-------------------------------------|---|--|----------------|------------------------------|----------|------------|---|--|
|                                     | Service Temperatures  | Printability   | Conformability | Chemical                     | Moisture | Outdoor/UV |   |  |
| Acetate                             | -20° to 140°F   | —  | 2              | 2                            | 2        | 2          | Rigid film, tears easily, works well for security seals or overlaminate.  | FA032, 8041, 8042, FA102, FA112  |
| Acrylate                            | -40° to 175°F   | Thermal Transfer   | 3              | 7                            | 7        | 10         | Excellent clarity and UV resistance. 5 year outdoor performance.  | 7735FL   |
| Acrylate, Cast                      | -40° to 392°F<br>530° for 30 sec.<br>500° for 7 min.                    | Thermal Transfer   | 7              | 9                            | 9        | 7          | Ultra-high temperature performance.   | 3921, 76999  |
| Acrylate, Cast Modified             | -40° to 392°F<br>530° for 1 min.<br>482° for 5 min.<br>440° for 60 min. | Laser Markable   | 7              | 10                           | 8        | 10         | Ultra-high temperature performance. Can be imaged and kiss cut by a laser beam. Long-term readability, chemical and abrasion resistance.  | 7847   |
| Acrylic                             | -20° to 140°F   | Flexo  | 3              | 5                            | 7        | 7          | Good clarity and UV resistance.   | FAC00102   |
| Aluminum Foil                       | -40° to 350°F   | Embossing, Flexo, Letterpress, Screen                                    | 4              | 7                            | 10       | 10         | Vinyl top-coated for ink receptivity. Facestock can be embossed using dot matrix impact printers.   | 7800, 7801, 7940   |
| Polyimide                           | -40° to 500°F   | Dot Matrix, Thermal Transfer   | 6              | 10                           | 10       | 10         | Ultra-high temperature performance. Easy readability of variable information and bar codes.   | 7811, 7812   |
| Kimdura™, Smudgeproof Polyolefin    | -20° to 170°F   | Flexo, Screen, Thermal Transfer  | 5              | 7                            | 7        | 7          | Biaxially oriented film offers consistent caliper, suitable for high speed dispensing.  | 7291   |
| Thermoplastic Polycarbonate         | -40° to 250°F   | —  | 4              | 8                            | 9        | 7          | Used to achieve the attractive appearance of subsurface screen printed polycarbonate.   | 7737FL, 7738FL, FL01N, FL02N, OFL010N, OFL020N   |
| Paper                               | -40° to 350°F   | Flexo, Thermal Transfer  | 3              | 3                            | 2        | 6          | Pharmaceutical and performance paper.   | 7002, 7004, 7000, 7000FL, 7113, 7142, 7110, 7120   |
| Polyart®                            | -40° to 160°F   | Dot Matrix, Flexo, Ion Deposition, Letterpress, Screen, Thermal Transfer | 7              | 6                            | 8        | 7          | Non-glare surface, biaxially oriented, printable with some cold fusing and flash fusing laser printers. Accepts handwriting with a ballpoint pen or marker.   | FPE05102   |
| Polyester EDP, DMI and Laser TC     | -40° to 302°F<br>-20° to 257°F<br>Clear only                            | Dot Matrix, Flexo, Laser, Letterpress, Offset, Screen, Thermal Transfer  | 2              | 9                            | 9        | 8          | Polyester EDP available in white, silver and clear. Optimal clarity for overlaminate applications. High quality rigid film with high tensile strength. Excellent dimensional stability. Not recommended for curved surfaces. High quality rigid film. High tear resistance, notch sensitive.                      | FM046302, FM162, OFM2502, FM142, FM14K, OFM3002, FM043302, FM152, OFM2702, 7480, 7840, 7880, 7880HL, FM162, 7745FL, 7881, 7883, 7883HL, 7887, 7897, 7840TL, 7840HL, FM01961K, FM031902, 7744FL, 7845HL, 7845TL |
| Polyester, White and Clear Laser TC | -20° to 257°F   | Dot Matrix, Flexo, Laser, Letterpress, Offset, Screen, Thermal Transfer  | 2              | 9                            | 9        | 8          | Polyester available in white, silver and clear. Clear polyester provides optimal clarity for overlaminate applications. High quality rigid film with high tensile strength. Excellent dimensional stability. Not recommended for curved surfaces. High quality rigid film. High tear resistance, notch sensitive. | FM02511K, FM1852, FM852  |
| Polyester MC                        | -40° to 302°F   | Flexo, Laser, Screen, Thermal Transfer                                   | 2              | 9                            | 9        | 8          |   | 7231, FM01961K, FM022202, FM031902, FM034602, FM1182, OFM03502, FM01972  |
| Polyester PT                        | -40° to 302°F<br>-20° to 257°F<br>Clear only                            | Flexo, Screen, Thermal Transfer  | 2              | 9                            | 9        | 8          |   | 7037, 7903, 7903FL, 7909, 9017FL, 9018FL, 7340FL   |

## Values: 1 = Lowest Performance; 10 = Highest Performance

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

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Facestock Properties (cont.)

| Facestock                      | Film Properties                              | Processing Properties  |                | Environmental Resistance to: |          |            | Features  |   |
|--------------------------------|--|--|----------------|------------------------------|----------|------------|---|---|
|                                | Service Temperatures                         | Printability   | Conformability | Chemical                     | Moisture | Outdoor/UV |   |   |
| Polyester TC                   | -40° to 302°F<br>-20° to 257°F<br>Clear only | Flexo, UV Inkjet, Hot Stamp, Letterpress, Offset, Screen, Thermal Transfer | 2              | 9                            | 9        | 8          | Polyester films exhibit excellent water and moisture barrier properties making it an ideal face stock for durable label applications. Able to withstand higher temperatures, polyester has excellent dimensional stability and tensile strength. High quality overlamine films utilize polyester for its optimal clarity. Compatible with a wide range of coatings, polyester film is commonly used in a wide range of printing applications including thermal transfer, laser, UV inkjet, flexographic and screen print processes. | 7331, 7860, 7331FL, 7816, 7816FL, 7817, 7830, 7864, 7868, 7871, 7871FL, 8418, FM033202, FM041902, FM122, FM282, FM53R2, OFM0302, OFM03402, 7220SA, 7214SA, 7480, 7810, 7815, 7815FL, 7840, 7840TL, 7850TL, 7874, 7850, 7850HL, 7350FL, 7350, 7861, 7831, 7876, FM042, OFM1502, OFM3102, 7745FL, 7845TL, 7881, FM232, 7222, 7865, 7813, 7818, 7879FL, 7883, 7887, 7897, FM047202, FM092, OFM2402, 7323, 7863, 7873, FM047302, FM052, FM062, FM1172, FM912, OFM0702, OFM2802, FM046202, FM3602, FM125, FM3605, FM102, FM112, FM852, FM1852, OFM2902, 7819, 7872, 7872FL, 7875, OFM3602, 7744FL, 7745FL, 7380, 7381, 7866, 7384, 7935, 7937, FMV01202, FMV01402, FMV02, FMV22, FM1732R, 7034, 7035, 7907, 7908, 7908FL, 7920, 7931, 7935, 7937, 7980, 7029, 7905, 7950, 7025, 7026, 7032, 7028, 7033, 7924, 7925 |
| Polyester NTC                  | -20° to 257°F                                | —  | 2              | 9                            | 9        | 8          | Optimal clarity for overlamine applications.  | 7730FL, 7731FL, 7741, 8417, FM011, FM01N, FM022, FM1142, FM292, FM452, FM45N, OFM0102, OFM010N, 7732FL, 7742, FM071   |
| Polyethylene                   | -20° to 140°F                                | Flexo  | 10             | 3                            | 7        | 4          | High tear resistance and elongation, low tensile strength.  | FPE06505, FPE06602, FPE42, FPE004302, FPE05102  |
| Polyolefin                     | -40° to 140°F                                | Flexo, Thermal Transfer  | 9              | 7                            | 7        | 3          | Extremely pliable and conformable, moisture resistant. PVC-free vinyl alternative.  | FP035402  |
| Polypropylene, Label-Lyte® EDP | -20° to 220°F                                | Flexo, Thermal Transfer  | 8              | 7                            | 8        | 7          | Outdoor UV durability up to one year. Excellent ink adhesion, good stiffness for auto application; excellent opacity.   | FP010402  |
| Polypropylene, Label-Lyte® T2S | -20° to 220°F                                | Flexo, Thermal Transfer  | 8              | 7                            | 8        | 7          |   | 76716, 7776, 7777, 7779, FP018802, FP018902, FP029102   |
| Polypropylene T1S              | -20° to 140°F                                | Flexo  | 8              | 7                            | 8        | 7          | Semi-hard film with high tear resistance and good dimensional stability.  | FP011   |
| Polypropylene EDP              | -20° to 140°F                                | Flexo, Ion Deposition, Lithography, Offset, Screen, Thermal Transfer       | 6              | 7                            | 8        | 3          | Excellent opacity, moisture and tear resistance, excellent dimensional stability, resistant to cracking and abrasion, antistatic coating to eliminate double feeding when printing and folding.   | FP022102, FP024102, FP027402, FP032002  |

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 Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

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## Facestock Properties (cont.)

| Facestock   | Film Properties      | Processing Properties                      |                | Environmental Resistance to: |          |            | Features  |  |
|---|----------------------|--|----------------|------------------------------|----------|------------|---|--|
|   | Service Temperatures | Printability                               | Conformability | Chemical                     | Moisture | Outdoor/UV |   |  |
| Polypropylene TC, White, Clear or Metalized         | -20° to 140°F        | Flexo                                      | 8              | 7                            | 8        | 7          | High tensile strength, but notch sensitive.   | FP031702, FP032302, FP082, FP092, FP102, FPM000902, FP012602, FP016102, FP022202, FP027202, FP011902, FP016902, FP024502, FP56N, FP024402, FP0862, FP029502              |
| Polystyrene, Matte and Gloss Clear                  | -20° to 140°F        | Flexo                                      | 2              | 2                            | 5        | 2          | Economical, hard, rigid film. Tear and temperature sensitive. Not recommended for outdoor use.  | FS152, FS242, FS302, FS442   |
| Retro-Reflective Film                               | -40° to 300°F        | Thermal Transfer                           | 7              | 7                            | 9        | 8          | When bar code printed, the facestock extends the max. and min. scanning distance of long-range scanners.  | 3929, 39294  |
| Teslin®, Polyolefin                                 | -40° to 250°F        | Flexo, Continuous Laser                    | 9              | 8                            | 9        | 7          | Durable alternative to paper labels, excellent abrasion properties.   | 7841, 7841TL, 7841HL   |
| Vinyl (PVC) EDP, White                              | -20° to 140°F        | Dot Matrix, Flexo, Laser, Thermal Transfer | 10             | 4                            | 7        | 7          | Conformability reduces as gauge increases. Multi-purpose film available in flexible, semi-rigid or rigid. Polymerically plasticized for dimensional stability. Handles outdoor conditions well. Will burn in flame, but should be self-extinguishing after removal. Low tear resistance. Available in medical grades. | FV100K, FV1002, FV512, FV02410K  |
| Vinyl (PVC) NTC, White, Clear, Color or Translucent | -20° to 140°F        | Press Printable Solvent Inks               | 10             | 4                            | 7        | 7          |   | 7605, FV1405, FV0216R2, IJ39-20, FV102, FV612, FV092, FV003602, FV362, 3690E, 3698E, 7045, 7046, FV027805, 7051, 7051SA, 7065, 7901, 7902, 7904, 7052, 7053, FV031705-60 |
| Vinyl (PVC) TC, White                               | -20° to 140°F        | Flexo, Letterpress                         | 10             | 4                            | 7        | 7          |   | 7604FP, 7613T, 7600, 7930T   |
| Vinyl (PVC) TC2                                     | -20° to 140°F        | Flexo                                      | 10             | 4                            | 7        | 7          |   | FV052, FV232   |
| Vinyl (PVC) TC3, White, Colors or Clear             | -20° to 140°F        | Flexo, Letterpress                         | 10             | 4                            | 7        | 7          |   | FV023202, FV025102, FV032, FV122, FV252, FV292, FV010002, FV1222   |
| Vinyl (PVC) TC6, White, Colors or Clear             | -20° to 140°F        | Flexo, Thermal Transfer                    | 10             | 4                            | 7        | 7          |   | FV022702, FV022902, OFV0102, OFV0202, FV01462, FVS110S, FVS12S, FV016402, FV018602   |
| Vinyl (PVC) TC9                                     | -20° to 140°F        | UV Flexo, UV Screen                        | 10             | 4                            | 7        | 7          |   | 7043   |
| Vinyl, Textured                                     | -20° to 140°F        | —  | 10             | 4                            | 7        | 7          |   | FV02800N, FV02490N, FV02610N   |

### Values: 1 = Lowest Performance; 10 = Highest Performance

Rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

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## Liner Selection

| Liner          | Mil (nominal) Thickness | Description  | Layflat | Semi Layflat | Back Side Printable | Fanfold | Roll-to-Roll |
|----------------|-------------------------|--|---------|--------------|---------------------|---------|--------------|
| 40# SC, 43# DK | 2.4                     | Semi-bleached, super calendered/densified kraft sheet.   |         |              | ■                   |         | ■            |
| 2.2 Glassine   | 2.2                     | Double sided glassine liner assures consistent die cutting. The backside release coating helps minimize label blocking.  |         |              |                     |         | ■            |
| 3.0 Glassine   | 3.0                     | Double sided glassine liner assures consistent die cutting. The backside release coating helps minimize label blocking.  |         |              |                     | ■       | ■            |
| 44# Polykraft  | 3.1                     | Polypropylene has been laminated to a 44# brown kraft sheet. Excellent caliper control and strength making it ideal for high-speed labeling applications.                  |         |              | ■                   |         | ■            |
| 50# SC, 55# DK | 3.2                     | Semi-bleached, super calendered/densified kraft sheet designed for high-speed die-cutting and matrix stripping. Not recommended for sheet on press applications.           |         |              | ■                   |         | ■            |
| 50# C2S        | 3.2                     | Back side has been lightly coated with silicone to reduce label pick. Recommended when using very soft adhesives or where heavy adhesive coat weights are required.        |         |              |                     |         | ■            |
| 50# TL         | 3.4                     | Stabilized bleached kraft sheet with good caliper control. Ideal for most sheet-on-press applications. Back side is printable.   |         | ■            | ■                   | ■       | ■            |
| 78# CCK, HL    | 4.6                     | Bleached, clay-coated kraft sheet. Excellent for sheet-on-press applications where additional strength and stiffness is required.  |         | ■            | ■                   | ■       | ■            |
| 90# Polycoated | 7.0                     | Bleached kraft sheet polyethylene-coated on two sides.   | ■       |              |                     |         |              |
| 1.0 Polyester  | 1.0                     | Used when high strength and caliper control are important. Recommended for high-speed labeling application or where clarity of the adhesive is critical.                   |         |              |                     |         | ■            |
| 1.5 Polyester  | 1.5                     | Clear polyester. Used when high strength and caliper control are important. Recommended for high-speed labeling applications or where clarity of the adhesive is critical. |         |              |                     |         | ■            |
| 4.0 Polyester  | 4.0                     | Clear polyester. Excellent for doming applications where ultimate lay flat is required.  | ■       |              |                     |         |              |

The chart above is a general guide. Facestocks and adhesives should be tested with actual components to ensure acceptable performance.

# 3M™ Roll Label Materials

| Facestock                | Product   | Typical Performance Characteristics  | Construction      |   | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method               | Specs             |
|--------------------------|-----------|--|-------------------|---|--|-------------------------------|-------------------|
|                          |           |  | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                 |  |                               |                   |
| Polyester<br>Gloss White | ▶ 7816    | Offers excellent durability. Film adhesive that resists oozing. Precision Roll Program — custom slit rolls as small as 2.5" x 1668 ft., as wide as 54", and with up to one splice.   | 2.0<br>0.8<br>3.2 | PET, White TC<br><b>310</b><br>55# Densified Kraft  | 54"<br>1668 ft. Min.<br><b>6"</b><br>Precision         | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | 7816FL    | Same as 7816 label stock, except with polyester liner.   | 2.0<br>0.8<br>1.5 | PET, White TC<br><b>310</b><br>Polyester Film       | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | ▶ FM122   | Good initial tack. General purpose adhesive for durable goods and nameplate applications.  | 2.0<br>0.9<br>3.2 | PET, White TC<br><b>P1212</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | 7868      | Excellent high temperature resistance. Excellent adhesion to LSE plastics and smooth powder coats. Precision Roll Program — custom slit rolls as small as 2.5" x 1668 ft., as wide as 54", and with up to one splice.  | 2.0<br>1.1<br>3.2 | PET, White TC<br><b>350</b><br>55# Densified Kraft  | 54"<br>1668 ft. Min.<br><b>6"</b><br>Precision         | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | ▶ 7871    | Heavy adhesive coat weight for textured surfaces. Excellent high temperature resistance. Excellent adhesion to LSE plastics and powder coats. Precision Roll Program — custom slit rolls as small as 2.5" x 1668 ft., as wide as 54", and with up to one splice. | 2.0<br>1.8<br>3.2 | PET, White TC<br><b>350</b><br>55# Densified Kraft  | 54"<br>1668 ft. Min.<br><b>6"</b><br>Precision         | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | 7871FL    | Same as 7871 label stock, except with film liner.  | 2.0<br>1.8<br>1.5 | PET, White TC<br><b>350</b><br>Polyester Film       | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | 7220SA    | Gloss finish, adhesive allows trapped air to release to prevent bubbling, chemical resistant, good for powder coated surfaces, slightly oily metals, high performance adhesive.  | 2.0<br>1.1<br>6.8 | PET, White TC<br><b>350</b><br>90# Polycoated Kraft | Sheet: 20" x 27"<br>Roll: 54" x 750"                   | Screen Flexo                  | RoHS              |
|                          | FM033202  | Chemical resistant film paired with adhesive designed for use in automotive applications. Excellent thermal stability.   | 2.0<br>1.2<br>3.2 | PET, White TC<br><b>P1650</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                          | FM041902  | Durable film facestock with aggressive, high tack adhesive. Good adhesion to powder coats and textured surfaces.   | 2.0<br>1.3<br>3.2 | PET, White TC<br><b>P1480</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                          | FM53R2    | Rubber-based adhesive with high adhesion to LSE plastics or waxy surfaces.   | 2.0<br>0.9<br>3.2 | PET, White TC<br><b>P1110</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                          | OFM03402  | Glossy film label with excellent UV resistance and adhesion to a variety of substrates. Good choice for durable goods or lawn and garden applications.   | 2.0<br>0.9<br>3.2 | PET, White TC<br><b>P1400</b><br>50# SC             | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |
|                          | ▶ 7817    | Glossy film label with excellent UV resistance and adhesion to a variety of substrates. Good choice for durable goods or lawn and garden applications.   | 2.0<br>0.9<br>3.2 | PET, White Gloss TC<br><b>P1400</b><br>50# SC       | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |
|                          | 7231      | Print receptive film accepts most film ink systems and thermal transfer printing. General purpose adhesive for durable goods and nameplate applications.   | 2.0<br>0.9<br>3.2 | PET, White MC<br><b>P1425</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |
|                          | 7331/7860 | High abrasion and solvent resistance. Good for indoor and outdoor use. Excellent bond to LSE plastics.   | 2.0<br>0.8<br>3.2 | PET, White TC<br><b>300</b><br>55# Densified Kraft  | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | 7331FL    | Same as 7331 label stock with film liner for automatic application equipment.  | 2.0<br>0.8<br>1.5 | PET, White TC<br><b>300</b><br>Polyester Film       | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | CSA<br>RoHS       |
|                          | 7830/7864 | Good abrasion and chemical resistance. Thin label profile provides good performance on small diameter packages. Excellent cold temperature performance.  | 1.0<br>0.8<br>3.2 | PET, White TC<br><b>400</b><br>55# Densified Kraft  | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | FM282     | Thinner version of FM122. Suitable for slightly curved surfaces.   | 1.0<br>0.8<br>3.2 | PET, White TC<br><b>P1212</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | 8418      | Ideal for fuel line identification.  | 1.0<br>1.4<br>2.5 | PET, White TC<br><b>100</b><br>43# Densified Kraft  | 48" x 216 yd   | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |

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# 3M™ Roll Label Materials (cont.)

| Facestock              | Product   | Typical Performance Characteristics  | Construction      |   | Roll Width Minimum Mini-Master (shown in red) | Print Method                            | Specs             |
|------------------------|-----------|--|-------------------|---|---|---|-------------------|
|                        |           |  | Caliper (mils)    | Facestock Adhesive Type Liner                                   |   |   |                   |
| Polyester Matte White  | 7815      | Same as 7810 label stock, except #310 adhesive. Firm adhesive that resists oozing.   | 2.3<br>0.8<br>3.2 | PET, White TT TC<br><b>310</b><br>50# SC                        | 54"<br>1668 ft. Min.<br><b>4.5", 6"</b>       | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | 7246      | Extreme durability topcoat. Eliminates the need for protective overlaminates in many applications.   | 2.2<br>1.8<br>2.2 | PET TT3, Matte White<br><b>350</b><br>40# Densified Glassine    | 48"<br>1668 ft. Min.<br><b>4.5", 6"</b>       | Flexo,<br>Thermal<br>Transfer           | UL<br>RoHS        |
|                        | 7815FL    | Same as 7815 label stock, except polyester liner.  | 2.3<br>0.8<br>1.5 | PET, White TT TC<br><b>310</b><br>Polyester Film                | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | 7874      | 350 adhesive for performance applications that require thermal transfer printing and demand adhesive performance on difficult to stick to surfaces (e.g., LSE plastics or powder coats).       | 2.3<br>1.8<br>3.2 | PET, White TT TC<br><b>350</b><br>50# SC                        | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | 7810      | Features ultra smooth top-coat. Ideal for bar code applications. Good durability with a wide range of ribbons.   | 2.3<br>0.8<br>3.2 | PET, White TT TC<br><b>300</b><br>50# SC                        | 54"<br>1668 ft. Min.<br><b>6"</b>             | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | FM034602  | Micro-cavitated film with print receptive coating for use with most film inks systems and thermal transfer printing. Designed for use in automotive applications. Excellent thermal stability. | 2.0<br>1.3<br>3.2 | PET, White MC<br><b>P1650</b><br>50# SC                         | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer,<br>Laser | RoHS              |
| Polyester Gloss Clear  | 7876      | Heavy adhesive coat weight for textured surfaces. Excellent high temperature resistance. Excellent adhesion to LSE plastics and powder coats.  | 2.0<br>1.8<br>3.2 | PET, Clear TC<br><b>350</b><br>55# Densified Kraft              | 54"<br>1668 ft. Min.<br><b>4.5", 6"</b>       | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | OFM3102   | Durable film offers thermal stability and moisture resistance. Adheres to a variety of surfaces and offers excellent UV resistance.  | 2.0<br>0.9<br>3.2 | PET, Clear TC<br><b>P1400</b><br>50# SC                         | 54"<br>1668 ft. Min.<br><b>6"</b>             | Flexo,<br>Thermal<br>Transfer           | UL<br>RoHS        |
|                        | 7350/7861 | Offers high abrasion and solvent resistance. Excellent adhesion to LSE plastics. Ideal for indoor and outdoor applications.  | 2.0<br>0.8<br>3.2 | PET, Clear TC<br><b>300</b><br>55# Densified Kraft              | 54"<br>1668 ft. Min.<br><b>6"</b>             | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | 7350FL    | Same as 7350 label stock with film liner for automatic application equipment.  | 2.0<br>0.8<br>1.5 | PET, Clear TC<br><b>300</b><br>Polyester Film                   | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | CSA<br>RoHS       |
|                        | 7831      | Thin label profile provides good performance on small diameter packages. Excellent cold temperature performance.   | 1.0<br>0.8<br>3.2 | PET, Clear TC<br><b>400</b><br>55# Densified Kraft              | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | FM042     | High clarity general purpose adhesive with good initial tack and excellent die cutting properties. Adhesion to metals and HSE plastics.  | 2.0<br>0.9<br>3.2 | PET, Clear TC<br><b>P1212</b><br>50# SC                         | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
| Polyester Matte Clear  | FM232     | Matte film suitable for thin gauge label applications or as a printable overlaminate film. General purpose adhesive for HSE substrates.  | 1.0<br>0.8<br>3.2 | PET, Clear TC<br><b>P1212</b><br>50# SC                         | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
| Polyester Matte Silver | 7247      | Extreme durability topcoat. Eliminates the need for protective overlaminates in many applications.   | 2.3<br>1.8<br>2.2 | PET TT3, Matte Silver,<br><b>350</b><br>40# Densified Glassine  | 48"<br>1668 ft. Min.<br><b>4.5", 6"</b>       | Flexo,<br>Thermal<br>Transfer           | UL<br>RoHS        |
|                        | 7818      | Compatible with a wide range of ribbons. Firm adhesive that resists oozing. Excellent durability.  | 3.3<br>0.8<br>3.2 | PET, Silver TT TC<br><b>310</b><br>55# Densified Kraft          | 54"<br>1668 ft. Min.<br><b>4.5", 6"</b>       | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | 7879FL    | Heavy adhesive coat weight for textured surfaces. Excellent adhesion to LSE plastics and powder coats.   | 3.3<br>1.8<br>1.5 | PET, Silver TT TC<br><b>350</b><br>Polyester Film               | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | 7222/7865 | Offers high abrasion and chemical resistance. Excellent "quick stick" and bond to LSE plastics. Uses include instruction and schematic panels.   | 2.0<br>0.8<br>3.2 | PET, Matte Silver Gloss TC<br><b>300</b><br>55# Densified Kraft | 54"<br>1668 ft. Min.<br><b>6"</b>             | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | 7813      | Ultra-smooth matte top-coat. Excellent durability with a wide variety of ribbons. Excellent adhesion to LSE plastics.  | 3.3<br>0.8<br>3.2 | PET, Silver Matte TT TC<br><b>300</b><br>55# Densified Kraft    | 54"<br>1668 ft. Min.<br><b>6"</b>             | Flexo,<br>Thermal<br>Transfer           | UL<br>CSA<br>RoHS |
|                        | FM043702  | Thermal transfer printable top-coating. Designed for use in demanding environments including automotive underhood applications.  | 2.0<br>1.3<br>3.2 | PET, Matte Silver TC<br><b>P1650</b><br>50# SC                  | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer           | RoHS              |

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# 3M™ Roll Label Materials (cont.)

| Facestock                            | Product   | Typical Performance Characteristics  | Construction       |  | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method               | Specs             |
|--------------------------------------|-----------|--|--------------------|--|--|-------------------------------|-------------------|
|                                      |           |  | Caliper<br>(mils)  | Facestock<br>Adhesive Type<br>Liner                          |  |                               |                   |
| Polyester<br>Matte Silver<br>(cont.) | FM047202  | Metallized film offers excellent thermal stability and moisture resistance. High performance adhesive ideal for demanding applications, including powder coated paints.                                | 2.0<br>1.2<br>3.2  | PET, Matte Silver TC<br><b>P1480</b><br>50# SC               | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                                      | OFM2402   | Durable, moisture resistant film. Adhesive offers adhesion to a variety of surfaces, including LSE plastics. Designed for use on durable goods in an outdoor environment.                              | 2.0<br>0.9<br>3.2  | PET, Matte Silver TC<br><b>P1400</b><br>50# SC               | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |
|                                      | FM092     | Matte film with gloss top-coating. Adhesive offers good initial tack and excellent die cutting properties. Excellent choice for use in nameplate applications.   | 2.0<br>0.9<br>3.2  | PET, Matte Silver TC<br><b>P1212</b><br>50# SC               | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
| Polyester<br>Bright Silver           | OFM2802   | Designed for use in outdoor applications. Good adhesion to HSE and LSE plastics.   | 2.0<br>0.9<br>3.2  | PET, Bright Silver TC<br><b>P1400</b><br>50# SC              | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |
|                                      | 7323/7863 | Excellent abrasion and chemical resistance. Excellent adhesion to LSE plastics.  | 2.0<br>0.8<br>3.2  | PET, Silver Gloss TC<br><b>300</b><br>55# Densified Kraft    | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                                      | 7873      | Heavy adhesive coat weight for textured surfaces. Excellent high temperature resistance. Excellent adhesion to LSE plastics and powder coats.  | 2.0<br>1.8<br>3.2  | PET, Silver Gloss TC<br><b>350</b><br>55# Densified Kraft    | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                                      | 7340FL    | Facestock uses unique 3M film technology to produce a mirror like film that reflects without metalization.   | 2.55<br>1.1<br>1.5 | PET, Mirror Finish<br><b>350</b><br>Polyester                | 54" x 1668 ft.   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                                      | FM047302  | Reflects with 98% efficiency.  | 2.0<br>1.2<br>3.2  | PET, Bright Silver TC<br><b>P1480</b><br>50# SC              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                                      | FM1172    | High tack rubber-based adhesive. Good adhesion to waxy surfaces.   | 2.0<br>1.2<br>3.2  | PET, Bright Silver TC<br><b>P1110</b><br>50# SC              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                                      | FM052     | Good choice where a thinner profile label is required.   | 1.0<br>0.8<br>3.2  | PET, Bright Silver TC<br><b>P1212</b><br>50# SC              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                                      | FM062     | General purpose adhesive. Excellent die cutting properties.  | 2.0<br>0.9<br>3.2  | PET, Bright Silver TC<br><b>P1212</b><br>50# SC              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                                      | FM912     | Thicker version of FM1172 for use where more rigidity is required.   | 3.0<br>0.9<br>3.2  | PET, Bright Silver TC<br><b>P1212</b><br>50# SC              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
| Polyester<br>Brushed Silver          | 7214SA    | Gloss finish, adhesive allows trapped air to release to prevent bubbling, chemical resistant, good for powder coated surfaces, slightly oily metals, high performance adhesive. Brushed silver finish. | 2.0<br>1.1<br>6.8  | PET, Brushed Silver TC<br><b>350</b><br>90# Polycoated Kraft | Sheet: 20" x 27"<br>Roll: 54" x 750"                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                                      | FM046202  | Aggressive, high tack adhesive. Designed for adhesion to difficult surfaces.   | 2.0<br>1.2<br>3.2  | PET, Brushed Silver TC<br><b>P1480</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                                      | FM102     | Durable high performance material with good moisture resistance. Designed for indoor and outdoor applications, with adhesion to a variety of surfaces.   | 1.0<br>0.8<br>3.2  | PET, Brushed Silver TC<br><b>P1212</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA         |
|                                      | OFM2902   | Durable high performance material with good moisture resistance. Designed for indoor and outdoor applications, with adhesion to a variety of surfaces.   | 2.0<br>0.9<br>3.2  | PET, Brushed Silver TC<br><b>P1400</b><br>50# SC             | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |
|                                      | FM112     | Excellent choice for nameplate applications. Adheres well to metal and HSE plastics.   | 2.0<br>0.9<br>3.2  | PET, Brushed Silver TC<br><b>P1212</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA         |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.






# 3M™ Roll Label Materials (cont.)

| Facestock             | Product  | Typical Performance Characteristics   | Construction      |  | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method               | Specs             |
|-----------------------|----------|---|-------------------|--|--|-------------------------------|-------------------|
|                       |          |   | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                          |  |                               |                   |
| Polyester<br>Platinum | 7872     | Heavy adhesive coat weight for textured surfaces. Excellent adhesion to LSE plastics and powder coats. Precision Roll Program — custom slit rolls as small as 2.5" x 1668 ft., as wide as 54", and with up to one splice. | 2.0<br>1.8<br>3.2 | PET, Platinum TC<br><b>350</b><br>55# Densified Kraft        | 54"<br>1668 ft. Min.<br><b>6"</b><br>Precision         | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                       | 7872FL   | Same as 7872 label stock, except with film liner.   | 2.0<br>1.8<br>1.5 | PET, Platinum TC<br><b>350</b><br>Polyester Film             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                       | 7875     | Durable facestock for harsh environments. Firm adhesive resists oozing. Precision Roll Program — custom slit rolls as small as 2.5" x 1668 ft., as wide as 54", and with up to one splice.                                | 2.0<br>0.8<br>3.2 | PET, Platinum TC<br><b>310</b><br>55# Densified Kraft        | 54"<br>1668 ft. Min.<br><b>6"</b><br>Precision         | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                       | 0FM3602  | Moisture resistant film paired with tackified acrylic designed for use in lawn and garden applications.   | 2.0<br>0.9<br>3.2 | PET, Platinum TC<br><b>P1400</b><br>50# SC                   | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                       | FM3602   | Platinum silver polyester with permanent acrylic adhesive for bar code labels or nameplates.  | 2.0<br>0.9<br>3.2 | PET, Platinum TC<br><b>P1212</b><br>50#                      | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
| Vinyl<br>White        | FV032    | Soft conformable vinyl that offers durability and moisture resistance. General purpose adhesive.  | 3.4<br>0.9<br>3.2 | Soft White TC3<br><b>P1212</b><br>50# SC                     | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo                         | UL<br>RoHS        |
|                       | 7051SA   | White finish, adhesive allows trapped air to release to prevent bubbles, good for powder coated surfaces, high performance adhesive.  | 3.8<br>1.1<br>6.8 | Soft White EL Vinyl NT<br><b>350</b><br>90# Polycoated Kraft | Sheet: 20" x 27"<br>Roll: 54" x 750"                   | Flexo                         | RoHS              |
|                       | 7605     | Conformable to contoured surfaces. Excellent adhesion to LSE plastics and textured powder coats.  | 3.4<br>1.8<br>3.2 | Soft White NTC<br><b>350</b><br>55# Densified Kraft          | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | FV0216R2 | High performance adhesive ideal for demanding applications, including powder coated paints. Excellent choice for machinery label applications.  | 3.4<br>1.2<br>3.2 | Soft White NTC<br><b>P1480</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | FV022702 | Soft conformable film offers durability and moisture resistance. High performance adhesive ideal for demanding applications, including powder coated paints.  | 3.4<br>1.2<br>3.2 | Soft White TC6<br><b>P1480</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                       | FV023202 | High initial tack adhesive with good moisture resistance. Performs well in ladder label applications.   | 3.4<br>1.2<br>3.2 | Soft White TC3<br><b>P1480</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | 7604FP   | Top-coated, conformable to contoured surfaces. Consistent, high-speed dispensing. Excellent squeeze bottle performance.   | 3.5<br>1.2<br>3.2 | Soft White TC3<br><b>300</b><br>55# Densified Kraft          | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | FV052    | High initial tack adhesive. Good choice for retread tire label applications.  | 3.4<br>1.3<br>3.2 | Soft White TC<br><b>P1110</b><br>50# SC                      | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | FV292    | Adheres to a variety of surfaces including polyolefins. Excellent choice for wire marking applications.   | 3.4<br>0.9<br>3.2 | Soft White TC3<br><b>P1410</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | 0FV0202  | Designed for use in outdoor applications. Good adhesion to HSE and LSE plastics.  | 3.4<br>0.9<br>3.2 | Soft White TC6<br><b>P1400</b><br>50# SC                     | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | UL<br>RoHS        |
|                       | FV022902 | Soft conformable film with thermal transfer printable top-coat. Excellent choice for drum labeling applications.  | 3.4<br>0.8<br>3.2 | Soft White TC6<br><b>F2201</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS              |
|                       | FV102    | Non top-coated semi rigid white vinyl label product offers excellent moisture resistance paired with a general purposed adhesive.   | 3.4<br>0.9<br>3.2 | Semi-rigid NTC<br><b>P1212</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | FV122    | Semi rigid white vinyl label product that had been top-coated to accept a variety of flexo film and UV rotary letterpress inks. General purpose adhesive.   | 3.4<br>0.9<br>3.2 | Semi-rigid TC3<br><b>P1212</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |
|                       | FV252    | Freezer grade adhesive offers high initial tack and good clarity. Offers adhesion when applied at temperatures as low as 0°F.   | 3.4<br>0.8<br>3.2 | Soft White TC3<br><b>F2201</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS              |





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# 3M™ Roll Label Materials (cont.)

| Facestock                 | Product   | Typical Performance Characteristics  | Construction      |  | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method                              | Specs             |
|---------------------------|---|--|-------------------|--|--|--|-------------------|
|                           |   |  | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                                    |  |  |                   |
| Vinyl<br>White<br>(cont.) | 7890  | Can be used on rigid and semi-rigid containers. Excellent for general purpose labeling such as drum labels.  | 3.5<br>1.1<br>3.2 | Rigid White Gloss TC<br><b>300</b><br>55# Densified Kraft              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer                | UL<br>RoHS        |
|                           | FV025102  | High performance adhesive ideal for demanding applications, including powder coated paints.  | 6.0<br>1.2<br>3.2 | Semi-rigid TC3<br><b>P1480</b><br>50# SC                               | 54"<br>1668 ft. Min.                                   | Flexo  | RoHS              |
|                           |  FV100K  | Similar to FV02410K except with a freezer grade adhesive. Suitable for drum labeling applications.   | 3.4<br>0.8<br>5.9 | Soft White EDP<br><b>F2201</b><br>83# Laser                            | 54"<br>5000 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI, Laser | RoHS              |
| Vinyl<br>Clear            |  FV01462 | Thermal transfer printable clear vinyl.  | 4.0<br>0.9<br>3.2 | Soft Clear TC6<br><b>P1212</b><br>50# SC                               | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer                | RoHS              |
|                           | FV018702  | Firm clear vinyl label product offers excellent moisture resistance.   | 4.0<br>0.9<br>3.3 | Rigid Clear NTC<br><b>P1212</b><br>50# SC                              | 54"<br>1668 ft. Min.                                   | Flexo  | RoHS              |
|                           | FV172   | Soft conformable translucent vinyl that has been topcoated for water-based flexo inks. High clarity general purpose adhesive.  | 3.4<br>0.9<br>3.2 | Soft Translucent TC1<br><b>P1212</b><br>50# SC                         | 54"<br>1668 ft. Min.                                   | Flexo  | RoHS              |
|                           | FV612   | Non top-coated vinyl is suitable for wire marking applications.  | 3.4<br>0.9<br>3.3 | Soft Translucent NTC<br><b>P1410</b><br>50# SC                         | 54"<br>1668 ft. Min.                                   | Flexo  | RoHS              |
| Vinyl<br>Yellow & Black   | FV362   | Non top-coated conformable yellow vinyl with a general purpose adhesive.   | 3.4<br>0.9<br>3.2 | Soft Yellow Vinyl NTC<br><b>P1212</b><br>50# SC                        | 54"<br>1668 ft. Min.                                   | Flexo  | —                 |
|                           | FV232   | Top-coated version of FV362 for press printing.  | 3.4<br>0.9<br>3.2 | Soft Yellow Vinyl TC2<br><b>P1212</b><br>50# SC                        | 54"<br>1668 ft. Min.                                   | Flexo  | —                 |
|                           | FV018602  | Top-coated black vinyl for press printing.   | 3.4<br>0.9<br>3.2 | Soft Black Vinyl TC6<br><b>P1212</b><br>50# SC                         | 54"<br>1668 ft. Min.                                   | Flexo  | —                 |
| Vinyl<br>Cast             | 3690E   | Durable coat film flexible and conformable. Outstanding weathering properties. Non-transferable on some surfaces.  | 2.0<br>1.0<br>3.2 | Bright White NTC<br><b>320</b><br>90g/sm glassine                      | 48"<br>1620 ft. Min.                                   | Thermal<br>Transfer                          | UL<br>CSA<br>RoHS |
|                           | 3698E   | Same as 3690E except in matte silver. Outstanding weathering properties. Non-transferable on some surfaces.  | 2.0<br>1.0<br>3.2 | Matte Silver NTC<br><b>320</b><br>90g/sm glassine                      | 48"<br>1620 ft. Min.                                   | Thermal<br>Transfer                          | UL<br>CSA<br>RoHS |
| Retro-<br>reflective      | 3929  | When bar code printed, the facestock extends the maximum scanning distance of long range scanners. Excellent for bin labels or shelf markers.  | 4.8<br>1.0<br>4.6 | Silver Gloss TC<br><b>200</b><br>78# Clay Coated Kraft                 | 40"<br>2000 ft. Min.<br><b>6" x 450 ft.</b>            | Flexo,<br>Thermal<br>Transfer                | RoHS              |
|                           | 39294   | Bead-free retro-reflective for improved die life. When bar code printed, the facestock extends the maximum scanning distance of long range scanners.   | 4.8<br>1.0<br>4.6 | White Gloss TC<br><b>200</b><br>Polycoated Kraft                       | 48" x 1668 ft. Min.<br>4.5", 6" x 1668 ft.             | Flexo,<br>Thermal<br>Transfer                | RoHS              |
|                           | 3925  | Yellow retro-reflective version of 3929.   | 4.8<br>1.0<br>4.6 | Yellow Gloss TC<br><b>200</b><br>78# Clay Coated Kraft                 | 40"<br>2000 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer                | RoHS              |
| Poly-<br>propylene        |  7776  | Light duty facestock with firm adhesive that resists oozing.   | 2.6<br>0.8<br>3.2 | PP, Label-Lyte™<br><b>310</b><br>55# Densified Kraft                   | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer                | UL<br>CSA<br>RoHS |
|                           | 7777  | Corona treated. Bright white facestock offers high opacity. Film stiffness allows for easy die cutting and dispensing for automatic applications. Can be thermal transfer printed with resin ribbon. | 2.6<br>0.9<br>3.2 | PP, Label-Lyte™<br><b>Permanent<br/>Acrylic</b><br>50# Densified Kraft | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer                | UL<br>CSA<br>RoHS |
|                           | 7779  | Same as 7777 except with 350 adhesive. Excellent adhesion to powder coats and LSE plastics.  | 2.6<br>1.1<br>3.2 | PP, Label-Lyte™<br><b>350</b><br>55# Densified Kraft                   | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer                | UL<br>CSA<br>RoHS |

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# 3M™ Roll Label Materials (cont.)

| Facestock                     | Product   | Typical Performance Characteristics  | Construction      |   | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method               | Specs |
|-------------------------------|---|--|-------------------|---|--|-------------------------------|-------|
|                               |   |  | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                     |  |                               |       |
| Poly-<br>propylene<br>(cont.) |  76716       | Extreme Durability when printed with 3M™ Durable Resin Ribbon 92904.   | 2.6<br>1.1<br>3.3 | Polypropylene Film<br><b>350</b><br>55# Densified Kraft | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
|                               | FP012602  | Press printable stock with good initial tack and excellent die cutting properties. Adhesion to HSE substrates.   | 2.3<br>0.9<br>3.2 | PP, TC2S<br><b>P1212</b><br>50# SC                      | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FP016102  | Conformable moisture resistant film. Freezer grade adhesive that can be applied at temperatures as low as 0°F.   | 2.3<br>0.8<br>3.2 | PP, TC2S<br><b>F2201</b><br>50# SC                      | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               |  FP018802    | Bright white facestock with high opacity. Thermal transfer printable. Good adhesion to glass and metal.  | 2.6<br>0.9<br>3.2 | PP, Label-Lyte™ T2S<br><b>P1212</b><br>50# SC           | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
|                               | FP022102  | High performance adhesive designed for demanding LSE substrates. Matte film.   | 3.0<br>1.2<br>3.2 | PP, EDP<br><b>P1480</b><br>50# SC                       | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo                         | RoHS  |
|                               |  FP022202    | High performance adhesive ideal for demanding applications, including powder coated paints.  | 2.3<br>1.2<br>3.2 | PP, TC2S<br><b>P1480</b><br>50# SC                      | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FP029102  | High performance adhesive with high tack and peel from difficult textured LSE plastics.  | 2.6<br>1.2<br>3.2 | PP, TC2S<br><b>P1480</b><br>50# SC                      | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
|                               | FP027402  | High tack rubber-based adhesive. Good adhesion to waxy surfaces. Excellent choice for candle pad label applications or carpet backing labels.  | 3.0<br>1.3<br>3.2 | PP, EDP C1S<br><b>P1110</b><br>50# SC                   | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
|                               | FP032002  | High performance adhesive ideal for demanding applications, including powder coated paints. Excellent choice for machinery label applications, with adhesive designed for adhesion to smooth HSE and LSE substrates. | 3.0<br>0.9<br>3.2 | PP, EDP C1S<br><b>P1400</b><br>50# SC                   | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
|                               | FP032302  | White opaque adhesive paired with metallized film offers exceptional opacity.  | 2.3<br>1.1<br>3.2 | PP, Metallized TC<br><b>P1655</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FP011   | High clarity adhesive. Suitable for overlaminating applications or thin profile label applications. Corona treated film for press printing applications.   | 1.2<br>0.8<br>2.5 | PP, Clear T1S<br><b>P1212</b><br>40# SC                 | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FP082   | Durable moisture resistant film offers excellent conformability. Top-coated to accept flexographic film inks.  | 2.0<br>0.9<br>3.2 | PP, Clear TC<br><b>P1212</b><br>50# SC                  | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FP092   | Freezer grade adhesive. Adhesive dry ingredients are listed by FDA as indirect food contact additives when used in food packaging with minimum opportunity for exposure. See 21 CFR 175.105.                         | 2.0<br>0.8<br>3.2 | PP, Clear TC<br><b>F2201</b><br>50# SC                  | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FP102   | General purpose adhesive offers excellent adhesion to a wide variety of substrates, including polyolefins.   | 2.0<br>0.9<br>3.2 | PP, Clear TC<br><b>P1410</b><br>50# SC                  | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               |  FPM000902 | Bright silver conformable film with adhesive designed to adhere to multiple surfaces. Excellent choice for candle label applications.  | 2.0<br>0.9<br>3.2 | PP, Silver TC<br><b>P1212</b><br>50# SC                 | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
| Polystyrene                   | FS302   | Hard rigid film that offers excellent moisture resistance. High clarity general purpose adhesive. Good for candle top applications.  | 2.0<br>0.9<br>3.2 | Clear Polystyrene<br><b>F2201</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FS152   | Rigid film offers exhibits good dispensing properties. Good adhesion to smooth LSE substrates and folded cartons.  | 2.5<br>0.9<br>3.2 | White Polystyrene<br><b>P1410</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FS242   | High initial tack rubber-based adhesive. Adheres to waxy surfaces and rubber hoses.  | 2.5<br>1.2<br>3.2 | White Polystyrene<br><b>P1110</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                               | FS442   | Matte clear durable hard rigid film that offers excellent moisture resistance. Good adhesion to metals, glass and HSE plastics.  | 2.0<br>0.9<br>3.2 | Matte Polystyrene<br><b>P1212</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |

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# 3M™ Roll Label Materials (cont.)

| Facestock          | Product  | Typical Performance Characteristics  | Construction      |  | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method                       | Specs             |
|--------------------|----------|--|-------------------|--|--|---------------------------------------|-------------------|
|                    |          |  | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                                |  |                                       |                   |
| Polyethylene       | FPE05102 | Biaxially oriented film that is compatible with a variety of print methods. General purpose adhesive designed to adhere to both smooth LSE and HSE surfaces. | 3.8<br>0.9<br>3.2 | Matte Polyart™ TC<br><b>P1425</b><br>50# SC                        | 54" x 1668 ft.<br>Min.                                 | Flexo,<br>Thermal<br>Transfer,<br>DMI | RoHS              |
|                    | FPE06602 | Conformable film suitable alternative to vinyl label materials. Aggressive adhesive designed to adhere to both LSE and HSE surfaces.                         | 2.5<br>1.1<br>3.2 | White Polyethylene<br><b>P1480</b><br>50# SC                       | 54" x 1668 ft.<br>Min.                                 | Flexo,<br>Thermal<br>Transfer         | RoHS              |
|                    | FPE42    | Conformable film suitable alternative to vinyl label materials. Aggressive adhesive designed to adhere to both LSE and HSE surfaces.                         | 3.0<br>0.9<br>3.2 | Clear Polyethylene<br><b>P1410</b><br>50# SC                       | 54" x 1668 ft.<br>Min.                                 | Flexo,<br>Thermal<br>Transfer         | RoHS              |
| Acetate            | FA032    | Matte high-quality film offers excellent dispensability. Die cuts easily to extend die life.   | 2.0<br>0.9<br>3.2 | Matte Clear Acetate<br><b>P1212</b><br>50# SC                      | 48"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
| Acrylic            | FAC00102 | Clear acrylic film. General purpose adhesive with minimal cold flow. Durable overlaminate.   | 2.0<br>0.8<br>3.2 | Clear Acrylic<br><b>P1212</b><br>50# SC                            | 54"<br>1668 ft. Min.                                   | Flexo                                 | UL<br>CSA<br>RoHS |
| Kimdura            | 7291     | Smudge-proof top coat. Good for general purpose applications. Can be printed by dot-matrix, thermal transfer, and ion deposition.                            | 3.7<br>0.9<br>3.2 | Smudge-proof TC Kimdura™<br><b>P1400</b><br>50# Densified Kraft    | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer         | UL<br>CSA<br>RoHS |
| Teslin             | 7841     | Excellent toner anchorage. Good conformability. Good print contrast when bar coding.   | 7.0<br>0.8<br>3.2 | Matte White Teslin™<br><b>310</b><br>55# Densified Kraft           | 54"<br>1668 ft. Min.                                   | Flexo, Laser                          | UL<br>CSA<br>RoHS |
| Paper              | 7000     | High-gloss for fine printing. Adheres well to curved surfaces.   | 4.0<br>0.9<br>2.5 | 60# White High Gloss<br><b>320</b><br>43# Densified Kraft          | 60"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
|                    | 7000FL   | Same as 7000 with film liner.  | 4.0<br>0.9<br>1.5 | 60# White High Gloss<br><b>320</b><br>Polyester Film               | 54"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
|                    | 7002     | Facestock provides excellent graphic reproductions. Excellent flag resistance on small diameter vials.   | 4.0<br>0.9<br>2.5 | 60# Bright White High Gloss<br><b>320</b><br>43# Densified Kraft   | 60"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
|                    | 7004     | Excellent quick stick and adhesion to low surface energy plastics.   | 2.8<br>0.9<br>2.5 | 60# Bright White High Gloss<br><b>300</b><br>43# Densified Kraft   | 54"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
|                    | 7113     | Ideal for data-processing applications. Can be cleanly removed and repositioned on most surfaces.  | 4.0<br>0.4<br>3.2 | 46# Uncoated Paper<br><b>1000</b><br>50# Densified Kraft           | 48"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
|                    | 7142     | Good thermal transfer printable facestock. Can be removed cleanly or repositioned on most substrates.  | 3.5<br>0.4<br>2.5 | 55# Coated Paper<br><b>1000</b><br>40# Kraft Glassine              | 48"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer         | RoHS              |
|                    | 7011     | Excellent flag resistance on small diameter vials. Used for unit dose pharmaceutical packages.   | 2.3<br>0.9<br>2.5 | 32# Coated Paper<br><b>320</b><br>43# Densified Kraft              | 60"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
|                    | 7110     | Readily fractures or delaminates. Ideal for tamper-resistant labeling. Provides write-on capability.   | 2.8<br>1.1<br>2.5 | 40# Uncoated Paper<br><b>320</b><br>43# Densified Kraft            | 60"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
|                    | 7120     | Conforms to curved surfaces. Resists staining and moisture. Adheres to many textured surfaces.   | 3.5<br>1.3<br>2.5 | 60# Semi-gloss White<br>Paper<br><b>400</b><br>43# Densified Kraft | 54"<br>1668 ft. Min.                                   | Flexo                                 | RoHS              |
| Acrylate           | 3921     | Offers ultra-high temperature performance. Thermal transfer printable.   | 2.0<br>1.0<br>3.0 | Matte White Acrylate<br><b>150</b><br>55# Densified Kraft          | 48"<br>1668 ft. Min.<br><b>6"</b>                      | Thermal<br>Transfer                   | UL<br>CSA<br>RoHS |
|                    | 76999    | Offers ultra-high temperature performance. Thermal transfer printable with un-branded liner.   | 2.0<br>1.0<br>3.1 | Matte White Acrylate<br><b>150</b><br>55# Densified Kraft          | 48"<br>1668 ft. Min.                                   | Thermal<br>Transfer                   | UL<br>CSA<br>RoHS |
| Polyimide<br>White | 7812     | Offers ultra-high temperature performance. Easy readability of bar codes. Thermal transfer printable.  | 2.0<br>2.0<br>3.2 | Polyimide, Matte White<br><b>100</b><br>50# Densified Kraft        | 12" x<br>1000 ft.<br><b>6" x 500</b>                   | Thermal<br>Transfer                   | UL<br>CSA<br>RoHS |

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# 3M™ Dot Matrix Label Materials

| Facestock                  | Product  | Typical Performance Characteristics  | Construction      |  | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method                       | Specs             |
|----------------------------|----------|--|-------------------|--|--|---------------------------------------|-------------------|
|                            |          |  | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                          |  |                                       |                   |
| Polyester<br>Matte White   | 7840     | Matte top-coat offers excellent ink anchorage for various electronic printing technologies. Firm adhesive that resists oozing.                 | 2.3<br>0.8<br>3.2 | PET, White DMI TC<br><b>310</b><br>55# Densified Kraft       | 54"<br>1668 ft. Min.                                   | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | 7880     | Matte top-coat resists scuffing, chemicals and moisture. Excellent adhesion to LSE plastics. Liner perforates and fan-folds easily.            | 2.3<br>0.8<br>3.2 | PET, White DMI TC<br><b>300</b><br>55# Densified Kraft       | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | 7880HL   | Heavy liner version of 7880 label stock for excellent liner stability in high humidity.  | 2.3<br>0.8<br>4.6 | PET, White Laser TC<br><b>300</b><br>Clay Coated Kraft Laser | 54"<br>1668 ft. Min.                                   | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | FM162    | Computer imprintable film that also accepts thermal transfer print. Adheres well to metals and HSE plastics.                                   | 2.0<br>0.9<br>3.2 | PET, White EDP<br><b>P1212</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI | UL<br>RoHS        |
|                            | OFM2502  | Absorbent matte coated for a variety of electronic print technologies. Good adhesion to both HSE and LSE plastics.                             | 2.0<br>0.9<br>3.2 | PET, White EDP<br><b>P1400</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI | UL<br>RoHS        |
| Polyester<br>Matte Clear   | 7745FL   | Dot-matrix imprintable matte top-coat. Ideal where variable information is needed.   | 1.3<br>0.8<br>1.5 | PET, Clear DMI TC<br><b>400</b><br>Polyester Film            | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | 7881     | Matte top-coat provides good chemical and abrasion resistance. Excellent adhesion to LSE plastics.   | 2.3<br>0.8<br>3.2 | PET, Clear DMI TC<br><b>300</b><br>55# Densified Kraft       | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | FM142    | Absorbent matte coated for a variety of electronic print technologies. General purpose adhesive for HSE substrates.                            | 2.0<br>0.9<br>3.2 | PET, Clear EDP<br><b>P1212</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI | UL<br>RoHS        |
| Polyester<br>Matte Silver  | 7883     | Matte top-coat resists scuffing, chemicals, and moisture. Excellent adhesion to LSE plastics. Liner can be perforated and fan-folded easily.   | 3.3<br>0.8<br>3.2 | PET, Silver DMI TC<br><b>300</b><br>55# Densified Kraft      | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | 7883HL   | Heavy liner version of 7883 label stock for excellent liner stability in high humidity.  | 3.3<br>0.8<br>4.6 | PET, Silver DMI TC<br><b>300</b><br>Clay Coated Kraft Laser  | 54"<br>1668 ft. Min.                                   | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | 7887     | Same as 7883 label stock except thinner facestock.   | 2.3<br>0.8<br>3.2 | PET, Silver DMI TC<br><b>300</b><br>55# Densified Kraft      | 54"<br>1668 ft. Min.                                   | Flexo, DMI                            | UL<br>CSA<br>RoHS |
|                            | 7897     | Firm adhesive resists oozing. Liner perforates and fan-folds easily.   | 2.3<br>0.8<br>3.2 | PET, Silver DMI TC<br><b>310</b><br>55# Densified Kraft      | 54"<br>1668 ft. Min.                                   | Flexo, DMI                            | UL<br>CSA<br>RoHS |
| Polyester<br>Bright Silver | FM152    | Bright metallized film with a matte absorbent top-coating designed for computer imprinting applications. Excellent adhesion to HSE substrates. | 2.0<br>0.9<br>3.2 | PET, Bright Silver EDP<br><b>P1212</b><br>50# SC             | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI | UL<br>RoHS        |
| Vinyl<br>White             | FV512    | Same film as FV062 with an adhesive designed to adhere to a variety of surfaces, including polyolefins.  | 3.4<br>0.9<br>3.2 | Semi-rigid EDP<br><b>P1410</b><br>50# SC                     | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI | RoHS              |
| Polypropylene<br>White     | FP010402 | Matte top-coating is designed for compatibility with a variety of film ink systems. Film stiffness allows for easy die cutting and dispensing. | 2.8<br>0.9<br>3.2 | PP, Label-Lyte™ EDP<br><b>P1212</b><br>50# SC                | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI | RoHS              |
|                            | FP024102 | Freezer grade adhesive that can be applied at temperatures as low as 0°F. Suitable for frozen food or drum label applications.                 | 3.0<br>0.8<br>3.2 | PP, EDP C1S<br><b>F2201</b><br>50# SC                        | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer,<br>DMI | RoHS              |
| Polyimide<br>White         | 7811     | Offers ultra-high temperature performance. Easy readability of variable information and bar codes.   | 2.0<br>2.0<br>3.0 | Matte Polyimide TC<br><b>100</b><br>50# Densified Kraft      | 12"<br>1000 ft.<br><b>6" x 500</b>                     | DMI                                   | UL<br>CSA<br>RoHS |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.




# 3M™ Digital Label Materials

| Facestock                   | Product    | Typical Performance Characteristics   | Construction      |   | Roll Width Minimum Mini-Master (shown in red)   | Print Method                        | Specs             |
|-----------------------------|------------|---|-------------------|---|---|-------------------------------------|-------------------|
|                             |            |   | Caliper (mils)    | Facestock Adhesive Type Liner                                   |   |                                     |                   |
| Vinyl White                 | IJ39-20    | Solvent or UV inkjet printable film with high tack and peel adhesive  | 3.2<br>1.2<br>6.8 | Matte Vinyl<br><b>Permanent Acrylic</b><br>90# Polycoated Kraft | 54" x 50 yd<br>60" x 50 yd                      | Inkjet, Screen, UV Flexo            | RoHS              |
| Polyester Matte White       | ▶ 7840HL   | Matte top-coat offers excellent ink anchorage for various electronic printing technologies. Firm adhesive that resists oozing. Clay-coated liner.   | 2.3<br>0.8<br>4.6 | PET, White Laser TC<br><b>310</b><br>Clay Coated Kraft Laser    | 54"<br>1668 ft. Min.                            | Flexo, Laser                        | UL<br>CSA<br>RoHS |
|                             | 7850HL     | Matte top-coat offers excellent ink anchorage for laser toner and dot-matrix. Excellent high temperature performance especially to LSE plastics and smooth powder coats.  | 2.3<br>1.1<br>4.6 | PET, White Laser TC<br><b>350</b><br>Clay Coated Kraft Laser    | 54"<br>1668 ft. Min.                            | Flexo, Laser                        | UL<br>CSA<br>RoHS |
|                             | ▶ FM01961K | Adhesive can be applied at temperatures as low as 0°F. Liner has special surface finish on the back side to enhance feed and reduce static problems. Excellent for drum labeling applications.  | 2.0<br>0.8<br>4.6 | PET, White MC<br><b>F2201</b><br>Clay Coated Kraft Laser        | 54"<br>5000 ft. Min.<br><b>9"</b>               | Flexo, Thermal Transfer, Laser      | RoHS              |
|                             | FM031902   | Print receptive film accepts most film ink systems and thermal transfer printing Excellent for temporary membership card applications. Film is also laser printable.  | 5.0<br>0.9<br>3.2 | PET, White MC<br><b>P1212</b><br>50# SC                         | 54"<br>5000 ft. Min.                            | Flexo, Thermal Transfer, Laser      | RoHS              |
| Polyester Gloss White Laser | FM1852     | Unique gloss top coat compatible with laser toner print technology for short run digitally printed labels. Pattern adhesive keeps digital press clean.  | 2.0<br>0.9<br>3.2 | PET, White Laser TC<br><b>P1212 Pattern</b><br>50# SC           | 54"<br>1668 ft. Min.<br>8.5" x 1250 ft. PreSlit | Flexo, Laser                        | RoHS              |
| Polyester Gloss Clear       | FM02511K   | Durable film with clear laser topcoat. Adheres to a variety of substrates. Offers excellent UV resistance. Liner designed for lay-flat through laser applications.  | 2.0<br>0.9<br>4.6 | PET, Clear Laser TC<br><b>P1400</b><br>Clay Coated Kraft Laser  | 54"<br>1668 ft. Min.                            | Flexo, Thermal Transfer, Laser      | RoHS              |
|                             | FM852      | Unique gloss top coat compatible with laser toner print technology for short run digitally printed labels. Pattern adhesive keeps digital press clean.  | 2.0<br>0.9<br>3.2 | PET, Clear Laser TC<br><b>P1212 Pattern</b><br>50# SC           | 54"<br>1668 ft. Min.<br>8.5" x 1250 ft. PreSlit | Flexo, Laser                        | RoHS              |
| Polyester Matte Clear       | 7845HL     | Matte top-coat provides good chemical and abrasion resistance. Excellent adhesion to HSE plastics and metals.   | 1.3<br>0.8<br>4.6 | PET, Clear Laser TC<br><b>310</b><br>Clay Coated Kraft Laser    | 54"<br>1668 ft. Min.                            | Flexo, Laser                        | UL<br>RoHS        |
|                             | FM02090K   | Translucent matte coated for a variety of electronic print technologies. Liner has a special surface finish on the back side to enhance feed and reduce static problems.  | 2.0<br>0.8<br>4.6 | PET, Translucent EDP<br><b>P1212</b><br>Clay Coated Kraft Laser | 54"<br>5000 ft. Min.                            | Flexo, Thermal Transfer, Laser      | RoHS              |
|                             | FM14K      | Matte coated for a variety of electronic print technologies. Liner has a special surface finish on the back side to enhance feed and reduce static problems.  | 2.0<br>0.8<br>4.6 | PET, Clear EDP<br><b>P1212</b><br>Clay Coated Kraft Laser       | 54"<br>5000 ft. Min.                            | Flexo, Thermal Transfer, Laser      | UL<br>RoHS        |
|                             | FM1681     | Translucent matte coated for a variety of electronic print technologies. Excellent for use as a laser printable overlaminates.  | 2.0<br>0.8<br>2.5 | PET, Translucent EDP<br><b>P1212</b><br>40# SC                  | 54"<br>1668 ft. Min.                            | Flexo, Thermal Transfer, Laser      | RoHS              |
| Vinyl White                 | FV02410K   | Top-coated for laser printing applications. Liner has a special surface finish on the back side to enhance feed and reduce static problems.   | 3.4<br>0.9<br>4.6 | Soft White EDP<br><b>P1425</b><br>Clay Coated Kraft Laser       | 54"<br>5000 ft. Min.                            | Flexo, Thermal Transfer, DMI, Laser | RoHS              |
|                             | FV100K     | Similar to FV02410K except with a freezer grade adhesive. Suitable for drum labeling applications.  | 3.4<br>0.8<br>4.6 | Soft White EDP<br><b>F2201</b><br>Clay Coated Kraft Laser       | 54"<br>5000 ft. Min.                            | Flexo, Thermal Transfer, DMI, Laser | RoHS              |
| Acrylate                    | 7847       | Excellent temperature, chemical, and environmental resistance. Two-layered film construction provides excellent long-term performance. Excellent adhesion to LSE plastics. Brittle facestock provides destructibility on some substrates. | 2.4<br>1.2<br>3.2 | Matte Black/White<br><b>350</b><br>65# Densified Kraft          | 48"<br>984 ft.<br><b>3.5", 4.75"</b>            | Laser Etch                          | UL<br>CSA<br>RoHS |
|                             | 7848       | Same as 7847 label stock, except with matte silver/black facestock.   | 2.4<br>1.2<br>3.2 | Matte Silver/White<br><b>350</b><br>65# Densified Kraft         | 48"<br>984 ft.                                  | Laser Etch                          | UL<br>CSA<br>RoHS |

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# 3M™ Removable Label Materials

| Facestock              | Product  | Typical Performance Characteristics   | Construction      |  | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method               | Specs |
|------------------------|--|---|-------------------|--|--|-------------------------------|-------|
|                        |  |   | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                      |  |                               |       |
| Polyester<br>White     | FM01972  | Matte film that offers thermal stability. Suitable for masking applications.  | 2.0<br>0.8<br>3.2 | PET, White MC<br><b>R3500</b><br>50# SC                  | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
|                        | FM1732R  | Thermal transfer printable with resin ribbons. Removable from a variety of surfaces.  | 2.0<br>0.8<br>3.2 | PET, White TC<br><b>R3500</b><br>50# SC                  | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
| Vinyl<br>White         | 7600   | Top-coated, high bond, but offers clean removability on most surfaces for up to one year. Excellent for plasticizer resistance.                             | 3.5<br>1.0<br>2.5 | Soft White Gloss TC<br><b>500</b><br>43# Densified Kraft | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo                         | RoHS  |
|                        | FV010002   | Ultra removable adhesive. Static cling alternative.   | 3.4<br>0.8<br>3.2 | Soft White Vinyl TC3<br><b>R3800</b><br>50# SC           | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                        | FV1222   | Soft conformable vinyl that offers long term adhesion with clean removability.  | 3.4<br>0.8<br>3.2 | Soft White Vinyl TC3<br><b>R3500</b><br>50# SC           | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
| Vinyl<br>Clear         | FV016402   | Top-coated vinyl is an excellent alternative to static cling. Designed for high-speed die cutting and matrix stripping.                                     | 4.0<br>0.8<br>3.2 | Soft Clear Vinyl TC6<br><b>R3500</b><br>50# SC           | 54" x 1668 ft. Min.                                    | Flexo,<br>Thermal<br>Transfer | RoHS  |
| Vinyl<br>Static Cling  | FVS110S  | Highly plasticized vinyl label material that adheres to most clean smooth surfaces without the use of pressure sensitive adhesives.                         | 7.5<br>—<br>3.4   | Clear Vinyl TC6<br><b>None</b><br>60# Gloss              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
|                        | FVS12S   | White version of FVS110S. Utilizes a non-silicone coated liner specially designed for static cling vinyl.   | 7.5<br>—<br>3.4   | White Vinyl TC6<br><b>None</b><br>60# Gloss              | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer | RoHS  |
| Polypropylene<br>White | FP011902   | Removable adhesive from polyethylene and polypropylene surfaces only.   | 2.3<br>0.8<br>3.2 | PP, White TC2S<br><b>RMR10</b><br>50# SC                 | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                        | FP016902   | Good conformability. Good removability from a variety of surfaces. Excellent alternative to static cling.   | 2.3<br>0.8<br>3.2 | PP, White TC2S<br><b>R3500</b><br>50# SC                 | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo                         | RoHS  |
|                        | FP024502   | Glossy white label paired with adhesive designed to be easily removable from a variety of surfaces with lower peel and tack than R3500 adhesive.            | 2.3<br>0.8<br>3.2 | PP, White TC2S<br><b>R3800</b><br>50# SC                 | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
| Polypropylene<br>Clear | FP56N  | Clear conformable label offers long term adhesion with clean removability. Excellent alternative to static cling with film liner for high speed dispensing. | 2.0<br>0.8<br>1.0 | PP, Clear TC2S<br><b>R3500</b><br>Clear Polyester        | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                        | FP024402   | Specially formulated adhesive designed to be easily removable from a variety of surfaces. Offers lower peel and tack than R3500 adhesive.                   | 2.0<br>0.8<br>3.2 | PP, Clear TC2S<br><b>R3800</b><br>50# SC                 | 54"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                        |  FP0862 | Clear conformable label offers long term adhesion with clean removability. Excellent alternative to static cling.   | 2.0<br>0.8<br>3.2 | PP, Clear TC2S<br><b>R3500</b><br>50# SC                 | 54" x 1668 ft. Min.<br><b>6"</b>                       | Flexo                         | RoHS  |
| Paper<br>White         | 7113   | Ideal for data-processing applications. Can be cleanly removed and repositioned on most surfaces.   | 4.0<br>0.4<br>3.2 | 46# Uncoated Paper<br><b>1000</b><br>50# Densified Kraft | 48"<br>1668 ft. Min.                                   | Flexo                         | RoHS  |
|                        | 7142   | Good thermal transfer printable facestock. Can be removed cleanly or repositioned on most substrates.   | 3.5<br>0.4<br>2.5 | 55# Coated Paper<br><b>1000</b><br>40# Kraft Glassine    | 48"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer | RoHS  |

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# 3M™ Tamper Evident Label Materials

| Facestock                                  | Product     | Typical Performance Characteristics   | Construction      |   | Roll Width<br>Minimum<br>Mini-Master<br>(shown in red) | Print<br>Method                          | Specs             |
|--|-------------|---|-------------------|---|--|--|-------------------|
|  |             |   | Caliper<br>(mils) | Facestock<br>Adhesive Type<br>Liner                           |  |  |                   |
| Destructible<br>Facestocks                 | 7110        | Readily fractures or delaminates. Ideal for tamper-resistant labeling. Provides write-on capability.  | 2.8<br>1.1<br>2.5 | 40# Uncoated White Paper<br><b>320</b><br>43# Densified Kraft | 60"<br>1668 ft. Min.                                   | Flexo                                    | UL*<br>RoHS       |
|  | 7613T       | Resists one-piece removal. Facestock fractures and tears easily. Excellent adhesion to powder coating, LSE plastics and oily metals.  | 2.0<br>0.8<br>3.2 | White Vinyl TC<br><b>350</b><br>55# Densified Kraft           | 48"<br>1668 ft. Min.<br><b>4.5", 6"</b>                | Flexo,<br>Thermal<br>Transfer            | UL<br>CSA<br>RoHS |
|  | 7930T       | Same as 7613, except with 90# polycoated kraft liner.   | 2.0<br>0.8<br>6.7 | White Vinyl TC<br><b>350</b><br>90# Polycoated Kraft          | Sheet: 20"x 27"<br>Roll: 48" x 750 ft.                 | Screen,<br>Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|  | 3812        | This destructible, non-shrink white film is designed as a non-removable security label. Once applied in a correct manner, one-piece removal is not possible on most surfaces. | 1.6<br>1.2<br>3.2 | Urethane, Matte White<br><b>350</b><br>Glassine               | 48"<br>1668 ft. Min.<br>6" PreSlit                     | Flexo,<br>Thermal<br>Transfer            | RoHS              |
|  | FA102       | Same as FA112 with a white film.  | 2.0<br>0.9<br>3.2 | White Acetate<br><b>P1212</b><br>50# SC                       | 48"<br>1668 ft. Min.                                   | Flexo                                    | RoHS              |
|  | FA112       | High-quality film resists one piece removal, fractures easily. Good initial tack adhesive.  | 2.0<br>0.9<br>3.2 | Clear Acetate<br><b>P1212</b><br>50# SC                       | 48"<br>1668 ft. Min.                                   | Flexo                                    | RoHS              |
| Polyester<br>Tamper<br>Indicating<br>Films | 7380        | Tamper evident VOID. Ideal for security rating plates and certification plates.   | 2.3<br>0.8<br>3.2 | Matte White VOID DMI TC<br><b>300</b><br>55# Densified Kraft  | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo, DMI                               | UL<br>CSA<br>RoHS |
|  | ▶ 7381/7866 | Used for closures in packaging of OTC drugs. Facestock resists harsh environments.  | 2.0<br>0.8<br>3.2 | Gloss White VOID TC<br><b>300</b><br>55# Densified Kraft      | 54"<br>1668 ft. Min.<br><b>4.5", 6"</b>                | Flexo,<br>Thermal<br>Transfer            | UL<br>CSA<br>RoHS |
|  | 7384        | Tamper evident VOID. Mirror finish hides security feature. Ideal for security closure seal.   | 2.0<br>0.8<br>3.2 | PET, Bright Silver TC<br><b>300</b><br>55# Densified Kraft    | 54"<br>1668 ft. Min.<br><b>4.5", 6"</b>                | Flexo,<br>Thermal<br>Transfer            | UL<br>CSA<br>RoHS |
|  | 7935        | Facestock resists harsh environments. Heavy lay-flat liner. Ideal for screen printing.  | 2.0<br>0.8<br>6.7 | Gloss White VOID TC<br><b>300</b><br>90# Polycoated Kraft     | Sheet: 20"x 27"<br>Roll: 54" x 750 ft.                 | Screen,<br>Flexo                         | UL<br>RoHS        |
|  | 7937        | Ideal for security rating plates and certification plates. Heavy lay-flat liner. Ideal for screen printing.   | 2.3<br>0.8<br>6.7 | Matte White VOID DMI TC<br><b>300</b><br>90# Polycoated Kraft | Sheet: 20"x 27"<br>Roll: 54" x 750 ft.                 | Screen,<br>Flexo, DMI                    | UL<br>RoHS        |
|  | FMV01402    | Tamper evident with triangle pattern. Alternative to standard VOID labels.  | 2.0<br>0.9<br>3.2 | White Triangle TC<br><b>P1410</b><br>50# SC                   | 54"<br>1668 ft. Min.<br><b>4.5", 6"</b>                | Flexo,<br>Thermal<br>Transfer            | RoHS              |
|  | FMV01202    | Same as FMV01402 in bright silver finish.   | 2.0<br>0.9<br>3.2 | Bright Silver Triangle TC<br><b>P1410</b><br>50# SC           | 54"<br>1668 ft. Min.<br><b>4.5", 6"</b>                | Flexo,<br>Thermal<br>Transfer            | RoHS              |
|  | FMV02       | Thermal transfer printable VOID label. General purpose adhesive offers excellent adhesion to a wide variety of substrates, including polyolefins.                             | 2.0<br>0.9<br>3.2 | Bright Silver VOID TC<br><b>P1410</b><br>50# SC               | 54"<br>1668 ft. Min.<br><b>6"</b>                      | Flexo,<br>Thermal<br>Transfer            | RoHS              |
|  | FMV22       | Same as FMV02 in white finish.  | 2.0<br>0.9<br>3.2 | White VOID TC<br><b>P1410</b><br>50# SC                       | 54"<br>1668 ft. Min.                                   | Flexo,<br>Thermal<br>Transfer            | RoHS              |

\*Can be used to display the UL listing mark, but each case must be reviewed and approved by UL follow-up services before use.




Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Health Care Label Materials

| Facestock                         | Product  | Typical Performance Characteristics  | Construction      |  | Roll Width Minimum Mini-Master (shown in red) | Print Method               | Specs |
|-----------------------------------|--|--|-------------------|--|---|----------------------------|-------|
|                                   |  |  | Caliper (mils)    | Facestock Adhesive Type Liner                                    |   |                            |       |
| Paper                             |  7000       | High-gloss for fine printing. Adheres well to curved surfaces.   | 3.2<br>0.9<br>2.5 | 60# White High Gloss<br><b>320</b><br>43# Densified Kraft        | 60"<br>1668 ft. Min.<br><b>6"</b>             | Flexo                      | RoHS  |
|                                   | 7000FL   | Same as 7000 with film liner.  | 3.2<br>0.9<br>1.5 | 60# White High Gloss<br><b>320</b><br>Polyester Film             | 54"<br>1668 ft. Min.                          | Flexo                      | RoHS  |
|                                   | 7002   | Facestock provides excellent graphic reproductions. Excellent flag resistance on small diameter vials. | 2.8<br>0.9<br>2.5 | 60# Bright White High Gloss<br><b>320</b><br>43# Densified Kraft | 60"<br>1668 ft. Min.                          | Flexo                      | RoHS  |
|                                   | 7004   | Excellent quick stick and adhesion to low surface energy plastics.                                     | 2.8<br>0.9<br>2.5 | 60# Bright White High Gloss<br><b>300</b><br>43# Densified Kraft | 54"<br>1668 ft. Min.                          | Flexo                      | RoHS  |
| Litho White                       | 7113   | Ideal for data-processing applications. Can be cleanly removed and repositioned on most surfaces.      | 4.0<br>0.4<br>3.2 | 46# Uncoated Paper<br><b>1000</b><br>50# Densified Kraft         | 48"<br>1668 ft. Min.                          | Flexo                      | RoHS  |
|                                   | 7142   | Good thermal transfer printable facestock. Can be removed cleanly or repositioned on most substrates.  | 3.5<br>0.4<br>2.5 | 55# Coated Paper<br><b>1000</b><br>40# Kraft Glassine            | 48"<br>1668 ft. Min.                          | Flexo,<br>Thermal Transfer | RoHS  |
| Litho Tamper-Indicating White     |  7110       | Readily fractures or delaminates. Ideal for tamper-resistant labeling. Provides write-on capability.   | 2.8<br>1.1<br>2.5 | 40# Uncoated Paper<br><b>320</b><br>43# Densified Kraft          | 60"<br>1668 ft. Min.                          | Flexo                      | RoHS  |
|                                   | 7011   | Excellent flag resistance on small diameter vials. Used for unit dose pharmaceutical packages.         | 2.3<br>0.9<br>2.5 | 35# Coated Paper<br><b>320</b><br>43# Densified Kraft            | 60"<br>1668 ft. Min.                          | Flexo                      | RoHS  |
| Saturated Latex Impregnated White | 7120   | Conforms to curved surfaces. Resists staining and moisture. Adheres to many textured surfaces.         | 3.5<br>1.3<br>2.5 | 60# Semi-gloss White Paper<br><b>400</b><br>43# Densified Kraft  | 54"<br>1668 ft. Min.                          | Flexo                      | RoHS  |
| Polyolefin                        |  FP035402 | Offers excellent durability, conformability and moisture resistance. Conforms for use with blood bags. | 3.3<br>1.3<br>3.1 | Matte White Polyolefin<br><b>P1650</b><br>50# SC                 | 54"<br>5000 ft. Min.                          | Flexo,<br>Thermal Transfer | RoHS  |





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# 3M™ Sheet Label Materials (Standard Sheet Size 20" x 27" Packed 100 sheets/box)

| Facestock   | Product  | Typical Performance Characteristics  | Construction  |   | Roll Width Minimum  | Print Method      | Specs             |
|-------------|--|--|---|---|---|-------------------|-------------------|
|             |  |  | Caliper (mils)  | Facestock Adhesive Type Liner                                   |   |                   |                   |
| Vinyl White |  FV031705   | Flexible film, ideal for screen printing with solvent ink systems, UV inkjet or UV flexo.  | 3.2<br>0.9<br>6.8   | Soft White Vinyl NTC<br><b>P1212</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | RoHS              |
|             | 7043   | Specially top-coated vinyl for UV curable screen inks. Good general purpose adhesive for a variety of surfaces.  | 3.2<br>0.9<br>6.8   | Soft White Vinyl TC9<br><b>P1400</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | UL<br>RoHS        |
|             | 7045   | Non top-coated film with good conformability. Excellent choice for curved surfaces   | 3.2<br>0.9<br>6.8   | Soft White Vinyl NTC<br><b>P1400</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | UL<br>RoHS        |
|             | 7046   | Flexible film, ideal for screen printing with solvent ink systems.   | 3.2<br>1.1<br>6.8   | Soft White Vinyl NTC<br><b>350</b><br>90# Polycoated Kraft      | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | UL<br>RoHS        |
|             | FV027805   | Flexible film, ideal for printing with solvent, UV inkjet or UV flexo inks. High tack and peel adhesive suitable for outdoor, textured LSE substrates.             | 3.2<br>1.1<br>6.8   | Soft White Vinyl NTC<br><b>P1480</b><br>90# Polycoated Kraft    | Sheet: Custom Sizes<br>Master: 54" or 60" x 750 ft.               | Screen            | RoHS              |
|             | 7049   | Non top-coated film with good conformability. Excellent choice for curved surfaces. General purpose adhesive for a variety of surfaces. High performance adhesive. | 3.8<br>0.9<br>6.8   | Soft White EL Vinyl NTC<br><b>P1400</b><br>90# Polycoated Kraft | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | UL<br>RoHS        |
|             | 7051   | Non top-coated film with good conformability. Excellent choice for curved surfaces. General purpose adhesive for a variety of surfaces. High performance adhesive. | 3.8<br>1.1<br>6.8   | Soft White EL Vinyl NTC<br><b>350</b><br>90# Polycoated Kraft   | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | UL<br>RoHS        |
|             |  7051SA   | White finish adhesive allows trapped air to release to prevent bubbles, good for powder coated surfaces, high performance adhesive.                                | 3.8<br>1.1<br>6.8   | Soft White EL Vinyl NT<br><b>350</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.                           | Flexo             | RoHS              |
|             | 7065   | Ultra removable from smooth surfaces. Topcoated. Excellent alternative to static cling.  | 4.0<br>0.8<br>6.8   | Soft White Vinyl NTC<br><b>R3500</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | RoHS              |
|             |  7902   | Non top-coated. Conformable to contoured surfaces. Heavy lay-flat liner. Ideal for screen printing.  | 3.5<br>1.2<br>6.8   | Soft White Vinyl NTC<br><b>300</b><br>90# Polycoated Kraft      | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.                           | Screen            | UL<br>CSA<br>RoHS |
|             | 7904   | Conformable to contoured surfaces. Excellent adhesion to LSE plastics and textured powder coats.   | 3.4<br>1.8<br>6.8   | Soft White Vinyl NTC<br><b>350</b><br>90# Polycoated Kraft      | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.                           | Screen            | RoHS              |
|             | 7901   | Non top-coated. High bond, but offers clean removability on most surfaces for up to one year. Excellent for plasticizer resistance.                                | 3.5<br>1.0<br>6.8   | Soft White Vinyl NTC<br><b>500</b><br>90# Polycoated Kraft      | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.                           | Screen            | RoHS              |
| 7930T       | Resists one-piece removal. Facestock fractures and tears easily. Excellent adhesion to powder coating, LSE plastics and oily metals. | 2.0<br>0.8<br>6.8  | White Destructible TC<br><b>350</b><br>90# Polycoated Kraft | Sheet: 20" x 27"<br>Roll: 48" x 750 ft.                         | Screen  | UL<br>CSA<br>RoHS |                   |
| Vinyl Clear | 7053   | Semi-flexible, non top-coated film designed for screen printing applications.  | 4.0<br>1.1<br>6.8   | Soft Clear Vinyl NTC<br><b>350</b><br>90# Polycoated Kraft      | Sheet: 20" x 27"<br>Master: 54" x 750 ft.                         | Screen            | RoHS              |
|             | FV1405   | Ultra removable from smooth surfaces. Non-topcoated. Excellent alternative to static cling.  | 4.0<br>0.8<br>6.8   | Soft Clear Vinyl NTC<br><b>R3500</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Rolls: 27" x 750 ft.<br>Master: 54" x 750 ft. | Screen            | RoHS              |

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# 3M™ Sheet Label Materials (Standard Sheet Size 20" x 27" Packed 100 sheets/box) (cont.)

| Facestock       | Product  | Typical Performance Characteristics   | Construction      |   | Roll Width Minimum                        | Print Method          | Specs             |
|-----------------|--|---|-------------------|---|---|-----------------------|-------------------|
|                 |  |   | Caliper (mils)    | Facestock Adhesive Type Liner   |   |                       |                   |
| Polyester White |  7034   | Glossy white film, excellent choice for screen printing applications. Good convertibility.  | 2.0<br>0.9<br>6.8 | PET, White TC<br><b>P1400</b><br>90# Polycoated Kraft                 | Sheet: 20" x 27"<br>Master: 54" x 750 ft. | Screen,<br>Flexo      | UL<br>RoHS        |
|                 | 7035   | Excellent adhesion to LSE plastics and powder coated paints. Moderate coat weight of adhesive improves processing.  | 2.0<br>1.1<br>6.8 | PET, White TC<br><b>350</b><br>90# Polycoated Kraft                   | Sheet: 20" x 27"<br>Master: 54" x 750 ft. | Screen,<br>Flexo      | UL<br>RoHS        |
|                 | 7037   | Same film as 7036 with aggressive adhesive for difficult substrates.  | 2.0<br>1.1<br>6.8 | PET, White MC<br><b>350</b><br>90# Polycoated Kraft                   | Sheet: 20" x 27"<br>Master: 54" x 750 ft. | Screen,<br>Flexo      | UL<br>RoHS        |
|                 |  7220SA | Adhesive allows trapped air to release to prevent bubbling, chemical resistant, goo for powder coated surfaces, slightly oily metals, high performance adhesive.                        | 2.0<br>1.1<br>6.8 | PET, Gloss White TC<br><b>350</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | RoHS              |
|                 | 7907   | 350 adhesive for performance applications that require thermal transfer printing and demand adhesive performance on difficult to stick to surfaces (e.g. HSE plastics or powder coats). | 2.3<br>1.8<br>6.8 | PET, Matte White TC<br><b>350</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>CSA<br>RoHS |
|                 |  7908   | Heavy adhesive coat weight for textured surfaces. Excellent high temperature resistance. Excellent adhesion to LSE plastics and powder coats.   | 2.0<br>1.8<br>6.8 | PET, Gloss White TC<br><b>350</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>CSA<br>RoHS |
|                 | 7908FL   | Same as 7908 except with thick polyester liner suitable for domed decals.   | 2.0<br>1.8<br>4.0 | PET, Gloss White TC<br><b>350</b><br>Polyester                        | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>CSA<br>RoHS |
|                 | 7920   | Good abrasion and chemical resistance. Excellent cold temperature performance. Ideal for screen printing.   | 1.0<br>0.8<br>6.8 | PET, Gloss White TC<br><b>400</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>CSA<br>RoHS |
|                 | 7931   | High abrasion and solvent resistance. Good for indoor and outdoor use. Excellent bond to LSE plastics.  | 2.0<br>0.8<br>6.8 | PET, Gloss White TC<br><b>300</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>CSA<br>RoHS |
|                 | 7935   | Facestock resists harsh environments. Heavy layflat liner. Ideal for screen printing.   | 2.0<br>0.8<br>6.8 | PET, Gloss White VOID TC<br><b>300</b><br>90# Polycoated Kraft        | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>RoHS        |
|                 | 7937   | Ideal for security rating plates and certification plates. Heavy lay-flat liner. Ideal for screen printing.   | 2.3<br>0.8<br>6.8 | PET, Matte White VOID<br>DMI TC<br><b>300</b><br>90# Polycoated Kraft | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>RoHS        |
|                 | 7980   | Matte top-coat resists scuffing, chemicals, and moisture. Excellent adhesion to smooth LSE plastics. Designed for screen printing.  | 2.3<br>0.8<br>6.8 | PET, Matte White TC<br><b>300</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo, DMI | UL<br>RoHS        |
|                 | FM125  | Gloss white polyester with permanent acrylic adhesive for bar code labels or nameplates with layflat liner for screen printed durable graphics.   | 2.0<br>0.9<br>7.0 | PET, White TC<br><b>P1212</b><br>90# Polycoated Kraft                 | Custom Sheet Sizes<br>Roll: 54" x 750 ft. | Screen                | RoHS              |
| Polyester Clear |  7029 | Excellent UV resistance. Good adhesion to a variety of surfaces.  | 2.0<br>0.9<br>6.8 | PET, Clear TC<br><b>P1400</b><br>90# Polycoated Kraft                 | Sheet: 20" x 27"<br>Master: 54" x 750 ft. | Screen,<br>Flexo      | UL<br>RoHS        |
|                 | 7905   | Heavy adhesive coat weight for textured surfaces. Excellent high temperature resistance. Excellent adhesion to LSE plastics and powder coats.   | 2.0<br>1.8<br>6.8 | PET, Gloss Clear TC<br><b>350</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>CSA<br>RoHS |
|                 | 7950   | Offers high abrasion and solvent resistance. Excellent adhesion to smooth LSE plastics. Ideal for indoor and outdoor applications.  | 2.0<br>0.8<br>6.8 | PET, Gloss Clear TC<br><b>300</b><br>90# Polycoated Kraft             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.   | Screen,<br>Flexo      | UL<br>CSA<br>RoHS |

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# 3M™ Sheet Label Materials (Standard Sheet Size 20" x 27" Packed 100 sheets/box) (cont.)







| Facestock            | Product   | Typical Performance Characteristics   | Construction  |  | Roll Width Minimum                          | Print Method                                  | Specs             |
|----------------------|---|---|---|--|---|---|-------------------|
|                      |   |   | Caliper (mils)                                      | Facestock Adhesive Type Liner                                  |   |   |                   |
| Polyester Silver     | ▶ 7025  | General purpose adhesive designed for outdoor applications. Designed for use with smooth surfaces.  | 2.0<br>0.9<br>6.8                                   | PET, Bright Silver TC<br><b>P1400</b><br>90# Polycoated Kraft  | Sheet: 20" x 27"<br>Master: 54" x 750 ft.   | Screen,<br>Flexo                              | UL<br>RoHS        |
|                      | 7026  | Excellent chemical and moisture resistance.   | 2.0<br>1.1<br>6.8                                   | PET, Bright Silver TC<br><b>350</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Master: 54" x 750 ft.   | Screen,<br>Flexo                              | UL<br>RoHS        |
|                      | 7027  | Good adhesion to smooth HSE and LSE surfaces. Ideal for indoor and outdoor applications.  | 2.0<br>0.9<br>6.8                                   | PET, Brushed Silver TC<br><b>P1400</b><br>90# Polycoated Kraft | Sheet: 20" x 27"<br>Master: 54" x 750 ft.   | Screen,<br>Flexo                              | UL<br>RoHS        |
|                      | 7028  | Similar to 7909 with slightly lower coat weight for easier processing.  | 2.0<br>1.1<br>6.8                                   | PET, Brushed Silver TC<br><b>350</b><br>90# Polycoated Kraft   | Sheet: 20" x 27"<br>Master: 54" x 750 ft.   | Screen,<br>Flexo                              | UL<br>RoHS        |
|                      | FM3605  | Platinum silver polyester with permanent acrylic adhesive for bar code labels or nameplates with layflat liner for screen printed durable graphics.               | 2.0<br>0.9<br>7.0                                   | PET, Silver TC<br><b>P1212</b><br>90# Polycoated Kraft         | Custom Sheet Sizes<br>Master: 54" x 750 ft. | Screen  | RoHS              |
|                      | 7032  | Excellent lay-flat performance for screen printing applications.  | 2.0<br>0.9<br>6.8                                   | PET, Matte Silver TC<br><b>P1400</b><br>90# Polycoated Kraft   | Sheet: 20" x 27"<br>Master: 54" x 750 ft.   | Screen,<br>Flexo                              | UL<br>RoHS        |
|                      | 7033  | Aggressive adhesive for harsh environments.   | 2.0<br>1.1<br>6.8                                   | PET, Matte Silver TC<br><b>350</b><br>90# Polycoated Kraft     | Sheet: 20" x 27"<br>Master: 54" x 750 ft.   | Screen,<br>Flexo                              | UL<br>RoHS        |
|                      | ▶ 7214SA  | Adhesive allows trapped air to release to prevent bubbling, chemical resistant, good for powder coated surfaces, slightly oily metals, high performance adhesive. | 2.0<br>1.1<br>6.8                                   | PET, Brushed Silver TC<br><b>350</b><br>90# Polycoated Kraft   | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.     | Flexo   | RoHS              |
|                      | 7903  | Heavy adhesive coat weight for textured surfaces. Excellent high temperature resistance. Excellent adhesion to LSE plastics and powder coated paints.             | 2.0<br>1.8<br>6.8                                   | PET, Bright Silver PT<br><b>350</b><br>90# Polycoated Kraft    | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.     | Screen,<br>Flexo                              | UL<br>CSA<br>RoHS |
|                      | ▶ 7903FL  | Same as 7903 except with thick polyester liner suitable for domed decals.   | 2.0<br>1.8<br>4.0                                   | PET, Bright Silver PT<br><b>350</b><br>Polyester               | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.     | Screen,<br>Flexo                              | CSA<br>RoHS       |
|                      | 7924  | Excellent abrasion and chemical resistance. Excellent adhesion to smooth LSE plastics. Ideal for indoor and outdoor applications.                                 | 2.0<br>0.8<br>6.8                                   | PET, Gloss Silver TC<br><b>300</b><br>90# Polycoated Kraft     | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.     | Screen,<br>Flexo                              | UL<br>CSA<br>RoHS |
|                      | 9017FL  | Bright silver with thick polyester liner suitable for domed decals. Thick, high-performance adhesive for durable applications.                                    | 2.0<br>5.0<br>4.0                                   | PET, Bright Silver PT<br><b>200MP</b><br>Polyester             | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.     | Screen,<br>Flexo                              | RoHS              |
| 9018FL               | Brushed silver with thick polyester liner suitable for domed decals. Thick, high-performance adhesive for durable applications. | 2.0<br>5.0<br>4.0   | PET, Brushed Silver PT<br><b>200MP</b><br>Polyester | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.                        | Screen,<br>Flexo                            | RoHS  |                   |
| Polyester Gold       | 7925  | Offers high abrasion and solvent resistance. Excellent quick stick and bond to smooth LSE plastics. Uses include instruction and schematic panels.                | 2.0<br>0.8<br>6.8                                   | PET, Gloss Gold TC<br><b>300</b><br>90# Polycoated Kraft       | Sheet: 20" x 27"<br>Roll: 54" x 750 ft.     | Screen,<br>Flexo                              | UL<br>CSA<br>RoHS |
| Aluminum Foil Silver | 7940  | Vinyl top-coated for ink receptivity. Heavy adhesive coat weight suitable for textured surfaces.  | 2.0<br>1.7<br>6.8                                   | Matte Silver TC<br><b>320</b><br>90# Polycoated Kraft          | Sheet: 20" x 27"<br>Rolls: See product 7800 | Screen,<br>Flexo, DMI                         | UL<br>CSA<br>RoHS |
| Polyethylene         | FPE06505  | Biaxially oriented film that is compatible with a variety of print methods. Aggressive adhesive designed to adhere to both LSE and HSE surfaces.                  | 3.8<br>1.1<br>3.2                                   | Matte Polyart™ TC<br><b>P1480</b><br>90# Polycoated Kraft      | 54" x 1668 ft. Min.<br>Custom Sheet Sizes   | Screen,<br>Flexo,<br>Thermal Transfer,<br>DMI | RoHS              |

Performance Label Materials

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.



# 3M™ Overlamine Label Materials

| Facestock                | Product   | Typical Performance Characteristics  | Construction      |   | Roll Width Minimum Mini-Master (shown in red) | Print Method                  | Specs             |
|--------------------------|---|--|-------------------|---|---|-------------------------------|-------------------|
|                          |   |  | Caliper (mils)    | Facestock Adhesive Type Liner                       |   |                               |                   |
| Polyester<br>Gloss Clear |  7730FL    | Non top-coated. Film liner offers excellent graphic appearance. Ideal for metallized or dark colors. Excellent durability and UV resistance. | 1.0<br>0.8<br>1.5 | PET, Clear NTC<br><b>400</b><br>Polyester Film      | 54"<br>1668 ft. Min.<br><b>6"</b>             | —                             | UL<br>CSA<br>RoHS |
|                          | 7731FL  | Non top-coated. Same as 7730FL, except with 2.0 mil facestock.   | 2.0<br>0.8<br>1.5 | PET, Clear NTC<br><b>400</b><br>Polyester Film      | 54"<br>1668 ft. Min.<br><b>6"</b>             | —                             | UL<br>CSA<br>RoHS |
|                          |  7733FL    | Resists UV exposure for extended periods of time. Provides premium clarity that will not impart haze on underlying graphics.                 | 1.0<br>0.8<br>1.5 | PET, Clear UV<br><b>400</b><br>Polyester            | 54"<br>1668 ft. Min.<br><b>6", 12.25"</b>     | —                             | UL<br>RoHS        |
|                          | 7741  | Non top-coated. For general purpose overlaminate. Excellent abrasion, chemical, and UV resistance.   | 1.0<br>0.8<br>2.5 | PET, Clear NTC<br><b>400</b><br>43# Densified Kraft | 54"<br>1668 ft. Min.                          | —                             | UL<br>CSA<br>RoHS |
|                          | 8417  | Non top-coated. Ideal for fuel line identification.  | 1.0<br>1.2        | PET, Clear NTC<br><b>100</b>                        | 48"<br>216 yd                                 | —                             | UL<br>RoHS        |
|                          |  FM011     | Basic polyester overlaminate film with general purpose adhesive.   | 1.0<br>0.8<br>2.5 | PET, Clear NTC<br><b>P1212</b><br>40# SC            | 54"<br>1668 ft. Min.<br>Precision             | —                             | UL<br>RoHS        |
|                          | FM01N   | Same as FM011 with film liner.   | 1.0<br>0.8<br>1.0 | PET, Clear NTC<br><b>P1212</b><br>Clear Polyester   | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
|                          | FM022   | General purpose overlaminate film for indoor use.  | 2.0<br>0.9<br>3.2 | PET, Clear NTC<br><b>P1212</b><br>50# SC            | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
|                          | FM1142  | 4.0 mil version of FM022.  | 4.0<br>0.9<br>3.2 | PET, Clear NTC<br><b>P1212</b><br>50# SC            | 54"<br>1668 ft. Min.                          | —                             | RoHS              |
|                          | FM292   | High clarity adhesive. Abrasion resistant film. Designed for indoor applications.  | 3.0<br>0.9<br>3.2 | PET, Clear NTC<br><b>P1212</b><br>50# SC            | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
|                          | FM452   | Heavy gauge durable non top-coated film designed for overlaminate applications. Abrasion resistant. Designed for indoor applications.        | 5.0<br>0.9<br>3.2 | PET, Clear NTC<br><b>P1212</b><br>50# SC            | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
|                          | FM45N   | Same as FM452 with a film liner for ultimate adhesive clarity.   | 5.0<br>0.9<br>1.0 | PET, Clear NTC<br><b>P1212</b><br>Clear Polyester   | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
|                          | OFM0102   | Excellent UV resistance. Designed for indoor and outdoor overlaminate applications.  | 1.0<br>0.8<br>3.2 | PET, Clear NTC<br><b>P1400</b><br>50# SC            | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
|                          |  OFM010N | Same as OFM0102 with a clear liner for ultimate adhesive smoothness.   | 1.0<br>0.8<br>1.0 | PET, Clear NTC<br><b>P1400</b><br>Clear Polyester   | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
| Polyester<br>Matte Clear | 7732FL  | Non top-coated. Film liner provides excellent clarity. Ideal for metallized or dark colors. Excellent durability and UV resistance.          | 1.0<br>0.8<br>1.5 | PET, Matte NTC<br><b>400</b><br>Polyester Film      | 54"<br>1668 ft. Min.                          | —                             | UL<br>CSA<br>RoHS |
|                          | 7742  | Non top-coated. For general purpose overlaminate. Excellent abrasion, chemical and UV resistance.  | 1.0<br>0.8<br>2.5 | PET, Matte NTC<br><b>400</b><br>43# Densified Kraft | 54"<br>1668 ft. Min.                          | —                             | UL<br>CSA<br>RoHS |
|                          |  7744FL  | Thermal transfer printable matte top-coat. Ideal where variable information is needed. Film liner provides smoother adhesive appearance.     | 1.3<br>0.8<br>1.5 | PET, Matte TT TC<br><b>400</b><br>Polyester         | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
|                          | 7745FL  | Dot-matrix imprintable matte top-coat. Ideal where variable information is needed.   | 1.3<br>0.8<br>1.5 | PET, Matte DMI TC<br><b>400</b><br>Polyester Film   | 54" x 1668 ft. Min.<br><b>6"</b>              | Flexo, DMI                    | UL<br>CSA<br>RoHS |
|                          |  FM071   | Matte clear film for general purpose overlaminate applications.  | 1.0<br>0.8<br>2.5 | PET, Matte NTC<br><b>P1212</b><br>40# SC            | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Overlamine Label Materials (cont.)

| Facestock            | Product  | Typical Performance Characteristics   | Construction      |  | Roll Width Minimum Mini-Master (shown in red) | Print Method                  | Specs             |
|----------------------|----------|---|-------------------|--|---|-------------------------------|-------------------|
|                      |          |   | Caliper (mils)    | Facestock Adhesive Type Liner                          |   |                               |                   |
| Acetate Clear        | 8042     | Matte overlamine designed for use with 803 chart tape.  | 1.6<br>0.7        | Matte Acetate<br><b>400</b>                            | 47"<br>216 yd                                 | —                             | RoHS              |
| Acrylate Clear       | 7735FL   | Ideal for long term outdoor applications. Special UV resistant film provides 5 years outdoor durability.  | 3.0<br>0.8<br>1.5 | UV Resistant Acrylate<br><b>400</b><br>Polyester Film  | 48"<br>1668 ft. Min.<br><b>6"</b>             | Flexo,<br>Thermal<br>Transfer | UL<br>CSA<br>RoHS |
| Acrylic Clear        | 8524     | Clear overlamine for outdoor applications. Ideal for use with IJ8624.   | 2.0<br>0.9<br>3.2 | UV Resistant Film<br><b>P1212</b><br>50# SC            | 54" x 50 yd                                   | —                             | RoHS              |
| Textured Vinyl Clear | FV02800N | Textured, durable film is an alternative to polycarbonate for less demanding applications. High clarity general purpose adhesive with good initial tack and excellent die cutting properties. | 4.0<br>0.9<br>1.0 | Textured Vinyl NTC<br><b>P1212</b><br>Clear Polyester  | 54"<br>1668 ft. Min.                          | —                             | RoHS              |
|                      | FV02490N | Thicker version of FV02800N.  | 5.0<br>0.9<br>0.0 | Textured Vinyl NTC<br><b>P1212</b><br>Clear Polyester  | 54"<br>1668 ft. Min.                          | —                             | RoHS              |
|                      | FV02610N | Adhesive offers excellent UV resistance for outdoor applications.   | 5.0<br>1.0<br>1.0 | Textured Vinyl NTC<br><b>P1400</b><br>Clear Polyester  | 54"<br>1668 ft. Min.                          | —                             | RoHS              |
| Polycarbonate Clear  | 7737FL   | Used to achieve the attractive appearance of a subsurface screen printed polycarbonate.   | 3.0<br>0.8<br>1.5 | Velvet Clear Lexan™<br><b>400</b><br>Polyester Film    | 54"<br>1668 ft. Min.                          | —                             | UL<br>CSA<br>RoHS |
|                      | 7738FL   | Same as 7737FL, except with 5.0 mil facestock.  | 5.0<br>0.8<br>1.5 | Velvet Clear Lexan™<br><b>400</b><br>Polyester Film    | 54"<br>1668 ft. Min.                          | —                             | UL<br>CSA<br>RoHS |
|                      | FL01N    | Liner offers high strength and caliper control Recommended where the clarity of the adhesive is critical.   | 5.0<br>1.1<br>1.0 | Velvet Clear Lexan™<br><b>P1212</b><br>Clear Polyester | 54"<br>1668 ft. Min.<br><b>6"</b>             | —                             | RoHS              |
|                      | FL02N    | Similar to 7737FL. High clarity general purpose adhesive. Designed for indoor use.  | 3.0<br>1.1<br>1.0 | Velvet Clear Lexan™<br><b>P1212</b><br>Clear Polyester | 54"<br>1668 ft. Min.<br><b>6"</b>             | —                             | UL<br>RoHS        |
|                      | OFL010N  | Specialty durable polycarbonate overlamine. High performance adhesive formulated for demanding applications. Adheres to a variety of surfaces. Excellent UV resistance.                       | 3.0<br>1.0<br>1.0 | Velvet Clear Lexan™<br><b>P1400</b><br>Clear Polyester | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |
|                      | OFL020N  | Thicker caliper version of OFL010N.   | 5.0<br>1.0<br>1.0 | Velvet Clear Lexan™<br><b>P1400</b><br>Clear Polyester | 54"<br>1668 ft. Min.                          | —                             | UL<br>RoHS        |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Foil Label Materials

| Facestock     | Product | Typical Performance Characteristics  | Construction      |   | Roll Width Minimum Mini-Master (shown in red) | Print Method     | Specs             |
|---------------|---------|--|-------------------|---|---|------------------|-------------------|
|               |         |  | Caliper (mils)    | Facestock Adhesive Type Liner                         |   |                  |                   |
| Aluminum Foil | 7800    | Vinyl top-coated for ink receptivity. Heavy adhesive coat weight suitable for textured surfaces. Excellent adhesion to LSE plastics. | 2.0<br>1.7<br>3.0 | Matte Silver TC<br><b>320</b><br>60# Densified Kraft  | 40"<br>1668 ft. Min.<br><b>6.5"</b>           | Flexo, DMI       | UL<br>CSA<br>RoHS |
|               | 7801    | Vinyl top-coated for ink receptivity. Heavy adhesive coat weight ideal for textured surfaces. Excellent adhesion to LSE plastics.    | 2.0<br>1.7<br>3.0 | Bright Silver TC<br><b>320</b><br>60# Densified Kraft | 40"<br>1668 ft. Min.                          | Flexo, DMI       | UL<br>CSA<br>RoHS |
|               | 7940    | Vinyl top-coated for ink receptivity. Excellent for rough or textured surfaces. High-temperature resistant adhesive.                 | 2.0<br>3.5<br>6.8 | Matte Silver TC<br><b>320</b><br>90# Polycoated Liner | Roll: 40" x 750 ft. Min.<br>Sheet: 20" x 27"  | Flexo,<br>Screen | UL<br>CSA<br>RoHS |

## 3M™ Tire Label Materials

| Facestock     | Product   | Typical Performance Characteristics  | Construction      |  | Roll Width Minimum Mini-Master (shown in red) | Print Method                  | Specs |
|---------------|-----------|--|-------------------|--|---|-------------------------------|-------|
|               |           |  | Caliper (mils)    | Facestock Adhesive Type Liner            |   |                               |       |
| Polypropylene | FP028502  | Excellent film opacity. Extremely aggressive rubber-based adhesive designed for use in tire label applications   | 2.6<br>1.8<br>3.2 | PP, White TC2S<br><b>G1120</b><br>50# SC | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer | RoHS  |
| Polyethylene  | FPE004302 | Conformable film for easy printing with flexo or thermal transfer ribbons. Extremely aggressive rubber-based adhesive designed for use in tire label applications. | 3.8<br>1.5<br>3.2 | Polyart TC<br><b>G1120</b><br>50# SC     | 54"<br>1668 ft. Min.                          | Flexo,<br>Thermal<br>Transfer | RoHS  |

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.



## Commercial Graphics

# Give Your Customers Peace of Mind

When customers invest in your commercial graphics, they put their reputations on display. For long-, medium- and short-term applications, 3M films stand up to the elements to ensure a high-quality image and give your customers peace of mind.

Graphics using 3M materials apply easily and resist fading, peeling and cracking. This is the image that keeps your customers coming back with repeat business.

## 3M™ Graphic Films

| Product Number                 | Product Name  | Colors                    | Adhesive                  | Signs & Graphics | Window | Walls | Floors | Sidewalk | Durability                    |
|--------------------------------|---|---------------------------|---------------------------|------------------|--------|-------|--------|----------|-------------------------------|
| <b>Digital Printable Films</b> |   |                           |                           |                  |        |       |        |          |                               |
| <b>Translucent Films</b>       |   |                           |                           |                  |        |       |        |          |                               |
| IJ63                           | 3M™ Scotchcal™ Changeable Translucent Graphic Film                      | Matte White               | Removable                 | ■                | ■      |       |        |          | 1.5 yrs.                      |
| IJ3630                         | 3M™ Scotchcal™ Translucent Graphic Film                                 | White                     | Permanent                 | ■                | ■      |       |        |          | 7 yrs.                        |
| <b>Opaque Films</b>            |   |                           |                           |                  |        |       |        |          |                               |
| IJ35                           | 3M™ Scotchcal™ Graphic Film   | White (Gloss & Matte)     | Permanent                 | ■                |        | ■     |        |          | 5 yrs.                        |
| IJ35C                          | 3M™ Scotchcal™ Graphic Film with Comply™ Adhesive                       | White (Gloss & Matte)     | Permanent                 | ■                |        | ■     |        |          | 5 yrs.                        |
| IJ40C                          | 3M™ Scotchcal™ Graphic Film with Comply™ Adhesive                       | White (Gloss & Matte)     | Removable                 | ■                |        | ■     | ■      |          | 1 yr. floors,<br>7 yrs. walls |
| 40C                            | 3M™ Controltac™ Graphic Film  | White (Gloss & Matte)     | Removable                 | ■                |        | ■     | ■      |          |                               |
| IJ86E                          | 3M™ Wall Decorating Film  | Matte White               | Removable                 |                  |        |       |        |          | 1 yr.                         |
| IJ160                          | 3M™ Controltac™ Graphic Film  | White                     | Removable, Slideable      |                  |        | ■     |        |          | 5 yrs.                        |
| IJ160C                         | 3M™ Controltac™ Graphic Film with Comply™ Adhesive                      | White                     | Removable, Slideable      |                  |        | ■     |        |          | 5 yrs.                        |
| IJ162                          | 3M™ Controltac™ Graphic Film  | White, Transparent        | Removable, Slideable      |                  |        |       | ■      | ■        | 1 yr.                         |
| IJ170Cv3                       | 3M™ Scotchcal™ Graphic Film with Comply™ v3 Adhesive                    | White                     | Removable                 | ■                |        | ■     |        |          | 1 yr.                         |
| IJ3650                         | 3M™ Scotchcal™ Graphic Film   | White, Transparent        | Permanent                 |                  |        | ■     |        |          | 7 yrs.                        |
| IJ8624                         | 3M™ Scotchcal™ Graphic Film for Textured Surfaces                       | White                     | Removable                 |                  |        | ■     |        |          | 1 mo.                         |
| <b>Reflective Films</b>        |   |                           |                           |                  |        |       |        |          |                               |
| IJ680                          | 3M™ Scotchlite Reflective Graphic Film                                  | White                     | Permanent, Repositionable | ■                |        |       |        |          | 9 yrs.                        |
| IJ680CR                        | 3M™ Scotchlite™ Removable Reflective Graphic Film with Comply™ Adhesive | White                     | Removable, Repositionable | ■                |        |       |        |          | 9 yrs.                        |
| IJ5000                         | 3M™ Scotchlite™ Reflective Graphic Film                                 | White                     | Permanent                 | ■                |        |       |        |          | 1.5 yrs.                      |
| IJ5100                         | 3M™ Scotchlite™ Reflective Graphic Film                                 | White                     | Permanent                 | ■                |        |       |        |          | 7 yrs.                        |
| IJ5100R                        | 3M™ Scotchlite™ Reflective Graphic Film                                 | White                     | Removable                 | ■                |        |       |        |          | 7 yrs.                        |
| <b>Transparent Films</b>       |   |                           |                           |                  |        |       |        |          |                               |
| IJ8150                         | 3M™ Scotchcal™ Clear View Graphic Film                                  | Transparent               | Removable                 | ■                | ■      |       |        |          | 3 yrs.                        |
| IJ61                           | 3M™ Changeable Window Graphic Film                                      | Transparent               | Removable                 | ■                | ■      |       |        |          | 1 yr.                         |
| <b>Perforated Films</b>        |   |                           |                           |                  |        |       |        |          |                               |
| IJ66                           | 3M™ Scotchcal™ Perforated Window Graphic Film, 50% Perforation          | White                     | Removable                 |                  | ■      |       |        |          | 1 yr.                         |
| IJ67                           | 3M™ Scotchcal™ Perforated Window Graphic Film, 40% Perforation          | White                     | Removable                 |                  | ■      |       |        |          | 1 yr.                         |
| IJ8171                         | 3M™ Scotchcal™ Perforated Window Graphic Film                           | White                     | Removable                 |                  | ■      |       |        |          | 3 yrs.                        |
| <b>Screen Printable Films</b>  |   |                           |                           |                  |        |       |        |          |                               |
| <b>Translucent Films</b>       |   |                           |                           |                  |        |       |        |          |                               |
| 3630                           | 3M™ Scotchcal™ Translucent Graphic Film Series                          | Various                   | Permanent                 | ■                | ■      |       |        |          | 7 yrs.                        |
| <b>Opaque Films</b>            |   |                           |                           |                  |        |       |        |          |                               |
| 50                             | 3M™ Scotchcal™ Graphic Film Series                                      | Various                   | Removable                 | ■                | ■      |       |        |          | 3 yrs.                        |
| 160                            | 3M™ Controltac™ Graphic Film Series                                     | White, Transparent, Black | Removable, Slideable      | ■                |        | ■     |        |          | 5 yrs.                        |
| 160C                           | 3M™ Controltac™ Graphic Film with Comply™ Adhesive Series               | White, Black              | Removable, Slideable      | ■                |        | ■     |        |          | 5 yrs.                        |
| 162                            | 3M™ Controltac™ Graphic Film Series                                     | White, Transparent        | Removable, Slideable      |                  |        |       | ■      |          | 1 yr.                         |
| 164                            | 3M™ Controltac™ Graphic Film  | White                     | Removable, Slideable      |                  |        |       | ■      |          | 5 mo.                         |
| 180                            | 3M™ Controltac™ Graphic Film Series                                     | Various                   | Removable, Slideable      | ■                |        | ■     |        |          | 7 yrs.                        |
| 180C                           | 3M™ Controltac™ Graphic Film with Comply™ Adhesive Series               | Various                   | Removable, Slideable      | ■                |        | ■     |        |          | 7 yrs.                        |
| 180Cv2                         | 3M™ Controltac™ Graphic Film with Comply™ v2 Adhesive                   | White                     | Removable, Slideable      | ■                |        | ■     |        |          | 7 yrs.                        |
| 181                            | 3M™ Controltac™ Graphic Film  | White                     | Removable, Slideable      | ■                |        |       |        |          | 8 yrs.                        |
| 1000                           | 3M™ Scotchcal™ Graphic Film Series                                      | Various                   | Permanent                 | ■                |        |       |        |          | 5 yrs.                        |
| 3545C                          | 3M™ Controltac™ Removable Graphic Film with Comply™ Adhesive            | White                     | Removable, Slideable      | ■                | ■      | ■     |        |          | 3 yrs.                        |
| 3470                           | 3M™ Scotchcal™ Graphic Film   | White                     | Removable, Slideable      | ■                |        | ■     |        |          | 3 yrs.                        |
| 3475                           | 3M™ Scotchcal™ Graphic Film   | Black                     | Removable, Slideable      | ■                |        | ■     |        |          | 3 yrs.                        |
| 3500C                          | 3M™ Controltac™ Changeable Graphic Film with Comply™ Adhesive           | White                     | Removable, Slideable      | ■                |        | ■     |        |          | 2 yrs.                        |

Removable products are only removable with heat. Durability information is for outdoor applications.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.



# 3M™ Graphic Films (cont.)

| Product Number                        | Product Name  | Colors                    | Adhesive                  | Signs & Graphics | Window | Walls | Floors | Sidewalk | Durability |
|---------------------------------------|---|---------------------------|---------------------------|------------------|--------|-------|--------|----------|------------|
| <b>Screen Printable Films (cont.)</b> |   |                           |                           |                  |        |       |        |          |            |
| <b>Opaque Films</b>                   |   |                           |                           |                  |        |       |        |          |            |
| 3650                                  | 3M™ Controltac™ Graphic Film Series                                 | White, Transparent, Black | Removable, Slideable      | ■                | ■      | ■     |        |          | 7 yrs.     |
| 3552C                                 | 3M™ Controltac™ Changeable Graphic Film with Comply™ Adhesive       | White                     | Removable, Slideable      | ■                | ■      |       |        |          | 2 yrs.     |
| 3662                                  | 3M™ Controltac™ Graphic Film  | White                     | Removable, Slideable      |                  |        |       | ■      | ■        | 3 mo.      |
| 3670LF                                | 3M™ Scotchcal™ Graphic Film   | White                     | Permanent                 | ■                |        |       |        |          | 3 yrs.     |
| 3690                                  | 3M™ Scotchcal™ Graphic Film Series                                  | White, Transparent, Black | Permanent                 | ■                |        | ■     |        |          | 5 yrs.     |
| 3690C                                 | 3M™ Controltac™ Removable Graphic Film with Comply™ Adhesive Series | White, Transparent, Black | Removable, Slideable      | ■                |        | ■     |        |          | 5 yrs.     |
| 7125                                  | 3M™ Scotchcal™ Electrocut™ Graphic Film Series                      | Various                   | Permanent                 | ■                | ■      | ■     |        |          | 5 yrs.     |
| 7725                                  | 3M™ Scotchcal™ Electrocut™ Graphic Film Series                      | Various                   | Permanent                 | ■                | ■      | ■     |        |          | 5 yrs.     |
| 7725SE                                | 3M™ Scotchcal™ Electrocut™ Graphic Film Series                      | Various Fluorescent       | Permanent                 | ■                |        |       |        |          | 1 yr.      |
| 8000                                  | 3M™ Scotchcal™ Graphic Film Series                                  | Various                   | Removable                 | ■                |        |       |        |          | 8 yrs.     |
| <b>Reflective Films</b>               |   |                           |                           |                  |        |       |        |          |            |
| 680                                   | 3M™ Scotchlite™ Reflective Graphic Film Series                      | Various                   | Removable, Repositionable | ■                |        |       |        |          | 9 yrs.     |
| 680CR                                 | 3M™ Scotchlite™ Reflective Graphic Film Series                      | Various                   | Removable, Repositionable | ■                |        |       |        |          | 9 yrs.     |
| 5000                                  | 3M™ Scotchlite™ Reflective Graphic Film Series                      | White                     | Permanent                 | ■                |        |       |        |          | 1.5 yrs.   |
| 5100                                  | 3M™ Scotchlite™ Reflective Graphic Film Series                      | Various                   | Permanent                 | ■                | ■      |       |        |          | 7 yrs.     |
| 5100R                                 | 3M™ Scotchlite™ Reflective Graphic Film Series                      | Various                   | Removable                 | ■                |        |       |        |          | 7 yrs.     |
| <b>Transparent Films</b>              |   |                           |                           |                  |        |       |        |          |            |
| 180C-114                              | 3M™ Controltac™ Graphic Film with Comply™ Adhesive                  | Transparent               | Removable, Slideable      | ■                |        | ■     |        |          | 7 yrs.     |
| 8000                                  | 3M™ Scotchcal™ Graphic Film Series                                  | Transparent               | Removable                 | ■                |        |       |        |          | 8 yrs.     |
| <b>Perforated Films</b>               |   |                           |                           |                  |        |       |        |          |            |
| 8171                                  | 3M™ Scotchcal™ Perforated Window Graphic Film, 50% Perforation      | White                     | Removable                 | ■                | ■      |       |        |          | 1 yr.      |
| <b>Diffuser Films</b>                 |   |                           |                           |                  |        |       |        |          |            |
| 3635-30                               | 3M™ Diffuser Films  | Translucent               | Permanent                 | ■                |        |       |        |          | 9 yrs.     |
| 3635-70                               | 3M™ Diffuser Films  | Translucent               | Permanent                 | ■                |        |       |        |          | 9 yrs.     |
| 3735-50                               | 3M™ Diffuser Films  | Translucent               | Permanent                 | ■                |        |       |        |          | 9 yrs.     |
| 3735-60                               | 3M™ Diffuser Films  | Translucent               | Permanent                 | ■                |        |       |        |          | 9 yrs.     |

Removable products are only removable with heat. Durability information is for outdoor applications.

| Product Number          | Product Name                                    | Colors      | Adhesive  | Durability | Comments  |
|-------------------------|---|-------------|-----------|------------|---|
| <b>Overlamine Films</b> |   |             |           |            |   |
| 3619                    | 3M™ Scotchcal™ Luster Overlamine                | Transparent | Permanent | 7 yrs.     | Flexible, conformable and more durable                    |
| 3620                    | 3M™ Scotchcal™ Matte Overlamine                 | Transparent | Permanent | 7 yrs.     | For digitally imaged backlit signs                        |
| 3658G                   | 3M™ Scotchcal™ Gloss Overlamine                 | Transparent | Permanent | 7 yrs.     | For flexible surfaces                                     |
| 3660M                   | 3M™ Scotchcal™ Matte Overlamine                 | Transparent | Permanent | 7 yrs.     | For use on illuminated signs                              |
| 8508                    | 3M™ Scotchcal™ Gloss Overlamine                 | Transparent | Permanent | 1 yr.      | Vinyl film offers good UV protection                      |
| 8509                    | 3M™ Scotchcal™ Luster Overlamine                | Transparent | Permanent | 1 yr.      | For flat and simple curves                                |
| 8518                    | 3M™ Scotchcal™ Gloss Overlamine                 | Transparent | Permanent | 5 yrs.     | Flexible and conformable film                             |
| 8519                    | 3M™ Scotchcal™ Luster Overlamine                | Transparent | Permanent | 5 yrs.     | Flexible and conformable film                             |
| 8520                    | 3M™ Scotchcal™ Matte Overlamine                 | Transparent | Permanent | 5 yrs.     | Flexible and conformable film                             |
| 8528                    | 3M™ Scotchcal™ Gloss Overlamine                 | Transparent | Permanent | 7 yrs.     | For harsh environments                                    |
| 8580                    | 3M™ Scotchcal™ Gloss Overlamine                 | Transparent | Permanent | 5 yrs.     | Stretchy and conformable for complex contours             |
| 8908                    | 3M™ Scotchcal™ Luster Overlamine                | Transparent | Permanent | 3 yrs.     | Polyolefin film with low solvents                         |
| 8909                    | 3M™ Scotchcal™ Matte Overlamine                 | Transparent | Permanent | 3 yrs.     | Polyolefin film with low solvents                         |
| 8914                    | 3M™ Scotchcal™ Optically Clear Overlamine       | Transparent | Permanent | 5 yrs.     | For perforated window films                               |
| 8915                    | 3M™ Scotchcal™ Ultra-Matte Overlamine           | Transparent | Permanent | 5 yrs.     | For flat surfaces   |
| 8991                    | Scotchgard™ Graphic and Surface Protection Film | Transparent | Permanent | 5 yrs.     | Film resists abrasion, stains, graffiti and cleans easily |
| 8993                    | Scotchgard™ Graphic and Surface Protection Film | Transparent | Permanent | 5 yrs.     | Film resists abrasion, stains, graffiti and cleans easily |

Durability information is for outdoor applications.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.



## 3M™ Graphic Films (cont.)

| Product Number                     | Product Name                            | Colors      | Adhesive  | Durability | Comments                                       |
|------------------------------------|---|-------------|-----------|------------|--|
| <b>Overlaminates Films (cont.)</b> |   |             |           |            |  |
| <b>Anti-Slip Overlaminates</b>     |   |             |           |            |  |
| 3645                               | 3M™ Scotchcal™ Luster Overlaminates     | Transparent | Permanent | 8 yrs.     | Skid and scuff resistant for floor graphics    |
| 3647                               | 3M™ Scotchcal™ Matte Overlaminates      | Transparent | Permanent | 8 yrs.     | Slip and scuff resistant for sidewalk graphics |
| 3648                               | 3M™ Scotchcal™ High Gloss Overlaminates | Transparent | Permanent | 8 yrs.     | Slip and scuff resistant for floor graphics    |

Durability information is for outdoor applications.

## 3M™ Screen Printing Inks

| Product Number | Product Name                   | Colors                  | Print Method        | Comments   |
|----------------|--------------------------------|-------------------------|---------------------|--|
| <b>Inks</b>    |                                |                         |                     |  |
| 1900           | 3M™ Screen Printing Ink Series | Various (Gloss & Matte) | Solvent Screenprint | Fast drying opaque inks                                      |
| 2900           | 3M™ Screen Printing Ink Series | Various (Gloss & Matte) | Solvent Screenprint | Transparent inks formulated for Scotchlite™ Reflective Films |
| 9800           | 3M™ Screen Printing Ink Series | Various (Gloss & Matte) | UV Screenprint      | Weather resistant and excellent color retention              |

## 3M™ Commercial Graphics — Glossary

|  |   |
|--|---|
| <b>3M™ Comply™ Adhesive</b>  | 3M brand name for a characteristic that permits air bubbles to escape through channels in the adhesive as a film is being applied.  |
| <b>3M™ Controltac™ Graphic Film</b>  | 3M brand name for films with pressure-activated adhesive that is slideable and repositionable until pressure bonds it to the substrate.   |
| <b>3M™ Scotchcal™ Graphic Film</b>   | 3M brand name for films with pressure-sensitive adhesive that bonds upon contact.   |
| <b>3M™ Scotchcal™ Overlaminates</b>  | 3M brand name for a transparent film that can enhance or change the gloss of a graphic as well as provide resistance to dirt, abrasion and harmful UV light.  |
| <b>3M™ Scotchlite™ Reflective Graphic Film</b>   | 3M brand name for a retroreflective film that allows a graphic to be clearly seen in low or no ambient light situations when a light source is directed at it from a point near the viewer's location.  |
| <b>Cast Film</b>   | Highest quality vinyl film for the best in image quality, conformability, dimensional stability and durability.   |
| <b>Changeable Film</b>   | Can be removed without heat or chemicals and leaves little or no adhesive residue.  |
| <b>Compound Curves</b>   | A surface with three-dimensional curves.  |
| <b>Conformable</b>   | A feature in some graphic films that allows it to conform around curves and rivets.   |
| <b>Perforated</b>  | A grid of small holes found in some printable films that allows an image to be seen on one side of a clear substrate, but allows a viewer to see through the film from the other side.  |
| <b>Permanent Adhesive</b>  | Adhesive that is not intended to be removable.  |
| <b>Positionable or Repositionable</b><br>(As used in 3M™ Controltac™ Graphic Films only)   | Light finger pressure may be used to tack the film in place to check for proper positioning and then repositioned if necessary. Firm pressure applied by any means, as well as high application temperature or removing and trying to reapply any liner, eliminates this feature. |
| <b>Pressure-Activated Adhesive</b><br>(As used in 3M™ Controltac™ Graphic Films)           | Slideable, positionable and repositionable until firm pressure is applied with hand, squeegee or other application tool. Incompletely dried solvent in piezo inkjet printed film may reduce the slideability. An applied film cannot be moved to another position.                |
| <b>Pressure-Activated Adhesive</b><br>(As used in 3M™ Scotchlite™ Graphic Films 680/680CR) | Slideable until firm pressure is applied with hand, squeegee or other application tool. Incompletely dried solvent in piezo inkjet printed film may reduce the slideability. An applied film cannot be moved to another position.   |
| <b>Pressure-Sensitive Adhesive</b>   | Adheres upon contact to the substrate. Does not slide and cannot be repositioned.   |
| <b>Removable Adhesive</b>  | Can be removed with heat leaving little or no adhesive residue. Occasionally chemicals are also needed.   |

All fleet graphics and other graphics subjected to abrasion require graphic protection. Please refer to the applicable product bulletin for a list of compatible products and intended uses.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## Release Liners

# Choose from a Variety of Solutions

Your customers have many different needs, and 3M offers a variety of liner and film solutions, including paper and film, silicone-free liners, non-adhesive backed films and clear films.

# 3M™ Release Liners and Printable Films

| Product Group  | Product | Description/Application Ideas   | Construction   |                                     | Master Size  | Print Method     | Specs |
|--|---------|---|----------------|-------------------------------------|--------------|------------------|-------|
|  |         |   | Caliper (mils) | Liner                               |              |                  |       |
| Release Liners<br>Non-silicone                       | 4935    | 3M proprietary fluoropolymer release coat one side.   | 3.0            | Polyester, Clear                    | 40" x 360 yd | —                | —     |
|  | 5053    | 3M proprietary fluoropolymer release coat one side.   | 3.0            | Polyester, Clear                    | 40" x 360 yd | —                | —     |
|  | 5932    | 3M proprietary fluoropolymer release coat one side.   | 2.0            | Polyester, Clear                    | 54" x 360 yd | —                | —     |
| Release Liners<br>Silicone                           | 4986    | High-density polyethylene is transparent for graphic inspection. Release coat one side. For delamination/relamination only.   | 3.0            | HDPE Film, Clear                    | 48" x 360 yd | —                | —     |
|  | 4988    | Neutral-colored, polycoated lay-flat kraft liner. Release coat one side.  | 6.2            | 83# Polycoated Kraft, Neutral Color | 48" x 360 yd | —                | —     |
|  | 4994    | Caliper controlled liner for rotary die-cutting. Release coated two sides. Very low release for double lining #300 high-strength adhesive.  | 3.2            | 55# Densified Kraft, White          | 54" x 360 yd | —                | —     |
|  | 4996    | Clear film is ideal for graphics inspection of backlit panels. Release coat one side.   | 1.4            | Polyester Film, Clear               | 54" x 360 yd | —                | —     |
|  | 4997    | Heavy liner ideal for kiss-cutting and lay-flat applications. Release coat one side.  | 4.0            | 70# Densified Kraft, Clear          | 54" x 360 yd | —                | —     |
|  | 4998    | Release coat two sides (matte).   | 4.2            | 58# Polycoated Kraft, Tan           | 50" x 360 yd | —                | —     |
|  | 4999    | Caliper controlled liner for rotary die-cutting. Release coat one side.   | 3.2            | 55# Densified Kraft, White          | 54" x 360 yd | —                | —     |
|  | 5002    | Clear polyester film for rotary cutting. Release coat one side.   | 2.0            | Polyester Film, Clear               | 60" x 360 yd | —                | —     |
|  | 5002D   | Clear polyester film for rotary cutting. Release coat two sides.  | 2.0            | Polyester Film, Clear               | 60" x 360 yd | —                | —     |
|  | 5004    | Thick, clear polyester film for rotary cutting. Release coat one side.  | 4.0            | Polyester Film, Clear               | 50" x 360 yd | —                | —     |
|  | 5051    | Special PCK liner for double lining 300LSE tapes. Release coat one side.  | 4.2            | 58# Polycoated Kraft                | 48" x 180 yd | —                | —     |
|  | 7526L   | Tan polycoated kraft. Release coat two sides (matte).   | 4.2            | 58# Polycoated Kraft                | 48" x 360 yd | —                | —     |
|  | 7527L   | Cloudy high-density polyethylene. Release coat one side.  | 3.0            | HDPE Film                           | 48" x 360 yd | —                | —     |
| Printable Polyester Films —<br>Label Component Films | 8038    | Top-coated film for use with standard printing inks. Top-coat is wound inside. Clear film allows for subsurface printing. Used for automotive, electronics, and other durable goods applications. | 2.0            | Polyester, Gloss Clear              | 48" x 720 yd | Press            | —     |
|  | 8049    | Matte top-coat for dot-matrix printing. Clear film allows for subsurface printing of inks.  | 2.5            | Polyester, Matte Clear              | 54" x 720 yd | Dot Matrix       | UL    |
|  | 8050    | Matte top-coat for dot-matrix printing. Excellent abrasion and chemical resistance.   | 2.5            | Polyester, Matte White              | 54" x 720 yd | Dot Matrix       | UL    |
|  | 8053    | Same as 8050, except matte silver.  | 2.5            | Polyester, Matte Silver             | 54" x 720 yd | Dot Matrix       | UL    |
|  | 8057    | Provides excellent durability. Used for automotive, electronic, and other durable goods applications.   | 2.0            | Polyester, Gloss White              | 54" x 720 yd | Thermal Transfer | —     |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.



## Single Coated Tapes

# Modify Surfaces to Improve Appearance

Whether you need to protect surfaces against scratches, mask paint, reflect heat, repel sticky materials or modify surfaces in other ways, 3M can help.

3M's single coated tapes are designed to modify surfaces, while improving their appearance, function and productivity.

## Selecting the Right Product for the Job

To help you make sure you find the optimum 3M tape or other adhesive-backed product for your particular application, you'll want to consider several factors:

- Backing material
- Adhesive type
- Application time and temperature
- Surface characteristics (e.g., roughness, surface energy, contours, etc.)
- End use conditions (e.g., temperature, UV exposure, abrasion, etc.)

The information on these two pages integrates those factors to help you narrow your selection to fewer products for a more in-depth evaluation.

### 3M Backing Materials

In many applications, 3M backings add a second surface that affects how the underlying surface relates to the environment.

To optimize that relationship, 3M backings offer a wide choice of performance and handling characteristics.

### 3M Pressure Sensitive Adhesives

Most of the products in this section feature a 3M pressure sensitive adhesive that bonds the backing to another surface on contact. Each adhesive has different characteristics that affect production and end use performance.

| Backings                                  | Characteristics   |
|---|---|
| <b>Paper</b>                              |   |
| Crepe                                     | Conformable, easy tear  |
| Flatback                                  | Strong, smooth, good for straight line masking  |
| Kraft                                     | Strong, some versions are repulpable  |
| Tissue                                    | Thin, porous to allow adhesive penetration of sheet   |
| <b>Plastic</b>                            |   |
| Polyester                                 | Strong even when thin, chemical resistant, high temperature resistance  |
| Polypropylene                             | Resistant to most solvents, conformable, tear resistant   |
| Polyethylene                              | Conformable, easy to stretch, chemical/acid/moisture resistant, economical  |
| Polyethylene/<br>Polypropylene Co-polymer | Conformable, chemical/acid/moisture resistant   |
| UHMW-PE                                   | High abrasion resistance, low coefficient of friction, anti-stick surface easy to clean                             |
| Polyvinyl Chloride (Vinyl)                | Conformable, abrasion resistant, resistant to most chemicals  |
| Polyimide                                 | High temperature resistance, excellent dimensional stability, good insulation properties                            |
| Polyamide (Nylon)                         | High temperature resistance, high strength and toughness, good chemical resistance but can absorb moisture          |
| Polytetrafluoroethylene (PTFE)            | Low coefficient of friction, excellent high temperature and chemical resistance, anti-stick/release properties      |
| Polyvinyl Alcohol (PVA)                   | Water-soluble, organic solvent resistant, high temperature resistance   |
| Polyurethane                              | Abrasion/scratch resistant, impact/puncture resistant, UV and corrosion resistant                                   |
| Polyvinyl Fluoride                        | Excellent weather resistance, excellent long-term UV resistance, thin yet stiff feel                                |
| <b>Cloth</b>                              |   |
| Cotton                                    | Strong, easy tear by hand, soft and drapable  |
| Glass Cloth                               | Strong, high temperature resistance, flame-resistant  |
| Vinyl Coated                              | Strong yet hand tearable, abrasion resistant, water-resistant, conformable  |
| <b>Non-woven</b>                          |   |
| Fiber                                     | Air permeable, strong enough to hold expanding foams  |
| <b>Metals</b>                             |   |
| Aluminum                                  | Heat and light reflective, moisture and chemical resistant, flame-resistant, outdoor weather resistant, conformable |
| Copper                                    | EMI/RFI shielding   |
| Lead                                      | Electrically conductive, acid resistant, high conformability, x-ray opacity   |
| Stainless Steel                           | Corrosion resistant   |
| <b>Rubber</b>                             |   |
| Neoprene                                  | Abrasion resistant, die-cuttable  |
| <b>Combination (Laminates)</b>            |   |
| Paper/Polyethylene                        | Weather and chemical resistant, hand tearable, stretch resistant  |
| Metallized/Polyester                      | Reflective, decorative  |
| Glass Cloth/PTFE                          | High temperature resistance, high strength  |
| Glass Cloth/Aluminum                      | Very high temperature resistance, high strength   |
| Non-woven/Aluminum                        | High heat and cold resistance   |

| Adhesives  |                               |  |  |
|--|-------------------------------|--|--|
| Rubber   | Standard Acrylic              | Modified Acrylic                             | Silicone   |
| High initial bond  | Moderate initial bond         | Bonds to wider variety than standard acrylic | Fair initial bond                                  |
| Softer   | Firmer                        | Softer                                       | Very firm  |
| Widest variety of surfaces including low surface energy materials* | High surface energy*          | Many surfaces                                | Fewer surfaces                                     |
| Up to 350°F  | Up to 450°F                   | Up to 300°F                                  | Up to 600°F, excellent low temperature performance |
| Fair chemical resistance   | Excellent chemical resistance | Good chemical resistance                     | Excellent chemical resistance                      |
| Fair UV resistance   | Excellent UV resistance       | Moderate UV resistance                       | Excellent UV resistance                            |
| Poor aging   | Excellent aging               | Durable                                      | Excellent aging                                    |
| Removable  | Permanent                     | Various                                      | Removable  |
| Good solvent resistance  | Excellent solvent resistance  | Good solvent resistance                      | Excellent solvent resistance                       |

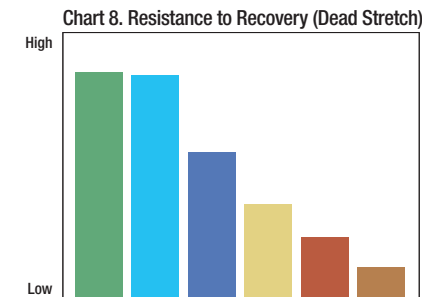
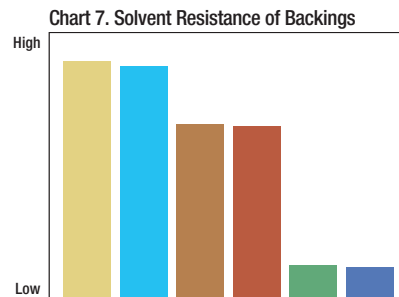
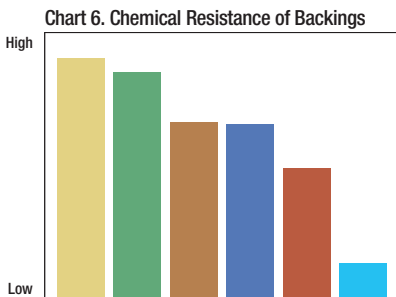
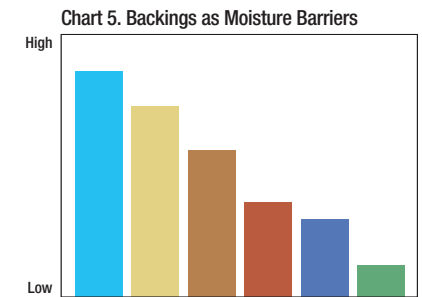
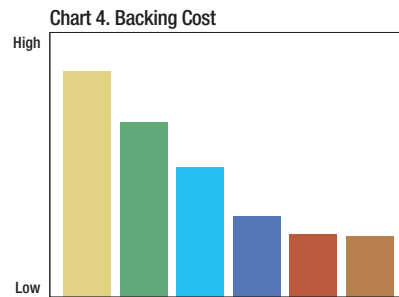
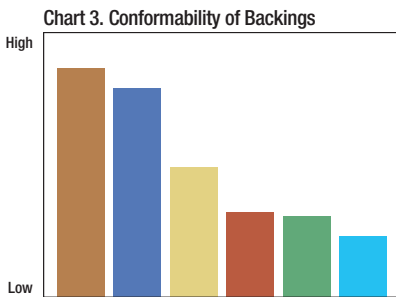
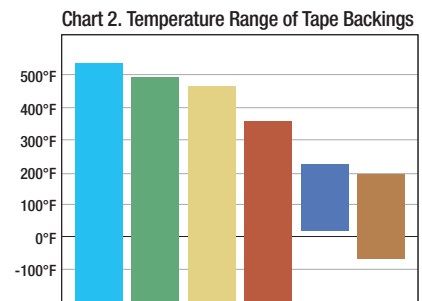
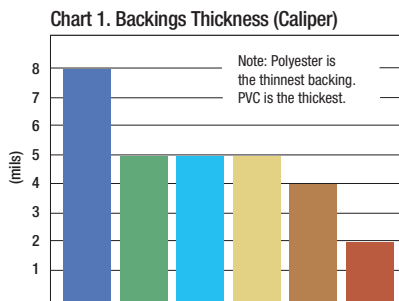
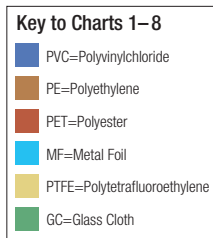
\*Surface energy ranges from high to low. The substrate must be unified, dry, and clean to maximize adhesive contact.

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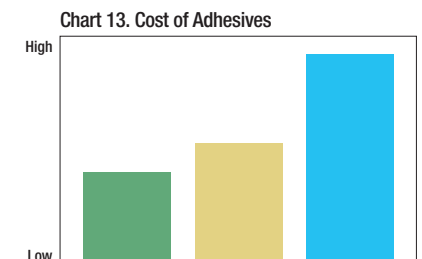
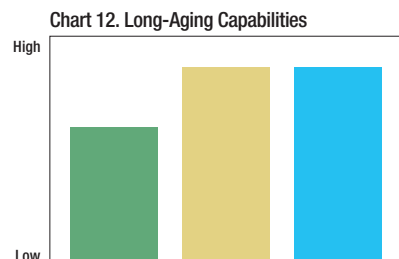
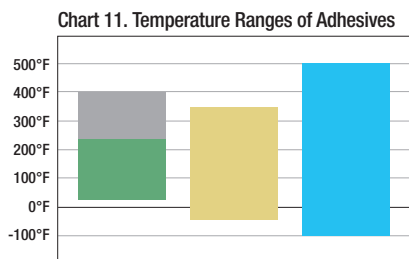
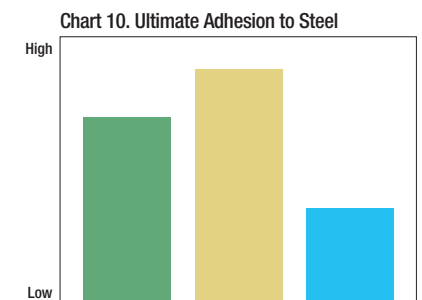
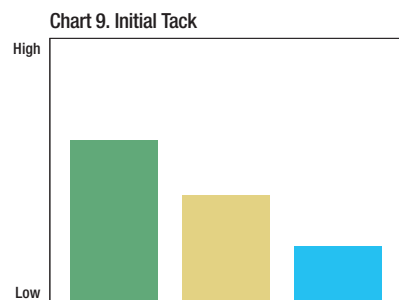
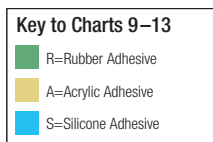


# Tape Reference Charts

To help select the tape backing for your application, consult the following charts. Each backing is rated in eight critical categories.



To help select the adhesive for your application, consult the charts below. Each adhesive is rated in five critical categories.



Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.



# 3M™ Single Coated Tapes

| Material (alphabetical order)          | Product  | Typical Performance Characteristics/<br>Application Ideas   | Color      | Total Caliper mils (mm) | Backing                                |                   | Adhesive Type      | Specs   |
|--|--|---|------------|-------------------------|--|-------------------|--------------------|---|
|  |  |   |            |                         | Material                               | Caliper mils (mm) |                    |   |
| Premium Performance Aluminum Foil Tape | 363/<br>363L   | An aluminum foil/glass cloth tape that can be used as a high temperature, heat reflective, protective wrap for certain cables and other components in aerospace and industrial applications. 363L is lined version.             | Silver     | 7.3 (0.19)              | Aluminum Foil Laminated to Glass Cloth | 3.4 (0.086)       | Silicone           | F.A.R. 25.853(a)  |
|  | 425  | Dead-soft aluminum foil tape. Masking of sensitive components to protect from damage during aircraft paint stripping. In white goods appliances, tape provides an excellent moisture barrier, helps reflect and dissipate heat. | Silver     | 4.6 (0.12)              | Aluminum Foil                          | 2.8 (0.07)        | Acrylic            | F.A.R. 25.853(a); SAE AMS T-23397; UL 723; UL 746C; LT-80 C |
|  | 427  | Dead-soft aluminum foil tape. Lined version of 425 that can be easily die-cut into special sizes or shapes. Mask sensitive components to protect from damage during paint stripping or reflect and dissipate heat.              | Silver     | 4.6 (0.12)              | Aluminum Foil                          | 2.8 (0.07)        | Acrylic            | F.A.R. 25.853(a); UL 723; UL 746C; LT-80 C                  |
|  | 431  | Dead-soft aluminum foil with transparent acrylic adhesive for many permanent sealing, holding, splicing or masking applications requiring the protection offered by a foil backing.   | Silver     | 3.1 (0.08)              | Aluminum Foil                          | 1.9 (0.05)        | Acrylic            | F.A.R. 25.853(a)  |
|  | 433  | Dead-soft aluminum foil backing with silicone adhesive that can be used in many high temperature applications.  | Silver     | 3.6 (0.09)              | Aluminum Foil                          | 2.0 (0.05)        | Silicone           | F.A.R. 25.853(a); US Gov A-A-59258; MIL-T-47014             |
|  | 433L   | Lined version of 433.   | Silver     | 3.5 (0.09)              | Aluminum Foil                          | 2.0 (0.05)        | Silicone           | F.A.R. 25.853(a)  |
|  | 437  | Dead-soft aluminum foil tape.   | Silver     | 8.0 (0.20)              | Aluminum Foil                          | 2.8 (0.07)        | Acrylic            | —   |
|  | 438/<br>438L   | Thickest aluminum tape. 438L is lined version.  | Silver     | 7.2 (0.18)              | Aluminum Foil                          | 5.0 (0.13)        | Acrylic            | F.A.R. 25.853(a)  |
|  | 439  | Conformable aluminum foil with 1.2 mil acrylic adhesive on a 5.6 mil, 83# brown kraft liner. Lined version of 431.  | Silver     | 3.1 (0.08)              | Aluminum Foil                          | 1.9 (0.05)        | Acrylic            | F.A.R. 25.853(a)  |
|  | 3302   | Aluminum foil tape. EMI/RFI shielding. Perforated.  | Silver     | 3.5 (0.09)              | Aluminum Foil                          | 2.0 (0.05)        | Conductive Acrylic | UL 510  |
|  | 3334   | Works well in very cold and hot temperatures. Perforated.   | Silver     | 6.9 (0.18)              | Aluminum Foil/Scrim/Polypropylene      | 5.4 (0.14)        | Acrylic            | —   |
|  | 3338   | 60 lb. moisture stable liner.   | Silver     | 7.0 (0.18)              | Aluminum Foil                          | 5.0 (0.13)        | Acrylic            | —   |
|  | 33801  | High temperature acrylic adhesive at 425°F.   | Silver     | 4.0 (0.10)              | Aluminum Foil                          | 2.0 (0.05)        | Acrylic            | UL 723  |
|  | 33806  | High temperature acrylic adhesive at 425°F.   | Silver     | 5.0 (0.13)              | Aluminum Foil                          | 3.0 (0.076)       | Acrylic            | —   |
| 1430                                   | Dead-soft aluminum foil tape combined with a non-woven web. It has a pressure sensitive adhesive and offers superior sealing benefits of foil with ease of handling and strength of cloth. | Silver  | 5.5 (0.14) | Aluminum/Non-Woven Web  | 5.0 (0.13)                             | Acrylic           | —                  |   |
| General Purpose Aluminum Foil Tape     | 3311   | Designed for maximum adhesion over clean, dry surfaces. Scotch® Tape branded product.   | Silver     | 3.6 (0.09)              | Aluminum Foil                          | 2.0 (0.05)        | Rubber             | UL 723  |
|  | 3369   | Thinnest aluminum foil tape.  | Silver     | 2.4 (0.06)              | Aluminum Foil                          | 1.1 (0.028)       | Acrylic            | UL 723  |
|  | 33803  | Highest tack rubber adhesive.   | Silver     | 3.6 (0.09)              | Aluminum Foil                          | 1.8 (0.05)        | Rubber             | UL 723  |
|  | 97065  | Good for die-cut applications.  | Silver     | 3.4 (0.09)              | Aluminum Foil                          | 1.8 (0.05)        | Acrylic            | —   |
|  | 3380   | Good for narrow slit rolls.   | Silver     | 3.3 (0.08)              | Aluminum Foil                          | 2.0 (0.05)        | Acrylic            | UL 723  |
|  | 4380   | General purpose aluminum foil tape.   | Silver     | 3.3 (0.08)              | Aluminum Foil                          | 2.0 (0.05)        | Acrylic            | —   |
|  | 34383  | General purpose aluminum foil tape.   | Silver     | 4.5 (0.11)              | Aluminum Foil                          | 2.8 (0.07)        | Acrylic            | —   |
|  | 3363   | Good for narrow slit rolls.   | Silver     | 5.0 (0.13)              | Aluminum Foil                          | 3.0 (0.08)        | Acrylic            | UL 723  |
| 3367                                   | Good for die-cut applications.   | Silver  | 4.4 (0.11) | Aluminum Foil           | 3.0 (0.08)                             | Acrylic           | UL 723             |   |
| HVAC Construction                      | 3320   | Aluminum foil/scrim/laminate.   | Silver     | 6.7 (0.17)              | Aluminum Foil                          | 6.0 (0.16)        | Acrylic            | UL 723  |
|  | 3340   | Aluminum foil tape for use with rigid and flexible ducts.   | Silver     | 4.0 (0.10)              | Aluminum Foil                          | 2.0 (0.05)        | Acrylic            | UL 181A-P; UL 181B-FX                                       |
|  | 3350   | Polypropylene tape for use with flexible ducts.   | Silver     | 3.1 (0.08)              | Silver Polypropylene Film              | 1.6 (0.04)        | Acrylic            | UL 181 B-FX   |
|  | 3380   | General purpose aluminum foil tape. Go to product for this market.  | Silver     | 3.3 (0.08)              | Aluminum Foil                          | 2.0 (0.05)        | Acrylic            | UL 723  |
|  | 3381   | Value grade aluminum foil tape.   | Silver     | 2.7 (0.07)              | Aluminum Foil                          | 1.4 (0.04)        | Acrylic            | UL 723  |
|  | 3382   | Foil/PET laminate, tear resistance. Roof and gutter repair tape.  | Silver     | 4.2 (0.11)              | Aluminum Foil                          | 2.5 (0.06)        | Acrylic            | —   |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Single Coated Tapes (cont.)

| Material<br>(alphabetical<br>order) | Product | Typical Performance Characteristics/<br>Application Ideas   | Color       | Total<br>Caliper<br>mils (mm) | Backing           |                      | Adhesive<br>Type     | Specs   |
|-------------------------------------|---------|---|-------------|-------------------------------|-------------------|----------------------|----------------------|---|
|                                     |         |   |             |                               | Material          | Caliper<br>mils (mm) |                      |   |
| Aluminum<br>Sound<br>Damping Foil   | 434     | Aluminum foil constraining layer coated with a 2.0 mil (0.05mm) pressure sensitive viscoelastic polymer on a blue polyethylene easy-release liner. Controls resonant vibrations from -76°F to 68°F (-60°C to 20°C). | Silver      | 7.5 (0.19)                    | Aluminum          | 5.5 (0.14)           | Viscoelastic Polymer | F.A.R. 25.853(a)                                    |
|                                     | 435     | Thicker version of 434.   | Silver      | 13.5 (0.34)                   | Aluminum          | 8.0 (0.2)            | Viscoelastic Polymer | F.A.R. 25.853(a)                                    |
|                                     | 436     | Aluminum foil constraining layer coated with a 5.5 mil (0.14mm) pressure sensitive viscoelastic polymer on a blue polyethylene easy-release liner. Controls resonant vibrations from -76°F to 68°F (-60°C to 20°C). | Silver      | 17.5 (.045)                   | Aluminum          | 12.0 (0.31)          | Viscoelastic Polymer | F.A.R. 25.853(a)                                    |
|                                     | 2542    | Aluminum foil constraining layer coated with a 5.0 mil (0.13mm) pressure sensitive viscoelastic polymer on a 58# paper liner.   | Silver      | 10.0 (0.25)                   | Aluminum          | 5.0 (0.13)           | Viscoelastic Polymer | —   |
|                                     | 2552    | Aluminum foil constraining layer coated with a 5.0 (0.13mm) pressure sensitive viscoelastic polymer on a polycoated paper easy-release liner. Controls resonant vibrations from -25°F to 175°F (-32°C to 80°C).     | Silver      | 15.0 (0.38)                   | Aluminum          | 10.0 (0.25)          | Viscoelastic Polymer | F.A.R. 25.853(a)                                    |
|                                     | 4014    | Foil/foam sheet laminate.   | Silver      | 250.0 (6.35)                  | Aluminum-Urethane | 3.0 (0.09)           | Viscoelastic Polymer | F.A.R. 25.853(a)                                    |
| Fiberglass<br>Cloth                 | 361     | Glass cloth tape coated with a silicone adhesive for many applications requiring high temperature resistance, high adhesion and a very strong abrasion-resistant backing.   | White       | 6.4 (0.16)                    | Glass Cloth       | 5.0 (0.13)           | Silicone             | F.A.R. 25.853                                       |
|                                     | 365     | Splicing textured surfaces/thermosetting adhesive.  | White       | 8.3 (0.20)                    | Glass Cloth       | 4.8 (0.12)           | Thermoset Rubber     | —   |
|                                     | 398FR   | Glass cloth film tape with acrylic adhesive. Used for sealing seams on aircraft ducting and cargo area panels. Flame retardant. Skip-slit liner for ease of application.  | White       | 7.0 (0.18)                    | Glass Cloth       | 5.0 (0.13)           | Acrylic              | BMS 5-146;<br>F.A.R. 25.853(a);<br>F.A.R. 25.855(d) |
|                                     | 398FRP  | Printed backing version of 398FR.   | White       | 7.0 (0.18)                    | Glass Cloth       | 5.0 (0.13)           | Acrylic              | BMS 5-146;<br>F.A.R. 25.853(a);<br>F.A.R. 25.855(d) |
|                                     | 399FR   | Thicker adhesive. Flame resistant.  | White       | 9.5 (0.24)                    | Glass Cloth       | 5.0 (0.13)           | Acrylic              | F.A.R. 25.853(a)                                    |
|                                     | 3615    | An easy unwind glass tape for many applications requiring high temperature resistance, high adhesion, and a very strong abrasion-resistant backing.   | White       | 7.0 (0.18)                    | Glass Cloth       | 5.0 (0.13)           | Silicone             | —   |
|                                     | 3650    | Splicing textured surfaces/thermosetting adhesive. Film lined version of 365.   | White       | 8.3 (0.20)                    | Glass Cloth       | 4.8 (0.12)           | Thermoset Rubber     | —   |
| Lead Foil                           | 420     | Lead foil backing with rubber adhesive and a clear, easy-release film liner.  | Dark Silver | 6.8 (0.17)                    | Lead Foil         | 4.7 (0.12)           | Rubber               | —   |
|                                     | 421     | Self-wound plating tape.  | Dark Silver | 6.3 (0.16)                    | Lead Foil         | 4.0 (0.10)           | Rubber               | —   |
|                                     | 4201    | Permanent acrylic adhesive.   | Dark Silver | 6.5 (0.17)                    | Lead Foil         | 5.0 (0.13)           | Acrylic              | —   |
|                                     | 34201   | Removable rubber adhesive.  | Dark Silver | 6.3 (0.16)                    | Lead Foil         | 5.0 (0.13)           | Rubber               | —   |
| Copper Foil                         | 3313    | EMI/RFI shielding.  | Copper      | 3.0 (0.08)                    | Copper Foil       | 1.4 (0.04)           | Conductive Acrylic   | UL 510  |
|                                     | 3325    | EMI/RFI shielding.  | Copper      | 3.0 (0.08)                    | Copper Foil       | 1.5 (0.04)           | Acrylic              | UL 510  |
|                                     | 33315   | "Tinned," corrosion resistant.  | Copper      | 3.3 (0.08)                    | Copper Foil       | 1.5 (0.04)           | Acrylic              | —   |
|                                     | 33316   | "Tinned," corrosion resistant.  | Copper      | 3.0 (0.08)                    | Copper Foil       | 1.5 (0.04)           | Conductive Acrylic   | UL 510  |
| Stainless Steel Foil                | 3361    | Corrosion resistant.  | Silver      | 3.8 (0.10)                    | Stainless Steel   | 2.0 (0.05)           | Acrylic              | —   |

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## 3M™ Single Coated Tapes (cont.)

| Material<br>(alphabetical<br>order) | Product   | Typical Performance Characteristics/<br>Application Ideas  | Color                   | Total<br>Caliper<br>mils (mm) | Backing   |                      | Adhesive<br>Type           | Specs                      |
|-------------------------------------|---|--|-------------------------|-------------------------------|---|----------------------|----------------------------|----------------------------|
|                                     |   |  |                         |                               | Material  | Caliper<br>mils (mm) |                            |                            |
| Non-Woven                           | 394   | Air-permeable backing.   | White                   | 5.0 (0.13)                    | Non-Woven   | 4.5 (0.11)           | Acrylic                    | —                          |
|                                     | 3294  | Most permeable venting tape.   | Pink                    | 5.0 (0.13)                    | Non-Woven   | 4.5 (0.11)           | Acrylic                    | —                          |
| Paper                               | 101+  | Indoor use. Light-duty applications.   | Tan                     | 5.1 (0.13)                    | Crepe Paper   | —                    | Rubber                     | —                          |
|                                     | 200   | Good instant adhesion.   | Tan                     | 4.4 (0.11)                    | Crepe Paper   | —                    | Rubber                     | —                          |
|                                     | 201+  | General indoor use. Light-to-medium duty. Clean removal.   | Tan                     | 4.4 (0.11)                    | Crepe Paper   | —                    | Solvent-Free Rubber        | —                          |
|                                     | 202   | Good holding power.  | Tan                     | 6.3 (0.16)                    | Crepe Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 203   | Low temperature tape. General purpose masking tape for holding, bundling, sealing and more.  | Beige                   | 4.7 (0.12)                    | Crepe Paper   | —                    | Rubber                     | —                          |
|                                     | 213   | Good on anodized aluminum.   | Tan                     | 6.0 (0.15)                    | Crepe Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 214   | Stain resistant.   | Tan                     | 5.8 (0.15)                    | Crepe Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 225   | Outdoor use.   | Silver                  | 5.8 (0.15)                    | Crepe Paper   | —                    | Rubber                     | —                          |
|                                     | 226   | Outdoor use.   | Black                   | 10.6 (0.27)                   | Polyethylene/<br>Crepe Paper                                | —                    | Rubber                     | —                          |
|                                     | 231   | Best all-purpose paint masking tape.   | Tan                     | 7.6 (0.19)                    | Crepe Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 231A  | Best all-purpose paint masking tape.   | Tan                     | 7.6 (0.19)                    | Crepe Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 232   | Good paint lines.  | Tan                     | 6.3 (0.16)                    | Crepe Paper   | —                    | Rubber                     | —                          |
|                                     | 234   | Excellent controlled unwind.   | Tan                     | 5.9 (0.15)                    | Crepe Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 235   | Photographic masking.  | Black                   | 7.0 (0.17)                    | Crepe Paper   | 5.0 (0.12)           | Rubber                     | —                          |
|                                     | 250*  | Flatback tape. Used in paint adhesion testing.   | Tan                     | 6.0 (0.15)                    | Flatback<br>Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 253   | Silicone butt splicing tape.   | Tan                     | 4.6 (0.12)                    | Treated<br>Flatstock<br>Paper                               | 3.5 (0.09)           | Silicone                   | —                          |
|                                     | 256*  | Printable, accepts marking inks.   | White,<br>Red,<br>Green | 6.7 (0.17)                    | Flatback<br>Paper   | —                    | Rubber                     | ASTM D 6123;<br>D 6123M-97 |
|                                     | 301+  | Good conformability to irregular surfaces. Great paint lines.  | Yellow                  | 6.3 (0.16)                    | Crepe Paper   | —                    | Solvent-Free Rubber        | —                          |
|                                     | 401+  | Highly conformable to many surfaces. Superior adhesion to metal, rubber, glass and plastic. Great paint lines.   | Green                   | 6.7 (0.17)                    | Crepe Paper   | —                    | Solvent-Free Rubber        | —                          |
|                                     | 501+  | Exceptionally conformable to irregular surfaces. Superior adhesion to metal, rubber, glass and plastic. Removes cleanly in one piece with no residue. Great paint lines. | Tan                     | 7.3 (0.19)                    | Crepe Paper<br>Treated with a<br>Heat Resistant<br>Saturant | —                    | High Temp Rubber           | ASTM D 6123                |
| 2214                                | Good for holding and bundling.  | Tan  | 5.4 (0.14)              | Crepe Paper                   | —   | Rubber               | —                          |                            |
| 2307                                | Solvent-free construction; non-critical paint masking.  | Tan  | 5.2 (0.13)              | Crepe Paper                   | —   | Rubber               | —                          |                            |
| 2308                                | Good transfer resistance.   | Tan  | 5.3 (0.13)              | Crepe Paper                   | —   | Rubber               | —                          |                            |
| 2364                                | High temperature, crepe paper masking tape for general masking application. Good holding power. | Tan  | 6.5 (0.17)              | Crepe Paper                   | —   | Synthetic Rubber     | ASTM D 6123;<br>D 6123M-97 |                            |

\*Scotch brand.

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# 3M™ Single Coated Tapes (cont.)

| Material<br>(alphabetical<br>order) | Product | Typical Performance Characteristics/<br>Application Ideas  | Color  | Total<br>Caliper<br>mils (mm) | Backing        |                      | Adhesive<br>Type  | Specs                       |
|-------------------------------------|---------|--|--|-------------------------------|----------------|----------------------|-------------------|-----------------------------|
|                                     |         |  |  |                               | Material       | Caliper<br>mils (mm) |                   |                             |
| Paper<br>(cont.)                    | 2380    | High temperature. Best holding to widest variety of surfaces.  | Tan  | 7.2 (0.18)                    | Crepe Paper    | —                    | Synthetic Rubber  | ASTM D 6123;<br>D 6123M-97  |
|                                     | 2393    | Smooth, heavy duty, high temperature masking tape.   | Tan  | 7.6 (0.19)                    | Crepe Paper    | —                    | Rubber            | ASTM D 6123;<br>D 6123M-97  |
|                                     | 2460    | For paint bake operations at temperatures up to 300°F (149°C). 14 days outdoor.  | Gold   | 3.3 (0.08)                    | Flatback Paper | —                    | Acrylic           | —                           |
|                                     | 2480S   | A thin, strong, smooth flat back paper that gives sharp paint lines with low paint ridge. 60 days outdoor.                   | Green  | 4.0 (0.10)                    | Flatback Paper | —                    | Acrylic           | —                           |
|                                     | 2510    | General purpose masking tape for holding, bundling, sealing and general paint masking where a dark colored tape is required. | Black  | 5.6 (0.14)                    | Crepe Paper    | —                    | Rubber            | ASTM D 6123;<br>D 6123M-97  |
|                                     | 2515**  | General purpose splicing, holding and bundling applications.   | Tan  | 6.7 (0.17)                    | Kraft Paper    | —                    | Rubber            | —                           |
|                                     | 2517*   | Excellent splicing, holding and bundling applications.   | Medium Brown                                 | 6.5 (0.15)                    | Kraft Paper    | —                    | Rubber            | ASTM D 6123;<br>D 6123M-97  |
|                                     | 2525*   | Premium splicing, bright color.  | Orange                                       | 9.5 (0.24)                    | Flatback Paper | —                    | Rubber            | —                           |
|                                     | 2526*   | Excellent adhesion and strength for textile applications.  | White  | 9.8 (0.24)                    | Flatback Paper | —                    | Rubber            | —                           |
|                                     | 2693    | Very aggressive holding; excellent for multi-bake paint cycles.  | Tan  | 7.9 (0.20)                    | Crepe Paper    | —                    | Synthetic Rubber  | ASTM D 6123;<br>D 6123M-97  |
|                                     | 3051    | Very low tack.   | White  | 3.8 (0.10)                    | Flatback Paper | 3.4 (0.09)           | Acrylic           | —                           |
| Polyester                           | 396     | Adhesion to low energy surfaces.   | Transparent                                  | 4.1 (0.10)                    | Polyester      | 1.7 (0.04)           | Rubber            | —                           |
|                                     | 685     | Transparent film with a green adhesive coated on the edges of tape only.   | Transparent/<br>Green                        | 1.7 (0.04)                    | Polyester      | 1.0 (0.02)           | Rubber            | —                           |
|                                     | 850     | Polyester film tape with acrylic adhesive. Used for splicing, holding, decorating, color-coding and sealing.                 | Transparent,<br>Red, Black,<br>White, Silver | 1.9 (0.05)                    | Polyester      | 0.9 (0.02)           | Acrylic           | —                           |
|                                     | 851     | Performance silicone plating.  | Green  | 3.6 (0.09)                    | Polyester      | 0.9 (0.02)           | Synthetic Rubber  | L-T-100                     |
|                                     | 853     | Transparent polyester film tape with solvent-resistant adhesive. Used for butt splicing and tabbing applications.            | Transparent                                  | 2.2 (0.06)                    | Polyester      | 1.1 (0.03)           | Acrylic           | L-T-100<br>F.A.R. 25.853(a) |
|                                     | 856     | Economy edge and hole reinforcing.   | Transparent                                  | 2.0 (0.05)                    | Polyester      | 1.0 (0.02)           | Acrylic           | —                           |
|                                     | 1279    | Plating tape.  | Orange                                       | 4.1 (0.10)                    | Polyester      | 0.9 (0.02)           | Synthetic Rubber  | —                           |
|                                     | 1280    | Performance silicone plating.  | Red  | 3.6 (0.09)                    | Polyester      | 0.9 (0.02)           | Synthetic Rubber  | —                           |
|                                     | 3305    | De-taping applications, clean room.  | Transparent                                  | 2.7 (0.07)                    | Polyester      | 1.6 (0.04)           | Rubber            | —                           |
|                                     | 5557    | Water-contact indicator.   | White  | 10.2 (0.26)                   | Polyester      | —                    | Paper/<br>Acrylic | UL-969                      |
|                                     | 5558    | Ultra thin water-contact indicator.  | White  | 6.0 (0.15)                    | Polyester      | —                    | Paper/<br>Acrylic | —                           |

\*Scotch brand.

\*\*Tartan brand.

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# 3M™ Single Coated Tapes (cont.)

| Material<br>(alphabetical<br>order) | Product                   | Typical Performance Characteristics/<br>Application Ideas  | Color                | Total<br>Caliper<br>mils (mm) | Backing                                  |                      | Adhesive<br>Type             | Specs |
|-------------------------------------|---------------------------|--|----------------------|-------------------------------|--|----------------------|------------------------------|-------|
|                                     |                           |  |                      |                               | Material                                 | Caliper<br>mils (mm) |                              |       |
| Polyester<br>(cont.)                | 8401                      | Splicing many release coated paper.  | Translucent<br>Cream | 1.9 (0.05)                    | Polyester                                | 1.0 (0.03)           | Silicone/<br>Rubber<br>Blend | —     |
|                                     | 8402                      | Splicing tape. Adheres well to silicone.   | Translucent<br>Green | 1.9 (0.05)                    | Polyester                                | 0.9 (0.02)           | Silicone                     | —     |
|                                     | 8403/<br>8403L            | Splicing tape. Adheres well to silicone. 8403L is a lined<br>version of 8403.  | Translucent<br>Green | 2.4 (0.06)                    | Polyester                                | 1.4 (0.04)           | Silicone                     | —     |
|                                     | 8411                      | Edge and hole reinforcing.   | Transparent          | 1.5 (0.04)                    | Polyester                                | 1.0 (0.02)           | Acrylic                      | —     |
|                                     | 8412                      | Heavy-duty edge and hole reinforcing.  | Transparent          | 6.3 (0.16)                    | Polyester                                | 4.7 (0.12)           | Acrylic                      | —     |
|                                     | 8421                      | Photo film splicing.   | White                | 2.5 (0.06)                    | Polyester                                | 1.4 (0.04)           | Rubber                       | —     |
|                                     | 8422                      | Photo film splicing.   | Black                | 2.5 (0.06)                    | Polyester                                | 1.4 (0.04)           | Rubber                       | —     |
|                                     | 8429                      | Photo film splicing.   | Yellow               | 3.2 (0.08)                    | Polyester                                | 2.0 (0.05)           | Rubber                       | —     |
|                                     | 8437                      | Low emissivity, reflective tape.   | Silver               | 2.1 (0.05)                    | Polyester                                | 0.9 (0.02)           | Acrylic                      | —     |
|                                     | 8901                      | High temperature coating.  | Blue                 | 2.4 (0.06)                    | Polyester                                | 0.9 (0.02)           | Silicone                     | —     |
|                                     | 8902                      | High temperature coating.  | Blue                 | 3.5 (0.08)                    | Polyester                                | 2.0 (0.05)           | Silicone                     | —     |
|                                     | 8905                      | High temperature coating.  | Blue                 | 6.5 (0.17)                    | Polyester                                | 5.0 (0.12)           | Silicone                     | —     |
|                                     | 8911                      | High temperature label protection.   | Transparent          | 2.3 (0.05)                    | Polyester                                | 0.9 (0.02)           | Silicone                     | —     |
|                                     | 8991/<br>8991L            | Thin tapes, powder coat masking, high temperature<br>applications. 8991L is lined version.   | Blue                 | 2.4 (0.06)                    | Polyester                                | 1.0 (0.03)           | Silicone                     | —     |
|                                     | 8992/<br>8992L            | Powder coat and anodized masking, high temperature<br>applications. 8992L is lined version.  | Green                | 3.2 (0.08)                    | Polyester                                | 2.0 (0.05)           | Silicone                     | —     |
| Polypropylene                       | 218/<br>218L              | Polypropylene plastic film tape with rubber adhesive. A<br>high performance film backed tape with low profile and<br>high adhesion to achieve excellent paint line and for other<br>masking and holding applications. 218L is lined version. | Green                | 5.0 (0.13)                    | Polypropylene                            | —                    | Rubber                       | —     |
|                                     | 265                       | In-mold composite masking where sharp, clean, gel-coat<br>color separation lines are desired.  | Green                | 5.1 (0.13)                    | Polypropylene                            | —                    | Rubber/<br>Silicone          | —     |
|                                     | 8087                      | Construction seaming tape.   | Red                  | 3.0 (0.08)                    | Biaxially Oriented<br>Polypropylene Film | 1.5 (0.04)           | Acrylic                      | —     |
| PTFE —<br>Slick Surface             | 547                       | Pipe thread sealant.   | White                | 3.0 (0.08)                    | PTFE                                     | 3.0 (0.08)           | none                         | —     |
|                                     | 5151/<br>5151L/<br>5151PL | A woven glass cloth impregnated with PTFE tape which<br>provides a high temperature release surface for protection<br>and insulation. 5151L is a lined version. 5151PL is a<br>thicker, premium liner.                                       | Light Brown          | 5.3 (0.13)                    | Glass Cloth<br>Impregnated<br>w/PTFE     | 3.0 (0.08)           | Silicone                     | —     |
|                                     | 5153/<br>5153L            | Thicker version of 5151. 5153L is a lined version.   | Light Brown          | 8.0 (0.20)                    | Glass Cloth<br>Impregnated<br>w/PTFE     | 5.8 (0.15)           | Silicone                     | —     |
|                                     | 5180                      | Skived PTFE film tape used for roller wrapping and other<br>slick surface applications.  | Gray                 | 3.5 (0.09)                    | PTFE                                     | 2.0 (0.05)           | Silicone                     | —     |
|                                     | 5181                      | Thicker version of 5180.   | Gray                 | 6.5 (0.17)                    | PTFE                                     | 5.0 (0.13)           | Silicone                     | —     |

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## 3M™ Single Coated Tapes (cont.)

| Material<br>(alphabetical<br>order)  | Product | Typical Performance Characteristics /<br>Application Ideas   | Color  | Total<br>Caliper<br>mils (mm) | Backing                        |                      | Adhesive<br>Type | Specs              |
|--|---------|--|--|-------------------------------|--------------------------------|----------------------|------------------|--------------------|
|  |         |  |  |                               | Material                       | Caliper<br>mils (mm) |                  |                    |
| PTFE —<br>Slick Surface<br>(cont.)   | 5451    | A woven glass cloth impregnated with PTFE tape which provides a high temperature release surface for protection and insulation.  | Brown  | 5.6 (0.14)                    | Glass Cloth Impregnated w/PTFE | 3.2 (0.08)           | Silicone         | —                  |
|  | 5453    | Thicker version of 5451.   | Brown  | 8.2 (0.21)                    | Glass Cloth Impregnated w/PTFE | 6.0 (0.15)           | Silicone         | —                  |
|  | 5480    | Skived PTFE film tape used for roller wrapping and other slick surface applications.   | Gray   | 3.7 (0.09)                    | PTFE                           | 2.0 (0.05)           | Silicone         | —                  |
|  | 5481    | Heavy-duty skived PTFE film tape used for roller wrapping and other slick surface applications.  | Gray   | 6.8 (0.17)                    | PTFE                           | 5.0 (0.13)           | Silicone         | —                  |
|  | 5490    | PTFE Film tape with silicone adhesive used in many slick surface applications. Lay-flat backing.   | Gray   | 3.7 (0.09)                    | PTFE                           | 2.0 (0.05)           | Silicone         | —                  |
|  | 5491    | Thicker version of 5490.   | Gray   | 6.7 (0.17)                    | PTFE                           | 5.0 (0.13)           | Silicone         | —                  |
|  | 5498    | Extruded PTFE film tape with rubber silicone-free adhesive.  | Brown  | 4.0 (0.10)                    | PTFE                           | 2.0 (0.05)           | Rubber           | —                  |
| Polyethylene-<br>Ultra High<br>Molecular<br>Weight<br>(UHMW-PE) —<br>Slick Surface | 5421    | General purpose tape to protect plastic and metal chutes, guide rails and containers from wear.  | Transparent  | 6.7 (0.17)                    | UHMW-PE                        | 5.0 (0.13)           | Rubber           | —                  |
|  | 5423    | Excellent abrasion resistance and low coefficient of friction makes this an effective solution for noise and vibration problems.   | Transparent  | 11.7 (0.30)                   | UHMW-PE                        | 10.0 (0.25)          | Rubber           | —                  |
|  | 5425    | Solvent resistant adhesive with low coefficient of friction and abrasion resistance.   | Transparent  | 5.0 (0.13)                    | UHMW-PE                        | 3.0 (0.08)           | Acrylic          | —                  |
|  | 5430    | Transparent UHMW-PE film tape with high tack acrylic adhesive.   | Transparent  | 7.0 (0.18)                    | UHMW-PE                        | 5.0 (0.13)           | Acrylic          | —                  |
|  | 9324    | Black version of 5430.   | Black  | 6.5 (0.17)                    | UHMW-PE                        | 5.0 (0.13)           | Acrylic          | —                  |
|  | 9325    | Thin version of 5430.  | Transparent  | 5.0 (0.13)                    | UHMW-PE                        | 3.0 (0.08)           | Acrylic          | —                  |
| Vinyl  | 470     | Conformable and abrasion resistant for masking various surfaces during electroplating and anodizing.   | Tan  | 7.1 (0.18)                    | Vinyl                          | 6.3 (0.16)           | Rubber           | —                  |
|  | 471     | Vinyl plastic tape ideal for color-coding, abrasion protection, decoration, sealing, patching, splicing, wrapping, and general purpose. Available in 9 colors and transparent. | Yellow, White, Red, Black, Brown, Green, Orange, Purple, Blue, Transparent       | 5.2 (0.13)                    | Vinyl                          | 4.1 (0.10)           | Rubber           | MIL-STD 2041D (SH) |
|  | 471+    | Superior conformability, sharp paint lines, clean removal.   | Indigo   | 5.3 (0.13)                    | Vinyl                          | 4.1 (0.10)           | Rubber           | —                  |
|  | 472     | Abrasion resistant, high temperature resistant.  | Black  | 10.4 (0.26)                   | Vinyl                          | 9.0 (0.23)           | Rubber           | —                  |
|  | 477     | Abrasion resistant.  | Transparent  | 7.2 (0.18)                    | Vinyl                          | 6.0 (0.15)           | Rubber           | —                  |
|  | 484     | Lower adhesion than 470.   | Tan  | 6.7 (0.17)                    | Vinyl                          | 5.6 (0.14)           | Rubber           | —                  |
|  | 764     | A general purpose vinyl tape for use in non-critical applications such as color-coding, bundling and safety marking.   | Yellow, Red, White, Black, Blue, Green, Orange, Gray, Purple, Brown, Transparent | 5.0 (0.13)                    | Vinyl                          | 4.1 (0.10)           | Rubber           | —                  |
|  | 766     | A general purpose hazard marking vinyl tape for use in non-critical applications.  | Black & Yellow Stripes   | 5.0 (0.13)                    | Vinyl                          | 4.1 (0.10)           | Rubber           | —                  |
|  | 767     | A general purpose hazard marking vinyl tape for use in non-critical applications.  | Red & White Stripes  | 5.0 (0.13)                    | Vinyl                          | 4.1 (0.10)           | Rubber           | —                  |
|  | 4712    | Linered version of 471 for die-cutting applications.   | Brown, White, Blue, Green, Yellow, Orange, Red, Black, Purple, Transparent       | 5.2 (0.13)                    | Vinyl                          | 4.1 (0.10)           | Rubber           | MIL-STD 2041D (SH) |

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## 3M™ Single Coated Tapes (cont.)

| Material<br>(alphabetical<br>order) | Product | Typical Performance Characteristics/<br>Application Ideas  | Color  | Total<br>Caliper<br>mils (mm) | Backing                              |                      | Adhesive<br>Type | Specs   |
|-------------------------------------|---------|--|--|-------------------------------|--------------------------------------|----------------------|------------------|---|
|                                     |         |  |  |                               | Material                             | Caliper<br>mils (mm) |                  |   |
| Vinyl (cont.)                       | 4731    | Electroplating. Flame retardant and weather resistant.   | Blue, Gray,<br>Orange,<br>Purple, White,<br>Yellow           | 7.0 (0.18)                    | Vinyl                                | 5.8 (0.15)           | Rubber           | —   |
|                                     | 4735    | Highly conformable, high temperature vinyl fine line tape for fascia panels, two-tone and other multiple color applications where critical paint break lines are required. | Orange   | 5.4 (0.14)                    | Vinyl                                | —                    | Rubber           | —   |
|                                     | 4737S   | Highly visible backing version of 4737T.   | Solid Blue   | 5.4 (0.14)                    | Vinyl                                | —                    | Rubber           | —   |
|                                     | 4737T   | Conformable, high temperature vinyl fine line tape for fascia panels, two-tone and other multiple color applications where critical paint break lines are required.        | Translucent<br>Blue  | 5.4 (0.14)                    | Vinyl                                | —                    | Rubber           | —   |
|                                     | 4737TL  | Lined version of 4737T.  | Blue   | 5.4 (0.14)                    | Vinyl                                | —                    | Rubber           | —   |
|                                     | 5700    | Critical applications. Adhesive side printing. For lane and safety marking.  | Black & White<br>Stripes                                     | 5.5 (0.14)                    | Vinyl                                | 4.2 (0.11)           | Rubber           | —   |
|                                     | 5702    | Critical applications. Adhesive side printing. For lane and safety marking.  | Black & Yellow<br>Stripes                                    | 5.5 (0.14)                    | Vinyl                                | 4.2 (0.11)           | Rubber           | —   |
| Miscellaneous<br>Film Tapes         | 215     | Medium temperature. Fine line masking tape. Excellent conformability.  | Blue   | 4.8 (0.12)                    | Copolymer<br>Plastic Film            | —                    | Rubber           | —   |
|                                     | 480     | Good chemical and solvent resistance, conformable, abrasion resistant.   | Transparent  | 5.1 (0.13)                    | Polyethylene                         | 4.0 (0.10)           | Acrylic          | —   |
|                                     | 481     | Preservation sealing tape. Clean removal up to 2 years.  | Black  | 9.8 (0.24)                    | Polyethylene                         | 7.7 (0.20)           | Rubber           | MIL-T-22085<br>Amend 3,<br>Type IV                          |
|                                     | 4811    | Preservation sealing tape. Clean removal up to 1 year.   | White  | 9.5 (0.24)                    | Polyethylene                         | 7.5 (0.18)           | Rubber           | —   |
|                                     | 483     | Conformability, UV resistance, and clean removal for sealing end cap on metal pipes stored outdoors.   | Black, Blue,<br>Green, Red,<br>White, Yellow,<br>Transparent | 5.0 (0.13)                    | Polyethylene                         | 3.9 (0.10)           | Rubber           | MIL-STD<br>2041D (SH)                                       |
|                                     | 616     | Lithographers tape.  | Ruby Red   | 2.4 (0.06)                    | UPVC                                 | 1.6 (0.04)           | Rubber           | —   |
|                                     | 695     | Polyethylene film with a rubber-strip coated along edges of tape only and tack-free center. Riveters tape.   | Yellow   | 3.0 (0.08)                    | Polyethylene                         | 2.0 (0.05)           | Acrylic*         | —   |
|                                     | 838     | Weather-resistant film.  | White  | 3.4 (0.09)                    | PVF                                  | 2.1 (0.05)           | Acrylic          | MIL-T-22085<br>Amend 3,<br>Type IV;<br>F.A.R.<br>25.853(a). |
|                                     | 855     | Composite bonding tape.  | White  | 3.2 (0.08)                    | Nylon                                | 2.0 (0.05)           | Rubber           | —   |
|                                     | 5401    | High coefficient of friction for traction.   | Tan  | 9.3 (0.24)                    | Fiberglass<br>Reinforced<br>Silicone | 8.0 (0.20)           | Silicone         | —   |
|                                     | 5414    | Water-soluble tape.  | Transparent  | 2.5 (0.06)                    | PVA                                  | 1.3 (0.03)           | Synthetic        | —   |
|                                     | 5461    | High friction roller tape.   | White  | 9.1 (0.23)                    | Silicone<br>Rubber                   | 7.8 (0.19)           | Rubber           | —   |
|                                     | 8067    | Window and door flashing tape.   | Tan  | 10.0 (0.25)                   | Multilayer<br>Elastomeric<br>Film    | 5.0 (0.13)           | Acrylic          | ICC AC 148,<br>AAMA 711                                     |
|                                     | 8777    | Air and water tight sealing tape.  | Tan  | 10.0 (0.25)                   | Multilayer<br>Elastomeric<br>Film    | 5.0 (0.13)           | Acrylic          | —   |
|                                     | 8555    | Thicker version of 855, composite bonding tape.  | White  | 6.0 (0.15)                    | Nylon                                | 5.0 (0.13)           | Rubber           | —   |

\*Strip coated along edges of tape only.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Single Coated Foam Tapes

| Product Number  | Color         | Description  | Adhesive    | Approximate Thickness in. (mm) | Density lb/cu ft (kg/cu m) | Tensile Strength psi (kPa) | Compression Deflection 25% psi (kPa) | Compression Set % Loss | Temperature Tolerance |              |
|-----------------|---------------|--|-------------|--------------------------------|----------------------------|----------------------------|--------------------------------------|------------------------|-----------------------|--------------|
|                 |               |  |             |                                |                            |                            |                                      |                        | Short-Term            | Long-Term    |
| <b>Urethane</b> |               |  |             |                                |                            |                            |                                      |                        |                       |              |
| 4104*           | Natural White | Firm, rigid, open cell urethane foam for cushioning. Allows air or gas vapors to pass through. Not recommended for outdoor use.  | 350 Acrylic | 0.250 (6)                      | 12 (192)                   | 115 (795)                  | 4 (27.6)                             | 8                      | 350°F (176°C)         | 200°F (93°C) |
| 4108            | Natural White |  | 350 Acrylic | 0.125 (3)                      | 16 (256)                   | 130 (895)                  | 6 (82.8)                             | 8                      |                       |              |
| 4116            | Natural White |  | 350 Acrylic | 0.062 (1.5)                    | 18 (288)                   | 115 (795)                  | 12 (82.8)                            | 12                     |                       |              |
| 4314            | Charcoal Gray | Soft conformable, low density foam can help seal out air, dust and light when compressed 50%. Used to help damp sound and absorb vibration in electronics.   | 430 Acrylic | 0.250 (6)                      | 2 (32)                     | 25 (170)                   | 0.3 (2.1)                            | 5                      | 250°F (121°C)         | 150°F (66°C) |
| 4317*           | Charcoal Gray |  | 430 Acrylic | 0.375 (9.5)                    | 2 (32)                     | 25 (170)                   | 0.3 (2.1)                            | 5                      |                       |              |
| 4318            | Charcoal Gray |  | 430 Acrylic | 0.125 (3)                      | 2 (32)                     | 25 (170)                   | 0.3 (2.1)                            | 5                      |                       |              |
| <b>Vinyl</b>    |               |  |             |                                |                            |                            |                                      |                        |                       |              |
| 4504*           | Black         | Durable, flexible, closed cell vinyl foams with excellent aging characteristics. Weather resistant. Can help to seal out dust, light and moisture when placed under 30% compression. Liner over PSA. | 430 Acrylic | 0.250 (6)                      | 20 (320)                   | 90 (620)                   | 4 (27.6)                             | 15                     | 250°F (121°C)         | 150°F (66°C) |
| 4508*           | Black         |  | 430 Acrylic | 0.125 (3)                      | 20 (320)                   | 100 (690)                  | 4 (27.6)                             | 15                     |                       |              |
| 4516*           | Black         |  | 430 Acrylic | 0.062 (1.5)                    | 25 (400)                   | 130 (895)                  | 4 (27.6)                             | 15                     |                       |              |
| 4714*           | Black         |  | 430 Acrylic | 0.250 (6)                      | 14 (225)                   | 75 (515)                   | 2 (13.8)                             | 5                      |                       |              |
| 4718*           | Black         |  | 430 Acrylic | 0.125 (3)                      | 20 (320)                   | 100 (690)                  | 4 (27.6)                             | 15                     |                       |              |
| 4726*           | Black         |  | 430 Acrylic | 0.062 (1.5)                    | 20 (320)                   | 130 (895)                  | 3 (20.7)                             | 15                     |                       |              |

\*Meets requirements of UL 94HBF.

# 3M™ Single Coated Foil/Foam Sheets

| Product Master | Description                          | Sheets Per Case | Sheet Size (in.) |
|----------------|--------------------------------------|-----------------|------------------|
| 4014           | 250.0 Mil Aluminum/<br>Urethane Foam | 50              | 6 x 48           |
|                |                                      | 25              | 12 x 48          |
|                |                                      | 15              | 18 x 48          |

# 3M™ Extreme Sealing Tapes

| Product | Color               | Backing/<br>Adhesive                        | Tape Thickness mils (mm) | Tensile Strength lb/in (N/cm) | 90° Peel Adhesion Strength* lb/in (N/cm) |                 |         |             |         |         | Application Ideas   |
|---------|---------------------|---|--------------------------|-------------------------------|--|-----------------|---------|-------------|---------|---------|---|
|         |                     |   |                          |                               | Alumi-num                                | Stainless Steel | Glass   | Truck Paint | PVC     | ABS     |   |
| 4411G   | Grey                | Ionomer Film/<br>Pressure Sensitive Acrylic | 40 (1)                   | 13 (23)                       | 15 (26)                                  | 16 (28)         | 15 (26) | 15 (26)     | 15 (26) | 16 (28) | Seals RV trailers and roofs. Seals metal enclosures and awnings. Seals trailer home roofs and metal storage buildings. Seals vent stacks and windows. Seals gutters and downspouts. Seals skylights. Seals outdoor signs/displays. Leak patching and repairs. |
| 4411N   | Neutral/Translucent |   | 40 (1)                   |                               | 15 (26)                                  | 15 (26)         | 15 (26) | 14 (25)     | 16 (28) | 16 (28) |   |
| 4411B   | Black               |   | 40 (1)                   |                               | 19 (33)                                  | 17 (30)         | 19 (33) | 17 (30)     | 19 (33) | 18 (32) |   |
| 4412N   | Neutral/Translucent |   | 80 (2)                   |                               | 18 (32)                                  | 18 (32)         | 19 (33) | 19 (33)     | 19 (33) | 19 (33) |   |

†Adhesion promoters were used on peel Adhesion test substrates.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Repulpable Tapes

To achieve true quality, a tape must meet all your needs. Outstanding strength is not enough. The tape must be easy to use, easy to choose, readily available and fully repulpable. We've built our reputation as an industry leader by being responsive to the increasingly complex needs of paper producers. Today, our customer base consists of clients who demand no less of their product than we demand of ours.

| Product                               | Color              | Comments   | Tape Thickness<br>mils (mm) | Tape Structure      |            | Liner |                        | Heat Resistance*<br>°F (°C) | FDA Compliant <sup>†</sup> |
|---------------------------------------|--------------------|--|-----------------------------|---------------------|------------|-------|------------------------|-----------------------------|----------------------------|
|                                       |                    |  |                             | Backing/<br>Carrier | Adhesive   | Type  | Thickness<br>mils (mm) |                             |                            |
| <b>Permanent Double Coated</b>        |                    |  |                             |                     |            |       |                        |                             |                            |
| 405                                   | Lt. Green          | Excellent for raw and starch-treated papers.   | 3.0 (0.08)                  | Tissue Carrier      | Repulpable | UPVC  | 1.7 (0.04)             | 400 (200)                   | —                          |
| 900                                   | Blue               | Recommended for light weight coated papers.  | 2.5 (0.06)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | Yes                        |
| 900B                                  | Blue               | Recommended for supercalendared papers.  | 2.5 (0.06)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | Yes                        |
| <b>Permanent Single Coated</b>        |                    |  |                             |                     |            |       |                        |                             |                            |
| 901                                   | Lt. Green          | Excellent for raw and starch-treated papers.   | 4.0 (0.10)                  | Paper               | Repulpable | UPVC  | 1.7 (0.04)             | 400 (200)                   | —                          |
| 910                                   | Blue               | Recommended for coated and uncoated papers and paperboard.   | 4.0 (0.10)                  | Paper               | Repulpable | —     | none                   | 400 (200)                   | Yes                        |
| 914                                   | Blue               | Recommended for high speeds, digital business forms, perforated splicing tape.   | 4.0 (0.10)                  | Paper               | Repulpable | —     | none                   | 400 (200)                   | Yes                        |
| 9103                                  | Blue               | Printable, coatable backing.   | 4.5 (0.11)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | Yes                        |
| 9114                                  | Blue               | The easiest way to make a butt splice. Printable.  | 4.5 (0.11)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | Yes                        |
| 9960                                  | Blue               | Thinnest butt splicing tape for light weight uncoated and coated and supercalendared papers.   | 2.2 (0.06)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 350 (180)                   | Yes                        |
| 9969                                  | Blue/White         | Very thin butt splicing/cover tape for uncoated, newsprint and most coated papers.   | 2.2 (0.06)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 350 (180)                   | Yes                        |
| <b>Adhesive Transfer Tape</b>         |                    |  |                             |                     |            |       |                        |                             |                            |
| R3037                                 | Blue               | Thinnest, fiber reinforced adhesive transfer tape.   | 2.0 (0.05)                  | None                | Repulpable | Paper | 3.3 (0.08)             | 250 (120)                   | Yes                        |
| <b>Temporary Double Coated</b>        |                    |  |                             |                     |            |       |                        |                             |                            |
| 906                                   | Blue/White         | Flying splice at the Off-Machine Coater (OMC).   | 3.0 (0.08)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | Yes                        |
| 9038                                  | Blue/White         | General purpose plus flying splice for the commercial printers, and corrugators.   | 3.5 (0.09)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 350 (180)                   | Yes                        |
| 9069                                  | Blue               | Excellent for newsprint or directory stock.  | 3.5 (0.09)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | —                          |
| 9977                                  | Blue               | High strength tissue for flying splices where extra strength is needed.  | 4.0 (0.10)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | —                          |
| R3227                                 | Blue/White         | General purpose temporary splicing.  | 3.5 (0.09)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | Yes                        |
| R3257                                 | White              | Thin tissue, very high tack.   | 4.1 (0.11)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | Yes                        |
| R3287                                 | White              | Heavy tissue, very high tack.  | 5.5 (0.14)                  | Tissue Carrier      | Repulpable | Paper | 3.2 (0.08)             | 400 (200)                   | Yes                        |
| <b>Temporary Single Coated</b>        |                    |  |                             |                     |            |       |                        |                             |                            |
| R3127                                 | Blue/White/        | General purpose, excellent holding power.  | 4.5 (0.11)                  | Paper               | Repulpable | —     | none                   | 400 (200)                   | Yes                        |
| R3187                                 | Kraft              | General purpose, strong repulpable backing.  | 7.5 (0.19)                  | Paper               | Repulpable | —     | none                   | 400 (200)                   | Yes                        |
| R3177                                 | Blue/White/<br>Red | Heavy duty, extensible repulpable backing.   | 7.0 (0.16)                  | Paper               | Repulpable | —     | none                   | 400 (200)                   | Yes                        |
| <b>Splittable Flying Splice (SFS)</b> |                    |  |                             |                     |            |       |                        |                             |                            |
| R3345                                 | Blue               | Thin SFS tape for flying splices through supercalendering operations, and permanent butt splices for light weight coated papers.                     | 4.8 (0.12)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |
| R3375                                 | Blue               | Strong SFS tape for flying splices on heavy papers and high tension web processing through supercalendering operations.                              | 6.5 (0.16)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |
| R3379                                 | Blue               | Repulpable SFS tape used for high speed splicing conditions when high tack is required and to compensate for roll profile issues.                    | 7.5 (0.18)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |
| R5348                                 | Blue               | Use with light- to medium-weight papers running through medium-temperature ovens.  | 5.0 (0.11)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 350 (180)                   | —                          |
| R7359                                 | Blue               | Use with light- to heavy-weight papers running at high speeds and high temperatures.   | 6.6 (0.17)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |
| R7369                                 | Blue               | Use with light- to heavy-weight paper on wide web rolls to help compensate for roll profile variations running at high speeds and high temperatures. | 7.4 (0.19)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |
| 9990N                                 | Blue               | Splittable flying splice (SFS) system with metalized layer for auto-sensing splice detection applications.   | 5.5 (0.14)                  | Aluminized Paper**  | Repulpable | Paper | 2.2 (.05)              | 350 (180)                   | —                          |
| R9993                                 | Blue               | All in one tabbing and splicing tape for heatset printing applications.  | 5.0 (0.11)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |
| R9996                                 | Blue               | Thinnest SFS tape for splicing applications in papermills and paper converting coating operations.   | 4.8 (0.12)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |
| R9999                                 | Blue               | Repulpable SFS tape for heavyweight papers in manual and automatic splicing equipment, with moderate speed.  | 6.7 (0.17)                  | Paper               | Repulpable | Paper | 2.9 (0.07)             | 400 (200)                   | —                          |

†All components of the adhesive and backing meet the requirements of indirect food additive regulations as described under 21 CFR 176.170 (Components of paper and paperboard in contact with aqueous and fatty food) and 21 CFR 176.180 (Components of paper and paperboard in contact with dry foods)

\*As tested in laboratory. Results may vary depending on machine and web tensions, nature of paper surface, application pressure, etc. which are outside of 3M's control.  
\*\*Non-repulpable, screenable aluminized sensor strip.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Protective Tapes

## Nominal Results

| Product                           | Tape Structure (Backing/Adhesive) | Total Thickness mils (mm) | Adhesion to Steel oz./in. width | Tack Level | Elongation at Break (%) | Application Ideas   |
|-----------------------------------|-----------------------------------|---------------------------|---------------------------------|------------|-------------------------|---|
| <b>Based on ASTM Test Method:</b> |                                   | <b>D-3652</b>             | <b>D-3330</b>                   |            | <b>D-3759</b>           |   |
| <b>Co-Extruded "A" Tapes</b>      |                                   |                           |                                 |            |                         |   |
| 25A825                            | Co-Extruded/Acrylic               | 2.5 (0.06)                | 6                               | Medium     | 600                     | Semi-gloss painted metals and plastic surfaces. Automotive moldings.  |
| 25A826                            | Co-Extruded/Acrylic               | 2.5 (0.06)                | 7                               | Medium     | 600                     | Embossed, painted metal building panels. Molded fiberglass.   |
| 25A829                            | Co-Extruded/Acrylic               | 2.5 (0.06)                | 11                              | High       | 600                     | Satin or bronzed painted aluminum and brushed finished steel and aluminum, textured plastics.                                       |
| 25A87                             | Co-Extruded/Acrylic               | 2.5 (0.06)                | 13                              | High       | 600                     | Brushed aluminum and stainless. Hand applied to cultured marble (typically dusty surface).  |
| 25A88                             | Co-Extruded/Acrylic               | 2.5 (0.06)                | 15                              | High       | 600                     | Matte high-pressure laminates. For matte finished automotive plastic parts.   |
| 25A89                             | Co-Extruded/Acrylic               | 2.5 (0.06)                | 15                              | High       | 600                     | For non-UV applications requiring high elongation and excellent abrasion resistance compared to a traditional polyethylene film.    |
| 2A804                             | Co-Extruded/Acrylic               | 2 (0.05)                  | 2                               | Very Low   | 600                     | Effective in many outdoor applications for up to 3 days.  |
| 2A825                             | Co-Extruded/Acrylic               | 2 (0.05)                  | 7                               | Medium     | 600                     | Painted building panels. Automotive moldings and urethane fascias.  |
| 2A826                             | Co-Extruded/Acrylic               | 2 (0.05)                  | 8                               | Medium     | 600                     | Painted, embossed, metal building panels, canopies and molded fiberglass.   |
| 2A829                             | Co-Extruded/Acrylic               | 2 (0.05)                  | 12                              | Medium     | 600                     | Brushed aluminum. Textured, plastic automotive moldings. Offers excellent protection for mill finished aluminum and steel surfaces. |
| 2A87                              | Co-Extruded/Acrylic               | 2 (0.05)                  | 14                              | High       | 600                     | Matte decorative and vinyl laminates.   |
| 2A88                              | Co-Extruded/Acrylic               | 2 (0.05)                  | 15                              | High       | 600                     | Matte decorative and vinyl laminates. Matte, plastic screen-printed nameplates.   |
| 2A89                              | Co-Extruded/Acrylic               | 2 (0.05)                  | 15                              | High       | 600                     | Matte decorative and vinyl laminates; brushed and anodized aluminum.  |
| 5A829                             | Co-Extruded/Acrylic               | 5 (0.13)                  | 10                              | High       | 600                     | Offers superior protection for mill finished aluminum and steel surfaces.   |
| <b>Carpet Tapes</b>               |                                   |                           |                                 |            |                         |   |
| 2E79                              | Polyethylene/Acrylic              | 2 (0.05)                  | 20                              | High       | 600                     | Automotive carpeted areas, fabric seals and headliners.   |
| 2E93/EZ                           | Polyethylene/Acrylic              | 2 (0.05)                  | 25                              | Very High  | 600                     | Automotive carpets, fabric seals and headliners.  |
| 2E95/EZ                           | Polyethylene/Acrylic              | 2 (0.05)                  | 35                              | Very High  | 600                     | Automotive carpets, fabric seals and headliners.  |
| 2E97                              | Polyethylene/Acrylic              | 2 (0.05)                  | 35                              | Very High  | 600                     | For automotive and industrial carpets and fabrics only.   |
| 2E98                              | Polyethylene/Acrylic              | 2 (0.05)                  | 45                              | Very High  | 600                     | For marine carpet only.   |
| 4193/EZ                           | Polyethylene/Acrylic              | 4 (0.10)                  | 25                              | Very High  | 600                     | Residential carpet tape.  |
| 5193EZ                            | Polyethylene/Acrylic              | 5 (0.13)                  | 30                              | Very High  | 600                     | Residential carpet tape.  |
| 4195/EZ                           | Polyethylene/Acrylic              | 4 (0.10)                  | 30                              | Very High  | 600                     | Higher adhesion for treated carpet.   |
| 4F94                              | Polyethylene/Acrylic              | 4 (0.10)                  | 20                              | Very High  | 600                     | Flame retardant carpet tape.  |
| <b>Co-Extruded Tapes</b>          |                                   |                           |                                 |            |                         |   |
| 15CV804                           | Polyethylene/Acrylic              | 1.5 (0.04)                | 2                               | —          | 420                     | LCD screens, glass, polycarbonate, high gloss laminate.   |
| 15CV825                           | Polyethylene/Acrylic              | 1.5 (0.04)                | 7                               | Medium     | 420                     | Smooth semi-gloss cultured marble, high pressure laminate.  |
| 15CV826                           | Polyethylene/Acrylic              | 1.5 (0.04)                | 8                               | Medium     | 420                     | Smooth, satin gloss cultured marble, high pressure laminate.  |
| <b>Self Sealing Tapes</b>         |                                   |                           |                                 |            |                         |   |
| 3130                              | Polyethylene/Rubber               | 3 (0.08)                  | 14*                             | —          | 450                     | Cohesive film used to package small machine parts, hand tools and literature.   |
| 4130                              | Polyethylene/Rubber               | 4 (0.10)                  | 12*                             | —          | 450                     |   |

\*Value measured as a cohesive bond strength in units.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Protective Tapes (cont.)

### Nominal Results

| Product                           | Tape Structure (Backing/Adhesive) | Total Thickness mils (mm) | Adhesion to Steel oz./in. width | Tack Level  | Elongation at Break (%) | Application Ideas  |
|-----------------------------------|-----------------------------------|---------------------------|---------------------------------|-------------|-------------------------|--|
| <b>Based on ASTM Test Method:</b> |                                   | <b>D-3652</b>             | <b>D-3330</b>                   |             | <b>D-3759</b>           |  |
| <b>Laser Tapes</b>                |                                   |                           |                                 |             |                         |  |
| 4H81CPK                           | Polyolefin/Acrylic                | 4 (0.10)                  | 12                              | Medium      | 270                     | Designed to be machine laminated using nip roll pressure. For best performance, apply 72 hours before laser cutting.         |
| 4H81WPK                           | Polyolefin/Acrylic                | 4 (0.10)                  | 12                              | Medium      | 270                     |  |
| 4H85CPB                           | Polyolefin/Acrylic                | 4 (0.10)                  | 17                              | High        | 270                     | Unique film construction offering extra protection during processing and allowing easy removal.                              |
| 4H85WPB                           | Polyolefin/Acrylic                | 4 (0.10)                  | 17                              | High        | 270                     |  |
| <b>Polyester Tapes</b>            |                                   |                           |                                 |             |                         |  |
| 1614                              | Polyester/Acrylic                 | 1.3 (0.03)                | 1                               | Very Low    | 88                      | Low tack adhesive removes cleanly after exposures of up to 300°F (150°C).  |
| 1675                              | Polyester/Acrylic                 | 1.3 (0.03)                | 2                               | Low         | 88                      | Low tack adhesive removes cleanly after exposures of up to 350°F (171°C).  |
| <b>Transit Films</b>              |                                   |                           |                                 |             |                         |  |
| 24S56W                            | Polypropylene/Acrylic             | 3 (0.08)                  | 9                               | Medium      | 700                     | White tape for painted metals, plastic surfaces and automotive clearcoat paint finishes.                                     |
| 44S56W                            | Polypropylene/Acrylic             | 4 (0.10)                  | 9                               | Medium      | 800                     |  |
| 64S58W                            | Polypropylene/Acrylic             | 6 (0.15)                  | 9                               | Medium      | 630                     | Use on base, clearcoat and high gloss painted surfaces. Ideal for mutilation protection.                                     |
| <b>UV Tapes</b>                   |                                   |                           |                                 |             |                         |  |
| 25M25X                            | Polypropylene/Acrylic             | 2.5 (0.06)                | 6                               | Medium      | 600                     | Black/White tape does not lift and removes cleanly after sunlight exposure.  |
| 25M26X                            | Polypropylene/Acrylic             | 2.5 (0.06)                | 8                               | Medium      | 600                     |  |
| 25X126                            | Polypropylene/Acrylic             | 2.5 (0.06)                | 6                               | Medium      | 850                     | Can withstand up to 30 days of outdoor exposure in applications oriented at 90 degrees to sunlight.**                        |
| 2AU23B/UV                         | Co-extruded A                     | 2 (0.05)                  | 3                               | Low         | 600                     | For glass and window frames with a high-gloss surface, high-gloss painted metals and plastics.                               |
| 2AU26B/UV                         | Co-extruded A                     | 2 (0.05)                  | 7                               | Medium      | 600                     | For flat finished vinyl and aluminum window frames, flat finished painted metals and plastics.                               |
| 31U23/UV                          | Polyethylene/Acrylic              | 3 (0.08)                  | 3                               | Low         | 450                     | For glass and window frames with a high-gloss surface, high-gloss painted metals and plastics.                               |
| 31U26/UV                          | Polyethylene/Acrylic              | 3 (0.08)                  | 7                               | Medium      | 450                     | For flat finished vinyl and aluminum window frames, flat finished painted metals and plastics.                               |
| 31U82P                            | Polyethylene/Acrylic              | 2.8 (0.07)                | 12.5                            | Medium      | 450                     | Protects a variety of automotive wheels.   |
| 31U84P                            | Polyethylene/Acrylic              | 3.2 (0.08)                | 15.5                            | Medium/High | 450                     | Protects a variety of automotive wheels.   |
| 3W25X                             | Co-Extruded Polyethylene/Acrylic  | 3 (0.08)                  | 5                               | Medium      | 450                     | Black/White tape does not lift and removes cleanly after exposure to sunlight. Excellent UV resistance for up to 9 months.** |
| 3W26X                             | Co-Extruded Polyethylene/Acrylic  | 3 (0.08)                  | 6                               | Medium      | 450                     |  |
| 3W29X                             | Co-Extruded Polyethylene/Acrylic  | 3 (0.08)                  | 7                               | Medium      | 450                     |  |
| 3W55X                             | Co-Extruded Polyethylene/Acrylic  | 3 (0.08)                  | 5                               | Medium      | 450                     |  |

\*Value measured as a cohesive bond strength in units.

\*\*UV performance was generated from actual exposure in South Eastern USA on selected painted metal surfaces.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Protective Tapes (cont.)

## Nominal Results

| Product                           | Tape Structure (Backing/Adhesive) | Total Thickness mils (mm) | Adhesion to Steel oz./in. width | Tack Level  | Elongation at Break (%) | Application Ideas  |
|-----------------------------------|-----------------------------------|---------------------------|---------------------------------|-------------|-------------------------|--|
| <b>Based on ASTM Test Method:</b> |                                   | <b>D-3652</b>             | <b>D-3330</b>                   |             | <b>D-3759</b>           |  |
| <b>Polyethylene Tapes</b>         |                                   |                           |                                 |             |                         |  |
| 21804                             | Polyethylene/Acrylic              | 2 (0.05)                  | 1                               | Very Low    | 450                     | Glass, CRT screens, LED and LCD screens.   |
| 21825                             | Polyethylene/Acrylic              | 2 (0.05)                  | 5                               | Medium      | 450                     | Painted, embossed, architectural building panels. Semi-gloss laminates and acrylic sheets.   |
| 21826                             | Polyethylene/Acrylic              | 2 (0.05)                  | 7                               | Medium      | 450                     | Slightly textured plastics, steel garage doors, metal extrusions and painted building panels.  |
| 2187                              | Polyethylene/Acrylic              | 2 (0.05)                  | 14                              | Medium      | 450                     | For textured plastics and metals.  |
| 3179                              | Polyethylene/Acrylic              | 3 (0.08)                  | 20                              | Very High   | 450                     | High-tack adhesive will adhere to most matte textured materials to help reduce rework.   |
| 31804                             | Polyethylene/Acrylic              | 3 (0.08)                  | 1                               | Very Low    | 450                     | High-gloss coated metals. CRT and LCD screens.   |
| 31825                             | Polyethylene/Acrylic              | 3 (0.08)                  | 5                               | Medium      | 450                     | Cut-to-length metal sheets in fabrication, shipping and storage. Semi-gloss, painted metals and plastic surfaces.  |
| 31826                             | Polyethylene/Acrylic              | 3 (0.08)                  | 7                               | Medium      | 450                     | Embossed, painted, metal building panels. Mill-finished aluminum and stainless sheets or coils in fabrication and shipping.                                    |
| 31829                             | Polyethylene/Acrylic              | 3 (0.08)                  | 11                              | Medium-High | 450                     | Painted metal, gloss finish building panels.   |
| 3187                              | Polyethylene/Acrylic              | 3 (0.08)                  | 11                              | High        | 450                     | Brushed aluminum and stainless. Hand applied to cultured marble (typically dusty surface).   |
| 3188                              | Polyethylene/Acrylic              | 3 (0.08)                  | 13                              | High        | 450                     | Matte, high-pressure laminates. Matte plastics.  |
| 4167                              | Polyethylene/Acrylic              | 4 (0.10)                  | 18                              | High        | 450                     | Textured decorative laminates and vinyl. Woodgrain laminates, matte plastics.  |
| 4179                              | Polyethylene/Acrylic              | 4 (0.10)                  | 20                              | High        | 450                     | Dissimilar metals. Automotive kick plates.   |
| 41825                             | Polyethylene/Acrylic              | 4 (0.10)                  | 5                               | Medium      | 450                     | Polished #3 and #4 finished stainless coils or sheets.   |
| 41826                             | Polyethylene/Acrylic              | 4 (0.10)                  | 7                               | Medium      | 450                     | Molded fiberglass or acrylic tubs and spas. Automotive applications such as bumpers, fascias, body side molding paint protection, tail lights or window glass. |
| 4187                              | Polyethylene/Acrylic              | 4 (0.10)                  | 13                              | High        | 450                     | Cultured marble and molded fiberglass. Woodgrain vinyl decorative laminates.   |
| 4188                              | Polyethylene/Acrylic              | 4 (0.10)                  | 15                              | High        | 450                     | Brushed anodized aluminum. Matte plastics or high-pressure laminates.  |
| 51825                             | Polyethylene/Acrylic              | 5 (0.13)                  | 3                               | Low         | 450                     | Painted metal, gloss finish building panels. Coated metal automotive trim.   |
| 51826                             | Polyethylene/Acrylic              | 5 (0.13)                  | 5                               | Medium      | 450                     | Mill finish aluminum and stainless coils and sheets. Molded fiberglass, polyester tubs and showers.  |
| 5187                              | Polyethylene/Acrylic              | 5 (0.13)                  | 10                              | Medium      | 450                     | Cultured marble, textured plastics, matte painted metals.  |
| 5188                              | Polyethylene/Acrylic              | 5 (0.13)                  | 15                              | High        | 450                     | Cultured marble, textured plastics, matte painted metals.  |
| 8179                              | Polyethylene/Acrylic              | 8 (0.21)                  | 15                              | High        | 450                     | Dissimilar metals.   |
| <b>Other Protective Tapes</b>     |                                   |                           |                                 |             |                         |  |
| 335/Pink                          | Polyester/Rubber                  | 1.5 (0.04)                | 13                              | Very Low    | 115                     | Low tack protective tape.  |
| 336/Clear                         | Polyester/Rubber                  | 1.5 (0.04)                | 13                              | Very Low    | 115                     | Transparent, low tack protective tape. Good attachment to smooth surfaces.   |
| 346/Tan                           | Flat Paper Stock/Rubber           | 17 (0.42)                 | 22                              | Very High   | 4                       | Heavy-duty protective tape.  |
| 9343/Black                        | Non-Woven/Acrylic                 | 19.5 (0.50)               | 27                              | Very High   | 400                     | Conformable for irregular shaped parts.  |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.



## 3M™ Polyurethane Protective Tapes (PPT) — Long-Term Protection

## Nominal Results

| Product                    | Tape Structure (Backing/Adhesive) | Color                     | Total Thickness mils (mm) | Adhesion to Steel oz./in. width | Tensile Strength lbs./in. (N/100 mm) | Elongation at Break (%) | Maximum Service Temp °F (°C) | Comments  |
|----------------------------|-----------------------------------|---------------------------|---------------------------|---------------------------------|--------------------------------------|-------------------------|------------------------------|---|
| Based on ASTM Test Method: |                                   |                           | D-3652                    | D-3330                          | D-3759                               |                         |                              |   |
| <b>Indoor Type</b>         |                                   |                           |                           |                                 |                                      |                         |                              |   |
| 8547                       | Polyurethane/Acrylic              | Transparent               | 13 (0.33)                 | 14 (15)                         | 75 (1313)                            | 500                     | 275 (135)                    | Flame resistant/low tack (passes NFPA 701).   |
| 8560                       | Polyurethane/Rubber               | Transparent               | 14 (0.35)                 | 18 (19.7)                       | 76 (1313)                            | 500                     | 275 (135)                    | Indoor grade with quick grab adhesive.  |
| 8561                       | Polyurethane/Acrylic              | Transparent               | 14 (0.35)                 | 62 (67)                         | 77 (1313)                            | 500                     | 275 (135)                    | Indoor grade.   |
| 8616                       | Polyurethane/Acrylic              | Transparent               | 12 (0.30)                 | 82 (90)                         | 32 (560)                             | 500                     | 200 (93)                     | Excellent bond to plasticized vinyls.   |
| 8617                       | Polyurethane/Rubber               | Transparent               | 12 (0.30)                 | 105 (110)                       | 32 (560)                             | 500                     | 150 (65)                     | Used as a patch on canvas, rubber, leather, and as a fabric joining tape.                             |
| 8686                       | Polyurethane/Flame Ret.           | Transparent               | 6 (0.15)                  | 23 (25) Aluminum                | 32 (560)                             | 500                     | 150 (65)                     | Meets F.A.R. 25.853(a). Low tack adhesive.  |
| <b>Outdoor Type</b>        |                                   |                           |                           |                                 |                                      |                         |                              |   |
| 8663                       | Polyurethane/Acrylic              | Transparent               | 18 (0.46)                 | 100 (110)                       | 117 (2049)                           | 500                     | 275 (135)                    | Excellent as a moisture barrier.  |
| 8671                       | Polyurethane/Acrylic              | Transparent               | 14 (0.35)                 | 86 (94)                         | 80 (1400)                            | 500                     | 275 (135)                    | Durable erosion protection with paper liner.  |
| 8672                       | Polyurethane/Acrylic              | Transparent               | 8 (0.25)                  | 79 (83)                         | 40 (700)                             | 500                     | 275 (135)                    | Thin durable erosion protection.  |
| 8673                       | Polyurethane/Acrylic              | Transparent               | 14 (0.35)                 | 86 (94)                         | 80 (1400)                            | 500                     | 275 (135)                    | Durable erosion protection with best UV stability. RESTRICTED AVAILABILITY OVER 12" WIDE.             |
| 8674                       | Polyurethane/Acrylic              | Transparent               | 8 (0.20)                  | 60 (66) Aluminum                | 48 (842)                             | 500                     | 200 (93)                     | Durable erosion protection with best UV stability. Dual liner. RESTRICTED AVAILABILITY OVER 12" WIDE. |
| 8681HS                     | Polyurethane/Acrylic              | Matte Clear Military Gray | 14 (0.35)                 | 95 (104)                        | 87 (1524)                            | 500                     | 275 (135)                    | Durable erosion protection with high shear adhesive.  |

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ EMI Shielding and Electrical Tapes

| Backing Material                 | Product | Typical Performance Characteristics   | Total Thickness (mils) | Adhesive Type                   | Master Size      | Specs |
|----------------------------------|---------|---|------------------------|---------------------------------|------------------|-------|
| Aluminum Foil                    | 1120    | For EMI shielding, static charge draining, grounding. Good for cable wrap. Easily die-cut.  | 4.0                    | Acrylic Conductive              | 27" x 36 yd      | UL    |
|                                  | 1170    | For EMI shielding, static charge draining, grounding. Easily die-cut.   | 3.2                    | Acrylic Conductive              | 23" x 18 yd      | UL    |
|                                  | 1267    | For EMI shielding, static charge draining, grounding. Solderable and easily die-cut.  | 5.0                    | Acrylic Non-conductive          | 23" x 18 yd      | UL    |
| Aluminum Foil/<br>Polyester Film | AL-36FR | Foil backing laminated with polyester film. Good resistance to oxidation, solvents and oils. Easily die-cut.  | 2.4                    | Acrylic Conductive              | 19.68" x 54.5 yd | UL    |
|                                  | AL-36NC | Same as AL-36FR.  | 2.2                    | Acrylic Non-conductive          | 19.68" x 54.5 yd | —     |
| Antistatic Films                 | 40      | Antistatic tape generates less than 50 volts on unwind.   | 2.2                    | Acrylic                         | 48" x 100 yd     | —     |
|                                  | 40PR    | General use utility tape for electronic components and assemblies, 1-mil clear polyester film backing with preprinted static symbol.  | 2.2                    | Antistatic Polymer Conductive   | 24" x 100 yd     | —     |
| Copper Foil                      | 1125    | For EMI shielding on a wide range of electronic applications. Easily die-cut.   | 3.5                    | Acrylic Non-conductive          | 24" x 36 yd      | UL    |
|                                  | 1126    | For EMI shielding, static charge draining when grounded. Easily die-cut.  | 3.5                    | Acrylic Conductive              | 24" x 36 yd      | MIL   |
|                                  | 1181    | For EMI shielding, static charge draining, grounding. Easily die-cut.   | 2.6                    | Acrylic Conductive              | 23" x 18 yd      | UL    |
|                                  | 1182    | Typically used to bond two surfaces, both physically and electrically. Also can provide EMI shielding, static charge draining, grounding. Easily die-cut.   | 3.5                    | Acrylic Conductive (both sides) | 23" x 18 yd      | UL    |
|                                  | 1183    | Oxidation resistant for long-term EMI shielding, static charge draining, grounding. Solderable and easily die-cut.  | 2.6                    | Acrylic Conductive              | 23" x 18 yd      | UL    |
|                                  | 1194    | For EMI shielding, static charge draining, grounding. Easily die-cut.   | 2.6                    | Acrylic Non-conductive          | 23" x 36 yd      | UL    |
|                                  | 1245    | For EMI shielding, static charge draining, grounding, solderable and easily die-cut.  | 4.0                    | Acrylic Non-conductive          | 23" x 18 yd      | UL    |
|                                  | 1345    | Embossed tin-plated copper foil. Oxidation resistant for long-term EMI shielding, static charge draining, grounding.  | 4.0                    | Acrylic Non-conductive          | 23" x 18 yd      | UL    |
| Epoxy Film                       | 1       | Excellent handling properties, high dielectric strength, solvent and flagging resistant; for use as an outer wrap on wrap and fill capacitors, coil cover, interlayer insulation and wire harness. Printable.   | 3.5                    | Acrylic                         | 23.75" x 100 yd  | UL    |
|                                  | 10      | Thermosetting, flame retardant, no liner. Tough, conformable, resistant to solder damage, puncture resistant, good electrical properties, good handling properties. For use as coil cover, anchor, harnessing, banding and as core, layer and crossover insulation. | 5.0                    | Rubber                          | 15.5" x 100 yd   | UL    |
|                                  | 20      | Reinforced, white acrylic adhesive, flame retardant, no liner, printable.   | 5.0                    | Acrylic                         | 15.5" x 100 yd   | UL    |
| Glass Cloth                      | 27      | Rubber adhesive, thermosetting, printable, no liner. Edge-tear resistant, conformable, abrasion resistant.  | 7.0                    | Rubber                          | 24.5" x 100 yd   | UL    |
|                                  | 69      | Silicone adhesive, thermosetting, printable, no liner. Edge-tear resistant, conformable, high temp flame-retardant adhesive.  | 7.0                    | Silicone                        | 24.5" x 100 yd   | UL    |
|                                  | 79      | Edge-tear resistant, conformable, solvent-resistant. For use as coil cover, anchor, and as core, layer and crossover insulation. Printable.   | 7.0                    | Acrylic                         | 24.5" x 100 yd   | —     |
| Metallized Cloth                 | 2191FR  | Lightweight, conformable, oxidation-resistant and high strength for EMI shielding and grounding. Easily die-cut.  | 5.5                    | Acrylic Conductive              | 19.68" x 21.8 yd | UL    |
|                                  | CN-3190 | Thicker version of 2191FR.  | 7.0                    | Acrylic Conductive              | 41.3" x 54.5 yd  | —     |
|                                  | X-7001  | Typically used to bond two surfaces both physically and electrically. Can also provide EMI shielding, static charge draining and grounding.   | 4.3                    | Acrylic Conductive              | 10.24" x 10.9 yd | —     |

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# 3M™ EMI Shielding and Electrical Tapes (cont.)

| Backing Material                          | Product  | Typical Performance Characteristics  | Total Thickness (mils) | Adhesive Type | Master Size    | Specs |
|---|--|--|------------------------|---------------|----------------|-------|
| Polyester Film                            | 5  | Clear, acrylic adhesive, no liner. Solvent-resistant for use in coil and capacitor holding applications.   | 2.5                    | Acrylic       | 24" x 100 yd   | UL    |
|   | 44   | Reinforced mat, rubber adhesive. Thermosetting, no liner.  | 5.5                    | Rubber        | 23.5" x 100 yd | UL    |
|   | 54   | Rubber adhesive, thermosetting, no liner. Used in fine wire coils where magnet wire serves to color code.  | 2.5                    | Rubber        | 22.5" x 100 yd | UL    |
|   | 55   | Thermosetting, no liner. Edge-tear, puncture and abrasion resistant for use as coil cover, lead pad and core, layer and crossover insulation.  | 7.5                    | Rubber        | 23.5" x 100 yd | UL    |
|   | 56   | Thermosetting, no liner. For use as layer insulation and coil cover in 130°F applications.   | 2.3                    | Rubber        | 15.5" x 100 yd | UL    |
|   | 57   | Thermosetting, no liner. Use as a coil cover, layer insulation and capacitor wrap where higher electrical strength is desirable.   | 3.3                    | Rubber        | 24" x 100 yd   | UL    |
|   | 58   | Use as a coil cover, layer insulation and capacitor wrap where higher electrical strength is desirable.  | 3.3                    | Rubber        | 15.5" x 100 yd | UL    |
|   | 74   | Conformable. Provides good electrical strength for coil applications where space is at a premium.  | 0.8                    | Rubber        | 15.5" x 100 yd | UL    |
|   | 75   | Thermosetting, lined. For use in bonding applications requiring a positive insulation barrier.   | 3.8                    | Rubber        | 15.5" x 100 yd | UL    |
|   | 1318-1   | 1 mil film; excellent flagging and solvent resistance. For use as an outer wrap on capacitors and coils; printable. Available in yellow, white and black.  | 2.5                    | Acrylic       | 24" x 100 yd   | UL    |
|   | 1318-2   | Same as 1318-1 but with 2 mil film.  | 3.3                    | Acrylic       | 24" x 100 yd   | UL    |
|   | 1350F-1  | 1 mil film with flame-retardant adhesive. Excellent flagging and solvent resistance. For use as an outer wrap on capacitors and coils; printable. Available in yellow, white and black.  | 2.5                    | Acrylic       | 24" x 100 yd   | UL    |
|   | 1350F-2  | Same as 1350-1 but with 2 mil film.  | 3.3                    | Acrylic       | 24" x 100 yd   | UL    |
|   | 1350T-1  | 1.5 mil, triple-layer, polyester film with flame-retardant acrylic adhesive. Excellent flagging and solvent resistance, with good wet grab and smooth, even unwind for use on automated equipment.   | 3.0                    | Acrylic       | 24" x 100 yd   | UL    |
|   | 1351-1   | 1 mil film with flame-retardant acrylic adhesive. Excellent flagging and solvent resistance. For use as inner layer and outer wrap insulation on coils. Smooth, even unwind for use on automatic equipment. Available in yellow and white. | 2.5                    | Acrylic       | 24" x 100 yd   | UL    |
|   | 1351-2   | Same as 1351-1 but with 2 mil film.  | 3.0                    | Acrylic       | 24" x 100 yd   | UL    |
| 1351T-1                                   | Same as 1350T-1 but available in yellow and white. | 3.0  | Acrylic                | 24" x 100 yd  | UL             |       |
| Polyester Film/<br>Filament<br>Reinforced | 46   | Good tensile strength and edge-tear resistance. For use in end-turn taping.  | 7.0                    | Rubber        | 23" x 100 yd   | UL    |
|   | 1046   | Scrim filament reinforcement with good tensile strength, edge-tear resistance, and designed for end turn taping.   | 7.0                    | Rubber        | 23" x 60 yd    | UL    |
|   | 1076   | Scrim filament reinforcement, solvent-resistant, high shear strength adhesive. Good tensile strength for holding in oil-filled transformer applications.   | 10.0                   | Acrylic       | 23" x 60 yd    | UL    |
|   | 1039   | Scrim filament reinforcement, solvent-resistant, high shear strength adhesive. Good tensile strength and edge-tear resistance. For holding applications.   | 7.0                    | Acrylic       | 23" x 60 yd    | —     |
|   | 1339   | Solvent-resistant, high shear strength adhesive. Good tensile strength and edge-tear resistance. For holding applications.   | 6.5                    | Acrylic       | 23" x 100 yd   | UL    |

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## 3M™ EMI Shielding and Electrical Tapes (cont.)

| Backing Material          | Product | Typical Performance Characteristics  | Total Thickness (mils) | Adhesive Type | Master Size     | Specs |
|---------------------------|---------|--|------------------------|---------------|-----------------|-------|
| Paper                     | 12      | For banding coils and for cover on bobbin-wound coils.   | 5.5                    | Rubber        | 23.25" x 100 yd | —     |
|                           | 16      | Conformable. For use as coil cover on bobbin-wound coils.  | 9.0                    | Rubber        | 23.25" x 100 yd | —     |
| PTFE Film                 | 60      | Thermosetting, no liner. Use on high temperature coils, capacitors and wire harnesses.   | 4.0                    | Silicone      | 13.5" x 100 yd  | UL    |
|                           | 61      | Thicker version of 60.   | 7.0                    | Silicone      | 13.5" x 100 yd  | UL    |
|                           | 62      | Thermosetting, printable. Better bonding of resins and varnishes.  | 4.0                    | Silicone      | 13.5" x 100 yd  | UL    |
|                           | 63      | Solvent-resistant adhesive for use where chemical properties are more important than temperature resistance. No liner.   | 3.5                    | Acrylic       | 13.5" x 100 yd  | UL    |
| Vinyl                     | 22      | Heavy-duty insulation designed for general purpose use where greater mechanical strength and abrasion resistance are required.   | 10.0                   | Rubber        | —               | UL    |
|                           | 33      | Provides moisture-tight electrical and mechanical protection; good resistance to abrasion, moisture, alkalis, acids and varying weather conditions (including ultraviolet exposure).   | 7.0                    | Rubber        | —               | UL    |
|                           | 33+     | All-weather vinyl insulating tape. Conformable for cold weather applications. Excellent resistance to abrasion, moisture, alkalis, acids, UV rays and weather. Thicker for quicker buildup.  | 7.0                    | Rubber        | —               | UL    |
|                           | 35      | Color-coding tape available in nine fade-resistant colors. Abrasion and weather resistant. For use in phase identification, color-coding leads and piping systems, and for marking safety areas. Resistant to moisture, alkalis, acids and copper corrosion. | 7.0                    | Rubber        | —               | UL    |
|                           | 88      | All-weather vinyl insulating tape. Conformable for cold weather applications. Excellent resistance to abrasion, moisture, alkalis, acids, and copper corrosion.  | 7.0                    | Rubber        | —               | UL    |
|                           | 1710    | Good quality, economical general purpose insulating tape. Good resistance to abrasion, moisture, alkalis, acid, copper corrosion and varying weather conditions (including ultraviolet).   | 7.0                    | Rubber        | —               | UL    |
| Magnetic/<br>Polymer Film | 1380    | Excellent high magnetic shielding at low frequency. Soft magnetic sheet sandwiched between layers of film. Thin, flexible, lightweight and easily die-cut.   | 11.8                   | Rubber        | 460mm x 610mm   | —     |

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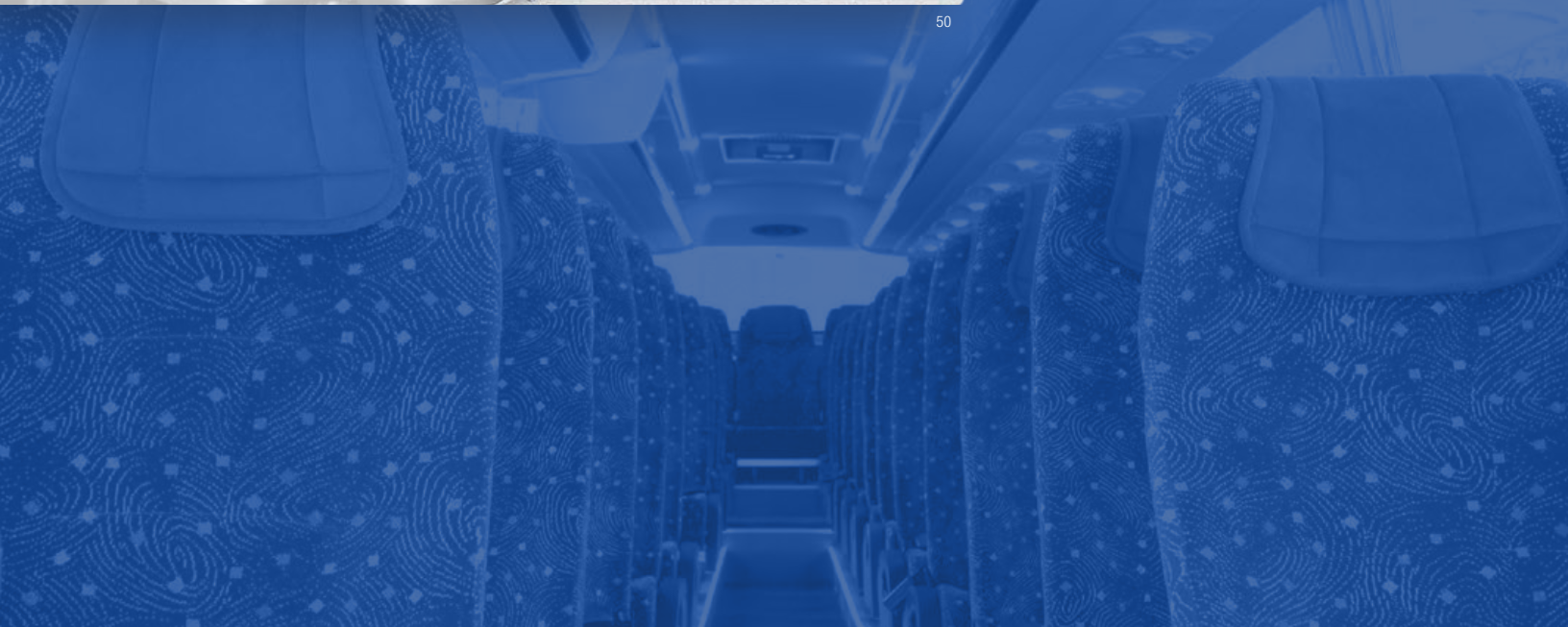
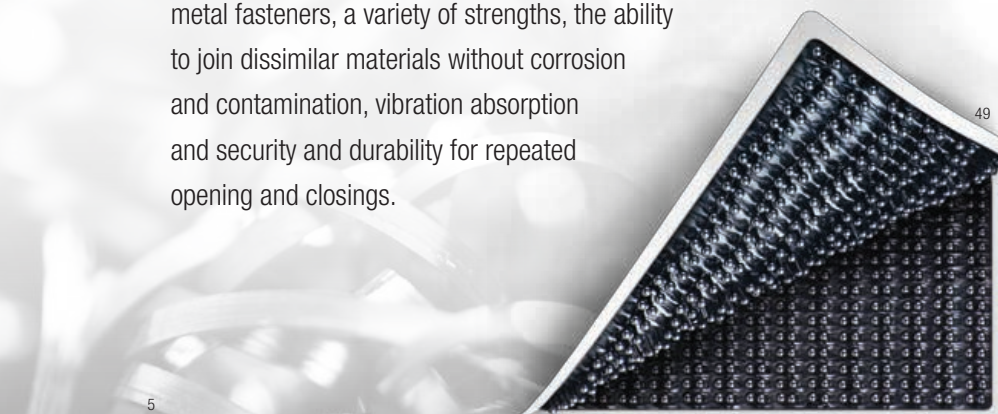


## Reclosable Fasteners

# Close It Right — Again and Again

When your customers' products require multiple openings and closings, 3M reclosable fasteners offer solutions that improve product appearance and performance, while saving production time.

3M's line of easy-to-apply fasteners offers a clean, discreet hold for aesthetic improvements, lightweight alternatives to metal fasteners, a variety of strengths, the ability to join dissimilar materials without corrosion and contamination, vibration absorption and security and durability for repeated opening and closings.



# 3M™ Hook and Loop Reclosable Fasteners

## Hooks on one side, loops on the other for secure, repeated closures

- Reliable PSA hold on contact with a variety of materials
- Low profile options, as much as 75% thinner than standard product
- Up to 5,000 closures for standard Hook and Loop

|   |  |
|---|--|
| ■ | Best Suggested Product   |
| ● | Performance Dependent on Selected Attachment Method                          |
| ▲ | Primer Recommended   |
| □ | Back-to-back fastener which can wrap around any type of surface or substrate |

| Product                 | Type                       | Adhesive                      | Closure Life | Product Material    | Liner Description   | Engaged Thickness  | Temperature Resistance °F (°C) | Substrates       |       |                             |                      |                             | Use            | Markets        |                  |                        |                    |                            |
|-------------------------|----------------------------|-------------------------------|--------------|---------------------|---|--------------------|--------------------------------|------------------|-------|-----------------------------|----------------------|-----------------------------|----------------|----------------|------------------|------------------------|--------------------|----------------------------|
|                         |                            |                               |              |                     |   |                    |                                | Metals (Al & SS) | Glass | Plastics (Acrylic, PC, ABS) | Powder Coated Paints | Low Surface Energy (PP, PE) |                | Indoor/Outdoor | Aerospace & Rail | Furniture & Upholstery | General Industrial | Marine & Specialty Vehicle |
| <b>Best</b>             |                            |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3526N                 | Hook                       | High Performance Rubber       | 5,000        | Nylon               | White, 3 mil (0.08mm) Polyethylene film 3M Red Print      | 0.14 in. (3.6mm)   | 120 (49)                       | ■                |       | ■                           | ■                    | ■                           | Indoor         | ■              | ■                | ■                      | ■                  |                            |
| SJ3527N                 | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3572                  | Hook                       | High Performance Acrylic      | 5,000        | Nylon               | Clear, 4 mil (0.10mm) Polypropylene film Embossed 3M logo | 0.14 in. (3.6mm)   | 200 (93)                       | ■                | ■     | ■                           | ▲                    | ▲                           | Indoor/Outdoor | ■              | ■                | ■                      | ■                  |                            |
| SJ3571                  | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3576                  | Hook                       |                               | 1,000        | Polyester           |   |                    |                                |                  | ■     | ■                           | ■                    | ▲                           | ▲              | Indoor/Outdoor | ■                | ■                      | ■                  | ■                          |
| SJ3577                  | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| <b>Better</b>           |                            |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3522                  | Hook                       | Plasticizer Resistant Acrylic | 5,000        | Nylon               | Clear, 3.5 mil (0.08mm) Polyolefin film, No print         | 0.14 in. (3.6mm)   | 158 (70)                       | ■                |       | ■                           |                      |                             | Indoor/Outdoor | ■              | ■                | ■                      | ■                  |                            |
| SJ3523                  | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3530                  | Hook                       | High Tack Rubber              | 5,000        | Nylon               | Yellow, 3 mil (mm) Polyethylene film No Print             | 0.14 in. (3.6mm)   | 90 (32)                        | ■                |       | ■                           | ■                    | ■                           | Indoor         | ■              | ■                | ■                      | ■                  |                            |
| SJ3531                  | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| <b>General Purpose</b>  |                            |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ30H                   | Hook                       | Rubber                        | 5,000        | Nylon               | White, 3 mil (0.08mm) Polyethylene film No Print          | 0.14 in. (3.6mm)   | 100 (38)                       | ■                |       | ■                           | ■                    | ■                           | Indoor         |                |                  | ■                      | ■                  |                            |
| SJ30L                   | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ60H                   | Hook                       | Acrylic                       | 5,000        | Nylon               | Clear, 4mil (0.10mm) Polypropylene film Embossed 3M logo  | 0.125 in. (3.2mm)  | 180 (82)                       | ■                |       | ■                           |                      |                             | Indoor/Outdoor |                |                  | ■                      | ■                  |                            |
| SJ60L                   | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3401                  | Loop                       | None                          | 5,000        | Nylon               | None  | 0.12 in. (3.0mm)   | 200 (93)                       | ●                | ●     | ●                           | ●                    | ●                           | Indoor/Outdoor |                |                  | ●                      | ●                  |                            |
| SJ3402                  | Hook                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3476                  | Hook                       |                               | 1,000        | Polyester           |   |                    | 0.13 in. (3.3mm)               |                  | ●     | ●                           | ●                    | ●                           | ●              | Indoor/Outdoor |                  |                        | ●                  | ●                          |
| SJ3477                  | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| <b>Low Profile/Thin</b> |                            |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3506                  | Hook                       | Acrylic                       | 25           | Polypropylene       | Brown #83 Polykraft Green Print                           | 0.034 in. (0.84mm) | 158 (70)                       | ■                | ■     | ■                           | ▲                    | ▲                           | Indoor/Outdoor |                |                  | ■                      | ■                  |                            |
| SJ3507                  | Loop                       |                               |              | Polyester           |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3000                  | Back-to-back hook and loop | None                          | 10           | Polypropylene/Nylon | None  | 0.053 in. (1.3mm)  | 200 (93)                       | □                | □     | □                           | □                    | □                           | Indoor         | □              | □                | □                      | □                  |                            |
| <b>Flame Resistant</b>  |                            |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3519FR                | Hook                       | Flame Resistant               | 5,000        | FR Nylon            | White, 3 mil (0.08mm) Polyethylene film 3M Red Print      | 0.14 in. (3.6mm)   | 158 (70)                       | ■                |       | ■                           | ■                    | ■                           | Indoor         | ■              | ■                | ■                      | ■                  |                            |
| SJ3518FR                | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3586FR                | Hook                       |                               | 1,000        | FR Polyester        |   |                    | 0.17 in. (4.3mm)               |                  | ■     |                             | ■                    | ■                           | ■              | Indoor         | ■                | ■                      | ■                  | ■                          |
| SJ3587FR                | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3419FR                | Hook                       | None                          | 5,000        | FR Nylon            | None  | 0.12 in. (3.0mm)   | 200 (93)                       | ●                | ●     | ●                           | ●                    | ●                           | Indoor/Outdoor |                |                  | ●                      | ●                  |                            |
| SJ3418FR                | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |
| SJ3486FR                | Hook                       |                               | 1,000        | FR Polyester        |   |                    | 0.13 in. (3.3mm)               |                  | ●     | ●                           | ●                    | ●                           | ●              | Indoor/Outdoor |                  |                        | ●                  | ●                          |
| SJ3487FR                | Loop                       |                               |              |                     |   |                    |                                |                  |       |                             |                      |                             |                |                |                  |                        |                    |                            |

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.



# 3M™ Dual Lock™ Reclosable Fasteners

## Holding power to replace screws, bolts and rivets

Durable enough to last through repeated opening and closing. Unique, interlocking mushroom-shaped heads snap shut and stay locked.

- Durable—up to 1,000 openings and closings before losing 50% of original tensile strength
- Helps reduce vibration
- Temperature, moisture and UV resistant
- Strong, pressure-sensitive adhesive bonds on contact
- Mushroom-shaped heads have **5X the tensile strength** of hook-and-loop products

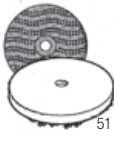
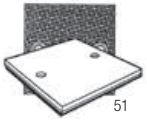


|   |   |
|---|---|
| ■ | Best Suggested Product                              |
| ● | Performance Dependent on Selected Attachment Method |
| ▲ | Primer Recommended                                  |

| Product  | Stem Density (per sq/in) | Adhesive                           | Color  | 3M Liner                         | Engaged Thickness  | Temperature Resistance °F (°C) | Substrates       |       |                             |                      |                             | Indoor/Outdoor | Markets          |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
|----------|--------------------------|------------------------------------|--------|----------------------------------|--------------------|--------------------------------|------------------|-------|-----------------------------|----------------------|-----------------------------|----------------|------------------|-------------------------|-----------------------|------------------------|--------------------|----------------------------|------------------------|---|---|--|--|--|
|          |                          |                                    |        |                                  |                    |                                | Metals (Al & SS) | Glass | Plastics (Acrylic, PC, ABS) | Powder Coated Paints | Low Surface Energy (PP, PE) |                | Aerospace & Rail | Appliance & Electronics | Design & Construction | Furniture & Upholstery | General Industrial | Marine & Specialty Vehicle | POP, Display & Signage |   |   |  |  |  |
| SJ3540   | 250                      | Rubber                             | Black  | White, 5 mil (0.13mm) Polyolefin | 0.23 in (5.7mm)    | 120 (49)                       | ■                |       | ■                           | ■                    | ■                           | Indoor         |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3541   | 400                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3542   | 170                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3550   | 250                      | White Acrylic                      | Black  | Clear, 4 mil (0.10mm) Polyolefin | 0.23 in (5.7mm)    | 200 (93)                       | ■                | ■     | ■                           | ▲                    | ▲                           | Indoor/Outdoor | ■                | ■                       | ■                     | ■                      | ■                  | ■                          | ■                      | ■ | ■ |  |  |  |
| SJ3551   | 400                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3552   | 170                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3558   | 250                      | White Acrylic                      | Clear* | Clear, 4 mil (0.10mm) Polyolefin | 0.23 in (5.7mm)    | 200 (93)                       | ■                | ■     | ■                           | ▲                    | ▲                           | Indoor/Outdoor |                  | ■                       | ■                     | ■                      | ■                  | ■                          | ■                      | ■ | ■ |  |  |  |
| SJ3560   | 250                      | Clear Acrylic                      | Clear  | Clear, 4 mil (0.10mm) Polyolefin | 0.23 in (5.7mm)    | 220 (104)                      | ■                | ■     | ■                           | ▲                    | ▲                           | Indoor/Outdoor |                  | ■                       | ■                     | ■                      | ■                  | ■                          | ■                      | ■ | ■ |  |  |  |
| SJ3561   | 400                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3562   | 170                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3550CF | 250                      | Clear Acrylic                      | Black  | Clear, 4 mil (0.10mm) Polyolefin | 0.23 in (5.7mm)    | 220 (104)                      | ■                | ■     | ■                           | ▲                    | ▲                           | Indoor/Outdoor |                  | ■                       | ■                     | ■                      | ■                  | ■                          | ■                      | ■ | ■ |  |  |  |
| SJ3551CF | 400                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3552CF | 170                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3870   | 250                      | Modified Acrylic                   | Black  | Red, 4.5 mil (0.11mm) Polyolefin | 0.24 in (6.1mm)    | 140 (60)                       | ■                |       | ■                           | ■                    | ▲                           | Indoor/Outdoor |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3871   | 400                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3872   | 170                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3782   | 250                      | Low Surface Energy Acrylic         | Black  | Brown, 83# Polykraft             | 0.16 in (4.1mm)    | 120 (49)                       | ■                |       | ■                           | ■                    | ■                           | Indoor/Outdoor |                  | ■                       |                       | ■                      | ■                  | ■                          | ■                      | ■ | ■ |  |  |  |
| SJ3440   | 250                      | None                               | Black  | No Liner                         | 0.15 in (3.86mm)   | 220 (104)                      | ●                | ●     | ●                           | ●                    | ●                           | Indoor/Outdoor |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3441   | 400                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3442   | 170                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3443   | 400                      | Non-woven backing with no adhesive | Black  | No Liner                         | 0.28 in (7.1mm)    | 220 (104)                      | ●                | ●     | ●                           | ●                    | ●                           | Indoor/Outdoor |                  | ●                       | ●                     | ●                      | ●                  | ●                          | ●                      | ● | ● |  |  |  |
| SJ3444   | 170                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3445   | 250                      |                                    |        |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ3460   | 250                      | None                               | Clear  | No Liner                         | 0.15 in (3.86mm)   | 220 (104)                      | ●                | ●     | ●                           | ●                    | ●                           | Indoor/Outdoor |                  | ●                       | ●                     | ●                      | ●                  | ●                          | ●                      | ● | ● |  |  |  |
| SJ3463   | 400                      | Piece Part Circle†                 | Black  | No Liner                         | 0.20 in** (5.1mm)  | 220 (104)                      | ■                |       | ■                           | ■                    | ■                           | Indoor/Outdoor |                  | ■                       | ■                     | ■                      | ■                  | ■                          | ■                      | ■ | ■ |  |  |  |
| SJ3481   | 400                      | Rigid Strip†                       | Black  | No Liner                         | 0.20 in** (5.1mm)  | 220 (104)                      | ●                | ●     | ●                           | ●                    | ●                           | Indoor/Outdoor |                  | ●                       | ●                     | ●                      | ●                  | ●                          | ●                      | ● | ● |  |  |  |
| SJ4570   | Low Profile/Thin         | Low Surface Energy Acrylic         | Clear  | Brown, 83# Polykraft             | 0.098 in (2.489mm) | 158 (70)                       | ■                |       | ■                           | ■                    | ■                           | Indoor/Outdoor |                  | ■                       | ■                     | ■                      | ■                  | ■                          | ■                      | ■ |   |  |  |  |
| SJ4575   |                          |                                    | Black  |                                  |                    |                                |                  |       |                             |                      |                             |                |                  |                         |                       |                        |                    |                            |                        |   |   |  |  |  |
| SJ4580   |                          | Clear Acrylic                      | Clear  | Red, 4.5 mil (0.11mm) Polyolefin | 0.12 in (3.0mm)    | 200 (93)                       | ■                | ■     | ■                           | ▲                    | ▲                           | Indoor/Outdoor |                  | ■                       | ■                     | ■                      | ■                  | ■                          | ■                      | ■ | ■ |  |  |  |

\*Clear fastener utilizes a white adhesive giving the product a white appearance    \*\*Single thickness; not engaged    †No adhesive

Note: The technical information and data on these pages should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Dual Lock™ — Piece Parts

| Product Number  | Product Type <sup>1</sup> | Dimensions <sup>2</sup><br>L x W or Dia.<br>inch (mm) | Functional<br>Size/Area<br>in. sq. (cm sq)       | Engaged<br>Thickness <sup>3</sup><br>inch (mm) | Counterbored<br>Hole Dia.<br>inch (mm) | Through<br>Hole Dia. | Spacing<br>Between Holes<br>(on centers)<br>inch (mm) | Comments   |  |              |
|---|---------------------------|---|--|--|--|----------------------|---|--|--|--------------|
| <b>Circle with a Counterbored Center Hole</b>   |                           |   |  |  |  |                      |   |  |  |              |
|            | SJ3251                    | 250   | 1-1/8 (28.5)                                     | 0.88 (5.68)                                    | 0.323 (8.20)                           | 0.38 (9.5)           | 0.19 (4.9)  | Attach using screws, rivets, etc. Circular profile reduces chance for edge lift. |  |              |
|   | SJ3755                    | 250   |  | 0.91 (5.87)                                    | 0.323 (8.20)                           | 0.31 (7.9)           | 0.16 (4.1)  |  |  |              |
|   | SJ3762                    | 400   |  | 0.91 (5.87)                                    | 0.288 (7.31)                           | 0.31 (7.9)           | 0.16 (4.1)  |  |  |              |
|   | SJ3263                    | 250   | 13/16 (20.6)                                     | 0.44 (2.84)                                    | 0.288 (7.31)                           | 0.31 (7.9)           | 0.16 (4.1)  |  |  |              |
|   | SJ3763                    | 400   |  |  |  |                      |   |  |  |              |
|   | SJ3235                    | 400   | 13/16 (20.6)                                     | 0.42 (2.71)                                    | 0.288 (7.31)                           | 0.35 (9.0)           | 0.16 (4.1)  |  |  |              |
|   | SJ3465                    | 400   | 9/16 (14.3)                                      | 0.17 (1.10)                                    | 0.288 (7.31)                           | 0.31 (7.9)           | 0.16 (4.1)  |  |  |              |
| <b>Circle with No Hole</b>  |                           |   |  |  |  |                      |   |  |  |              |
| SJ3238  | 250                       | 1-1/8 (28.6)  | 0.99 (6.39)                                      | 0.323 (8.20)                                   | —                                      | —                    | —   | —  |  |              |
| <b>Rectangle with Two Counterbored Holes</b>  |                           |   |  |  |  |                      |   |  |  |              |
|            | SJ3252                    | 400   | 1.5 x 1.5<br>(38.1 x 38.1)                       | 2.08 (13.4)                                    | 0.288 (7.31)                           | 0.33 (8.3)           | 0.16 (4.2)  | 1 (25.4)   | —  |              |
|   | SJ3261                    |   |  | 2.11 (13.6)                                    | 0.288 (7.31)                           | 0.29 (7.5)           | 0.14 (3.6)  | 1 (25.4)   | 15 mils (0.4mm) thicker than SJ3767.   |              |
|   | SJ3767                    |   |  | 0.273 (6.93)                                   | 0.29 (7.5)                             | 0.14 (3.6)           | 1 (25.4)  | 15 mils (0.4mm) thinner than SJ3261.   |  |              |
| <b>Rectangle with No Holes</b>  |                           |   |  |  |  |                      |   |  |  |              |
|           | SJ3204                    | 250   | 1 x 1<br>(25.4 x 25.4)                           | 1.0 (6.45)                                     | 0.288 (7.31)                           | —                    | —   | —  | —  |              |
|   | SJ3481                    | 400   | 48 x 1 or 48 x 2<br>(1.22 x 25.4 or 1.22 x 50.8) | Dependent on final length                      | 0.288 (7.31)                           | —                    | —   | —  | Excellent for custom cutting rectangular pieces. See SJ3766, SJ3768 or SJ3799 for ultrasonic attachment version. |              |
| <b>Rectangular Slide-in (2 edges cut down forming a flange) for Mounting into a Bracket</b> |                           |   |  |  |  |                      |   |  |  |              |
|          | SJ3736                    | 170   | 1 x 1.22<br>(25.4 x 30.7)                        | 1.0 (6.45)                                     | 0.288 (7.31)                           | —                    | 0.079 (2.0)   | 0.049 (1.25)   | Allows quick and easy installation or replacement.   |              |
|   | SJ3717                    | 400   |  |  |  | —                    | 0.079 (2.0)   | 0.049 (1.25)   |  |              |
|   | SJ3227                    | 250   | 5/8 x 1<br>(16 x 25.4)                           | 0.48 (3.10)                                    |  | —                    | 0.098 (2.5)   | 0.079 (2.0)  |  |              |
|   | SJ3700                    | 170   | 25/32 x 25/32<br>(20 x 20)                       | 0.43 (2.77)                                    |  | —                    | 0.098 (2.5)   | 0.079 (2.0)  |  |              |
|   | SJ3228                    | 400   | 25/32 x 25/32<br>(20 x 20)                       | 0.43 (2.77)                                    |  | —                    | 0.098 (2.5)   | 0.079 (2.0)  |  |              |
|   | SJ3229                    | 250   | 1 x 1<br>(25.4 x 25.4)                           | 0.76 (4.90)                                    |  | —                    | 0.098 (2.5)   | 0.079 (2.0)  |  |              |
|   | SJ3750                    | 400   | (32 x 50)  | 1.95 (12.58)                                   |  | 0.303 (7.70)         | —   | 0.079 (2.0)  |  | 0.049 (1.25) |
|   | SJ3248                    | 250   | 1 x 1.1<br>(25.4 x 28)                           | 0.79 (5.10)                                    |  | 0.298 (7.57)         | —   | 0.137 (3.5)  |  | 0.52 (1.32)  |
|   | SJ3249                    | 400   | 1 x 1.1<br>(25.4 x 28)                           | 0.79 (2.77)                                    |  | 0.298 (7.57)         | —   | 0.137 (3.5)  |  | 0.52 (1.32)  |

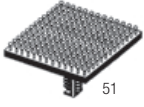
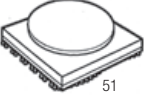
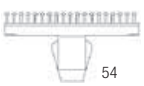
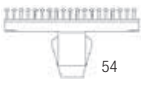
- 1 – Type 400 is not recommended to be engaged to other type 400 fasteners. As well, type 170 should not be engaged with type 170. Engagement strength is dependent upon the area engaged and number of stems engaged.
- 2 – The actual 3M™ Dual Lock™ area available for (dis)engagement may be less than the part dimension. This should be taken into consideration when designing how much 3M™ Dual Lock™ will be required for a specific application.
- 3 – Engaged thickness is for the shown product engaged to 3M™ Dual Lock™ Reclosable Fasteners SJ3781 (a type 250 Dual Lock™ with an acrylic adhesive backcoating). You can mix products with different backcoatings (standard pressure sensitive adhesives or via our 3M™ Dual Lock Mix and Match Program) to obtain a greater variety of engaged thicknesses. Any of these 3M™ Dual Lock™ Reclosable Fasteners can be engaged with 3M™ Scotchmate™ Reclosable Fasteners, providing a quick grab closure with high strength and limited life.

## Notes:

- Suggest 4 square inches of fastener per pound of load as a starting point for evaluation of long term performance. Suggest Type 250 engaged to Type 250 as a starting point for evaluations. Tensile strength increases approximately in the following order: 170/250 < 250/250 ≤ 170/400 < 250/400.
- The information provided is considered representative only for use in narrowing the possibilities of 3M™ Dual Lock™ piece parts to be considered for further evaluation, and should not be used for specification purposes.
- User is responsible for determining whether the 3M product is fit for the desired end use. Refer to specific product technical data sheets for more detailed product performance information.
- All 3M™ Dual Lock™ Piece parts are comprised completely of black polypropylene.

This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Dual Lock™ — Piece Parts with Functional Bases

| Product Number  | Product Type <sup>1</sup> | Dimensions <sup>2</sup><br>L x W or Dia.<br>(mm) | Functional Size/Area<br>in. sq. (cm sq) | Engaged Thickness <sup>3</sup><br>inch (mm) | Comments                 |  |
|---|---------------------------|--|---|---|--------------------------|--|
| <b>Pine Tree Shaped Push-in Stem (for insertion into wood and similar substrates over a range of thicknesses)</b> |                           |  |   |   |                          |  |
|                                  | SJ3209                    | 250  | 26 x 26                                 | 1.04 (6.7)                                  | 0.293 (7.44)             | 12mm (0.49") long base stem, designed to fit a 7.9mm to 8.4mm diameter hole.   |
|   | SJ3749                    | 400  |   |   |                          |  |
|   | SJ3222                    | 250  | 26 x 26                                 | 1.04 (6.7)                                  | 0.293 (7.44)             | 12mm (0.49") long base stem, designed to fit a 7mm to 7.5mm diameter hole.   |
|   | SJ3224                    | 400  |   |   |                          |  |
|   | SJ3848                    | 250  | 26 x 26                                 | 1.04 (6.7)                                  | 0.293 (7.44)             | 16.5mm long base stem, designed to fit a 7.9mm to 8.4mm diameter hole.   |
|   | SJ3748                    | 400  |   |   |                          |  |
|   | SJ3266                    | 170  | 26 x 26                                 | 1.04 (6.7)                                  | 0.293 (7.44)             | 12.74mm long base stem, designed to fit an 8.20mm to 8.50mm diameter hole.   |
|   | SJ3267                    | 250  |   |   |                          |  |
|   | SJ3268                    | 400  |   |   |                          |  |
|   | SJ3272                    | 170  |   |   |                          |  |
|   | SJ3273                    | 250  |   |   |                          |  |
|   | SJ3274                    | 400  |   |   |                          | White version of SJ3266.   |
|   |                           |  |   |   | White version of SJ3267. |  |
|   |                           |  |   |   | White version of SJ3268. |  |
| <b>Single Round Cone-shaped Base (for sliding into a key hole slot)</b>   |                           |  |   |   |                          |  |
|                                  | SJ3743                    | 170  | 20 x 20                                 | 0.62 (4.0)                                  | 0.293 (7.44)             | Fits key hole slot 3.1mm to 3.25mm thick panel that is 18mm in diameter. The shaft (stem of the cone) is 3.25mm tall and 4mm wide. |
|   | SJ3705                    | 250  |   |   |                          |  |
|   | SJ3221                    | 250  | 20 x 20                                 | 0.62 (4.0)                                  | 0.272 (6.91)             | Fits key hole slot in a 2.65mm thick panel that is 18mm in diameter. The shaft (stem of the cone) is 2.65mm tall and 4mm wide.     |
|   | SJ3731                    | 400  |   |   |                          |  |
|   | SJ3277                    | 170  | 26 x 26                                 | 1.04 (6.7)                                  | 0.293 (7.44)             | Fits key hole slot in a 3mm thick panel that is 14mm in diameter. The shaft (stem of the cone) is 3mm tall and 4mm wide.           |
|   | SJ3278                    | 250  |   |   |                          |  |
|   | SJ3279                    | 400  |   |   |                          |  |
| <b>Snap-in Base for 6.5mm x 10mm Rectangular Hole</b>   |                           |  |   |   |                          |  |
|                                | SJ3704                    | 250  | 26 x 26                                 | 1.04 (6.7)                                  | 0.293 (7.44)             | Fits a 1.30mm to 1.59mm thick panel.   |
|   | SJ3713                    | 400  |   |   |                          |  |
|   | SJ3825                    | 170  | 26 x 26                                 | 1.04 (6.7)                                  | 0.283 (7.19)             | Fits a 0.71mm to 0.91mm thick panel.   |
|   | SJ3826                    | 250  |   |   |                          |  |
|   | SJ3827                    | 400  |   |   |                          |  |
| <b>Snap-in Base for a Slotted Hole in a 0.70mm to 1.20mm Thick Panel</b>  |                           |  |   |   |                          |  |
|                                | SJ3804                    | 170  | 26 x 26                                 | 1.04 (6.7)                                  | 0.293 (7.44)             | Fits a 0.70mm to 1.00mm thick sheet metal. 5.35 ± 0.05mm x 21.25 + .00/- .15mm slot.   |
|   | SJ3805                    | 250  |   |   |                          | Fits a 1.00mm to 1.20mm thick sheet metal. 6.00 ± 0.05mm x 21.25 + .00/- .15mm slot.   |
|   | SJ3806                    | 400  |   |   |                          |  |

- 1 – Type 400 is not recommended to be engaged to other type 400 fasteners. As well, type 170 should not be engaged with type 170. Engagement strength is dependent upon the area engaged and number of stems engaged.
- 2 – The actual 3M™ Dual Lock™ area available for (dis)engagement may be less than the part dimension. This should be taken into consideration when designing how much 3M™ Dual Lock™ will be required for a specific application.
- 3 – Engaged thickness is for the shown product engaged to 3M™ Dual Lock™ Reclosable Fasteners SJ3781 (a type 250 Dual Lock™ with an acrylic adhesive backcoating). You can mix products with different backcoatings (standard pressure sensitive adhesives or via our 3M™ Dual Lock Mix and Match Program) to obtain a greater variety of engaged thicknesses. Any of these 3M™ Dual Lock™ Reclosable Fasteners can be engaged with 3M™ Scotchmate™ Reclosable Fasteners, providing a quick grab closure with high strength and limited life.

**Notes:**

- Suggest 4 square inches of fastener per pound of load as a starting point for evaluation of long term performance. Suggest Type 250 engaged to Type 250 as a starting point for evaluations. Tensile strength increases approximately in the following order: 170/250 < 250/250 ≤ 170/400 < 250/400.
- The information provided is considered representative only for use in narrowing the possibilities of 3M™ Dual Lock™ piece parts to be considered for further evaluation, and should not be used for specification purposes.
- User is responsible for determining whether the 3M product is fit for the desired end use. Refer to specific product technical data sheets for more detailed product performance information.
- All 3M™ Dual Lock™ Piece parts are comprised completely of black polypropylene.

This technical information and data should be considered representative or typical only and should not be used for specification purposes.



## Specialty Products

# Protection Against Noise, Scratches, Vibration, Slips and Falls

Life is full of risks, but you can offer your customers protection against some of them. 3M specialty products feature pressure-sensitive adhesives for long-lasting and fast-bonding protection where and when you need it.

# 3M™ Bumpon™ Protective Products — Resilient Rollstock Products

| Product             | Color        | Tape Construction  |                     | Product Hardness<br>ASTM D-2240 | Adhesive                |                     | Liner          |                     | Adhesion to Steel<br>oz./0.5 in. | Comments  |
|---------------------|--------------|--------------------|---------------------|---------------------------------|-------------------------|---------------------|----------------|---------------------|----------------------------------|---|
|                     |              | Backing Facestock  | Caliper mils** (mm) |                                 | Type                    | Thickness mils (mm) | Type           | Thickness mils (mm) |                                  |   |
| <b>5200 Series*</b> |              |                    |                     |                                 |                         |                     |                |                     |                                  |   |
| SJ5208              | Light Brown  | Polyurethane Foam  | 125 (3.2)           | 25 Shore A                      | Synthetic Rubber (R-25) | 2.0 (0.05)          | PET Film Liner | 4.0 (0.1)           | 55                               | UL 94HB recognized.   |
| SJ5216              | Light Brown  | Polyurethane Foam  | 62 (1.6)            | 25 Shore A                      | Synthetic Rubber (R-25) | 2.0 (0.05)          | PET Film Liner | 4.0 (0.1)           | 55                               | UL 94HB recognized.   |
| <b>5600 Series*</b> |              |                    |                     |                                 |                         |                     |                |                     |                                  |   |
| SJ5616              | Clear        | Clear Polyurethane | 62 (1.6)            | 70 Shore A                      | Acrylic (A-20)          | 1.0 (0.03)          | PET Film Liner | 4.0 (0.1)           | 25                               | Clear rollstock, great where invisible die-cuts are needed. |
| SJ5632              | Clear        | Clear Polyurethane | 31 (0.8)            | 70 Shore A                      | Acrylic (A-20)          | 1.0 (0.03)          | PET Film Liner | 4.0 (0.1)           | 25                               | Clear rollstock, great where invisible die-cuts are needed. |
| <b>5800 Series*</b> |              |                    |                     |                                 |                         |                     |                |                     |                                  |   |
| SJ5808              | Black, Brown | Polyurethane       | 125 (3.2)           | 70 Shore A                      | Natural Rubber (R-30)   | 3.6 (0.09)          | PET Film Liner | 4.0 (0.1)           | 22                               | UL 94HB recognized.   |
| SJ5816              | Black, Brown | Polyurethane       | 62 (1.6)            | 70 Shore A                      | Natural Rubber (R-30)   | 3.6 (0.09)          | PET Film Liner | 4.0 (0.1)           | 22                               | UL 94HB recognized.   |
| SJ5832              | Black, Brown | Polyurethane       | 31 (0.8)            | 70 Shore A                      | Natural Rubber (R-30)   | 3.6 (0.09)          | PET Film Liner | 4.0 (0.1)           | 22                               | UL 94HB recognized.   |
| <b>5900 Series*</b> |              |                    |                     |                                 |                         |                     |                |                     |                                  |   |
| SJ5904              | Black        | Polyurethane Foam  | 250 (6.4)           | 36 Shore A                      | Acrylic (A-20)          | 4.8 (0.12)          | PET Film Liner | 4.0 (0.1)           | 25                               | UL 94HB recognized.   |
| SJ5908              | Black        | Polyurethane Foam  | 125 (3.2)           | 36 Shore A                      | Acrylic (A-20)          | 4.8 (0.12)          | PET Film Liner | 4.0 (0.1)           | 25                               | UL 94HB recognized.   |
| SJ5916              | Black        | Polyurethane Foam  | 62 (1.6)            | 36 Shore A                      | Acrylic (A-20)          | 4.8 (0.12)          | PET Film Liner | 4.0 (0.1)           | 25                               | —   |
| <b>6000 Series*</b> |              |                    |                     |                                 |                         |                     |                |                     |                                  |   |
| SJ6005              | Black, White | Polyurethane       | 197 (5.0)           | 70 Shore A                      | Acrylic (A-20)          | 4.8 (0.12)          | PET Film Liner | 4.0 (0.1)           | 25                               | UL 94HB recognized.   |
| SJ6008              | Black, Brown | Polyurethane       | 125 (3.2)           | 70 Shore A                      | Acrylic (A-20)          | 4.8 (0.12)          | PET Film Liner | 4.0 (0.1)           | 25                               | UL 94HB recognized.   |
| SJ6016              | Black, Brown | Polyurethane       | 62 (1.6)            | 70 Shore A                      | Acrylic (A-20)          | 4.8 (0.12)          | PET Film Liner | 4.0 (0.1)           | 25                               | UL 94HB recognized.   |
| SJ6032              | Black, Brown | Polyurethane       | 31 (0.8)            | 70 Shore A                      | Acrylic (A-20)          | 4.8 (0.12)          | PET Film Liner | 4.0 (0.1)           | 25                               | UL 94HB recognized.   |
| <b>6200 Series*</b> |              |                    |                     |                                 |                         |                     |                |                     |                                  |   |
| SJ6208              | Black        | Polyurethane       | 125 (3.2)           | 70 Shore A                      | Synthetic Rubber (R-25) | 2.0 (0.05)          | PET Film Liner | 4.0 (0.1)           | 55                               | Fast bonding, permanent adhesion. UL 94HB recognized.       |
| SJ6216              | Black        | Polyurethane       | 62 (1.6)            | 70 Shore A                      | Synthetic Rubber (R-25) | 2.0 (0.05)          | PET Film Liner | 4.0 (0.1)           | 55                               | Fast bonding, permanent adhesion. UL 94HB recognized.       |
| SJ6232              | Black        | Polyurethane       | 31 (0.8)            | 70 Shore A                      | Synthetic Rubber (R-25) | 2.0 (0.05)          | PET Film Liner | 4.0 (0.1)           | 55                               | Fast bonding, permanent adhesion. UL 94HB recognized.       |

\*Service Temperature Range: -30°F (-34°C) to 150°F (66°C) and up to 225°F (107°C) intermittent exposure.

\*\*1 mil = .001 inches

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.



# 3M™ Bumpon™ Protective Products — Resilient Rollstock

| Resilient Rollstock Features   | 5800 Series               | 5600/5900/6000 Series               | 6200 Series               |
|--|---------------------------|-------------------------------------|---------------------------|
| <b>Adhesive</b>  | Natural Rubber (R-30)     | Acrylic (A-20)                      | Synthetic Rubber (R-25)   |
| <b>Adhesion (Peel)</b><br>Low Surface Energy<br>High Surface Energy  | Good<br>Good              | Poor<br>Good                        | Excellent<br>Excellent    |
| <b>Static Shear</b><br>75°F<br>120°F<br>158°F                        | Excellent<br>Fair<br>Poor | Excellent<br>Excellent<br>Excellent | Excellent<br>Good<br>Fair |
| <b>Initial Adhesion</b><br>Low Surface Energy<br>High Surface Energy | Good<br>Good              | Poor<br>Fair                        | Excellent<br>Excellent    |
| <b>Adhesion Buildup</b>  | Some                      | Gradual                             | Some                      |
| <b>Solvent Resistance</b>  | Good                      | Excellent                           | Good                      |
| <b>Age Life</b>  | Good                      | Excellent                           | Good                      |

| Product                               | Tape Construction |                      | Color               | Comments   | Adhesive              |                     | Liner     |                     | Product Hardness<br>oz./0.5 inch<br>ASTM-D 2240 | Adhesion<br>to Steel<br>oz./0.5 in. | Master<br>Size                 | Specs |
|---------------------------------------|-------------------|----------------------|---------------------|--|-----------------------|---------------------|-----------|---------------------|---|-------------------------------------|--------------------------------|-------|
|                                       | Caliper<br>(Mils) | Backing<br>Facestock |                     |  | Type                  | Thickness<br>(Mils) | Type      | Thickness<br>(Mils) |   |                                     |                                |       |
| <b>5600 Series — Acrylic</b>          |                   |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ5632                                | 31                | Polyurethane         | Clear               | “Clear” Rollstock great where “invisible” die cuts are needed. | Acrylic A-20          | 1                   | PET Liner | 4                   | 70 Shore A                                      | 25                                  | 9" x 72 yd<br>9" x 36 yd       | UL    |
| SJ5616                                | 62                |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ5608                                | 125               |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| <b>5800 Series — Natural Rubber</b>   |                   |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ5832                                | 31                | Polyurethane         | Black, Brown, White | UL 94HB recognized.  | Natural Rubber R-30   | 2                   | PET Liner | 4                   | 70 Shore A                                      | 22                                  | 13.5" x 72 yd<br>13.5" x 36 yd | UL    |
| SJ5816                                | 62                |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ5808                                | 125               |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| <b>5900 Series — Acrylic</b>          |                   |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ5916                                | 62                | Polyurethane Foam    | Black               | UL 94HB recognized, except for SJ5916.                         | Acrylic A-20          | 2                   | PET Liner | 4                   | 36 Shore A                                      | 25                                  | 13.5" x 36 yd<br>13.5" x 18 yd | UL    |
| SJ5908                                | 125               |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ5904                                | 250               |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| <b>6000 Series — Acrylic</b>          |                   |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ6032                                | 31                | Polyurethane         | Black, White        | UL 94HB recognized.  | Acrylic A-20          | 2                   | PET Liner | 4                   | 70 Shore A                                      | 25                                  | 13.5" x 72 yd<br>13.5" x 36 yd | UL    |
| SJ6016                                | 62                |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ6008                                | 125               |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ6004                                | 198               |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| <b>6200 Series — Synthetic Rubber</b> |                   |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ6232                                | 31                | Polyurethane         | Black, White, Gray  | Fast bonding, permanent adhesion. UL 94HB recognized.          | Synthetic Rubber R-25 | 2                   | PET Liner | 4                   | 70 Shore A                                      | 55                                  | 9" x 72 yd<br>9" x 36 yd       | UL    |
| SJ6216                                | 62                |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |
| SJ6208                                | 125               |                      |                     |  |                       |                     |           |                     |   |                                     |                                |       |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.



# 3M™ Bumpon™ Protective Products — Molded Products

| Product                              | Color                                  | Adhesive <sup>1</sup> | Shape                    | Width in. (mm) | Height in. (mm) | Hardness (Shore A) | Comments  |
|--------------------------------------|--|-----------------------|--------------------------|----------------|-----------------|--------------------|---|
| <b>Quiet Clear</b>                   |  |                       |                          |                |                 |                    |   |
| SJ6506                               | Clear                                  | R-25                  | Hemisphere               | 0.375 (9.5)    | 0.150 (3.8)     | 55                 | Clear, sound damping properties.                              |
| SJ6512                               | Clear                                  | R-25                  | Cylindrical              | 0.500 (12.7)   | 0.140 (3.5)     | 55                 |   |
| SJ6553                               | Clear                                  | R-25                  | Hexagonal Cone           | 0.433 (11.0)   | 0.120 (3.1)     | 55                 |   |
| SJ6561                               | Clear                                  | R-25                  | Hexagonal Hemisphere     | 0.433 (11.0)   | 0.150 (3.8)     | 55                 |   |
| <b>Cylindrical</b>                   |  |                       |                          |                |                 |                    |   |
| SJ5001                               | Black                                  | R-30                  | Cylindrical              | 0.500 (12.7)   | 0.145 (3.6)     | 70                 | Concave top; Good load bearing capacity.                      |
| SJ5012                               | White, Gray, Brown, Black              | R-30                  | Cylindrical              | 0.500 (12.7)   | 0.140 (3.6)     | 70                 | Versatile foot style for use on high-energy surfaces.         |
| SJ5076                               | Black                                  | R-30                  | Cylindrical              | 0.315 (8.0)    | 0.110 (2.8)     | 70                 | Flat top, nonskid for appliances and electronics.             |
| SJ5312                               | Transparent                            | A-20                  | Cylindrical              | 0.500 (12.7)   | 0.140 (3.6)     | 75                 | Universal color matching. Nonslip. Ideal for picture framing. |
| SJ5744                               | Black                                  | R-30                  | Cylindrical              | 0.750 (19.1)   | 0.160 (4.1)     | 70                 | Excellent load bearing capacity.                              |
| SJ6112                               | Black                                  | A-25                  | Cylindrical              | 0.500 (12.7)   | 0.140 (3.6)     | 70                 | Versatile foot style, best for low-energy materials.          |
| <b>Hemisphere</b>                    |  |                       |                          |                |                 |                    |   |
| SJ5003                               | White, Gray, Brown, Black              | R-30                  | Hemisphere               | 0.440 (11.2)   | 0.200 (5.1)     | 70                 | Good energy absorption on impact.                             |
| SJ5009                               | White, Gray, Brown, Black              | R-30                  | Hemisphere               | 0.880 (22.4)   | 0.400 (10.2)    | 70                 | Protects wall from door knob.                                 |
| SJ5017                               | White, Gray, Brown, Black              | R-30                  | Hemisphere               | 0.750 (19.1)   | 0.380 (9.7)     | 70                 | Recessed center, like screw-in bumper.                        |
| SJ5027                               | Black, Gray, Brown                     | R-30                  | Hemisphere               | 0.630 (16.0)   | 0.312 (7.9)     | 70                 | Cushions heavier items like glass or liftgate.                |
| SJ5302                               | Transparent                            | A-20                  | Hemisphere               | 0.312 (7.9)    | 0.085 (2.2)     | 75                 | For feet on small electronics.                                |
| SJ5306                               | Transparent                            | A-20                  | Hemisphere               | 0.375 (9.5)    | 0.150 (3.8)     | 75                 | Smaller, energy absorbing with small contact point.           |
| SJ5382                               | Transparent                            | A-20                  | Hemisphere               | 0.250 (6.4)    | 0.075 (1.9)     | 75                 | Smaller contact point for energy absorption.                  |
| SJ5532                               | White, Black                           | R-30                  | Hemisphere               | 1.880 (47.8)   | 0.660 (16.8)    | 70                 | Large, ideal for door stops.                                  |
| <b>Hexagon</b>                       |  |                       |                          |                |                 |                    |   |
| SJ5077                               | Black                                  | R-30                  | Hexagonal Width Flat Top | 0.750 (19.1)   | 0.160 (4.1)     | 70                 | Smallest hemisphere for appliances and electronics feet use.  |
| SJ5201                               | Light Brown                            | R-25                  | Hexagon Die-Cut          | 0.433 (11.0)   | 0.125 (3.2)     | 25                 | Unique with round flat top.                                   |
| SJ5202                               | Light Brown                            | R-25                  | Hexagon Die-Cut          | 0.433 (11.0)   | 0.063 (1.6)     | 25                 | Soft foam with quick stick R-25 adhesive for cabinets.        |
| <b>Square</b>                        |  |                       |                          |                |                 |                    |   |
| SJ5007                               | White, Black                           | R-30                  | Tapered Square           | 0.413 (10.4)   | 0.098 (2.5)     | 70                 | Nested on pad for fast removal.                               |
| SJ5008                               | White, Gray, Brown, Black, Transparent | R-30                  | Tapered Square           | 0.500 (12.7)   | 0.125 (3.1)     | 70                 | Popular, thin nonskid for appliances or electronics.          |
| SJ5018                               | White, Gray, Brown, Black              | R-30                  | Tapered Square           | 0.500 (12.7)   | 0.230 (5.8)     | 70                 | Larger height, smaller top surface for heat dissipation.      |
| SJ5023                               | White, Gray, Brown, Black              | R-30                  | Tapered Square           | 0.812 (20.6)   | 0.300 (7.6)     | 70                 | For larger appliances and electronics.                        |
| SJ5514                               | White, Gray, Brown, Black              | R-30                  | Tapered Square           | 0.812 (20.6)   | 0.520 (13.2)    | 70                 | Larger, high profile for heat dissipation.                    |
| SJ5705                               | Black                                  | R-30                  | Tapered Square           | 1.280 (32.4)   | 0.250 (6.4)     | 70                 | Larger, low profile for heavier appliances.                   |
| <b>Printed Circuit Board Spacers</b> |  |                       |                          |                |                 |                    |   |
| SJ61A1                               | Black                                  | R-25                  | Cylindrical              | 0.312 (7.9)    | 0.200 (5.1)     | 70                 | Shape for PCB spacer applications.                            |
| SJ61A3                               | Black                                  | R-25                  | Cylindrical              | 0.375 (9.5)    | 0.250 (6.35)    | 70                 |   |
| SJ61A4                               | Black                                  | R-25                  | Cylindrical              | 0.375 (9.5)    | 0.311 (7.9)     | 70                 |   |
| SJ61A8                               | Black                                  | R-25                  | Cylindrical              | 0.375 (9.5)    | 0.135 (3.4)     | 70                 |   |
| <b>Top-Hat</b>                       |  |                       |                          |                |                 |                    |   |
| SJ6115                               | Black                                  | R-25                  | Cylindrical              | 0.625 (15.9)   | 0.187 (4.75)    | 70                 | Flat top use for recesses.                                    |
| SJ6125                               | Black                                  | R-25                  | Hemisphere               | 0.625 (15.9)   | 0.250 (6.35)    | 70                 | Resists shear and removal.                                    |
| <b>Easy Slide</b>                    |  |                       |                          |                |                 |                    |   |
| SJ6344                               | Black                                  | R-25                  | Cylindrical              | 0.750 (19.0)   | 0.160 (4.0)     | 80                 | Use for low friction.   |

1 – A-20: Acrylic High strength adhesion to high energy surface.  
R-25: Synthetic Rubber Ideal for low surface energy substrates.  
R-30: Natural Rubber Excellent adhesion to a wide variety of surfaces.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## 3M™ Viscoelastic Damping Polymers

### Vibration and Shock Solutions

3M™ Viscoelastic Damping Polymers have been proven to reduce vibration in automobiles, disk drives and aircraft. Through continuous improvement, 3M can now offer you a choice of standard damping polymers or ultra-pure damping polymers to expand application possibilities to include the following:

Cover constrained layer dampers; multi-layer laminates using metal or polymeric films; free layer dampers; suspension dampers; isolators; panel, pipe, and wing dampers; and more.

### Market Application Ideas

- Automotive including body panels and under the hood
- Aerospace including space craft and commercial aircraft
- Electronics including disk drives
- Sporting goods including golf clubs and tennis racquets
- Appliances including washing machines

### Performance Versatility

- Choice of enhanced acrylic polymer for improved vibration damping or ultra-pure polymer for improved vibration damping, plus low out gassing and ionics
- Choice of good to excellent thermal stability for long term applications at moderate temperatures, or short term high temperature exposure
- Damping in temperatures ranging from as low as 0°C (32°F) to as high as 105°C (221°F)
- Select Loss Factor and Storage Modulus values to meet requirements

### Construction Availability

| Polymer  | Thickness      | Liner     | Typical Performance Characteristics   |
|--|----------------|-----------|---|
| <b>Standard Viscoelastic Damping Polymer</b>   |                |           |   |
| 110  | 2 and 5 mil    | Paper     | Good damping performance at higher temperature: 40–105°C (104–221°F). Heat and pressure needed for bonding.   |
| 112  | 1, 2 and 5 mil | Paper     | Good damping performance at 0–65°C (32–142°F). Pressure only for adequate bonding at room temperature (21°C/70°F) for many applications.                                |
| 130  | 2 and 5 mil    | Polyester | Good damping performance at moderate temperature range of 20–90°C (68–194°F). Pressure only for adequate bonding at room temperature (21°C/70°F) for some applications. |
| <b>Ultra-Pure Viscoelastic Damping Polymer</b> |                |           |   |
| 242  | 1 and 2 mil    | Polyester | Good damping performance at 0–65°C (32–142°F). Low outgassing by GC/MS (Modified ASTM 4526). Low ionics.  |

## 3M™ Safety-Walk™ Slip Resistant Materials

| Product | Product Characteristics  | Type             | Adhesive         | Color  | Master Roll Size |
|---------|--|------------------|------------------|--------|------------------|
| 220     | Non-mineral fine texture, for barefoot traffic.                        | Fine Resilient   | Acrylate         | Clear  | 48" x 120 ft     |
| 280     | Non-mineral fine texture, for barefoot traffic.                        | Fine Resilient   | Acrylate         | White  | 48" x 120 ft     |
| 310     | Non-mineral, medium texture, for barefoot or light traffic.            | Medium Resilient | Synthetic Rubber | Black  | 48" x 120 ft     |
| 370     | Non-mineral, medium texture, for barefoot or light traffic.            | Medium Resilient | Synthetic Rubber | Gray   | 48" x 120 ft     |
| 510     | Mineral coated, foil backing for conformability.                       | Conformable      | Synthetic Rubber | Black  | 48" x 120 ft     |
| 530     | Mineral coated, foil backing for conformability.                       | Conformable      | Synthetic Rubber | Yellow | 48" x 120 ft     |
| 610     | Mineral coated, heavy texture for light to heavy traffic.              | General Purpose  | Synthetic Rubber | Black  | 48" x 120 ft     |
| 620     | Mineral coated, heavy texture for light to heavy traffic.              | General Purpose  | Synthetic Rubber | Clear  | 48" x 120 ft     |
| 660     | Mineral coated, heavy texture for light to heavy traffic.              | General Purpose  | Synthetic Rubber | Brown  | 48" x 120 ft     |
| 710     | Mineral coated, coarse texture for extreme traffic.                    | Course           | Synthetic Rubber | Black  | 48" x 120 ft     |
| 2141    | <b>Primer</b> prepares rough or porous surfaces for proper adhesion.   | —                | —                | —      | —                |
| 5569    | <b>Edge Sealing Compound</b> to provide extra protection from liquids. | —                | —                | —      | —                |
| 903     | <b>Rubber Hand Roller</b> to help provide a firm bond.                 | —                | —                | —      | —                |

Custom adhesives available on 300, 500, 600 series products.  
Custom colors available on 300 series products.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Premium Polyurethane Foam Tapes

| Product                      | Color | Adhesive           | Approximate Thickness in. (mm) | Roll Size    | Density lb/cu ft (kg/cu m) | Tensile Strength (psi (kPa)) | Tensile Elongation % min. | Tear Strength min. pli (kN/m) | Compression Deflection @23°C, psi (kPa) | Temperature Tolerance |              |
|------------------------------|-------|--------------------|--------------------------------|--------------|----------------------------|------------------------------|---------------------------|-------------------------------|---|-----------------------|--------------|
|                              |       |                    |                                |              |                            |                              |                           |                               |   | Short-Term            | Long-Term    |
| <b>Medium Density Series</b> |       |                    |                                |              |                            |                              |                           |                               |   |                       |              |
| 12026                        | Black | With* or without** | 1/16 (1.6)                     | 54" x 300 ft | 15 (239)                   | 50 (345)                     | 90                        | 4.0 (0.7)                     | 305–6.5 (24–45)                         | 250°F (121°C)         | 150°F (66°C) |
| 12032                        | Black |                    | 3/32 (2.4)                     | 54" x 225 ft |                            |                              |                           |                               |   |                       |              |
| 12028                        | Black |                    | 1/8 (3.2)                      | 54" x 160 ft |                            |                              |                           |                               |   |                       |              |
| 12036                        | Black |                    | 3/16 (4.8)                     | 54" x 100 ft |                            |                              |                           |                               |   |                       |              |
| 12034                        | Black |                    | 1/4 (6.4)                      | 54" x 80 ft  |                            |                              |                           |                               |   |                       |              |
| 12038                        | Black |                    | 3/8 (9.5)                      | 54" x 60 ft  |                            |                              |                           |                               |   |                       |              |
| 12030                        | Black |                    | 1/2 (12.7)                     | 54" x 40 ft  |                            |                              |                           |                               |   |                       |              |
| <b>High Density Series</b>   |       |                    |                                |              |                            |                              |                           |                               |   |                       |              |
| 12046                        | Black | With* or without** | 1/16 (1.6)                     | 54" x 300 ft | 20 (320)                   | 75 (517)                     | 100                       | 7.0 (1.2)                     | 8–12 (55–83)                            | 250°F (121°C)         | 150°F (66°C) |
| 12062                        | Black |                    | 3/32 (2.4)                     | 54" x 225 ft |                            |                              |                           |                               |   |                       |              |
| 12048                        | Black |                    | 1/8 (3.2)                      | 54" x 160 ft |                            |                              |                           |                               |   |                       |              |
| 12056                        | Black |                    | 3/16 (4.8)                     | 54" x 100 ft |                            |                              |                           |                               |   |                       |              |
| 12054                        | Black |                    | 1/4 (6.4)                      | 54" x 80 ft  |                            |                              |                           |                               |   |                       |              |
| 12049                        | Black |                    | 3/8 (9.5)                      | 54" x 60 ft  |                            |                              |                           |                               |   |                       |              |
| 12050                        | Black |                    | 1/2 (12.7)                     | 54" x 40 ft  |                            |                              |                           |                               |   |                       |              |

\*Adhesive Selection

\*\*Non Adhesive foams are UL 94HBF, File E61941 Recognized Components.

| Product | Adhesive Family | Adhesive Thickness (mils) | Carrier | Liner   | Liner Thickness (mils) |
|---------|-----------------|---------------------------|---------|---------|------------------------|
| 6035PC  | 300MP           | 5.0                       | None    | 58# PCK | 4.2                    |
| 9772WL  | 300MP           | 2.0                       | None    | 96# PCK | 7.0                    |
| 9775WL  | 300MP           | 5.0                       | None    | 96# PCK | 7.0                    |
| 9832    | 300MP           | 4.8                       | PET     | 58# PCK | 4.2                    |
| 97053   | Special         | 3.0                       | Scrim   | 50# DK  | 3.2                    |

## Automotive Specifications for Non-adhesive Foams

| Manufacturer | Specification # | Medium Density Foams Type/Class | High Density Foams Type/Class |
|--------------|-----------------|---------------------------------|-------------------------------|
| Chrysler®    | MS-AY549        | A2                              | A1                            |
| Ford®        | WSS-M2D496      | A4                              | A5                            |
| GM®          | 6098M           | Type 1                          | Type 2                        |
| GMW          | 14196           | Type 2                          | Type 3                        |

## Automotive Specifications for Adhesive Foam Combinations

| Manufacturer | Specification # | Foam Series  | Adhesive # |
|--------------|-----------------|--|------------|
| Chrysler®    | MS-AY 522       | Medium and high density foam series laminated to the adjacent 3M Adhesive Tapes. | 6035PC     |
| Ford®        | WSA-M11P19      |  | 9832       |
| GM®          | 3622            |  | 97053      |

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## Flexographic Mounting Systems


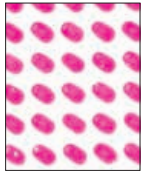
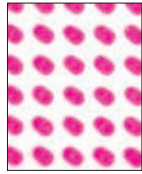

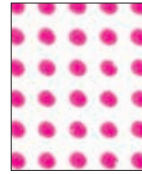

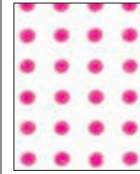
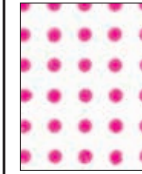

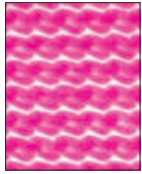
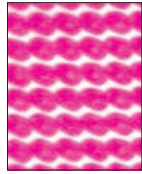

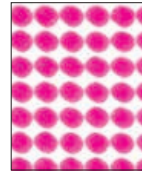
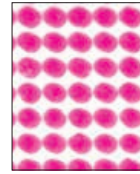
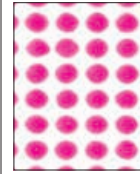
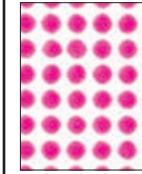











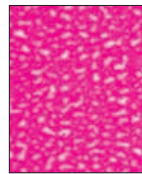
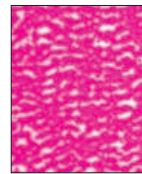
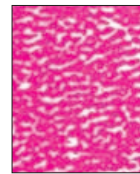
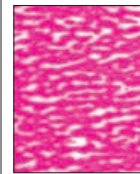
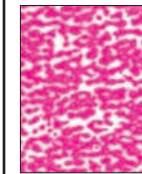
# Ensure Superior Print Quality

For halftone work where dot gain is a concern, softer tapes optimize reproduction. When solids and dots share the plate, a combination tape can properly balance the result. When your customer wants solid ink and crisp lines, you'll want firm, high density mounting tape.

3M offers a wide selection of adhesives, foams and thickness for the superior print quality your customers demand.



# 3M™ Flexographic Mounting Systems

| 3M™ Combination Printing Tapes   |   |   |   |   |  |   | 3M™ Process Printing Tapes  |
|--|---|---|---|---|--|---|---|
| 18 Series: Firm  | 17 Series: Medium Firm  | 15 Series: Medium   | 10 Series: Standard   | 13 Series: Medium Soft  | 19 Series: Light Medium  | 12 Series: Light  | 11 Series: Process  |
| <b>10% Highlight</b>   |   |   |   |   |  |   |   |
|                 |                        |          |                              |              |      |    |        |
| 57   | 58  | 59  | 60  | 61  | 62   | 63  | 64  |
| <b>40% Midtone</b>   |   |   |   |   |  |   |   |
|                 |                        |          |                              |              |      |    |        |
| 65   | 66  | 67  | 68  | 69  | 70   | 71  | 72  |
| <b>Reverse</b>   |   |   |   |   |  |   |   |
|                |                       |         |                             |             |     |   |       |
| 73   | 74  | 75  | 76  | 77  | 78   | 79  | 80  |
| <b>100% Solid</b>  |   |   |   |   |  |   |   |
|               |                      |        |                            |            |    |  |      |
| 81   | 82  | 83  | 84  | 85  | 86   | 87  | 88  |
| Quality results when plate contains mostly solids in a combination of solid and halftone images. | Quality results when plate contains slightly more solids in a combination of solid and halftone images. | Quality results for high speed printing with fine type reverses and expanded color gamut. | Quality results when solid and halftone areas are equally important.  | Quality results for high speed printing of combination work when halftone areas exceed solid. | Soft support improves tone reproduction when process and halftone images predominate.  | Low density maximizes dot reproduction high quality process work and screen printing. | Low density maximizes dot reproduction for high quality process work and screen printing. |
| E1815, E1815H, 1815M<br>E1820, E1820H, 1820M<br>E1840H, E1860H                                   | E1715, E1715H<br>E1720, E1720H, 1720M   | E1515, E1515H<br>E1520, E1520H  | E1015, E1015H, 1015, 1015M<br>E1020, E1020H, 1020, 1020M, 1020R<br>E1040, E1040H, 1040<br>E1060, E1060H, 1060 | E1315, E1315H<br>E1320, E1320H  | E1915, E1915H, 1915M, E1915S, E1915HS<br>E1920, E1920H, 1920M, E1920S, E1920HS, 1920S, | E1215, E1215H<br>E1220, E1220H  | E1115, E1115H, 1115<br>E1120, E1120H, 1120  |

E – Air Release Medium Plate Side Adhesion    EH – Air Release High Plate Side Adhesion    S – High Sleeve Side Adhesion for Urethane Sleeves    M – Modified Plate Side Adhesion  
DL – Double Liner    R – Rubber Plates    K – High sleeve side adhesion for composite sleeves

Additional calipers available for specialized applications.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Flexographic Mounting Systems (cont.)

| Product Number  | Application Thickness in. (mm)   | Manufactured Target Thickness in. (mm) | Description                  | Plates   | Cylinders   | Color  | Features |   |   |
|---|--|--|------------------------------|--|---|--------|----------|---|---|
| <b>3M™ Flexomount™ Solid Plate Mounting Tapes</b>                                     |  |  |                              |  |   |        |          |   |   |
| <b>Solid Printing Tapes</b>   | 411DL  | 0.015 (0.38)                           | 0.015 (0.38)                 | Gray double coated tape with a soft rubber adhesive on each side of a vinyl carrier. Available in single and double liner. | P/R   | SS/S/K | Gray     | Gray vinyl tapes with high adhesion. Helps reduce edge lifting. Helps minimize pin holing on solid work.            |   |
|   | 412DL  | 0.020 (0.51)                           | 0.020 (0.51)                 |  | P/R   | SS/S/K | Gray     |   |   |
|   | 447DL  | 0.010 (0.25)                           | 0.010 (0.25)                 |  | P/R   | SS/S/K | Gray     |   |   |
|   | 413DL  | 0.015 (0.38)                           | 0.015 (0.38)                 | Black double coated tape with a firm rubber adhesive on each side of a vinyl carrier. Available only in double liner.      | P/R   | SS/S/K | Black    | Black vinyl — lower adhesion. Higher temperature and solvent resistance. Helps minimize pin holing on solids.       |   |
|   | 414DL  | 0.020 (0.51)                           | 0.020 (0.51)                 |  | P/R   | SS/S/K | Black    |   |   |
| <b>18 Series 3M™ Cushion-Mount™ Plus Firm Combination Plate Mounting Tapes</b>        |  |  |                              |  |   |        |          |   |   |
| <b>Combination Printing Tapes</b>   | E1815H, E1815, 1815M   | 0.015 (0.38)                           | 0.017 (0.43)                 | Differential acrylate adhesive system on each side of a foam carrier, protected by a release liner on one side.            | P   | SS/S/K | Blue     | Better solid ink density than the standard combination printing tapes. Clean removal from plate and print cylinder. |   |
|   | E1820H, E1820, 1820M   | 0.020 (0.51)                           | 0.022 (0.56)                 |  | P   | SS/S/K | Blue     |   |   |
|   | E1840H, E1860H   | 0.040 (1.02)<br>0.060 (1.52)           | 0.042 (1.07)<br>0.062 (1.57) |  | P   | SS/S/K | Blue     |   |   |
|   | <b>17 Series 3M™ Cushion-Mount™ Plus Medium Firm Combination Plate Mounting Tapes</b>  |  |                              |  |   |        |          |   |   |
|   | <b>Combination Printing Tapes</b>  | E1715H, E1715                          | 0.015 (0.38)                 | 0.017 (0.43)   | Differential acrylate adhesive system on each side of a foam carrier, protected by a release liner on one side. | P      | SS/S/K   | Teal  | Quality results when plate contains slightly more solids in a combination of solid and halftone images.             |
| E1720H, E1720, 1720M  |  | 0.020 (0.51)                           | 0.022 (0.56)                 |  |   |        |          |   |   |
| <b>15 Series 3M™ Cushion-Mount™ Plus Medium Combination Plate Mounting Tapes</b>      |  |  |                              |  |   |        |          |   |   |
| <b>Combination Printing Tapes</b>   |  | E1515H, E1515                          | 0.015 (0.38)                 | 0.017 (0.43)   | Differential acrylate adhesive system on each side of a foam carrier, protected by a release liner on one side. | P      | SS/S/K   | Purple  | High quality, medium combination print.   |
|   |  | E1520H, E1520                          | 0.020 (0.51)                 | 0.022 (0.56)   |   | P      | SS/S/K   | Purple  |   |
|   | <b>10 Series 3M™ Cushion-Mount™ Plus Standard Combination Plate Mounting Tapes</b>     |  |                              |  |   |        |          |   |   |
|   | <b>Combination Printing Tapes</b>  | E1015H, E1015, 1015M                   | 0.015 (0.38)                 | 0.017 (0.43)   | Differential acrylate adhesive system on each side of a foam carrier, protected by a release liner on one side. | P      | SS/S/K   | White   | Most versatile 3M™ Cushion-Mount™ Plus Tapes. Effectively prints most types of flexographic printing.               |
|   |  | E1020H, E1020, 1020M, 1020R            | 0.020 (0.51)                 | 0.022 (0.56)   |   | P      | SS/S/K   | White   |   |
| E1040, 1040, E1040H   |  | 0.040 (1.02)                           | 0.042 (1.07)                 | P/R  |   | SS/S/K | White    |   |   |
| E1060, 1060, E1060H   |  | 0.060 (1.52)                           | 0.062 (1.57)                 | P  |   | SS/S/K | White    |   |   |
| E1040, 1040, E1040H   |  | 0.040 (1.02)                           | 0.042 (1.07)                 | P  |   | SS/S/K | White    |   |   |
| <b>13 Series 3M™ Cushion-Mount™ Plus Medium Soft Combination Plate Mounting Tapes</b> |  |  |                              |  |   |        |          |   |   |
| <b>Combination Printing Tapes</b>   | E1315H, E1315  | 0.015 (0.38)                           | 0.017 (0.43)                 | Differential acrylate adhesive system.   | P   | SS/S/K | Yellow   | High quality, medium-soft combination print.  |   |
|   | E1320H, E1320  | 0.020 (0.51)                           | 0.020 (0.51)                 |  | P   | SS/S/K | Yellow   |   |   |
|   | <b>19 Series 3M™ Cushion-Mount™ Plus Light Medium Combination Plate Mounting Tapes</b> |  |                              |  |   |        |          |   |   |
|   | <b>Combination Printing Tapes</b>  | E1915H, E1915, E1915HS, 1915M, E1915S  | 0.015 (0.38)                 | 0.017 (0.43)   | Differential acrylate adhesive system on each side of a foam carrier, protected by a release liner on one side. | P      | SS/S     | Pink  | Soft support improves tone reduction when process and halftone images predominate.                                  |
|   |  | E1920H, E1920, 1920M                   | 0.020 (0.51)                 | 0.022 (0.56)   |   | P      | SS/S     | Pink  |   |
| E1920S, 1920S, E1920HS  |  | 0.020 (0.51)                           | 0.022 (0.56)                 | P  |   | S/K    | Pink     |   |   |
| <b>12 Series 3M™ Cushion-Mount™ Plus Light Combination Plate Mounting Tapes</b>       |  |  |                              |  |   |        |          |   |   |
| <b>Combination Printing Tapes</b>   |  | E1215H, E1215                          | 0.015 (0.38)                 | 0.017 (0.43)   | Differential acrylate adhesive system on each side of a foam carrier, protected by a release liner on one side. | P      | SS/S     | Orange  | —   |
|   | E1220H, E1220  | 0.020 (0.51)                           | 0.022 (0.56)                 | P  |   | SS/S   | Orange   |   |   |
|   | <b>11 Series 3M™ Cushion-Mount™ Plus Process Plate Mounting Tapes</b>                  |  |                              |  |   |        |          |   |   |
|   | <b>Process Printing</b>  | E1115H, E1115, 1115                    | 0.015 (0.38)                 | 0.017 (0.43)   | Differential acrylate adhesive system on each side of a foam carrier, protected by a release liner on one side. | P      | SS/S     | Tan   | Better tone reproduction than the standard combination printing tapes. Clean removal from plate and print cylinder. |
|   |  | E1120H, E1120, 1120                    | 0.020 (0.51)                 | 0.022 (0.56)   |   | P      | SS/S     | Tan   |   |

E – Air Release Liner    M – Modified Plate Side Adhesion    DL – Double Liner    S – Urethane Sleeve    K – High sleeve side adhesion for composite sleeves  
 SS – Stainless Steel Cylinder    R – Rubber Plates    P – Photopolymeric Plates    EH – High Plate Side Adhesion

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## E-Series Tapes with Easy Mount Adhesive

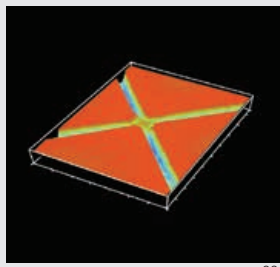
### On Easy with Reduced Air Entrapment

Unlike flat or pebbled liners, E-Series liners are cross-hatched on both sides with unique microchannels that allow air to flow throughout the adhesive. Improved airflow virtually eliminates air bubble problems for easier application. Air releases from between the tape and plate, and between the tape and cylinder or sleeve for virtually bubble-free mounting. Setup is faster with smoother surfaces for cleaner print quality and higher productivity.

## EH-Series Adhesive to Hold the Edge on Small Diameter Cylinders

3M EH-Series Tapes combine the air-release of 3M E-Series Tapes with higher plate side adhesion to resist edge lifting on cylinder diameters as small as 2 inches.

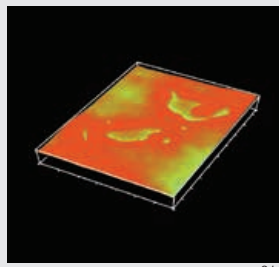
### Microscopic View of Adhesive Surface Measured with Interferometer



Easy Mount Adhesive

#### Stays On With Reduced Edge-Lifting

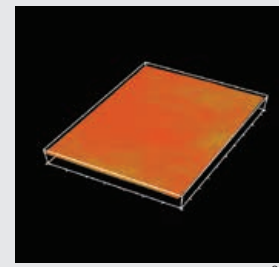
Exclusive 3M plate-side adhesive maintains tight contact between tape and plate to dramatically reduce edge lifting. Saves the prep time, downtime, and labor of sealing plate edges.



Pebbled Liner

#### Peels Off Easily to Reduce Plate Damage

E-series tapes grip tightly but peel off so easily you can virtually eliminate plate back treatment. You're less likely to damage plates, so you can save time, labor and money.



Flat Liner

#### Bubble-Free Print Quality

Prevent blemishes in screen and process printing, and help assure proper registration.

## 3M™ Thin Tapes

When cushioning is unnecessary, these tapes can mount both rubber and photopolymer plates. Some are also repositionable.

| Product Number | Tape Thickness Inch (mm) | Description  | Compressible Sleeves | Corrugated | Rotary Letterpress | Make Ready | Features   |
|----------------|--------------------------|--|----------------------|------------|--------------------|------------|--|
| 415            | 0.004 (0.10)             | Double coated tape with a medium-firm acrylic adhesive on each side of a polyester carrier.                      |                      | ■          | ■                  |            | Good adhesion to a wide range of surfaces. Can be used for Cameron Press applications.                           |
| 442KW          | 0.004 (0.10)             | Double coated tape with a firm rubber adhesive on each side of a polyester carrier.                              |                      | ■          | ■                  |            | Plate mounting applications requiring a thin tape to bond rubber or photopolymer plates to metal cylinders.      |
| 443            | 0.005 (0.13)             | Double coated tape with a soft rubber adhesive on each side of a polyester carrier.                              |                      | ■          | ■                  |            | Mounting applications requiring a thin tape to bond polyester, fiberglass and other surfaces.                    |
| 465            | 0.002 (0.05)             | Acrylic adhesive transfer tape.  |                      | ■          |                    | ■          | Small area plate build-up or make-ready. Also used to mount primed rubber plates.                                |
| 927            | 0.002 (0.05)             | Acrylic adhesive transfer tape.  |                      | ■          |                    | ■          | Corrugated plate mounting applications where repositionability and removability are not required.                |
| 950            | 0.005 (0.13)             | Acrylic adhesive transfer tape.  |                      | ■          |                    |            |  |
| 2205           | 0.005 (0.13)             | Double coated film tape with differential acrylic adhesive with a polyester film carrier on a kraft paper liner. | ■                    | ■          |                    |            | For the corrugated printing industry to hold flexographic print plates to PVC saddles/carriers. Removes cleanly. |
| 2205FL         | 0.005 (0.13)             | Double coated film tape with differential acrylic adhesive with a polyester film carrier on a film liner.        | ■                    | ■          |                    |            | Adhesives designed specifically for corrugated flexo mounting. Removes cleanly and easy to reposition.           |
| 9500PC         | 0.005 (0.13)             | High performance acrylic adhesive on each side of a polyester carrier.   | ■                    |            | ■                  |            | Thin tape plate mounting applications requiring higher performance than 442KW Tape.                              |

All tapes listed on this chart have been used successfully on non-compressible sleeves.

**Note:** This technical information and data should be considered representative or typical only and should not be used for specification purposes.

# 3M™ Flexographic Mounting Aids

| Product   | Description   |
|---|---|
| 3M™ Cylinder Mount Build-Up Tape 1640               | For use with any 3M flexographic tape to add 0.040 in. thickness.   |
| 3M™ Primer 94                                       | Helps hold the leading and trailing edges of the plate to prevent edge lifting.                                       |
| 3M™ Scotch-Weld™ Adhesives 3762LM, 3776LM or 3792LM | Use with 3M™ Polygun™ LT Applicator to seal plate edges against ink and solvent penetration that causes edge lifting. |
| 3M™ Aluminum Foil Tape 425                          |   |
| 3M™ Vinyl Tape 471                                  | Seals plate edges against ink and solvent penetration that can cause edge lifting.                                    |
| 3M™ Polyester Film Tape 850                         |   |
| Scotch® Magic Tape 810                              | Secures proofing paper to a proofer/mounter with good adhesion but simple removal from the proofing cylinder.         |

# 3M™ Non-Repulpable Splicing Tapes

| Go To Products                    | Product Description  | Tape Thickness mil (mm) | Carrier Thickness mil (mm) | Carrier Type     | Color            | Adhesion oz/in (N/25 mm) | High Temp (Short-term) °F (°C) | Go-To Application* |              |
|-----------------------------------|--|-------------------------|----------------------------|------------------|------------------|--------------------------|--------------------------------|--------------------|--------------|
|                                   |  |                         |                            |                  |                  |                          |                                | Zero Speed         | Flying Speed |
| <b>Based on ASTM Test Method:</b> |  | <b>D-3652</b>           | <b>D-3652</b>              |                  |                  | <b>D-3330</b>            |                                |                    |              |
| <b>Adhesive Transfer Tapes</b>    |  |                         |                            |                  |                  |                          |                                |                    |              |
| 465                               | High tack. Excellent adhesion to most paper stocks. Flexible to -60°F (-51°C).   | 2.0 (0.05)              | —                          | No Carrier       | Clear            | 25 (6.8)                 | 250 (121)                      |                    |              |
| 9498/9464                         | Low temperature splicing.  | 2.0 (0.05)              | —                          | No Carrier       | Clear/Red        | 20 (6.0)                 | 250 (121)                      | ■                  |              |
| 9499/9497                         | High temperature splicing.   | 2.0 (0.05)              | —                          | No Carrier       | Clear/Red        | 45 (12.5)                | 350 (177)                      | ■                  |              |
| <b>Double Coated Tapes</b>        |  |                         |                            |                  |                  |                          |                                |                    |              |
| 415/9420                          | High tack adhesion to paper and many other surfaces.   | 4.0 (0.10)              | 0.5 (0.01)                 | Polyester        | Clear/Red        | 25 (6.8)                 | 180 (82)                       |                    |              |
| 469                               | High temperature, high tack.   | 5.5 (0.14)              | 1.0 (0.02)                 | Tissue           | Red              | 60 (16.7)                | 350 (177)                      |                    | ■            |
| 9086                              | Easy tearing, easy handling. Thick high tack adhesive, very conformable.   | 7.5 (0.19)              | 1.5 (0.03)                 | Non Woven Tissue | Clear            | 146 (40.0)               | 250 (121)                      |                    |              |
| 9088                              | High temperature resistance. High tack and shear strength.   | 8.3 (0.20)              | 0.5 (0.01)                 | Polyester        | Clear            | 137 (37.5)               | 300 (150)                      |                    |              |
| 9576                              | Medium tack for general splicing and roll closing.   | 4.0 (0.10)              | 1.0 (0.02)                 | Polypropylene    | Red/Black/Yellow | 30 (13.5)                | 165 (75)                       |                    |              |
| 9737/9737R                        | Thin PET carrier. Aggressive and versatile tape for many surfaces.   | 3.5 (0.09)              | 0.5 (0.01)                 | Polyester        | Clear/Red        | 60 (16.7)                | 300 (150)                      | ■                  | ■            |
| 9738/9738R                        | Non-woven tissue carrier. Aggressive and versatile tape for many surfaces.   | 4.3 (0.11)              | 1.3 (0.03)                 | Non Woven Tissue | Clear/Red        | 60 (16.7)                | 300 (150)                      | ■                  | ■            |
| 9740                              | High temperature with extremely wide range. High peel, tack, and shear properties. Performance grade splicing for corrugators. | 3.5 (0.09)              | 0.5 (0.01)                 | Polyester        | Clear            | 70 (21.2)                | 425 (218)                      |                    | ■            |
| 9741/9741R                        | Thick tape adheres to a wide variety of substrates. Super aggressive for low surface energy substrates.                        | 6.5 (0.17)              | 0.5 (0.01)                 | Polyester        | Clear/Red        | 120 (34.0)               | 200 (93)                       |                    |              |

\*All tapes in this chart can be considered for zero speed or flying speed splices.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

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