



# Scotchmate™

## Nylon Reclosable Fasteners

Product Selection Guide

March, 2007

### Products

#### 3M™ Scotchmate™ Nylon Reclosable Fasteners

##### Plainbacked Products

###### Loop

SJ3401

SJ3418FR

###### Hook

SJ3402

SJ3419FR

##### Pressure Sensitive Adhesive Products

###### Unnapped Loop

SJ3529

###### Napped Loop

SJ3518FR

SJ3523

SJ3527N

SJ3571

SJ3531

SJ3533N

###### Hook

SJ3519FR

SJ3522

SJ3526N

SJ3572

SJ3530

SJ3532N

### Product Description

3M™ Scotchmate™ Reclosable Fasteners offer closure alternatives to zippers, screws, snaps, hooks, bolts and more. They offer greater design flexibility, faster product assembly, smoother and cleaner exterior surfaces and improved product performance in many applications. The hook and loop fasteners consist of two strips of nylon fabric which engage to form a quick fastening attachment. Simply pull the strips apart by hand to disengage.

The woven hook backing is covered with flexible self supporting J shaped hooks, about 300 hooks per square inch (46/sq. cm.) protruding up from a woven backing. The woven loop backing is covered with thousands of soft, pliable loops, providing for thousands of openings and closings (cycles). The loops can be napped or unnapped providing higher cycle life. The hook and loop are preshrunk to insure maximum dimensional stability and flatness.

These Scotchmate reclosable hook and loop fasteners can be coated on the backside with various pressure sensitive adhesives.

#### Plainbacked Products

**3M™ Scotchmate™ Reclosable Fastener SJ3402 Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3401 Loop**

**Standard Sew-on:** These standard products provide a tailored appearance for garments and fabrics. They provide adjustable closure, and are washable and dry cleanable.

**3M™ Scotchmate™ Reclosable Fastener SJ3419FR Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3418FR Loop**

**Flame Resistant Sew-on:** Improved flame resistance compared to Scotchmate reclosable fasteners SJ3402/01 hook and loop, meets F.A.R. 25.853 paragraph (a)(1)(i) and (a)(1)(ii). These are 60 and 12 second vertical burn tests, respectively.

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## Nylon Reclosable Fasteners

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**Product Description**  
*(continued)***Pressure Sensitive Adhesive (PSA) Products**

These products allow hook and loop fasteners to be attached to substrates with the convenience and ease of adhesive attachment. Simply peel off the liner and press in place.

**3M™ Scotchmate™ Reclosable Fastener SJ3526N Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3527N Loop**

**General Purpose Rubber PSA:** Suitable for indoor applications requiring higher temperature performance than 3M™ Scotchmate™ Reclosable Fasteners SJ3529/31 and SJ3500. These general purpose products offer high adhesive bond to a wide variety of materials, especially low surface energy materials such as polyethylene and polypropylene while providing excellent moisture resistance.

**3M™ Scotchmate™ Reclosable Fastener SJ3572 Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3571 Loop**

**Premium Performance Acrylic PSA:** For many static load applications exposed to UV or elevated temperatures. Provides reliable performance over a wide range of temperature and environmental extremes.

**3M™ Scotchmate™ Reclosable Fastener SJ3522 Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3523 Loop**

**Plasticizer Resistant Acrylic PSA:** A unique pressure sensitive adhesive which resists adhesive softening or oozing caused by most plasticizer oils in flexible vinyl and similar materials. This offers convenient attachment to many flexible, plasticized vinyls.

**3M™ Scotchmate™ Reclosable Fastener SJ3519FR Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3518FR Loop**

**Flame Resistant Synthetic Rubber PSA:** A high performance flame resistant adhesive, enabling these hook and loop fasteners to meet the requirements of F.A.R. 25.853 paragraph (a)(1)(i) and (a)(1)(ii). These are 60 and 12 second vertical burn tests, respectively.

**3M™ Scotchmate™ Reclosable Fastener SJ3530 Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3531 Napped Loop • 3M™ Scotchmate™ Reclosable Fastener SJ3529 Unnapped Loop**

**High Tack Synthetic Rubber PSA:** Suitable for many indoor applications, especially to low surface energy materials such as polyethylene and polypropylene.

**3M™ Scotchmate™ Reclosable Fastener SJ3532N Hook • 3M™ Scotchmate™ Reclosable Fastener SJ3533N Loop**

**General Purpose Synthetic Rubber PSA:** Suitable for many indoor applications, especially to low surface energy materials such as polyethylene and polypropylene.

# 3M™ Scotchmate™

## Nylon Reclosable Fasteners

### Product Description and Availability

| 3M™ Scotchmate™ Nylon Reclosable Fasteners                            |                         |                                |                                    |                         |                            |                                            |                         |                         |
|-----------------------------------------------------------------------|-------------------------|--------------------------------|------------------------------------|-------------------------|----------------------------|--------------------------------------------|-------------------------|-------------------------|
|                                                                       | Plainbacked             |                                | Pressure Sensitive Adhesive Coated |                         |                            |                                            |                         |                         |
| Hook:<br>Loop:<br>Unnapped Loop:                                      | SJ3402<br>SJ3401        | SJ3419FR<br>SJ3418FR           | SJ3526N<br>SJ3527N                 | SJ3519FR<br>SJ3518FR    | SJ3530<br>SJ3531<br>SJ3529 | SJ3532N<br>SJ3533N                         | SJ3572<br>SJ3571        | SJ3522<br>SJ3523        |
| Adhesive Type:                                                        | None                    | None                           | Rubber <sup>a</sup>                | Rubber <sup>a</sup>     | Rubber <sup>a</sup>        | Rubber <sup>a</sup>                        | Acrylic                 | Acrylic                 |
| Liner on Adhesive <sup>b</sup> :                                      | None                    | None<br>PE &<br>Red 3M<br>Logo | White<br>PE &<br>Red 3M<br>Logo    | White<br>PE             | Yellow<br>PE               | Yellow<br>3.5 mil PP<br>& White<br>3M Logo | Clear<br>PE             | Clear                   |
| Standard Widths,<br>Inches (mm) <sup>c</sup> :<br>± 1/16 in. (1.6 mm) |                         |                                |                                    |                         |                            |                                            |                         |                         |
| 1/2 (13)                                                              | ✓                       | ✓                              | ✓                                  | –                       | ✓                          | –                                          | ✓                       | ✓                       |
| 5/8 (16)                                                              | ✓                       | ✓                              | ✓                                  | ✓                       | ✓                          | ✓                                          | ✓                       | ✓                       |
| 11/16 (17.5)                                                          | –                       | –                              | ✓                                  | –                       | –                          | –                                          | –                       | –                       |
| 3/4 (19)                                                              | ✓                       | ✓                              | ✓                                  | ✓                       | ✓                          | ✓                                          | ✓                       | ✓                       |
| 1 (25)                                                                | ✓                       | ✓                              | ✓                                  | ✓                       | ✓                          | ✓                                          | ✓                       | ✓                       |
| 1 1/4 (32)                                                            | –                       | –                              | ✓                                  | –                       | ✓                          | –                                          | ✓                       | –                       |
| 1 1/2 (38)                                                            | ✓                       | ✓                              | ✓                                  | ✓                       | ✓                          | ✓                                          | ✓                       | ✓                       |
| 2 (51)                                                                | ✓                       | ✓                              | ✓                                  | ✓                       | ✓                          | ✓                                          | ✓                       | ✓                       |
| 2 1/2 (63.5)                                                          | –                       | –                              | –                                  | –                       | –                          | –                                          | ✓                       | –                       |
| 3 (76)                                                                | ✓                       | –                              | –                                  | –                       | –                          | –                                          | ✓                       | ✓                       |
| 4 (102)                                                               | ✓                       | ✓                              | ✓                                  | –                       | ✓                          | –                                          | ✓                       | ✓                       |
| Standard Colors <sup>d</sup> :                                        | Black<br>Beige<br>White | Black<br>Beige                 | Black<br>Beige<br>White            | Black<br>Beige<br>White | Black<br>Beige<br>White    | Black<br>Beige<br>White                    | Black<br>Beige<br>White | Black<br>Beige<br>White |
| Standard Roll Length <sup>e</sup> ,<br>yds. (m):                      | 50 (45.7)               | 50 (45.7)                      | 50 (45.7)                          | 50 (45.7)               | 50 (45.7)                  | 50 (45.7)                                  | 50 (45.7)               | 50 (45.7)               |
| Fabricated Forms<br>Available:                                        | Cut<br>Pieces           | Cut<br>Pieces                  | Cut<br>Pieces                      | Cut<br>Pieces           | Cut<br>Pieces              | Cut<br>Pieces                              | Cut<br>Pieces           | Cut<br>Pieces           |
| Shelf Life <sup>f</sup> :                                             | 2 Years                 | 2 Years                        | 1.5 Years                          | 1.5 Years               | 1.5 Years                  | 1.5 Years                                  | 2 Years                 | 2 Years                 |

a. All of our rubber adhesives contain synthetic rubber with no added latex.

b. PP: Polypropylene; PE: Polyethylene.

c. Not all widths for all products or colors may be available. Contact your 3M sales representative or 3M authorized distributor for widths not listed.

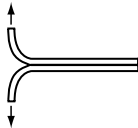
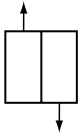
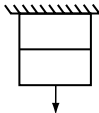
d. Slight tan or yellow may be observed on white with rubber based adhesives. All products are available in additional non-standard colors. Contact your 3M sales representative or 3M authorized distributor for pricing minimum quantities and lead times.

e. Under packaging conditions 70°F (21°C) and 50% R.H.

f. From date of manufacture, when stored in original packaging at 60° to 80°F (16° to 27°C and 40 to 60% relative humidity).

# 3M™ Scotchmate™

## Nylon Reclosable Fasteners

|                                                                                                                 |                                                                                                                                                                                                                                                       |           |
|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Typical Closure Performance Characteristics                                                                     | <b>Note: The following technical information and data was collected under controlled laboratory conditions and should be considered representative or typical only and should not be used for specification purposes.</b>                             |           |
|                                                                                                                 | 3M™ Scotchmate™ Reclosable Fasteners derive their strength from the area of engagement as well as closure pressure. Vibration or side to side movement tends to improve closure performance. Closure characteristics are indicated by typical values. |           |
|                                                                                                                 | Closure Performance for plainback products <sup>a</sup>                                                                                                                                                                                               | Typical   |
|                                                                                                                 | Dynamic T-Peel, lb./inch width (grams/cm width); ASTM D5170:                                                                                                                                                                                          | 2.6 (466) |
|                                                                                                                 |                                                                                                                                                                      |           |
|                                                                                                                 | Dynamic Shear, pounds force/square inch (Newtons/cm²); ASTM D5169:                                                                                                                                                                                    | 10 (6.9)  |
|                                                                                                                 |                                                                                                                                                                      |           |
|                                                                                                                 | Dynamic Tensile, pounds force/square inch (Newtons/cm²):                                                                                                                                                                                              | 8 (5.5)   |
|                                                                                                                 |                                                                                                                                                                     |           |
| a. 3M™ Scotchmate™ Reclosable Fastener Hook and Loop Products were disengaged at a rate of 12" (305 mm)/minute. |                                                                                                                                                                                                                                                       |           |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Attachment Techniques | <p>The following information is intended to assist the designer considering the use of 3M™ Scotchmate™ Reclosable Fasteners. Final product performance depends on actual conditions, including the fastener selected, the conditions in which the fastener is applied and the time and environmental conditions in which it is expected to perform. Because many of these factors are uniquely within the user’s knowledge and control, it is required that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user’s method of application and desired end use.</p> <p>As a general rule, four square inches of Scotchmate reclosable fastener area per pound of static load to be supported is suggested as a starting point for evaluation. More or less area may be needed depending on specific conditions or end use applications.</p> <p>There are typically six different methods for attaching Scotchmate reclosable fasteners to various surfaces. For complete details on techniques and options for attaching fasteners, please see Attachment of 3M™ Scotchmate™ and Dual Lock™ Reclosable Fasteners technical bulletin (70-0709-3929-6). The most important techniques for these Scotchmate reclosable fastener products are summarized on page 5.</p> |
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# 3M™ Scotchmate™

## Nylon Reclosable Fasteners

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### Attachment Techniques (continued)

**Pressure Sensitive Adhesive attachment:** The 3M™ Scotchmate™ Reclosable Fasteners and adherend surfaces should have equilibrated for a minimum of 1 hour at temperatures of 68°F (20°C) or greater before application. These adhesive backed Scotchmate reclosable fasteners should be applied to surfaces that are smooth, dry and free of oils, mold release agents or other surface contaminants.

The adherend should be cleaned to remove any surface contaminants with an appropriate cleaning method for the customer's substrate, type and quantity of surface contaminants that need to be removed. **Note:** Follow the manufacturer's precautions and directions for use of the cleaning method(s) chosen.

After the adherend is clean, the liner is removed from the fastener and without touching the adhesive, the Scotchmate reclosable fastener is applied to the surface using firm roller pressure to help ensure complete adhesive contact to substrate. Adhesive bond strength increases with time, as the adhesive flows into the substrate structure. Handling strength is achieved immediately. Approximately 50% of ultimate bond strength is achieved at room temperature in the first 20 minutes, 90% after about 24 hours and 100% after about 72 hours for acrylic adhesives. For the rubber based adhesives, 100% bond strength is obtained in about 24 hours.

**Heat (Press) Bonding:** 3M™ Scotchmate™ Reclosable Fasteners SJ3526N, SJ3530, SJ3519FR and SJ3532N hook and SJ3527N, SJ3529, SJ3518FR, SJ3531 and SJ3533N loop can be attached to many fabric and foam articles with a technique called press bonding. The Scotchmate reclosable fastener is adhered to the article, as indicated above, and bond strength is increased by typically applying heat and pressure to the adhesive side of the Scotchmate reclosable fastener through the fabric or foam article. Equipment can range from a simple household laundry iron to commercial press units. Product performance will depend on the nature of the fabric or foam and other conditions within any specific application. For this reason it is essential that the user evaluate the Scotchmate reclosable fastener product to determine if it is fit for a particular purpose and suitable for the user's method of application.

Typical press bonding conditions:

|                      |                                |
|----------------------|--------------------------------|
| Bonding Temperature: | 250 to 425°F (121 to 218°C)    |
| Bonding Pressure:    | 30 to 100 psi (207 to 690 kPa) |
| Bonding Time:        | 3 to 30 seconds                |

**Mechanical Attachment:** The bond strength can be increased by mechanically attaching it to difficult to adhere to surfaces such as textured plastics and wood by using staples. Alternatively wood products can be sealed and pressure sensitive adhesive backed fastener applied as discussed above.

### Sewing

3M™ Scotchmate™ Plainbacked Reclosable Fasteners can be attached with manual or semi-automatic sewing machines, generally utilizing the same thread used in the garment or fabric. Six to ten stitches per inch (25.4 mm) is suggested. These products are washable and dry cleanable.

### Ultrasonic Bonding

Scotchmate plainbacked reclosable fasteners can be bonded to themselves or other nylon fabrics with ultrasonic sealing equipment. This method can be used to provide straps and other fabricated forms.

# 3M™ Scotchmate™

## Nylon Reclosable Fasteners

### General Information

3M™ Scotchmate™ Pressure Sensitive Reclosable Fasteners can be bonded to a wide variety of materials. Some are listed below. Because product performance will depend on actual conditions within any specific application, it is essential that the user evaluate the Scotchmate product to determine if it is fit for a particular purpose and suitable for the user's method of application.

| 3M™ Scotchmate™ Reclosable Fasteners |         |        |        |          |        |         |
|--------------------------------------|---------|--------|--------|----------|--------|---------|
| Hook:                                | SJ3526N | SJ3572 | SJ3522 | SJ3519FR | SJ3530 | SJ3532N |
| Loop:                                | SJ3527N | SJ3571 | SJ3523 | SJ3518FR | SJ3531 | SJ3533N |
| Unnapped Loop:                       |         |        |        |          | SJ3529 |         |
| Bare Metals:                         | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Painted Metals:                      | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Powder Paint:                        | ✓       | —      | —      | ✓        | ✓      | ✓       |
| Fiberglass:                          | ✓       | —      | —      | ✓        | ✓      | ✓       |
| Structural Composites:               | ✓       | —      | —      | ✓        | ✓      | ✓       |
| Glass:                               | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Sealed Wood:                         | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Plastics –                           |         |        |        |          |        |         |
| ABS:                                 | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Acrylic:                             | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Polycarbonate:                       | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Polystyrene                          | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Rigid Vinyl:                         | ✓       | ✓      | ✓      | ✓        | ✓      | ✓       |
| Plasticized Vinyl <sup>a</sup> :     | —       | —      | ✓      | —        | —      | —       |
| Polypropylene:                       | ✓       | —      | —      | ✓        | ✓      | ✓       |
| Polyethylene:                        | ✓       | —      | —      | ✓        | ✓      | ✓       |

a. When attaching to plasticized vinyl (flexible PVC), evaluation for plasticizer migration is recommended. Adhere the fastener to the vinyl and age for seven days at 158°F (70°C) and inspect for signs of migration of plasticizer oils indicated by softness or oozing of the adhesive.

### Choosing Polyester or Nylon Reclosable Fasteners

3M™ Scotchmate™ Reclosable Fasteners are available in polyester or nylon hook and loop configurations. There are performance and use differences that may be experienced when using these products. The following table lists the differences between the two types of fasteners to aid in selecting the best fastener material for the customers final product.

|                                                   | Nylon                                                                             | Polyester*       |
|---------------------------------------------------|-----------------------------------------------------------------------------------|------------------|
| Cycle Life                                        | 5,000                                                                             | 1,000            |
| Moisture Gain (wt%)                               | <10                                                                               | <1               |
| Dynamic Closure Tensile (lb <sub>F</sub> /sq. in) | 7.5                                                                               | 10               |
| Dynamic Closure Shear (lb <sub>F</sub> /sq. in)   | 4.8                                                                               | 18               |
| Wet Strength                                      | Loses strength                                                                    | Retains strength |
| Resistance to Sunlight                            | Fair UV resistance (esp. the loop)                                                | Very good        |
| Combustion Gases                                  | Polyester may produce less toxic off gases under certain flammability conditions. |                  |

\*Please refer to our 3M™ Scotchmate™ Polyester Reclosable Fastener Product Selection Guide to review available polyester hook and loop products.

# 3M™ Scotchmate™

## Nylon Reclosable Fasteners

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### Certification/ Recognition

**MSDS:** 3M has not prepared a MSDS for this product which is not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, the product should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect its performance and present potential health and safety hazards.

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

**Military Spec. MIL-F-21840G:** All of our nylon hook products described in this publication meet the physical requirements of MIL-F-21840G, Type II Class 1. All of our loop products described in this publication except 3M™ Scotchmate™ Reclosable Fastener SJ3529, meet the physical requirements of MIL-F-21840G, Class 1 or Class 5.

**GM 2743M Type II:** SJ3571 and SJ3572 meet the requirements of GM2743GM Type II.

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### Product Use

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

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### Warranty and Limited Remedy

Unless stated otherwise in 3M's product literature, packaging inserts or product packaging for individual products, 3M warrants that each 3M product meets the applicable specifications at the time 3M ships the product. Individual products may have additional or different warranties as stated on product literature, package inserts or product packages. 3M MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's application. If the 3M product is defective within the warranty period, your exclusive remedy and 3M's and seller's sole obligation will be, at 3M's option, to replace the product or refund the purchase price.

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### Limitation of Liability

Except where prohibited by law, 3M and seller will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

ISO 9001:2000 - ISO/TS 16949:2002

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001:2000 and ISO/TS 16949:2002 standards.



#### Industrial Business Industrial Adhesives and Tapes Division

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