

## 3M™ Reflective Ink for Textiles - 8010

### Description

3M™ Reflective Ink for Textiles – 8010 is a low-intensity retroreflective screen printing ink intended for consumer fashion use when applied to an absorbent fabric. The retroreflective elements are exposed, wide-angle lenses. When properly used, they are designed to enhance the visibility of the wearer in nighttime or low-light conditions, when illuminated by a light source such as automobile headlights, and returning a limited amount of light to the driver's eye. A limited amount of light is returned due to the random orientation of the retroreflective elements.

### Performance

The retroreflective performance is less than 20 cd/lux/m<sup>2</sup>. It was measured by 3M on new product using the instructions below on cotton or polyester fabrics, in a 100% coverage pattern at 5.0° entrance angle and 0.2° observation angle. It was measured by methods based on any of the following retroreflective intensity testing procedures:

ASTM E809-08(2013), ASTM E810-03(2013) (R-A); CIE 54.2:2001 (R')

Reflected color is white. The daytime color is gray with a matte finish when dry. Color may vary from lot to lot and is influenced by fabric color and type.

Retroreflective performance will be reduced by the addition of color pigments, use of non-absorbent fabrics, and printing in patterns less than 100% coverage.

### Instructions

#### Set-up

- Off-contact with a medium soft squeegee.
- Screen Fabric: Monofilament polyester, mesh count 86-125 per inch (34-50 per centimeter).
- Block-out: Use a water-resistant liquid emulsion.
- Thinning: Part A is ready for screening without thinning. Use of drying retarders such as glycols or glycerin may affect the durability of the print and are not recommended.

#### Fabrics

- It must be screen printed directly onto an absorbent material and cured per instructions for maximum brightness and wash durability.
- For the optimum performance, use cotton or polyester fabrics.
- Printing on non-absorbent fabrics, will cause a decrease in reflectivity and wash durability.
- Stretchy fabrics can be used, but the ink will crack when stretched. This is an aesthetic issue only.
- Do not print onto flame resistant fabrics. It is not certified to any standard requiring flame-resistance.
- Do not print onto a transfer liner and laminate later, nor use any other print method.
- All fabrics must withstand the 340°F cure temperature for two minutes for wash durable applications.
- 3M recommends all fabric be thoroughly tested prior to going into production to confirm the desired performance.

#### Mixing

- It is packaged in three separate containers:
  - Part A: Water-based ink; Part B: Retroreflective elements; Part C: Coupling agent.
  - Parts B and C are packaged together in the B container, along with an eye dropper for dispensing part C.
- Correct proportions of the three parts must be thoroughly mixed prior to use.
  - Complete kit may be mixed together.
  - For smaller jobs, mix the three components in a ratio of 65:34:1 (A:B:C) by weight. Weigh out appropriate amounts of parts A and B; use the eye dropper to add part C.

# 3M™ Reflective Material

- Use a polyethylene, stainless steel or glass container for mixing.
- Any mixed ink not used within 24 hours of initial mixing should be discarded.
- All containers should be covered and sealed when not in use.
- For best results, mix components only in the amount needed for immediate screening.

## Application






- Use a light fill pass for each impression. Refill the screen with ink after each impression and keep filled during any delays to prevent ink drying in the screen. If a lengthy delay is unavoidable, the screen may be moistened with a spray bottle, or it should be cleaned with water.
- Best reflectivity is obtained with a single pass. A coarser screen should be used instead of more than one pass to obtain required coverage.
- For maximum durability the screened image must be force dried at 170 °C (340 °F) for a minimum of 2 minutes within 24 hours of printing. Temperatures and times below these will greatly reduce wash durability
- Clean-Up: The resin portion of this ink is a water-based latex. Timely clean-up is essential to screen preservation. Wash screens with water immediately after use or when sequential screening will be interrupted for a period of 5 minutes or more. Failure to promptly clean the screen may allow the ink to permanently dry into the screen.
- Coverage is approximately 250 ft<sup>2</sup>/gallon (6 m<sup>2</sup>/liter).

## Care Instructions

Select the appropriate care instructions for the finished product. For best image and brightness retention the following guidelines can be used.

### IMPORTANT NOTE

Testing is recommended to assure adequate brightness and adhesion to your substrate.

Wash		Dry		Iron	
	Machine wash warm, 40° C (104° F)		Tumble dry low		Cool iron, 110° C (230° F)
	Only non-chlorine bleach when needed				
	Do not dry-clean				

## Essential Information

While the use of 3M reflective material enhances visibility, no reflective material can guarantee absolute visibility, particularly in adverse weather conditions. Performance will vary depending upon actual use, exposure conditions, and maintenance. Customers should be aware that 3M presents a reflective material product portfolio that offers a range of product attributes, and users should test the reflective material on their finished garments to satisfy conformance to their own requirements. All high visibility safety apparel items should be constructed in accordance with the appropriate standard.

3M recommends that all customers, in accordance with good manufacturing practices, establish an ongoing quality system which includes maintaining lot/roll identification, and implementing continuous testing that reflects their garment needs throughout their production process.

The 3M Reflective Ink is designed for consumer use. If you require Scotchlite reflective material designed for occupational use, please consult the 3M website at [Scotchlite.com](http://Scotchlite.com) or contact 3M Technical Service for additional assistance with product selection.

3M reflective ink for textiles – 8010 Is not certified for marine safety applications requiring IMO approval. 3M™ Scotchlite™ Reflective Materials – SOLAS Grade Products have this type of certificate.

For health and safety issues refer to the 3M Safety Data Sheet.

## Product Availability

3M™ Reflective Ink for Textiles – 8010 is available in kits which make approximately 1 gallon of ink. It is sold in kits only.

## Storage and Shelf Life

Store each component in original container with air-tight lid at temperatures between 4 °C and 27 °C (40 °F and 80 °F). Use by expiration date on Part A label. Shelf life is valid until container is opened. Must be protected from freezing.

## Contact Us

For current technical literature and technical support, go to [Scotchlite.com](http://Scotchlite.com), or call Customer Service at 800-328-7098.

## Important Notice to User

### Warranty, Limited Remedy and Disclaimer

3M warrants that 3M™ Reflective Material that is stored, maintained and used in accordance with 3M's written instructions will meet the applicable 3M product specifications. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If any reflective material does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

### Limitation of Liability

Except where prohibited by law, 3M 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 or strict liability.

### Product Use

Because of the variety of factors that can affect the use and performance of reflective material, user is solely responsible for evaluating the product and determining whether it is fit for a particular purpose and suitable for user's method of application. User is solely responsible for determining the proper amount and placement of the product. While reflective products enhance visibility, no reflective product can ensure visibility or safety under all possible conditions. 3M may change the product, specification and availability of the product as improvements are made; therefore, user should contact 3M for latest information before specifying the product.

#### Personal Safety Division

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Scotchlite.com  
3M PSD products are  
occupational use only.

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