

Technical Data Sheet

3M™ Reflective Ink for Textiles – 8010 Gray

Limited Regional Availability, Check with your 3M Sales Representative

Description

3M™ Reflective Ink for Textiles – 8010 Gray is a water-based screen print ink packaged in three separate containers:

- Part A is the water-based ink.
- Part B is the reflective elements.
- Part C is a 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 (see Application and Mixing Instructions).

When correct proportions are mixed and appropriately applied to an absorbent fabric, 3M reflective ink for textiles – 8010 gray will provide a low-intensity reflective material intended for consumer fashion use. It may be used as supplemental visibility enhancement when combined with reflective materials that are certified for occupational use, and is not intended to be used alone on occupational workwear. This low-intensity material utilizes the principle of retroreflection. The retroreflective elements are exposed, wide-angle lenses that when illuminated by a light source, such as automobile headlights, returns a portion of light back toward the original source reaching the automobile driver's eye. A limited amount of light is returned due to random orientation of the lenses after screen printing onto a garment.

Retroreflective Performance

The coefficient of retroreflection, R_A , in cd/lux/m^2 is measured by methods based on either of the following retroreflective intensity testing procedures:

ASTM E809 and E810 (R_A)

CIE 54.2:2001 (R')

Reflected color of 3M reflective ink for textiles – 8010 gray is white.

The daytime color is gray.

Reflective performance data was generated by 3M and is based on testing new product applied using the Mixing and Application Instructions in this technical data sheet on cotton fabric, in a 100% coverage pattern. The retroreflective performance, R_A , for 3M reflective ink for textiles – 8010 gray is less than 20 cd/lux/m^2 at 5.0° entrance angle and 0.2° observation angle. The reflective performance of 3M reflective ink for textiles – 8010 gray will be reduced over time by washing, environmental conditions and normal wear. In addition, retroreflective performance will be reduced by the addition of color pigments to 3M reflective ink for textiles – 8010 gray, use of non-absorbent fabrics, and printing in patterns less than 100% coverage.

3M reflective ink for textiles – 8010 gray is not intended for making retroreflective trim certified to high-visibility standards such as ANSI/ISEA 107 American National Standard for High Visibility Safety Apparel and Headwear, or for marine safety applications requiring IMO type approval.

3M offers a wide range of 3M™ Scotchlite™ Reflective Materials to meet different needs. If you require a higher intensity and more durable reflective material, please contact 3M Customer Service or your local 3M Sales Representative.

Performance

For the optimum reflective performance and wash durability, 3M reflective ink for textiles – series 8010 gray must be printed on an absorbent fabric. The ink was designed to be screen printed on cotton or polyester fabrics. If you are printing on another fabric, there may be a decrease in reflectivity and wash durability. Users should test the reflective ink on the intended fabric to satisfy conformance to their own requirements.

3M recommends that all customers, in accordance with good manufacturing practices, establish an ongoing quality system. Customers should implement continuous testing throughout the production and on the finished garments that reflects their garment requirements.

Please visit our website, Scotchlite.com, or contact your local 3M Protective Apparel and Footwear Market Center Technical Service for new or updated technical literature.

Color

Dries to a non-gloss surface finish.

3M™ Reflective Ink for Textiles – 8010 Gray		
Product Number	Daytime Color	Reflected Color
8010	Gray	White

Coverage

3M reflective ink for textiles – 8010 gray averages about 250 square feet per gallon, or 23 square meters per 3.785 liters (approximately 6m²/liter). Coverage may vary by color.

Application and Mixing Instructions

Preparation

Screen Fabric: Monofilament polyester, mesh count 86-125 (number of openings per lineal inch, or 34-50 openings per lineal centimeter).

Blockout: Use a water resistant liquid emulsion such as Autosol WR, Ulano 400 WR, TZ, 925 WR, or Chromeline CP3 WR or equivalent.

Thinning: Part A is ready for screening without thinning. **Use of drying retarders such as glycols or glycerine may affect the durability of the print and is not recommended.**



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.

Mixing Instructions

Use a polyethylene, stainless steel or glass container for mixing. **Any mixed ink not used within 24 hours should be discarded. All containers should be covered and sealed when not in use.** Mix only amount for immediate screening. Mix all components thoroughly before using.

Partial Amounts: The ratio for mixing partial amounts is 65:34:1 (A:B:C) by weight. Weigh out appropriate amounts of parts A and B, and use the eye dropper to add part C.

Complete Kit: Mix complete amounts of parts A, B, and C.

Application Instructions

1. Use off-contact set-up.
2. 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 should be cleaned with water.
3. Use a medium soft squeegee.
4. Best reflectivity is obtained with a single pass. A coarser screen should be used if more than one pass is required for coverage.
5. For maximum durability the screened image **must be force dried at 170 °C (340 °F) for 2 minutes minimum.** The drying time may be cumulative within a 24-hour period.

Important Notice to User

WARRANTY, LIMITED REMEDY AND DISCLAIMER: 3M warrants that its Reflective Ink for Textiles, Product Number 8010, when it 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 this product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 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 this product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence 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.



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Care and Maintenance Instructions

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

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

- Wash:**  Machine wash warm, 40 °C (105 °F)
- Bleach:**  Only non-chlorine bleach when needed
- Dry:**  Tumble dry low
- Iron:**  Use cool iron, 110 °C (230 °F)
- Dry-clean:**  Do not dry-clean

Product Availability

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

Product Information

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

Storage and Shelf Life

Store each component in original container with air-tight lid at temperatures between 4 °C and 32 °C (40 °F and 90 °F). Use by expiration date on Part A label. Shelf life is valid until container is opened.

Must be protected from freezing.