



## Fire Coat Trim Care Guidelines to Help Reduce Silver Stripe Fading

### Background

3M™ Scotchlite Reflective Materials - Fire Coat Trims may exhibit fading of the silver stripe after use. This damage may appear as a water mark to complete loss of the silver stripe. Note, however, that the performance of the retroreflective material may not be affected even though the aesthetic appearance of the trim's silver strip may appear to be damaged.

The damage is usually caused by one of two things:

1. The first is by laundering the garment at too high a temperature or with detergents that are either too high or too low pH. This is shown by a very uniform fading of the silver stripe across the entire garment. As specified in the care instructions for these products, trim should be laundered at less than 40°C (104°F), within a pH range of 6.0 to 10.5.
2. The second cause is by contamination of various chemicals. This is usually evidenced by localized blotchy or spotted areas where the silver color has been stained or removed. To determine the possible effects, thirteen chemicals were evaluated that either are found in NFPA standards, commonly confronted in firefighting, or identified by turnout gear manufacturers, including:
  - a. AFFF - 3% H<sub>2</sub>O (fire suppressant)
  - b. Surrogate fuel (gasoline substitute)
  - c. Household bleach
  - d. Diesel fuel
  - e. Pool chlorine
  - f. NH<sub>4</sub>OH (ammonia)
  - g. Flame resistant hydraulic fluid
  - h. Novec fire protection fluid (fire suppressant)
  - i. Isopropyl alcohol (solvent)
  - j. D-limonene (cleaning products)
  - k. Purple K (fire suppressant)
  - l. Mineral spirits (solvent)
  - m. H<sub>2</sub>SO<sub>4</sub> - 37% wt/wt (battery acid)

3M's testing indicated that strong acids or bases will cause the most fading (for instance, in the above list, battery acid and hydraulic fluid caused the greatest fading). While it is impossible to test against every potential chemical and/or mix of chemicals that a firefighter may encounter, the testing analyzed product performance against many likely chemical hazards. Alternate exposure conditions, such as elevated temperatures, high humidity, or prolonged contact, may also affect results.

### Care Guidelines

In accordance with good care and maintenance procedures such as specified in the latest edition of NFPA 1851, Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, if any chemical exposure is suspected, garments should be laundered immediately as directed in the manufacturers care instructions and consistent with handling regulations in order to best maintain performance and appearance. A garment that sustains critical exposure or damage impairing its function requires timely replacement.

Per NFPA 1851 Section A.6.3.5.1(9), retroreflective properties can be checked by standing about 40 feet away from the trim in question and a sample of new trim, and shining a flashlight on them that is held at the nose. If the old trim is significantly less bright than the new trim, it should be replaced.

Please call 3M Scotchlite Technical Service for assistance at 1-800-328-7098.

## Important Notice to User

### Limited Warranty

In the event any 3M™ Scotchlite™ Reflective Material is found to be defective in material, workmanship, or not in conformance with any express warranty, 3M's only obligation and your exclusive remedy shall be to replace or refund the purchase price, at 3M's option, of such 3M™ Scotchlite™ Reflective Material upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with 3M's written instructions.

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Because of the unlimited variety of potential applications for the Products, BEFORE production use, the user (which may be a product designer, product specifier, converter or end product manufacturer or others) must determine that the Products are suitable for the intended use and are compatible with other component materials. User is solely responsible for determining the proper amount and placement of Products. While reflective products enhance visibility, no reflective product can ensure visibility or safety under all possible conditions.

3M may change the product, specifications and availability of the product as improvements are made; therefore, the user should contact 3M or visit [Scotchlite.com](http://Scotchlite.com) for latest information before specifying the product.

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