

# 3M™ Scotchlite™ Reflective Material – Product Bulletin

## 8850 Silver Marking Film

### 1. Product Description

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film is a non-washable film intended for the application on hard surfaces such as suitcases, skates, accessories and temporary applications on cloth, where an enhanced visibility of the wearer during darkness and low light conditions is required.

The product will appear brilliant white when illuminated by vehicle headlights, even when the wearer is situated at the side of the road.

When converting/storing the reflective material, certain circumstances (see e.g. 6.2) may change the uniform appearance of the reflective material; the reflective properties – and hence the defined functionality – will not be affected by this.

### 2. Product Features

#### 2.1 Product Design

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film consist of exposed high performance glass lenses bonded to a special polymer layer and a rubber based pressure sensitive adhesive (PSA).

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film comes with a protective paper carrier on the reflective side and a transparent polyester liner on the adhesive side.

#### 2.2 High Performance according to ISO 20471

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film:

- Exceeds the highest brightness requirements for retroreflective material.
- Is non-orientation sensitive.

#### 2.3 Special Feature

To ensure consistency of performance, 3M™ Scotchlite™ Reflective Materials are manufactured within an ISO 9001 controlled manufacturing environment.

### 3. General Safety Information

**Read 3M™ Scotchlite™ Reflective Material 8850 Silver Marking Film Product Bulletin carefully. The wearer is ultimately responsible for his/her own safety.**

- Verify the suitability of 3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film for the intended use of the PPE (EC Directive 89/656/EEC Art. 4 and Art. 5; EC Communication 89/C328/EEC Annex §7).
- No reflective material can guarantee absolute visibility.
- Various factors (e.g. environmental) can influence visibility. For further details see chapter 8 “Specific Safety Information”.
- Verify the suitability for intended use.

### 4. Product Application

Retroreflective materials are important in applications where being visible can reduce the risk of an accident. Example of environments where high-visibility is essential include applications of vehicular hazard such as motorways, rural and urban roads, railway environments, airports and docks. 3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film is recommended for hard surfaces.

#### Occupational Application

Temporary applications on garments.

#### Consumer Applications

Skates, suitcases, back packs, bicycles, temporary applications on garments.

### 5. Product Converting

#### 5.1 Cutting

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film can be handcut, die-cut, plotter-cut or guillotined (max. 5 cm stack height).

**Note:** Use very sharp cutting knives only and cut from the reflective side.

### 5.2 Product Application to Substrate

Work on a flat surface where uniform pressure can be applied. Avoid applying film over seams and stitches.

- Remove transparent plastic liner, exposing pressure sensitive adhesive. Do not remove paper carrier.
- With adhesive side down, press firmly onto substrate by starting on one end and gradually working to the other end. This will prevent air bubbles. Do not let adhesive touch the substrate until just before pressure is applied.
- Additional adhesion may be gained by evenly pressing for 5 seconds with an iron set at lowest temperature.
- Lift the liner from one corner and pull gently with a single motion while holding the substrate flat.

**Note:** Whenever two or more pieces of reflective fabric are used together on a single surface or as a set, they should be matched to ensure uniform day time colour appearance.

Production dependent colour deviations of new material do not affect the retroreflective performance of 3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film.

### 5.3 Silk Screen Printing

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film can only be screen printed after application and removal of the paper carrier.

Due to the product construction, durable prints on glass bead products are difficult to obtain.

Choice of ink will depend upon usage condition and care procedure. User should make test applications and select the appropriate care instruction for the finished product to ensure adequate adhesion of the ink. It is recommended to test the ink adhesion on the actual batch of 3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film being used before production.

When illuminated by e.g. vehicle headlights, opaque silk screen printing inks will appear black and greatly diminishes the brightness in the printed areas, transparent inks will reduce brightness when viewed as retroreflected light at low light conditions.

**For more information please refer to 3M Technical Information “Printing Guidelines for Glass Bead products”.**

## 6. Handling and Storage

### 6.1 Product Storage

**Store in a cool, dry area and use within 1 year of receipt.**

Rolls should be stored in their original cartons, whilst partially used rolls should be returned to their carton or suspended horizontally from the core via a rod or pipe.

Cut sheets should be stored flat.

### 6.2 Handling and Storage Precautions

Aggressive chemicals, e.g. sulphur or chlorine containing compounds, perspiration, strong acids or bases may affect the aesthetic appearance of 3M™ Scotchlite™ Silver Reflective Materials. When exposed to excessive heat and more than 70% relative humidity conditions, these products have the potential to become stained. These stains do not affect the retroreflective performance of the material and do not indicate that the input product was defective.

Care must be taken by the user when handling 3M™ Scotchlite™ Silver Reflective Materials in hot and humid environments. During application, storage and shipping, ambient conditions should be kept. Measures like cooling, dehumidifying the manufacturing area and specific handling precautions should be taken. Appropriate specific storekeeping is essential.

Knowing the individual situation, the user may contact 3M for further advice if needed.

## 7. Product Cleaning

Reflective fabrics and films naturally age. Ageing depends upon material type, conditions of use, environment and maintenance procedures. For temporary use on garments only. Washing will affect the adhesion on the textile surface. The retroreflective performance of all reflective materials is affected by soiling. Any kind of dirt, liquid chemicals, grease and alike will reduce brightness in the area of contamination.

## 8. Product Maintenance

### 8.1 Maintenance Misuse

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film is an optical system. Coating of the film with material of high refractive index, such as oil, will greatly diminish reflective performance.

- No harsh mechanical treatment, e.g. abrasion with wire brushes or sand paper.
- No uniform coating or spraying of oils, protective waxes, inks or paint.
- No application of products such as leather spray or shoe shine

### 8.2 Inspection

3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film should be kept in good condition and inspected regularly for signs of damage or deterioration in order to maintain functionality.

### 8.3 Product Disposal

Product can be recycled attached to the garment or accessory. The product can be incinerated in a commercial or industrial facility or disposed in a sanitary landfill. Before recycling, the compatibility shall

## 9. Specific Safety Information

### Visibility Limits see chapter 3 “General Safety Information”

Various environmental factors like line of sight, rain, fog, smoke, dust and visual noise can influence visibility.

Recognition of the wearer can also be significantly reduced, if the reflective material is covered, e.g. by simultaneously wearing other personal protective equipment or by obstacles in the working zone.

### In such instances the wearer should be aware of these limitations.

The brightness of 3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film can also be diminished in extreme weather conditions.

- Test results show, that 3M™ Scotchlite™ Reflective Material – 8850 Silver Marking Film exceeds the retroreflective performance requirements in rainfall conditions as defined in ISO 20471. Initial brightness levels return as the material dries.
- Fog, mist, smoke and dust can scatter the light from headlights. Wearer must be aware that detection distances will be severely reduced.
- Visual noise (contrast variations in the visual field) decreases the contrast of the reflective material with the background and affects the visibility in low-light conditions.

#### Important Notice to Purchaser / Converter / Wearer:

All statements, technical information and recommendations herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed. We shall not be liable and no warranty shall apply for products not applied according to our published information folder. Before using / converting, the user / converter must determine the suitability of the product for its intended use / converting, and the user / converter assumes all risk and liability whatsoever in connection therewith. All questions of warranty and liability relating to this product are governed by the terms of the sale subject where applicable to the prevailing law. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of us.



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