



# Scotchcal™

## Electrostatic Promotional Opaque Marking Film 8648 (ES)

### Description

#### Advantages

- For electrostatic imaging using the heat transfer method
- Opaque and glossy surface
- Suitable for short term interior and exterior applications
- Up to 3 months durability
- Removable pressure sensitive adhesive

#### Application and Uses

3M™ Scotchcal™ Electrostatic Opaque Marking Film 8648 (ES) is intended for short term removable graphics when used with the listed Compatible Products in the following applications. These types of applications are warranted by the 3M™ Warranty.

- Point-of- Purchase displays
- Short term promotional graphics
- Short term signage
- Decals
- Posters

#### Limitations of End Uses

We do not normally warrant other applications, but please contact us to discuss your needs or let us suggest other 3M products.

#### Compatible Products for Warranted Graphics

- Scotchprint® Electrostatic Graphics System
- 3M™ Image Transfer Media 8601 (ES)
- Scotchprint® Electrostatic Exterior Toner Series 8700/8800 (ES)
- 3M™ Scotchcal™ Overlaminates
  - Lustre 8936 (ES)
  - Matte 8937 (ES)
- Selected 3M application tapes

*Note:* Other products may be used with film 8648 (ES) on a customer test and approve basis for non-warranted graphics.

### Characteristics

Property	Description
Film color	White Opaque
Film only	0.11 mm
Adhesive type and color	Pressure sensitive, Acrylic water based, Transparent
Application substrates	Glass, metal, paint, rigid plastic
Application and removal temperature range	10° to 25°C <i>film, air and substrate</i>
Removable	Within 1 year
Roll sizes	0.9 m by 45.72 m 1.372 m by 45.72 m 1.372 m by 91 m

### Effective Performance Life

- When manufactured by a 3M Scotchprint® Graphics Authorized Manufacturer and used according to the 3M recommendations, the graphics should have the performance life shown in the table below. The actual performance depends on the:
  - Correct combination of film, toner, and protective overlaminate
  - Selection and preparation of the substrate
  - Application methods
  - Cleaning and maintenance methods
  - Exposure conditions

### Warranted Durability

Protective Overlaminate on Film 8648	Fleet Graphics <i>Months</i>	Exterior Graphics <i>months</i>	Interior Graphics <i>months</i>
8936 (ES)	3	3	3
8937 (ES)	3	3	3

## Fabrication

To get the durability given in the Effective Performance Life section for film 8648 (*ES*), use the correct combination of toners and protective overlaminate. Check the appropriate Product Bulletins and Instruction Bulletins for the limitations. Refer to the 3M Related Literature section.

Transfer media 8601 (*ES*) can be used to transfer an image onto film series 8648 (*ES*). The image is electrostatically printed onto the media and then heat transferred onto the film.

## Cutting

The following are common cutting methods for this film. See Instruction Bulletin 4.1 for details.

- Hand cut
- Guillotine
- Cold and hot steel-rule die cutting
- Hot kiss cutting
- Drum-type electronic cutting
- Flat-bed electronic cutting

## Premasking

Generally it is not necessary to premask film 8648(*ES*). However, graphics 0.36 m<sup>2</sup> (4 square feet) or larger and intricately-shaped graphics should be premasked to prevent stretching and for easier application.

The type of 3M application tape needed depends on the protective overlaminate or overlaminate that was used. See Instruction Bulletin 4.3 for details.

Protective Overlaminates	Premasking
8936 ( <i>ES</i> ) 8937 ( <i>ES</i> )	None required, but SCPM-3 may be used.

## Application

Refer to the Instruction Bulletins listed in the **3M Related Literature** section, located at the end of this bulletin, for more complete information.

- A clean substrate is required for a good application. See Instruction Bulletin 5.1 for details.
- When applying film 8648 (*ES*). The air and substrate application temperature range for flat surfaces should be 10°C to 25°C.

*Note:* At lower temperatures, moisture may condense on the substrate and prevent good adhesion.

## Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without strong solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline).

*Note:* Graphics damaged by improper cleaning are not covered by the 3M warranty.

## Removal

3M Scotchcal™ Electrostatic Marking Film 8648 (*ES*) is warranted for removal with heat for 3 months.

## Shelf Life, Shipping, and Storage

- Unprocessed film has a shelf life of 2 years after receipt from 3M. Processed film has a shelf life of 1 year. However, the total shelf life of a graphic before and after processing cannot exceed 2 years.
- Store the film in a clean, dry area in the original container.
- Store the film out of direct sunlight and at less than 38°C (100°F).
- Ship the finished graphic lying flat or in a roll. To roll the graphic, roll it film side out onto a core that is 15 cm (6 inches) or larger in diameter. These methods help prevent the film and application tape from wrinkling or popping off the liner.

See Instruction Bulletin 6.5 for details.

## Product Data

Values given are typical for unprocessed film 8648 (*ES*) and are not for use in specifications. For a custom specification, submit a request to your 3M sales representative.

### Physical Characteristics

Property	Metric Units	English Units
Tensile strength (Maximum)	10 N/25 mm at 23°C	2.25 pounds/inch at 73°F
Shrinkage	Less than 0.25%	Less than 0.25%
Service temperature range	-29° to +80°C	-20° to +117°F

### Chemical Resistance Characteristics

- Resists mild alkalis, mild acids, and salt.
- Excellent resistance to water.

## Important Notice

This bulletin provides technical information only. All questions of warranty and liability relating to this product are governed by the terms and conditions of the sale, subject, where applicable, to the prevailing law.

Before using, the user must determine the suitability of the product for its required or intended use, and the user assumes all risk and liability whatsoever in connection therewith.

## 3M Related Literature

Listed below is related 3M Technical Literature which may be of interest:

Subject	Bulletin No.
<b>Product Bulletins</b>	
3M™ Image Transfer Media 8601i (ES)	8601i
Scotchprint® Exterior Toner Series 8700/8800	8700/8800
3M™ Scotchcal™ Electrostatic Protective Overlaminates <ul style="list-style-type: none"><li>• Lustre 8936 (ES)</li><li>• Matte 8937 (ES)</li></ul>	8936 8937
<b>Instruction Bulletins</b>	
Toners, Scotchprint series 8700/8800	4.12
Scoring and cutting	4.1
Premasking/prespacing	4.3
Application, substrate selection, preparation and substrate-specific application techniques	5.1
Storage, handling, maintenance, removal	6.5

## For Further Assistance

For help on specific questions relating to 3M™ Scotchcal™ Electrostatic Promotional Opaque Marking Film 8648 (ES), or any other 3M Commercial Graphics Division products, contact your local 3M Technical Service representative or

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