

8170-P50 8170-P40

Product Description

- For solvent, UV, and latex Inkjet printing and solvent and UV screen printing
- 4-mil, opaque, cast vinyl film with a high gloss finish

Product Features

- Allows a full image to be seen on the outside of a window while allowing viewing through windows from the inside
- Continuous, non-perforated liner
- White on the outside facing image side, black on the see-through reverse side
- First surface application
- Pressure-sensitive adhesive
- Removable with heat
- Expected performance life of three years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, non-vehicle window)

Recommended Types of Graphics and End Uses

- Store and other building window graphics
- Non-regulated vehicle windows
- Application to metal areas less than 2 in. (51 cm) wide between windows if they are covered with 3M brand vinyl graphic film or are painted

When constructed and used as described in this bulletin, these types of graphics and end uses may be warranted by the 3M™ MCS™ Warranty or the 3M Performance Guarantee. Please read the entire bulletin for details.

CAUTION

Glass surfaces exposed to sunlight will absorb heat. A glass surface covered by a film with high opacity or dark-colored ink, including films with small areas of high opacity or dark-colored ink, will absorb more heat. Heat absorption can create thermal stress resulting in glass breakage. This can cause personal injury or property damage. 3M specifically does not recommend using a film with high opacity or dark-colored ink on glass surfaces with significant exposure to sunlight.

Recommended Compatible Products

Visit [3Mgraphics.com/warranties](https://www.3mgraphics.com/warranties) for a complete list of compatible products approved by 3M for use with the base film covered in this bulletin and used for the creation of graphics that may be eligible for the 3M™ MCS™ Warranty or 3M Performance Guarantee.

OEM Inkjet Inks and Printers for the 3M Performance Guarantee

See the [3M Performance Guarantee Matrix](#) for a complete list of compatible OEM inkjet inks and printers that are approved by 3M for use with the base film described in this bulletin and for the creation of completed graphics that may be eligible for the 3M Performance Guarantee.

Screen Printing Inks for 3M™ MCS™ Warranty

- [3M™ Screen Printing Ink Series 1900 \(solvent\)](#), line color and four color
- [3M™ Screen Printing UV Ink Series 9800](#), line color and four color

Quick Links

[3M Graphics Warranties](#)
[Technical Information Selector](#)
[Safety Data Sheets \(SDS\)](#)
[Flammability](#)
[Videos](#)

Some of these links lead to web-based resources that are not product-specific.

3M™ Window Graphic Film

Graphic Protection

- [3M™ Scotchcal™ Gloss Overlamine 8518](#)
- [3M™ Scotchcal™ Optically Clear Overlamine 8914](#)
- [3M™ Screen Print Gloss Clear 1920DR](#)
- [3M™ Screen Print UV Gloss Clear 9740i](#)
- [3M™ Screen Print UV Gloss Clear 9760LX](#)
- [3M™ Screen Print UV Gloss Clear 9800CL](#)

Other Products

- [3M™ Edge Sealer 3950](#)
- [3M™ Edge Sealer Tape 8914](#)

Certificate of 3M™ MCS™ Warranty

Graphic manufacturers who produce digitally printed graphics made with all branded 3M Graphics products, including 3M ink purchased through a qualified 3M distributor or 3M printing partner, may register to be recognized with a Certificate of 3M™ MCS™ Warranty. Only graphic manufacturers having a current Certificate of 3M™ MCS™ Warranty are eligible to extend this warranty to their customers.

NOTE: For non-digitally printed finished graphics, check your eligibility for the 3M™ MCS™ Warranty by viewing the warranty period found within this product bulletin or by using the warranty selector at www.3mgraphics.com/warranties.

Characteristics

These are the typical values for unprocessed product. Processing may change the values.

Physical Characteristics

Characteristic	Value
Material	Cast vinyl
Perforation Pattern	Film 8170-P50: 50% Film 8170-P40: 40%
Film Color	White on the image side, black on the reverse side
Thickness	Without adhesive: 4 mil (0.10 mm) With adhesive: 5 mil to 6 mil (0.13 mm to 0.15 mm)
Adhesive	Pressure-sensitive, removable
Adhesive Color	Clear
Adhesive Liner	Polyethylene-coated paper with a continuous, non-perforated paper liner
Tensile Strength	4.2 lbs/in. (0.75 kg/cm) minimum
Flammability	View the ASTM E84 reports here , or go to the online product catalog at 3Mgraphics.com . For all other test reports call 1-800-328-3908.

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	Surface type: Flat and simple curves Substrate type: Transparent substrates such as acrylic, glass, polycarbonate, 3M vinyl films; painted metal Note: Substrates must not have coatings such as anti-reflection and scratch resistance, or built-in heating or defrosting elements, or wipers. Application temperature: 40°F to 100°F (4°C to 38°C) air and substrate Application method: Dry
Temperature Range After Application	-40°F to +225°F (-40°C to +107°C) (Though not for extended periods of time at the extremes.)
Graphic Removal	Removable with heat from most surfaces within the warranted period

Factors Affecting Graphic Performance Life

The actual performance life of a graphic is affected by:

- The combination of graphic materials used
- Complete ink drying or curing
- Selection, condition, and preparation of the substrate
- Surface texture
- Application methods
- Angle and direction of sun exposure
- Environmental conditions
- Cleaning and maintenance methods

Graphics Manufacturing

CAUTION

Before using any equipment, always read the manufacturer's instructions for safe operation.

Laws and Regulations

Some countries have laws or regulations requiring minimum light transmission that may limit or preclude the use of this product on regulated vehicle windows, which may include passenger vehicles and vans. Users are responsible for determining and complying with all applicable standards.

CAUTION

Some states have laws or regulations requiring minimum light transmission that may limit or preclude the use of this product on regulated vehicle windows, which may include passenger vehicles and vans. Users are responsible for determining and complying with all applicable standards.

CAUTION

Applications requiring an optically-clear view, such as vehicle window exteriors, must be laminated with 3M™ Scotchcal™ Optically Clear Overlaminate 8914. Failure to apply this overlamine could result in obstructed or impaired viewing when the product becomes wet.

Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

Total Ink Coverage

The maximum recommended total ink coverage for this film is:

- **270%** when printed entirely with approved 3M solvent inkjet inks.
- **280%** when printed entirely with approved 3M UV inkjet inks.
- **280%** when printed entirely with approved 3M latex inkjet inks.

Do not exceed the recommended total ink coverage for this product. Having too much total physical ink on the product results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance. For additional details about total ink coverage, refer to the 3M product and instruction bulletins for 3M inks or the [3M Performance Guarantee Matrix](#) for OEM inks.

Completely Dry Graphics

IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage, and adhesion failure, which are not covered under any 3M Graphics warranty.

See the ink's 3M product and instruction bulletins for more details.

Cutting

See [3M Instruction Bulletin 4.1](#) for Sheeting, Scoring and Film Cutting details.

Graphic Protection

Graphic protection may improve the appearance, performance, and durability of the graphic. Click on the graphic protection options listed in this product bulletin or see the [3M Graphics Materials Product Catalog](#) for more information.

IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

Application Tapes

There are two types of application tapes. See [3M Instruction Bulletin AT-1](#) to determine what application tape is recommended for your film or finished graphic.

Premasking Tape

Premasking tape increases stiffness during application while preventing stretching and damage. Use when little or no liner is exposed. See [3M Instruction Bulletin 4.3](#) for complete details.

Prespacing Tape

Prespacing tape holds cut and weeded letters or graphics in place during application and after removal of the film liner, while preventing stretching and damage. Use when large amounts of liner are exposed. See [3M Instruction Bulletin 4.3](#) for complete details.

Application and Installation

In addition to other 3M bulletins specified in this document, the following bulletins provide details users may need to successfully apply a graphic.

- [3M Instruction Bulletin 2.1](#) Design of Graphics
- [3M Instruction Bulletin 4.22](#) Lamination Basics for Inkjet Printed Graphics
- [3M Instruction Bulletin 5.36](#) Application Techniques for Automobiles, Vans and Buses
 - Complete the 3M Pre-Installation Inspection Record found in 5.36 prior to manufacturing or applying a graphic to an automobile, van, or bus.
- [3M Instruction Bulletin 5.4](#) Application: Fleet Trucks
- [3M Instruction Bulletin 5.5](#) Application, General Procedures for Interior and Exterior Dry Application
- [3M Product and Instruction Bulletin V-Tools](#) 3M™ Vehicle Channel Applicator Tools

IMPORTANT NOTE

UV inkjet inks may crack if too much heat is used when applying graphics to complex curves and deep contours as well as around rivets. When using heat during an application, ensure the film surface temperature does not exceed 212°F (100°C). For best results, **always do a test application** of a printed graphic to determine how much heat can be used without damaging the image.

Stretchability

Many finished graphic constructions can be stretched without primer or relief cuts and maintain lift resistance.

- For straight trucks, semi-trucks, and semi-trailers, see [3M Instruction Bulletin 5.4](#) for details and exceptions.

3M™ Tape Primer 94 and Adhesion Promoter 111

3M recommends using primer where the film will be stretched, particularly on the edges of the film, to maximize a graphic's bond to its substrate.

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See [3M Instruction Bulletin 6.5](#) for details.

Removal

Removal requires heat. 3M makes no claims as to the ease or speed of removal. See [3M Instruction Bulletin 6.5](#) for details.

Shelf Life, Storage, and Shipping

Shelf Life

The shelf life is **never more than three years** from the date of manufacture on the original box.

Processing the film changes its shelf life to **one year** from the processing date, but no later than three years from the manufacturing date.

Storage Conditions

- 40°F to 100°F (4°C to 38°C)
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to room temperature before use

Shipping Finished Graphics

Flat, or rolled printed side out on a 6 in. (15 cm) or larger core. This helps prevent the application tape, if used, from popping off.

Health and Safety

CAUTION

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety, and environmental information. To obtain SDS for 3M products go to [3M.com/SDS](https://www.3m.com/SDS). To request SDS by mail, or in case of an urgent situation, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturer's instructions for safe operation.

Warranty Information

Warranty Coverage Overview

The warranty coverage for eligible graphics is based on the user both reading and following all applicable and current 3M Graphics product and instruction bulletins. The warranty period for eligible graphics is as stated in the 3M Graphics Warranties Matrices at the time the film was purchased. Information found at [3M.com/graphicswarranties](https://www.3m.com/graphicswarranties) includes:

- [3M Graphics Warranties Bulletin](#)
 - This bulletin contains information on limitations, exceptions, and warranty period reductions for 3M Graphics warranties. The warranty period may be reduced and stipulations may apply for certain constructions, applications, and graphic exposures as covered in this bulletin.
- [3M Graphics Warranties Selector](#)
 - Use this selector to search for your vertical warranty period by product type, ink type, film name, and/or ink/printer platform.
- [U.S. Desert Southwest Region Map](#)
 - Use this map of hot, arid desert areas to determine if you are subject to reduced warranted durabilities.

Technical Information

The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

Product Selection and Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment, reviewing all applicable regulations and standards, and reviewing the product label and use instructions. Failure to properly evaluate, select, and use a 3M product in accordance with instructions or to meet all applicable safety regulations may result in injury, sickness, death, and/or harm to property.

Warranty, Limited Remedy, and Disclaimer

Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, 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 for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

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[3M.com/Graphics](https://www.3m.com/Graphics)

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