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 3 year (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 inches (51 cm) wide between windows if they are covered with 3M brand vinyl graphic film or are painted

⚠️ 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 that results in glass breakage, or thermal cracking. 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

See 3Mgraphics.com/warranties for a complete list of compatible products that are approved by 3M for use with the base film covered in this Bulletin and used for the creation of a graphic 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 covered in the Bulletin and used for the creation of a graphic 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

3M

Graphic Protection

- 3M™ Scotchcal™ Gloss Overlaminate 8518
- 3M™ Scotchcal™ Optically Clear Overlaminate 8914
- 3M™ Screen Print Gloss Clear 1920DR
- 3M™ Screen Print UV Gloss Clear 9740i
- 3M™ Screen Print UV Gloss Clear 9800CL

Other Products

- 3M™ Edge Sealer 3950
- 3M™ Edge Sealer Tape 8914

Certificate of 3M™ MCS™ Warranty

Graphics manufacturers who produce graphics made with all 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 graphics manufacturers having a current Certificate of 3M™ MCS™ Warranty are eligible to extend this warranty to their customers.

Characteristics

These are 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
Gloss	High gloss
Thickness	**Without adhesive:** 4 mil (0.10 mm) **With adhesive:** 5-6 mil (0.13-0.15 mm)
Adhesive	Pressure-sensitive, removable
Adhesive Color	Clear
Liner	Polyethylene-coated paper with continuous, non-perforated paper liner
Tensile Strength	4.2 pounds/inch (0.74 kg/km) minimum
Flammability	ASTM E84 reports: 8170, or go to the On-line Product Catalog at 3Mgraphics.com **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 transparent acrylic, glass, polycarbonate, 3M vinyl films; narrow strips of painted metal between vehicle windows 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° – 100°F (4° – 38°C) air and sub-strate **Application method:** Dry
Temperature Range After Application	-30 °F to +150 °F (-25 °C to +65 °C) (not for extended periods of time at the extremes)
Graphic Removal	Removable with heat for up to 1 year on glass, acrylic, polycarbonate **Glass:**60° – 100°F (16° – 38°C) **Acrylic, polycarbonate:** 70° – 100°F (21° – 38°C)

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 that the film was purchased. Information found at 3Mgraphics.com/warranties includes:

- 3M Graphics Warranties Bulletin
  - This bulletin contains information on limitations and exceptions, and warranty period reductions for 3M Graphics Warranties. The warranty period may be reduced and stipulations may apply for certain constructions and 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 number, ink type, and 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.

The warranties set forth in this Bulletin are made in lieu of all other express or implied warranties, including any implied warranty of merchantability, fitness for a particular purpose, or arising out of a course of dealing, custom, or usage of trade.

3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the 3M Graphics Warranties Bulletin.

Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at 3MGraphics.com/warranties.

Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED IN THE 3M GRAPHICS WARRANTIES BULLETIN), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO 3M'S GRAPHICS PRODUCTS, SERVICES, or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought.

Warranty Period Matrices - Inkjet

See the 3M Graphics Warranties Matrices at 3MGraphics.com/warranties, for vertical warranty period information specific to your film.

Warranty Period Matrices - Screen Print

Table A. Screen Print Warranty Period (in years) for Finished Graphics in a Standard U.S. Vertical Exposure (see 3M Graphics Warranties Bulletin **for Graphic Type Definitions).**

Graphic Protection	Screen Print Solvent Ink Series 1900			UV Ink Series 9800			UV Ink Series 9800 Metallic		
	VEH	OUT	IN	VEH	OUT	IN	VEH	OUT	IN
8914, 8518, 9740i	1	2	5	1	2	5	1	2	5
1920DR	1	2	5	—	—	—	—	—	—
9800CL	—	—	—	1	2	5	1	2	5
None	—	—	—	—	—	2	—	—	—

Additional Limitations

See the 3M Graphics Warranties Bulletin at 3MGraphics.com/warranties, for terms, additional limitations of your warranty, if any, information on reduced warranties for different exposures, and limitations of liability.

Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

- the combinations of graphics 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 or maintenance methods.

Graphics Manufacturing

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. The user is 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. The user is responsible for determining and complying with all applicable standards.

⚠ CAUTION

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

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 the "Recommended Compatible Products" on page 1 or see the 3M Graphics Market Product Catalog, for more information.

Application and Installation

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

- 3M Instruction Bulletin 4.22. Hot and Cold Roll Lamination for 3M Overlaminates.
- 3M Instruction Bulletin 5.1. Select and Prepare Substrates for Graphic Application
- 3M Instruction Bulletin 5.36. Application Techniques for Automobiles, Vans and Buses. Complete the 3M Pre-Installation Inspection Record found in this Instruction Bulletin prior to manufacturing or applying a graphic to an automobile, van, or bus.
- 3M Instruction Bulletin 5.5. Application, General Procedures for Interior and Exterior Dry Application.
- 3M Instruction Bulletin 6.5. Storage, Handling, Maintenance, and Removal of Films and Sheetings.

⚠ CAUTION

  3M recommends using 3M™ Edge Sealer Tape 8914 around the perimeter of the graphic to prevent dirt and other contaminants from causing the graphic to prematurely curl and fail.

Pressure-sensitive Adhesive

This film has a pressure-sensitive adhesive. It bonds to the surface even with light pressure and cannot be repositioned.

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). See 3M Instruction Bulletin 6.5 for details.

Removal

Removal may require heat. The ease and rate of removal depends on a number of factors. See 3M Instruction Bulletin 6.5 for details.

Shelf Life, Storage and Shipping

Shelf Life

The shelf life is **never more than 1 year** from the date of manufacture on the original box.

Storage Conditions

- at an ambient temperature less than 86 °F (30 °C)
- Out of sunlight
- Clean, dry area
- Original container
- Bring the film to print room temperature before using

Shipping Finished Graphics

Flat, or rolled printed side out on 6 inch (15 cm) or larger core. This helps prevent the liner, and, if used, the application tape 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 sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

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

Bulletin Change Summary

For the most current 3M Technical Information available to successfully use this product, please view this Bulletin electronically and click on the blue underlined links to view the relevant documents.

Rev C JUN-2015:

• Added Glass Breakage Caution to "Recommended Types of Graphics and End Uses" on page 1.
• Updated "Warranty Coverage Overview" on page 3 to include links to specific areas on the 3M Graphics Warranties website to increase usability.