

Product Description

- For solvent, UV, and latex inkjet printing
- 2-mil, white, vinyl film

Product Features

- Pressure-activated adhesive for easy sliding, tacking, snap-up, and repositioning
- Air release channels for fast, easy, bubble-free installations
- Ultra-removable
- Expected performance life of two years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)

Recommended Types of Graphics and End Uses

- Indoor and outdoor signs, emblems, or striping
- Vehicle and fleet graphics, emblems, or striping
- Vending or dispensing machine and cooler graphics

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. Read the entire bulletin for details.

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 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.

Graphic Protection

- [3M™ Gloss Wrap Overlamine 8418G](#)
- [3M™ Gloss Wrap Overlamine 8428G](#)
- [3M™ Scotchcal™ Gloss Overlamine 8518](#)
- [3M™ Scotchcal™ Luster Overlamine 8519](#)
- [3M™ Scotchcal™ Matte Overlamine 8520](#)
- [3M™ Scotchcal™ Ultra Matte Overlamine 8915](#)
- [3M™ Screen Print UV Gloss Clear 9740i](#)
- [3M™ Screen Print UV Glass Clear 9760LX](#)

Other Products

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

Certificate of 3M™ MCS™ Warranty

Graphic manufacturers who produce digitally printed graphics made entirely with 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

NOTE: These are the typical values for unprocessed products. Processing may change the values.

Physical Characteristics

Characteristic	Value
Material	Vinyl
Film Color	White, opaque
Thickness	Without adhesive: 0.05 mm (2 mil) With adhesive: 0.08 – 0.10 mm (3 – 4 mil)
Adhesive	Pressure-activated (slide, tack, snap-up, reposition) with air release channels
Adhesive Appearance	Grey
Liner	Polyethylene-coated paper
Typical Adhesion 24 Hours After Application (FTM 1, 24 h 23°C/50%RH)	HDPE: 0.88 to 1.75 N/cm (0.5 to 1 lbf/in.) Fruehauf pre-painted panels: 1.75 to 3.5 N/cm (1 to 2 lbf/in.) Alodine aluminum: 3.5 to 5.3 N/cm (2 to 3 lbf/in.) Stainless Steel: 1.75 to 3.5 N/cm (1 to 2 lbf/in.)
Tensile Strength	8.8 N/cm at 23°C (5 lbf/in. at 73°F)
Chemical Resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water (does not include immersion) Resists occasional fuel spills
Flammability	Flammability standards are different from country to country. Ask your local 3M contact for details, please.

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	Surface type: Flat, with and without rivets, simple curves, moderate compound curves Substrate type: Smooth, rigid vehicle materials such as glass, aluminum, paint, ABS molding Application method: Dry Application temperature (air and substrate) for flat surfaces with and without rivets: -2°C to 38°C (28°F to 100°F)
Temperature Range After Application	-54°C to 93° C (-65°F to 200°F) (Though not for extended periods of time at the extremes.)
Graphic Removal	Graphic constructions with compatible overlaminates are removable without heat or chemicals from most surfaces at air and substrate temperatures greater than -1°C (30°F).

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.

Inkjet Printing

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

Total Ink Coverage

- 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.
- 250% when printed on the Mimaki JV5 Series printer entirely with HS series inks ([3M Performance Guarantee](#)).

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 3M Graphics Products. Finished graphics eligible for any 3M warranty must be constructed using approved 3M Graphics Products. See the [3M Graphics Warranty Bulletin](#) for more details.

Premasking Tape

Premasking tape increases stiffness during application while preventing stretching and damage. Use when little or no liner is exposed. See [3M Product 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 Product 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 5.42](#) Application, Special Considerations for Watercraft
 - Complete the 3M Pre-Installation Inspection Record found in 5.42 prior to manufacturing or applying a graphic to a watercraft.
- [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 during graphic application to complex curves and deep contours as well as around rivets. When using heat during application, make sure the film surface temperature does not exceed 100°C (212°F). For best results, **always do a test application** of a printed graphic to determine how much heat can be used without damaging the image.

Pressure-activated Adhesive

The pressure activated adhesive on this film offers:

- smooth sliding into position on a substrate;
- fast finger tacking to check positioning; and
- easy snap-up and repositioning when you need it.

The snap-up and reposition feature is lost:

- when firm pressure with a squeegee or other application tool is applied;
- at application temperatures above 38°C (100°F) even if only light finger pressure was used for tacking;
- if any part of the film is removed from the original liner and reapplied to the same or another liner; or
- if solvent from inkjet ink has not completely dried or cured, affecting both slideability and snap-up.

Working with Air Release Channels

Air release channels are a characteristic of films with Comply™ adhesive that allow trapped air to exit through the edges of the graphic.

- The channels will be damaged and effective air removal affected if you remove and attempt to change liners or reapply the same liner.

For the best results, always work from the center out to the edges of the graphic to allow trapped air to exit through the air release channels. If the channels are closed off by firm pressure and air is trapped, use an air release tool to help remove air bubbles. See [3M Instruction Bulletin 5.4](#) for details.

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

This product is ultra-removable. 3M makes no claims as to the speed of removal. This product may not remove similarly to other products in the same category. 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 two years from the manufacturing date.

Storage Conditions

- 4°C to 38°C (40°F to 100°F)
- 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 15 cm (6 in.) or larger core. This helps prevent the liner, if used, from popping off.

Health and Safety

Tools and Equipment Usage

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

Chemicals

When handling any chemical products, read the manufacturers' container labels and the Safety Data Sheets (SDS) for important health, safety, and environmental information.

[Follow the link to obtain SDS sheets for 3M products on 3M.com/SDS.](#)

[Follow the link to obtain information about substances of very high concern \(SVHC\).](#)

Warranty Information

Technical Information

Technical information, guidance, and other statements 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 to any intellectual property rights is granted or implied with respect to this technical 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 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.

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