180mC Series
With Comply™ Adhesive

Product Description

- 2-mil, cast vinyl film

Product Features

- Excellent hiding power
- Pressure-activated adhesive for easy sliding, tacking, snap-up and repositioning
- Features non-visible air release channels for fast and easy, bubble-free graphic installations
- Conforms to flat surfaces, with and without rivets, simple curves, compound curves and corrugations
- Expected Performance Life of 10 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 graphics and signs, including point-of-purchase and displays
- Commercial vehicles, straight trucks, semi-trucks and semi-trailers, emblems or striping
- Bus graphics
- Rail car graphics
- Transparent film color 114 can be used for two-way emblems for windows, except on buses or other vehicles
- Small format original equipment manufacturer's (OEM) decorative and identification graphics, cautionary and safety labeling
- Watercraft graphics (above the static water line only)

ⓘ **IMPORTANT NOTE**

For all stainless steel applications, see 181 product bulletin.

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.

Recommended Compatible Products

See 3M.com/graphicswarranties 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.

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
- Sericol™ Duracal™ UV Screen Print Ink* (approved for OEM applications only)
- Sericol™ Duracal™ Screen Print Clear* (approved for OEM applications only)

ⓘ **IMPORTANT NOTE**

To identify a Sericol inks distributor, contact FUJIFILM North America Corporation, Graphic 1101 W. Cambridge Drive, Kansas City, KS 66103; Tel: 1-800-255-4562 or 913-342-4060.

3M

Graphic Protection

- [3M™ Screen Print Gloss Clear 1920DR](#)
- [3M™ Screen Print Matte Clear 1930](#)
- [3M™ Screen Print UV Gloss Clear 9800CL](#)
- [3M™ Screen Print Matte Clear 9730UV](#)
- [3M™ Screen Print UV Gloss Clear 9740i](#)
- [3M™ Scotchcal™ Gloss Overlaminate 8518](#)
- [3M™ Scotchcal™ Luster Overlaminate 8519](#)
- [3M™ Scotchcal™ Matte Overalminate 8520](#)
- [3M™ Scotchcal™ Gloss Overlaminate 8528](#)
- [3M™ Envision™Gloss Wrap Overlaminate 8548G](#)
- [3M™ Envision™ Luster Wrap Overlaminate 8549L](#)
- [3M™ Envision™ Matte Wrap Overlaminate 8550M](#)
- [3M™ Wrap Overlaminate Series 8900](#)

Application Tapes

See [3M Instruction Bulletin AT-1](#) to determine what application tape is recommended for the film or finished graphic.

Other Products

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

Certificate of 3M™ MCS™ Warranty

Graphic manufacturers who produce digitally printed 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 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 the Product Bulletin or using the warranty selector at [www.3m.com/graphicswarranties](#).

Characteristics

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

Physical Characteristics

Characteristic	Value
Material	Cast Vinyl
Film Color	See Colors
Thickness	**Without adhesive:** 2 mil (0.05 mm) **With adhesive:** 3–4 mil (0.08–0.10 mm)
Adhesive	Pressure-activated (slide, tack, snap-up, reposition) with air release channels
Adhesive Color	Gray or clear, see Colors
Liner	Polyethylene-coated paper
Adhesion, Typical *24 hours after application*	**ABS:** 4-5 pounds/inch (0.72-0.89 kg/cm) **Acrylic enamel:** 3-4 pounds/inch (0.54-0.72 kg/cm) **Aluminum, anodized:** 7-8 pounds/inch (1.26-1.43 kg/cm) **Aluminum, etched:** 5-6 pounds/inch (0.89-1.08 kg/cm) **Chrome:** 4-5 pounds/inch (0.72-0.89 kg/cm) **Fruehauf pre-painted panels:** 3-5 pounds/inch (0.54-0.89 kg/cm)
Tensile Strength	5 pounds/inch at 73 °F (0.9kg/cm at 23 °C) minimum
Chemical Resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water (does not include immersion)
Flammability	Go to the On-line Product Catalog at 3M.com/graphics or Call 1-800-328-3908.

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	**Surface type:** Flat, with and without rivets; corrugated; simple curves; moderate compound curves. **Substrate type:** ABS resins, aluminum, chrome, glass, fiberglass reinforced plastics, paint (check adhesion to powdercoated or water-based paints) **Application method:** Dry **Application temperature (air and substrate):** Flat surfaces without rivets: 50° to 100°F (10° to 38°C) Flat, curved or corrugated surfaces with rivets: 55° to 100°F (13° to 38°C) Compound curves: 60° to 90°F (16° to 32°C)
Temperature Range After Application	-65 to +225 °F (-60 to +107 °C) Not for extended periods of time at the extremes
Graphic Removal	Removable with heat from most substrates within the Warranty Period at 50°F (10°C) minimum (air and substrate)

3M™ Controltac™ Graphic Film

Colors

Solid Colors			Metallic and Transparent
10 White[3]	53 Cardinal Red[3]	101 Nimbus Gray[1]	201 Slate[1]
11 Pearl gray[1]	54 Light Orange	103 Magenta[1]	211 Charcoal[1]
12 Black[3]	56 Dark Green	105 Harvest Gold[1]	217 Dark Blue[1]
13 Tomato Red[3]	57 Olympic Blue[3]	107 Light Blue[1]	227 Bright Blue[1]
14 Bright Orange	58 Burgundy[1]	117 Persian Blue	229 Copper[1]
15 Bright Yellow[1, 2, 3]	59 Putty[1]	120 Satin Aluminum[3]	239 Chocolate Brown[1]
16 Khaki Green	61 Mid Gray	121 Light Gray	241 Gold[1]
17 Vivid Blue	63 Geranium[1]	127 Boat Blue	243 Steampunk Red
19 Deep Mahogany Brown	64 Apricot[1]	131 Satin Gold[1]	247 Petroleum Blue[1]
20 Matte White[1, 2]	65 Light Lemon Yellow[1]	136 Lime Green[1]	249 Champagne
22 Matte Black[1]	66 Forest Green[1]	151 Traffic Gray[1,3]	114 Transparent[1, 2, 3]
23 Deep Red	69 Duranodic[1]	177 Shadow Blue[1]	
24 Terra Cotta[1]	74 Red Orange[1]	186 Bright Green[1, 3]	
25 Sunflower[1, 2]	77 Peacock Blue	187 Wedgewood Blue[1]	
27 Indigo (Navy)	78 Plum[1]	196 Apple Green[1]	
29 Russet Brown	81 Stone Gray	197 Light Navy[1]	
31 Medium Gray[1]	86 Robin Egg Blue[1]	263 Perfect match Red	
37 Sapphire Blue[3]	89 Sandstone[1]	273 Process Magenta[2]	
38 Royal Purple[1]	90 Antique White	276 Bottle Green[1]	
39 Tan	91 Dove gray[1]	293 Atomic Red[1, 2]	
41 Dark Gray[1]	93 Imperial Red	307 Dark Aqua[1]	
46 Kelly Green	96 Teal[1]	357 Bermuda Blue[1]	
47 Intense Blue	97 Soft Blue	397 Dark Blue[1]	
48 Purple[1]	98 Dark Violet[1]		
49 Beige	99 Fawn[1]		

1 Indicates clear adhesive; all other adhesives are gray-pigmented
2 Indicates minimal or no hiding power
3 Indicates 60"-wide material

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 3M.com/graphicswarranties 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, 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.

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 3M.com/graphicswarranties.

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

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

Additional Limitations

See the 3M Graphics Warranties Bulletin at 3MGraphics.com/warranties, for terms, additional limitations of your warranty, if any, 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

⚠ **CAUTION**

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

Screen Printing

- Formulations and processing conditions can affect ink durability. Refer to the Product and Instruction Bulletins for your ink for limitations and proper usage.
- Whether you apply screen print clears with traditional screening methods or roller coating, use equipment designed to handle high viscosity materials and make sure the coating is evenly applied to the specifications in the clear's 3M Instruction Bulletin.

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 Product Bulletin or see the 3M Graphics Market 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 the film or finished graphic.

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

Holds cut and weeded letters or graphics in place during application and after removing 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 that you 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 this Instruction Bulletin 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 this Instruction Bulletin 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.

Pressure-activated Adhesive

The pressure activated adhesive on this film offers:

- Smooth sliding into position on a substrate;
- Fast finger tacking to check position; 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 100° F (38° C) 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.

Working with Non-Visible 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 aid in removing air bubbles. See [3M Instruction Bulletin 5.4](#) for details.

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 that where the film will be stretched, use primer 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 and/or chemicals. 3M makes no claims as to the ease or 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 3 years** from the date of manufacture on the original box.
If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 3 year maximum from the manufacturing date.

Storage Conditions

- 40° to 100 °F (4° 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 6 inch (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 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 manufacturer's instructions for safe operation.

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