3M

Piezo Ink Jet Printing
with 3M™ Piezo Ink Jet Ink Series 3700

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Description

3M™ Piezo Ink Jet Ink Series 3700 makes attractive, multicolor graphics. These pigmented inks are weather resistant and have excellent color retention. They are intended for use in Gretag Arizona™ 180 Printer.

Product Line

This information is subject to change. Be sure this is the most current Product Bulletin. See 3M Related Literature at the end of this bulletin.

Product No.	Color
3791	Magenta
3792	Yellow
3795	Black
3796	Cyan
3781	Light Magenta
3786	Light Cyan

Compatible Products and Equipment

Films and Media

- 3M™ Controltac™ *Plus* Graphic Film RG160-30
- 3M™ Controltac™ *Plus* Graphic Film RG162-30
- 3M™ Controltac™ *Plus* Graphic Film RG180-10
- 3M™ Controltac™ *Plus* Graphic Film with Comply™ Performance RG180C-10
- 3M™ Scotchlite™ *Plus* Flexible Reflective Graphic Film RG680-10
- 3M™ Scotchlite™ Removable Graphic Film with Comply™ Performance Series RG680CR
- 3M™ Scotchcal™ Removable Graphic Film RG3470
- 3M™ Scotchcal™ Changeable Graphic Film RG3510
- 3M™ Scotchcal™ Graphic Film RG3630-20
- 3M™ Scotchcal™ Graphic Film RG3650-114
- 3M™ Scotchlite™ Changeable Graphic Film RG5100
- 3M™ Scotchcal™ Perforated Window Graphic Film RG8171
- 3M™ Banner Material RG8450
- 3M™ Single-Sided Banner Material RG8451

Note: Media with the RG designation indicate that the material is reverse-wound onto the core for use on the Arizona 180 printer.

Overprint Clears and Overlaminates

- 3M™ Screen Print Overprint Clear 1920DR
- 3M™ Screen Print Overprint Clear 9720UV
- 3M™ Scotchcal™ Luster Overlaminate 3645
- 3M™ Scotchcal™ Luster Overlaminate 8908 ES
- 3M™ Scotchcal™ Matte Overlaminate 8909 ES
- 3M™ Scotchcal™ Optically Clear Overlaminate 8914 ES
- 3M™ Scotchcal™ Luster Overlaminate 8519
- 3M™ Scotchcal™ Matte Overlaminate 8520

Note: Refer to page 9 for media and overlaminate compatibility.

Application Tapes

- 3M™ Premask Tape SCPM-3, SCPM-44X
- 3M™ Prespace Tape SCPS-2, SCPS-53X, SCPS-55

Printers

- Approved for use with the Arizona 180 printer.

Health and Safety

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

To obtain MSDS sheets for 3M products:

- By fax, call 1-800-364-0768 in the US and Canada or 1-650-556-8417 for all other locations.
- Electronically, visit us at www.3M.com/MSDS.
- 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.

Ventilation

Provide local and/or general exhaust ventilation in the printing drying areas to prevent a build up of solvent vapors and to maintain levels of solvents below the limit for worker exposure. An experienced industrial ventilation engineer and/or a certified industrial hygienist can help evaluate your ventilation requirements and design based on your site process conditions. Gretag, the printer's manufacturer, also provides ventilation information. Please refer to their literature also.

Note: All Product and Instruction Bulletins mentioned in this bulletin can be ordered through our Fax-on-Demand system. See 3M Related Literature near the end of this bulletin for details.

Note: Additional environmental, health and safety information is available in EHS Bulletin 3700, which is available on the Scotchprint® Graphics Network (Extranet site). See page 11 for more information on how to access this site.

Understanding Printing with Solvent-Based Piezo Ink Jet Inks

The Role of the Piezo Press Operator

An operator who understands pre-press operations and the relationship between media characteristics, printer setup, total ink coverage and drying time can produce graphics that achieve the performance expectations of the media and the customer. The operator should also work with the graphic designer and/or color conversion operator so there is a common understanding of print and media parameters.

A wide variety of printing substrates (media) can be used with piezo ink jet printing. Although 3M media have been extensively tested in laboratory conditions, the knowledge and skill of the operator is a key factor in producing high quality graphics.

About Solvent-Based Piezo Inks Used in This Printer

The inks used in this printer contain a very high percentage of solvent. If the solvent is not evaporated quickly through heat and air, it may significantly affect post-printing operations and how the media handles when applying it.

Solvent's Affect on Media

Normally, the solvents in piezo inks do not damage the media or adhesive unless the solvent remains too long on the media and is also absorbed by the adhesive. When the media is not sufficiently dried immediately after processing, it may result in edge curling, shrinkage, aggressive adhesive and/or stretching, all of which contribute to handling and performance problems. The more solvent you can eliminate, the better the media performance.

How to Manage the Total Physical Amount of Ink on Media

Testing shows that properly managing the total physical amount of ink laid down in any area on the graphic results in better image quality, less ink usage, quicker drying times and greater throughput. It also helps ensure good media performance.

To help you achieve these goals, we have established maximum Total Ink Coverage for each 3M media. Total ink coverage is the total percentage of all inks (CMYK) used in the darkest shadow regions of the graphic. For example, CMYK values of 60%, 60%, 60% and 100% produces a total ink coverage of 280%.

Note: Depending on the software you are using or the color printing reference books you use, total ink coverage may be called: total area coverage; total dot area; max CMYK; maximum ink amount; total ink limit; total printing dot.

There is a common misconception that because the ratio of ink solids to solvent is very low, the only way to achieve satisfactory density is to use high ink coverage. Testing shows that in many cases you can achieve very good density with lower total ink coverage with little or no loss of quality. The rest of this section discusses options for managing the total ink coverage.

Setting Total Ink Coverage During Color Separation

The best results can be achieved when total ink coverage is taken into consideration by the graphic designer and set during pre-press operations.

The graphic designer and/or color separator should always discuss printing parameters with the piezo press operator so that the total ink coverage can be set during separation. The typical methods of color separation are Photoshop®, ICC-based color management, third party color separation packages and direct conversion to CMYK at the time of scanning.

Part of establishing the total ink coverage is determining maximum black. We recommend limiting black ink to the minimum level necessary to achieve a maximum density. For example, if you review a series of black patches in 1% increments from 90% to 100%, a visible difference in density usually stops being noticeable between 94% to 100% of total black.

Correcting Total Ink Coverage During Printing

If the total ink coverage on a color-separated image is too high for the media and your RIP software supports ink limiting, you may be able to use this function to reduce the total physical amount of ink on the media.

For example, in 3M's **Scotchprint® Graphic Maker Software**, the ink limiting feature manipulates the print data to reduce the amount of ink used while maintaining color balance for the best possible image quality. It does this by limiting the number of ink spots that are printed over the top of one another without restricting the 100% solid colors (cyan, magenta, yellow and black). Ink limiting can be set for none, 100%, 150%, 200% or 250%. For complete details refer to the Graphic Maker User's Manual.

If you are not using Graphic Maker software, consult your RIP software manual for how to limit ink.

If you do not have print time ink limit functions

You may have to reseparate your image for correct total ink coverage. This is not the an optimal method as loss of color fidelity and image quality problems can occur.

Keys to Successful Printing and Application

There are many keys to successful printing and application. If we had to pick just two it would be total ink coverage and drying. However, because of the variety of media used and the different operating conditions of each shop, all of the following keys are important to overall success.

Very short term graphics, such as promotional posters and banners, may not require this level of consideration.

1. **Discuss the project with the graphic designer and/or color separator.**

   Make sure the designer and/or color separator know the parameters and printing recommendations for both the media and printer being used for each graphic.

2. **Discuss the project with the media applicator.**

   Work with the media applicator so you are both aware of any special handling or application techniques that may be needed for the selected media construction. Any combination of high total ink coverages, hot application temperatures, and irregular application surfaces may make applying the media more difficult

   Be aware that all 4 mil media with an overlaminate will tent over rivets; this is true for all print technologies.

3. **Select the right media for your type of graphic and application needs.**
   - Each media has specific intended uses and applications, which are described in the media's Product Bulletin.
   - Do not use rolls of media that are damaged; it can result in printer failure.
   - Condition the media for 24 hours in the same environment as the printer prior to printing.

4. **Understand the unique processing characteristics needed for each media.**
   a. *Specific Media Processing Recommendations* on page 5 are guidelines we have developed that help provide the best graphic results with the media you are using.
   b. *An overprint clear or overlaminate* is required for graphics subjected to abrasion such as road debris and automatic/power washing, harsh cleaners, or chemicals. Some window graphic film and all graphics for floors require an overlaminate.
   c. *Clear and translucent films for backlit signs require special consideration.* These films tend to be more sensitive to shrinkage due to high total ink coverage. Film that is not sufficiently dried prior to creating an overlap or seam may shrink and result in a light leak. Rather than increasing the total ink coverage to increase the density of the backlit image, we recommend printing two layers of film at lower ink levels. Refer to the appropriate instruction bulletin for the technique.

5. **Use the correct printer profile.**

   Each media has a unique printer profile that helps ensure successful printing. If you do not have the correct one, refer to pages 6 and 7.

6. **Limit the Total Ink Coverage.**

   Refer to the "How to Manage the Total Physical Amount of Ink on Media" on the previous page.

   Too much ink on the media results in media characteristic changes including shrinkage, loss of changeability, loss of positionability (3M™ Controltac™ *Plus* Graphic Films) and air release features (3M™ Controltac™ *Plus* Graphic Film with Comply™ Performance), as well as inadequate drying, overlaminate lifting, difficult application and/or poor graphic performance.

7. **Don't take shortcuts when drying graphics.**

   Graphics that seem dry to the touch may still be saturated with solvent. This causes the graphic to become soft and stretchy and the adhesive may become too aggressive. Use the maximum drying setting available for your printer that will not distort or damage the media.

   If the graphics don't seem to be drying sufficiently in the printer, we recommend increasing drying time or drying temperature in the printer, or using an auxiliary dryer to complete the drying (2 hours @ 150 should be sufficient), or air drying. Air drying is less effective than oven drying. The average air drying for graphics printed with a total ink coverage of 300% is about 12 hours; graphics printed with higher total ink coverage may require up to 24 hours.

   Remember, reducing total ink coverage reduces solvents and therefore reduces drying time.

   These are problems that may occur due to insufficient drying.
   - If the media you are using is a Controltac *Plus* graphic film, the positionability feature will be significantly reduced if the film is not sufficiently dried.
   - You may notice some problems, such as blocking or embossing, when the graphic is unrolled prior to application.
   - An overlaminate may be difficult to apply.

   Too high a drying temperature can distort the printing media, resulting in:
   - Transport problems in the printer.
   - Wrinkling when the printed graphic is overlaminated or premasked.

8. **Prepare test graphics.**

The default settings in the printer for drying temperature and time, and the preselected settings in the software for total ink coverage and linearization, may not be the optimum for the graphic that you are printing.

You'll save time and money if you print test graphics for each media type you use. Print the graphics at different printer settings, total ink coverage and drying times. We recommend starting your tests with the total ink coverage at 250% to 270%. Refer to Specific Media Processing Recommendations on page 5 for guidelines. Keep these samples for future reference.

If the graphic is wound on a spindle or core during printing, check to see that the graphic does not emboss or block after being dried in the printer.

9. **Follow all standard good operation and maintenance procedures.**

Specific Media Processing Recommendations

Note: For the full product names of the 3M products listed on this page, please see page 1.

Do not exceed the recommended selective strike settings. This is a software and printer function that allows you to manipulate how many double strikes of color are printed in the same place.

Media	Total Ink Coverage (Maximum)	Overlaminate or Overprint Clear?	Lifting on Corrugations and/or Tenting on Rivets	Other Considerations
RG160-30	380%	YES, selected applications	Tenting possible at high total ink coverage	
RG162-30	380%	YES, an overlaminate		
RG180-10	300%	YES, selected applications	Possible at high total ink coverage	
RG180C-10	300%	YES, selected applications	Possible at high total ink coverage	
RG680-10	300%	YES, selected applications		
RG680CR	300%	YES, selected applications		
RG3470	380%	YES, selected applications	Tenting possible at high total ink coverage	
RG3630-20	300%			Pay close attention to Key 4, page 4.
RG3510	300%	YES, selected applications	Possible at high total ink coverage	There may be some shrinkage at this ink coverage level and default printer drying time and temperature.
RG3650-114	300%			Pay close attention to Key 4, page 4.
RG5100	300%	YES, selected applications		

Continued on the next page

Note: For the full product names of the 3M products listed on this page, please see page 1.

Media	Total Ink Coverage (Maximum)	Overlaminate or Overprint Clear?	Lifting on Corrugations and/or Tenting on Rivets	Other Considerations
RG8171	300%	YES, an overlaminate		Due to the perforations in this film, it is harder to match the image quality of a solid film. Higher total ink coverage increases drying issues; the film may lift from liner, stick to liner when rolled up, wrinkle when being overlaminated. Retained solvent can cause film to lift from substrate after application.
RG8450	300%			Banner material is susceptible to blocking or embossing when rolled, especially if the graphic is not totally dried.
RG8451	300%			Banner material is susceptible to blocking or embossing when rolled, especially if the graphic is not totally dried.

Selective Strike Settings

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

⚠ **Caution**
Before handing any chemical products, always read the container label and the MSDS.

Selective strike is a software and printer function that allows an increase of ink coverage (solid density) so that no pattern or banding shows while still using the minimum amount of ink laydown necessary. Too little ink laydown results in partial fills of solid areas with the white of the media showing through. Too much ink laydown may result in ink smearing or running.

The procedures for establishing selective strike are different in Scotchprint® Graphic Maker Software Version 4.2 or higher than when using 3M™ Cactus™ Large-Format Print Software. Both procedures follow.

Selective Strikes Settings - Scotchprint® Graphic Maker Software Version 4.2 or Higher

Graphic Maker Software version 4.2 or higher has user-selectable selective strike settings in 12.5 percent increments. A suggested starting point when using any of the recommended media is given below.

Note: Caution must be used with high selective strikes. Too high an ink coverage results in inadequate ink drying or changes to the characteristics of the media.

Percent Selective Strike Settings for Graphic Maker Software Version 4.2 or higher						
Media	**Color**					
	C	**M**	**Y**	**K**	**LM**	**LC**
RG160-30	137.5	150	112.5	162.5	Off	Off
RG162-30	137.5	150	112.5	162.5	Off	Off
RG180-10	125	150	Off	112.5	Off	Off
RG180C-10	125	150	Off	112.5	Off	Off
RG680-10	125	150	Off	137.5	Off	Off
RG680CR	125	150	Off	137.5	Off	Off
RG3470	150	175	125	162.5	Off	Off
RG3510	150	175	125	162.5	Off	Off
RG3630-20	150	175	125	137.5	Off	Off
RG3650-114	125	150	125	150	Off	Off
RG5100	125	150	Off	112.5	Off	Off
RG8171	125	125	112.5	112.5	Off	Off
RG8450	125	150	Off	112.5	Off	Off
RG8451	125	150	Off	112.5	Off	Off

Note: The selective strike nomenclature used in Graphic Maker software is not equivalent to that used in PosterShop™ software versions 4.5 and higher from Onyx Graphics, Inc. For PosterShop, see page 7.

**Selective Strike Settings -
3M™ Cactus™ Large-Format Print Software**

1. Open Edit>Preferences>General, Color Correction.

2. Set the Color Correction Profile to the flatcurves.ocp.

3. Set the Calibration for 3M Screening to the Arizona 6 color Cal file for your media.

4. Click on the Image Options tab.

   - Set Tiff Halftoning to 3M Halftoning.

   - Set Tiff section Color Correction to Curves.

Note: Do not use Tables as is usually done with halftoning in Cactus software. This change only applies while you are trying to determine the proper selective strike or printing the test chart to create an OCP using the 3M Halftoning. Once selective strike has been determined, reset to Tables.

5. Set Postscript Halftoning to 3M Halftoning.

6. Set Postscript section Color Correction to Curves.

7. Print the Calibration test chart, Test.Chart.RGB.tiff located in the Calibration Images folder of the 3M Cactus Suite.

8. Check the solid ink fill to see if it completely covers the white of the media. If white area of the media can be seen, raise the selective strike setting and reprint. Continue this process until you have clean, solid color patches within the test chart.

**Selective Strike Settings -
Onyx PosterShop™ 4.5**

Support information for the Arizona printer are available on the Raster Graphics website at www.rgi.com.

The media profiles for PosterShop software are listed on the Onyx website at www.onyxgfx.com.

We recommend that PosterShop 4.5 software users use the media profiles provided for the Arizona printer. Customers who choose to create new media in PosterShop software need to follow a few guidelines regarding selective strike settings.

1. After creating a new media in PosterShop software, go to the **Onyx45/Common** folder.

2. Double click on the **RGI DSP Arizonta.Printer** file. Scroll down to the newly created media. If it does not look similar to the following example, edit as needed.

```
Media  {
  MediaName { "Media Name–Recommended
Settings" }
  ModifyDefaults {1}
  ColorBlend { 1 }
  StrikeMode { 3 }
  UsePrinterSettings { 0 }
  Quality Mode { 2 }
  Direction { 1 }
  PrinterCopy { 0 }
  LimitLight { 255 }
  LimitDouble { 0 }
LimitDoubleC { 96 }
LimitDoubleM { 96 }
LimitDoubleY { 32 }
LimitDoubleK { 32 }
```

3. When the LimitDouble for a particular color (CMYK) is { 0 }, then that color will print in single strike. If that value is { 255 }, then it will print in double strike, or twice the volume of ink.

4. The example above is a good starting point for most media. It is strongly recommended that customers DO NOT input a value higher than { 128 } for any color. Exceeding this value can result in poor head/nozzle performance, inadequate ink drying and changes to the characteristics of the media.

5. The following is a conversion table for selective strike values.

Selective Strike Settings for Onyx PosterShop 4.5

{ VALUE }	% Selective Strike
32	12.5%
54	25%
96	37.5%
128	50%

Printer Settings

A key factor to obtaining image quality, expected durability, and application performance of a finished graphic is the total ink lay down, drying temperature and time.

Too low a drying temperature or too short a drying time results in:

- Under-dried ink that embosses when the printed graphic is wound onto a take-up roll.
- Increased stretchiness of the media and stickiness of the adhesive resulting in application problems.

Too high a drying temperature can distort the printing media, resulting in:

- • Transport problems in the printer.
- • Wrinkling when the printed graphic is overlaminated or premasked.

Too high total ink coverage causes drying problems, resulting in:

- • Media changes affecting post processing, application, and expected durability.

Note: For the full product names of the 3M products listed on this page, please see page 1.

The following table summarizes the thickness, drying and ink laydown recommendations for the piezo ink jet media.

Important Note!

For the following tables only, Gretag defines "total ink coverage*" as a percentage that describes how much **area** of a graphic is printed. This is different than 3M's definition of total ink coverage as discussed on pages 2 to 5.

Recommended Settings Using 8 Pass, BiDirectional mode and total ink coverage* of 60 to 100%

Printer Settings Summary			
Product	Thickness	Drying Conditions	
		Time	Temp.
RG160-30	11.3 mil	1.5 seconds	49°C
RG162-30	11.3 mil	1.5 seconds	49°C
RG180-10	10.4 mil	1.5 seconds	45°C
RG180C-10	10.4 mil	1.5 seconds	45°C
RG680-10	14.0 mil	1.5 seconds	45°C
RG680CR	14.0 mil	1.5 seconds	45°C
RG3470	11.3 mil	1.5 seconds	49°C
RG3510	11.6 mil	1.5 seconds	49°C
RG3630-20	10.4 mil	3.0 seconds	45°C
RG3650-114	10.4 mil	3.0 seconds	45°C
RG5100	13.5 mil	1.5 seconds	45°C
RG8171	12.6 mil	1.5 seconds	47°C
RG8450	15.0 mil	1.5 seconds	42°C
RG8451	12.0 mil	1.5 seconds	44°C

Recommended Settings Using 4 Pass, BiDirectional mode and total ink coverage* of less than 30% percent

Printer Settings Summary			
Product	Thickness	Drying Conditions	
		Time	Temp.
RG160-30	11.3 mil	1.0 seconds	55°C
RG180-10	10.4 mil	1.0 seconds	54°C
RG180C-10	10.4 mil	1.0 seconds	54°C
RG3470	11.3 mil	1.0 seconds	55°C
RG3510	11.6 mil	1.0 seconds	56°C
RG8450	15.0 mil	1.0 seconds	45°C
RG8451	12.0 mil	1.0 seconds	47°C

Note: Graphics with ink coverage between 30 and 60% fall into a gray area where run length and frequency of maintenance affect image quality. For run lengths less than 10 feet, graphics in this category may be run in the 4 Pass mode. Longer runs will benefit from being run in the 8 Pass mode.

Note: For the full product names o f the 3M products listed on this page, please see page 1.

Recommended Overprint Clears, Overlaminates and Application Tapes

	Ink 3700	Overprint Clear or Overlaminate							
		1920DR	9720 UV	8519	8520	3645	8908[1]	8909[1]	8914
Media									
RG160-30		λ	λ	λ	λ		λ	λ	
RG162-30						λ Required			
RG180-10		λ	λ	λ	λ		λ	λ	
RG180C-10		λ	λ	λ	λ		λ	λ	
RG680-10		λ	λ	λ			λ		
RG680CR		λ	λ	λ			λ		
RG3470		λ	λ	λ	λ		λ	λ	
RG3510		λ	λ	λ	λ		λ	λ	
RG3630-20		λ	λ	λ	λ		λ	λ	
RG3650-114		λ	λ	λ	λ		λ	λ	
RG5100		λ	λ	λ			λ		
RG8171		λ	λ						λ
RG8450				λ	λ				
RG8451				λ	λ				
Application Tape									
Premask Tape	SCPM-3	SCPM-3	SCPM-44X	SCPM-3	SCPM-3	None	SCPM-3	SCPM-3	Do NOT Use Application Tape
Prespace Tape *Most films*	SCPS-2	SCPS-2	SCPS-53X	SCPS-2	SCPS-2	None	None	None	
Films RG180C-10 and RG680CR	SCPS-55	SCPS-55	SCPS-55	SCPS-55	SCPS-55	SCPS-55	SCPS-55	SCPS-55	

[1] Overlaminates 8908 ES and 8909 ES are not recommended or warranted for fleet or vehicle applications.

Overlaminates and Overprint Clears

When to Use an Overprint Clear or Overlaminate

An overprint clear or overlaminate provides protection to a graphic as well as changing gloss. Typically, only graphics that are subjected to harsh conditions require this protection in order to be warranted. They include:

- Vehicle and fleet graphics; such graphics are subjected to abrasion such as road debris and automatic/power washing.
- Any graphic exposed to abrasive washing conditions, including automatic/power washing, harsh cleaners or chemicals.

Graphics That Do Not Require Protection To Be Warranted

If the graphics are not exposed to the environments listed above, an overprint clear or overlaminate is not required to receive the Warranted Durability. However, for graphics applied in high contact areas such as bus shelters, hallways, etc., using an overprint clear or overlaminate will provide additional protection.

How to Apply Overlaminates or Overprint Clears

For overlaminates, refer to Instruction Bulletin 4.22.

For overprint clears, refer to the ink Instruction Bulletin for the ink series you are using.

Note: For the full product names of the 3M products listed on this page, please see page 1.

Application Tapes

Refer to the Instruction Bulletin 4.3 for more complete information on applying the recommended application tape.

The type of 3M application tape to use depends on the type of graphic produced. Refer to the table below for the recommended tape for the overprint clear or overlaminate you are using.

- Use premasking tape if there is very little exposed liner.
- Use prespacing tape if graphics have large amounts of exposed liner or are kiss cut.

Handling Finished Graphics

- Be sure ink series 3700 is dry before packaging the finished graphic.
- Ship the finished graphic lying flat or rolled. To roll, wrap the graphic, media-side out, onto a core that is 5 inches (130 mm) or larger in diameter. These methods help to prevent the liner from wrinkling or popping off.
- Put a slip sheet, such as 3M™ Easy Release Liner SCW-33, on the face of the printed side of these types of graphics: a graphic that is premounted on panels, panels that have graphics on both sides, or a liner that is printed by a customer.
- Store the graphics in a clean, dry area.
- Store the graphics out of the direct sunlight and at a temperature less than 100°F (38°C).

Shelf Life, Storage and Shipping

- Store the inks in their original packaging.
- Store the inks at 32° to 95°F (0° to 35°C).
- Use the inks within one year of purchase.
- Ink series 3700 is classified as non-hazardous by the Department of Transportation. The inks are non-regulated when transported via ground and air.

Waste Disposal

Waste from the printer includes ink waste, solvent waste, printer blotting cloth and felt absorber, and plastic bottles. We encourage you to handle all waste in a responsible manner. Some general guidelines are provided below.

Inks and Solvents

The inks and solvents are considered non-hazardous waste according to U.S. EPA requirements. Even though the inks and solvents are classified as non-hazardous, non-regulated waste, the EPA requires that any ink or solvent waste must be incinerated in an industrial or commercial facility. Do not pour the inks or solvents down the drain, or put in the general trash, or in a landfill. Since regulations vary, consult applicable regulations or authorities before disposal.

Printer Blotting Cloth and Felt Absorber

The printer blotting cloth and felt absorber can be disposed of in the general trash or in a landfill if free liquid can not be squeezed out. If inks can be squeezed out, the blotting cloth and felt absorber should be incinerated in an industrial or commercial facility.

Plastic Ink Bottles

Once bottles are empty of free liquid, dispose of the bottles in the general trash or in a landfill. The ink bottles are made of High-Density Polyethylene (HDPE) plastic as indicated by the recycling number "2". Check with your local recycler regarding recycling the bottles in your area.

Warranty and Disclaimers

This bulletin describes a technique. The information contained herein is believed to be reliable, but 3M makes no warranties, express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. To the extent allowed by law, 3M shall not be liable for any loss or damages, whether direct, indirect, special, incidental or consequential, in any way related to the technique of making a graphic regardless of the legal theory asserted.

Scotchprint® Graphics Network

There's a whole other world behind the Scotchprint® Graphics Internet site (www.scotchprint.com) and you can travel there with the Scotchprint® Graphics Network. This password-protected Web site opens the door to exclusive Scotchprint® Graphics product information, services and e-deals (product promotions) that are not available on our regular Internet site.

There's no charge and you can sign up today. Just ask your Commercial Graphics Division sales representative, or contact Lisa Burns (ljburns3@mmm.com or 651-736-9719).

3M Related Literature

Listed below is related 3M technical literature that may be of interest. You may view and print these Bulletins from our Web site at www.scotchprint.com, or order them via our Fax-on-Demand (FOD) system. Call one of these phone numbers to order the desired bulletins, and specify the FOD document number provided in the chart.

United States or Canada: 1-800-364-0768
International: 1-651-732-6506

Subject	Bulletin No.	FOD No.
Product Bulletins		
3M™ Piezo Ink Jet Ink Series 3700	3700	4512
3M™ Screen Printing Ink Series 1900	1900	2501
3M™ Screen Printing Ink Series 9700 UV	9700	2507
3M™ Scotchcal™ Overlaminate Film 3645	3645	1508
3M™ Scotchcal™ Overlaminate 8519 and 8520	8519/ 8520	4524
3M™ Scotchcal™ Luster Overlaminate 8908 ES	8908	3554
3M™ Scotchcal™ Matte Overlaminate 8909 ES	8909	3565
3M™ Scotchcal™ Optically Clear Overlaminate 8914 ES	8914	3542
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3M™ Controltac™ *Plus* Graphic Film RG180-10	RG180-10	4518
3M™ Controltac™ *Plus* Graphic Film with Comply™ Performance Series RG180C-10	RG180C-10	4555
3M™ Scotchlite™ *Plus* Flexible Reflective Graphic Film RG680-10	RG680-10	4522
3M™ Scotchlite™ Removable Graphic Film with Comply™ Performance Series RG680CR	RG680CR	4554
3M™ Scotchcal™ Removable Graphic Film RG3470	RG3470	4516
3M™ Scotchcal™ Changeable Graphic Film RG3510	RG3510	4521
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3M™ Scotchcal™ Perforated Window Graphic Film RG8171	RG8171	4517
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Health & Safety

Refer to the package label and the Material Safety Data Sheet for health, safety, and handling information on the products referenced in this bulletin. For 3M products, if necessary, you may contact our Toxicology/Product Responsibility Department on 01344 858000.

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Technical Assistance

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