



Piezo Ink Jet Ink Series 4000

For VUTEk UltraVu™ 3000/3300 and 5000/5300 Printers

Please use this bulletin in conjunction with Instruction Bulletin 4.27, Release F, dated October 2002 or later.

Description

3M™ Piezo Ink Jet Ink Series 4000 is a pigmented, solvent based ink approved for use with the VUTEk UltraVu™ 3000/3300 and 5000/5300 Printers to produce multi-color, permanent and durable graphics.

Applications and End Uses

Refer to the film product bulletin to determine the suitability of any particular film for your intended application.

Product Line

| No. | Color | Stock No. |
|------|----------------------|----------------|
| 4091 | Magenta | 75-3469-5864-0 |
| 4071 | Yellow Toned Magenta | 75-3469-5889-7 |
| 4092 | Yellow | 75-3469-5865-7 |
| 4095 | Black | 75-3469-5866-5 |
| 4096 | Cyan | 75-3469-5867-3 |

About the Magenta Inks

3M offers you two choices in magenta--a regular and a yellow-toned. This gives you the opportunity to extend your color gamut to meet the color needs of your customers.

- The **regular magenta (4091)** is suited for graphics with cool reds and purples. This color gamut closely replicates colors achieved on the Scotchprint® Printer 2000.
- The **yellow toned magenta (4071)** is suited for graphics oranges and warm reds. This color gamut is similar to other ink manufacturers.

Note: Do not use yellow toned magentas in combination with regular magentas.

More Information on the Web

To find out more about piezo ink jet printing and software profiles that help ensure successful printing, visit our website at www.scotchprint.com. Then click on *business partner login*, which is located under the Scotchprint® logo.

To enter the *business partner login* area, you must be a Scotchprint® Graphics Authorized Manufacturer or 3M Piezo Ink Jet Registered Fabricator. If you are not, please [contact your 3M sales representative](#).

Compatible Films and Substrates

Note: For details on using a particular film or substrate for piezo ink jet printing, please refer to that product's Product Bulletin.

4 mil Films

- 3M™ Controltac™ Plus Graphic Film IJ160-10
- 3M™ Controltac™ Plus Graphic Film Series IJ162-10
- 3M™ Scotchcal™ Graphic Film IJ3470
- 3M™ Scotchcal™ Changeable Graphic Film IJ3555
- 3M™ Scotchcal™ Perforated Window Graphic Film IJ8171
- 3M™ Scotchcal™ Graphic Film IJ8641
- 3M™ Scotchcal™ Removable Graphic Film IJ8643

2 mil Films

- 3M™ Controltac™ Plus Graphic Film [IJ180-10](#)
- 3M™ Controltac™ Plus Graphic Film [IJ180C-10](#)
- 3M™ Controltac™ Plus Changeable Graphic Film with Comply™ Performance [IJ3552C](#)
- 3M™ Scotchcal™ Graphic Film [Series IJ3650](#)
- 3M™ Scotchcal™ Graphic Film IJ3630-20

Reflective Films

- 3M™ Scotchlite™ Plus Flexible Reflective Graphic Film IJ680-10
- 3M™ Scotchlite™ Plus Flexible Reflective Graphic Film IJ680CR-10
- 3M™ Scotchlite™ Reflective Graphic Film IJ5000
- 3M™ Scotchlite™ Reflective Graphic Film [IJ5100R](#)

Banner Materials

- 3M™ Banner Material 8450 *single sided*
- 3M™ Single-sided Banner Material 8451
- 3M™ Banner Material 8452
- 3M™ Mesh Banner Material 8453
- 3M™ Panagraphics™ II Intermediate Flexible Substrate

Effective Performance Life

Only a Scotchprint® Graphics Authorized Manufacturer or 3M Piezo Ink Jet Registered Fabricator can produce 3M™ MCS™ Warranted Graphics.

For complete details on warranted constructions, please refer to the film's product bulletin. See 3M Related Literature, page 3, for information on how to obtain these bulletins.

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

Printing with Solvent-Based Piezo Ink Jet Inks

Note: Do not use yellow toned magenta in combination with regular magenta.

[To get the durability given in the Effective Performance Life, follow the guidelines and procedures in Instruction Bulletin 4.27 for printing with piezo ink jet ink series 4000.](#)

Note: It is very important to read and follow ALL instructions to achieve the best image quality.

Be sure the operator reads and follows “Understanding Printing with Solvent-Based Piezo Ink Jet Inks,” also in Instruction Bulletin 4.27. An operator who understands pre-press operations and the relationship between film characteristics, printer setup, total ink coverage and drying time can produce graphics that achieve the performance expectations of the film 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.

Total Ink Coverage

Do not exceed the total ink coverage recommended for the film (see the film Product Bulletin or Instruction Bulletin 4.27). Too high a total physical ink amount on the film results in media characteristic changes, inadequate drying, overlamine lifting, and/or poor graphic performance.

Drying

Caution

Always build enough time into your process to ensure adequate drying of the graphic. Poorly dried film may become soft and stretchy, and the adhesive may become too aggressive. This can cause difficulty when applying an overlamine, rolling the graphic, and applying the film. See Instruction Bulletin 4.32 for more details.

About Scotchlite Reflective Graphic Film

Ink series 4000 can be used with approved Scotchlite films; however, inkseries 4000 is semi-transparent and may reduce the retroreflectivity of the film.

Close color matching of multi-sheet graphics is difficult on retroreflective materials because production lots may vary. Adjoining panels of reflective graphic film must be checked for both daytime and nighttime appearance.

Printer Cleaning and Routine Printer Maintenance

Printer cleanliness is very important in the production of high quality, full color graphics. You must follow the routine maintenance schedule in the VUTEK UltraVu User’s Guide, including the periodic changing of in-line filters.

We recommend that each customer assign a master operator that will have maintenance responsibilities. This person will be trained by a technician during printer installation and must use the recommended methods and safety measures.

You will need 3M™ Thinner CGS-50 for performing normal printer maintenance.

Ink Change-Over

Proper ink change-over is critical. Failure to make the change-over correctly will result in poor image quality and/or graphic failure. Improper procedures may damage the printer.

The ink change-over procedure must always be followed in these situations.

- When you change from yellow toned magenta to regular magenta ink.
- When you change the full set of inks from or to 3M piezo ink jet ink series 4000.

Follow the instructions in Instruction Bulletin 4.28.

Shelf Life, Storage and Shipping

- Store piezo inks in their original packaging.
- Store the inks at 32° to 90°F (0° to 32°C).
- Use the ink within one year of purchase.
- Ink series 4000 is classified as non-hazardous by the U.S. Department of Transportation. The inks are non-regulated when transported via ground and air.

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 <http://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. VUTEK, the printer's manufacturer, also provides ventilation information. Please refer to their literature too.

Note: Additional environmental, health and safety information is available in EHS Bulletin 4000, which is available on our web site at www.scotchprint.com. See page 1 for how to access the site.

Warranty and Limited Remedy

The following is made in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose: Ink series 4000 is warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin. 3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. See the worldwide 3M™ MCS™ Warranty bulletin, which gives the terms and limitations of the warranty.

These remedies are exclusive. In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor or non-3M materials charges.

3M Related Literature

Before starting any job, be sure you have the most recent product and instruction bulletins.

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™ Controltac™ Plus Graphic Film IJ160-10 | IJ160-10 | 4567 |

| Subject | Bulletin No. | FOD No. |
|---|--------------|---------|
| 3M™ Controltac™ Plus Graphic Film Series IJ162-10 | IJ162-10 | 4561 |
| 3M™ Controltac™ Plus Graphic Film Series IJ180-10 | IJ180-10 | 4539 |
| 3M™ Controltac™ Plus Graphic Film with Comply™ Performance IJ180C-10 | IJ180C-10 | 4540 |
| 3M™ Scotchlite™ Plus Flexible Reflective Graphic Film IJ680-10 | IJ680-10 | 4541 |
| 3M™ Scotchlite™ Removable Reflective Graphic Film with Comply™ Performance IJ680CR-10 | IJ680CR-10 | 4564 |
| 3M™ Scotchcal™ Graphic Film IJ3470 | IJ3470 | 4543 |
| 3M™ Controltac™ Plus Graphic Film with Comply™ Performance IJ3552C | IJ3552C | 4576 |
| 3M™ Scotchcal™ Changeable Film IJ3555 | IJ3555 | 4548 |
| 3M™ Scotchcal™ Graphic Film Series IJ3650 | IJ3650 | 4544 |
| 3M™ Scotchcal™ Translucent Film IJ3630-20 | IJ3630 | 4527 |
| 3M™ Scotchlite™ Reflective Graphic Film IJ5000 | IJ5000 | 4566 |
| 3M™ Scotchlite™ Changeable Reflective Graphic Film IJ5100 | IJ5100R | 4562 |
| 3M™ Scotchcal™ Perforated Window Graphic Film IJ8171 | IJ8171 | 4545 |
| 3M™ Banner Material 8450 | 8450 | 3523 |
| 3M™ Single-Sided Banner Material 8451 | 8451 | 4552 |
| 3M™ Banner Material 8452 | 8452 | 4556 |
| 3M™ Mesh Banner Material 8453 | 8453 | 4572 |
| 3M™ Scotchcal™ Permanent Graphic Film IJ8641 | IJ8641 | 4546 |
| 3M™ Scotchcal™ Temporary Graphic Film IJ8643 | IJ8643 | 4547 |
| 3M™ Panagraphics™ II Intermediate Flexible Substrate | Panagraphics | 4010 |
| Instruction Bulletins | | |
| Printing with piezo ink jet ink series 4000 | 4.27 | 6527 |
| Ink change-over for ink series 4000 | 4.28 | 6528 |

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Bulletin Change Summary

Added film IJ3552C; [Changed film 180-10 to IJ180](#); [changed film 180C-10 to IJ180C-10](#); [changed film 3650 to IJ3650](#); [changed film IJ5100 to IJ5100R](#).



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For the United Kingdom and Republic of Ireland

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.

Important Notice to Purchaser

The 3M products described in this publication are covered by a 3M warranty and limitation of liability.

3M's warranty provides that if 3M finds that goods are defective in material or workmanship they will be replaced or the price refunded at 3M's option but note that 3M does not accept liability for other direct losses (except for personal injury or death) or consequential losses relating to defective products or from information supplied by 3M.

Purchasers and users of 3M products, and not 3M supplying companies, are always solely responsible for deciding on the suitability of the 3M product for their required or intended use.

Technical Assistance

For help on specific questions relating to 3M Commercial Graphics Division Products, contact your local Technical Service Representative.

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