

## For OKI Data Infotech ColorPainter™ M-64s and H3-104s Printers

### Quick Links

- [3M Graphics Warranties](#)
- [Technical Information Selector](#)
- [Safety Data Sheets \(SDS\)](#)
- [3M Color Profiles](#)
- [Videos](#)

Some of these links lead to web-based resources that are not product-specific.

### Product Description

- Solvent-based, pigmented inks
- Available colors include Magenta, Yellow, Black, Cyan, Light Cyan, Light Magenta, Gray, and Light Gray

### Product Features

- Designed for printing on inkjet-compatible 3M films and media for making warranted multicolor graphics
- Weather-resistant
- Excellent color retention and print quality

### Disclaimer

With the exception of 3M branded products, 3M does not represent that any printer or printer accessory recommended in 3M literature will meet customer requirements, any federal, state, or local regulations or any applicable safety standards. Such determination is the responsibility of the printer owner.

### Product Line

#### Ink

Container size: 1.5L large capacity ink cartridges

#### Cleaning Solvent

Use compatible cleaning solvents as recommended in the printer's user manual.

### Recommended Compatible Products

#### 3M Compatible Products for 3M™ MCS™ Warranty

- Many 2-mil and 4-mil graphic films, reflective films, flexible substrates and graphic protection methods are warranted for finished graphics using this ink.
- For the most current listing of 3M compatible products, go to the Warranty Matrices at [www.3Mgraphics.com/warranties](http://www.3Mgraphics.com/warranties)
- See the [3M Graphics Warranty Bulletin](#) for information on reduced warranties for different exposures.

#### 3M Intermediate Graphic Materials

This ink may be used with 3M's Intermediate Product line for low cost graphics that do not need a graphics warranty. Refer to the Inkjet Materials and Solid Color Films Brochure at [3Mgraphics.com](http://3Mgraphics.com) to see the [3M Intermediate Product Portfolio](#).

#### Other Graphic Materials

This ink series also may perform satisfactorily on many other 3M and non-3M graphics materials, but would not be warranted by 3M.

Always run a test print to be certain that the finished graphic quality meets your needs. Also check adhesion and scratch resistance of any graphic protection used. Contact the printer manufacturer and material manufacturer for guidance.



## 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 3M Graphics Warranty Period Selector at [www.3Mgraphics.com/warranties](http://www.3Mgraphics.com/warranties).

## 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](http://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](http://3MGraphics.com/warranties).

### Limitation of Liability

Except to the extent prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED HEREIN), 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 [3MGraphics.com/warranties](http://3MGraphics.com/warranties), for vertical warranty period information specific to your film.

### Additional Limitations

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

## Support Information

- 3M products: Contact 3M Commercial Solutions Technical Support at 1-800-328-3908.
- Printer hardware and software support: Contact OKI Data Infotech Corporation at 1-760-781-5200 ext. 107.

## 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](http://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.

To obtain SDS sheets for SX 3M ink series, contact OKI Data Infotech Corporation.

## Ventilation

Provide local and/or general exhaust ventilation in the print production areas to prevent a build up of ink vapors and to maintain levels 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 onsite process conditions.

Please refer to the printer manufacturer's literature for additional details and requirements.

## Air Quality Regulations

State Volatile Organic Compound (VOC) regulations may prohibit the use of certain chemicals with VOC's in graphic arts coatings and printing operations. For example, the California South Coast Air Quality Management District prohibits use of certain solvent-based solutions without a permit and other California AQMD's prohibit use of certain solutions without a permit or regulatory exemption. Check with your State environmental authorities to determine whether use of this solution may be restricted or prohibited.

## More on Environmental Health and Safety

Additional environmental, health, and safety information is available on our website at [3Mgraphics.com/sustainability](http://3Mgraphics.com/sustainability).

## Selecting, Preparing and Using 3M Graphic Materials

- Use the right film for the job. Each film has specific intended uses, processing conditions and durability. Always refer to the 3M Product Bulletins for each product used and to the recommended 3M Instruction Bulletins referenced in those 3M Product Bulletins for complete details. 3M Product and Instruction Bulletins can be found at [www.3MGraphics.com/TechInfo](http://www.3MGraphics.com/TechInfo).
- Condition the film, ink and graphic protection for 24 hours in the same environment as the printer before using.

## Ink and Film Processing Recommendations

Refer to the printer manufacturer's instructions for setup and adjustment to achieve good image quality and to ensure proper ink and film processing.



### CAUTION

Before handling any chemical products, always read the container label and the SDS.

## About Solvent Ink Printing

### Effect on Printed Images

Normally, very small amounts of retained solvent will not affect the finished graphic characteristics or application performance. Excessive solvent must be removed through proper drying prior to applying graphic protection (overlamine or clear). If it is not, the graphic protection will trap excessive retained solvents. This softens the film and allows the solvent to migrate into the adhesive. Softened film is more likely to stretch, curl, bubble, lift off the liner, pucker, or shrink when handling and during graphic application. In addition, the solvent in the adhesive will contribute to more aggressive adhesion. The result is poor application characteristics.

### Completely and Properly Dry Printed Film

- Use the highest printer dryer setting that does not distort or damage the film.
- Slower printing speed allows the film to be in the dryer longer for more effective drying.
- Additional drying options:
  - An auxiliary dryer may be used to complete the drying.
  - You can air dry on racks, although it is less effective than drying with heat on the printer. Typical air drying at 270% total ink coverage is 12 hours; higher total ink coverage may need up to 24 hours.
  - Reducing total ink coverage reduces retained solvents and reduces drying time.
- Troubleshooting
  - Change the temperature or drying times only if you observe problems.
  - Too much heat in the drying process may result in any of the following. Reduce the heat to correct these problems.
    - Film problems, including blisters and film shrinkage.
    - Transport problems in the printer.
    - Wrinkling when the printed film is overlaminated or premasked.
  - The drying time varies for each film and the total ink coverage of its image.
- To check dryness, use the Dryness Test.

### Graphic Performance Problems Due to Insufficient Drying

- It may be difficult to apply an overlaminate.
- Blistering may occur during processing of the UV clear.
- A graphic without graphic protection may block or emboss when it is rolled.
- For Controltac™ graphic films, the slideability and positionability features will be significantly reduced during application if the film is not sufficiently dried.

## Dryness Test for Most Solvent Ink Printed Graphics

Drying times vary with the equipment being used, oven temperature, humidity conditions, etc. Insufficient drying can result in blocking or severe surface impressions. Therefore, it is important to check for sufficient dryness as soon as you start printing. We recommend using the following procedures to determine if adequate drying has occurred.

1. Use this test to check the approximate dryness.
  - a. Fold the area of the film with the highest ink laydown face-to-face.
  - b. Place folded film close to your ear and separate it.
    - If the film is adequately dried, there is either a slight or no discernible sound when the surfaces separate.
    - If the film is not sufficiently dry, a crackling sound is heard. The louder the sound, the greater the amount of additional drying needed.
2. Even when the graphic feels or appears dry, some solvent will remain. Use this test to determine if sufficient drying has taken place. If it does not pass this test, more drying is required.
  - a. Place several printed pieces of film (each folded in the area of the highest ink laydown) face-to-face under a weight of 2 pound per square inch (135 g/sq.cm).
  - b. After 10 minutes, remove the sheets and check for blocking or surface impressions. If blocking or severe surface impressions are noted, increase the amount of drying.

## Printer Settings

Refer to the printer manufacturer's technical literature for additional details.

### IMPORTANT NOTE

Be aware that not every mode will give you acceptable graphic performance. Read and follow proper drying instructions for optimum results.

### IMPORTANT NOTE

The surface temperature of the 3M graphic film liner should not exceed 221 °F (105 °C).

## Managing the Amount of Ink on Film

Properly managing the total amount of ink laid down in any area on the graphic results in better image quality, less ink usage and greater throughput. It also helps ensure good film performance.

### Total Ink Coverage

#### Total Ink Coverage: 270%

Total ink coverage is the total percentage of all ink (CMYK) used in the graphic. For example, CMYK values of 60%, 60%, 60% and 90% produces a total ink coverage of 270%. For inks, a maximum of 270% is recommended unless otherwise noted in the base film's Product Bulletin.

### IMPORTANT NOTE

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

You can achieve very good density using lower total ink coverage with little or no loss of quality. The rest of this section discusses options for managing the total ink coverage.

### Controlling Total Ink Coverage

Controlling total ink coverage can be managed by the color profile of the original artwork and during the printing process.

## Getting a Color Profile

A color profile typically contains the ink limits for a specific ink set, printer and media. You can use an existing color profile that is known to produce good color output with the required amount of ink limiting. Profiles may be available from the printer manufacturer, RIP software or material supplier. Visit 3M Color Profiles at [3MGraphics.com](http://3MGraphics.com).

Some RIP software has ink limit settings that may be adjusted without changing the color profile setup. Check the literature for the RIP software being used.

## Setting Total Ink Coverage in the Original Artwork

The best time to limit the total ink used is when the original artwork is created. Have the designer observe two rules while creating the artwork to greatly simplify printing.

1. Do not exceed 270% total ink coverage.
2. The graphic designer should specify the proper ICC color profile for the film, ink and printer when submitting the artwork for printing.

## Operation and Maintenance Procedures

Follow all operation and maintenance procedures recommended in the printer's user manual.

Printer cleanliness is very important in the production of high quality, full color graphics. Refer to the printer manufacturer's recommendations for compatible cleaning solutions for this ink and your printer.

## Graphic Installation

Please refer to the 3M Product and Instruction Bulletins at [www.3MGraphics.com/TechInfo](http://www.3MGraphics.com/TechInfo) for the film and graphic protection you are using for detailed usage and graphic installation procedures.

## Graphic Installer

The graphic installer needs to be aware of any special handling or application techniques for the construction. Any combination of high total ink coverages, hot ambient application temperatures and irregular application surfaces may make the application more difficult.

Some application requirements may be different due to the type of film processing. See the applicable 3M Product Bulletin for application details on each product used, as well as the recommended 3M Instruction Bulletins.

## Waste Disposal

Refer to the product SDS and the printer User's Manual for details. Since regulations vary, consult applicable regulations or authorities before disposal.

## Shelf Life, Storage and Shipping

Refer to the ink container label or contact OKI Data Infotech Corporation for details.

### Shelf Life

Use by the expiration date shown on the product packaging.

### Shipping Finished Graphics

Refer to the base media's Product Bulletin.

### Shipping Ink

Opened ink boxes and bags may no longer provide adequate protection against leaks and spills. Exercise caution when shipping opened boxes or bags to ensure prevention of spills or leaks. In the United States, refer to the SDS for further information.

## 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. Please read the entire Bulletin thoroughly.

### Release D APR-2016:

- Updated Ink name throughout.
- Added new ColorPainter™ H3-104s Printers from OKI to the "Product Description" on page 1.
- Added "Light Gray" to list of colors in "Product Description" on page 1.

### Release C OCT-2015:

- Changed name from "Seiko I Infotech" to "OKI Data Infotech Corporation" throughout document.
- Changed name from "SIIT" to "OKI" throughout document.

### Release B JULY-2015:

- Updated Bulletin to new template. This Bulletin has been substantially changed. Please read the entire Bulletin thoroughly.

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