Application Notes

Spot Color Printing

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rip solutions

Spot Color Printing

ErgoSoft AG
Moosgrabenstr. 13
CH-8595 Altnau, Switzerland

The **ErgoSoft RIP** is available in different editions. Therefore the description of available features in this document does not necessarily reflect the license details of your edition of the **ErgoSoft RIP.** For information on the features included in your edition of the **ErgoSoft RIPs** refer to the ErgoSoft homepage or contact your dealer.

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Introduction

Some ink type or colors, e.g. fluorescent or metallic inks cannot or should not be included in the color management workflow. But they can successfully be used for controlled effect printing. For this reason, the **ErgoSoft RIP** offers the possibility of ***Spot Color Printing.*** This allows using the special color, in the following called "spot color", to be used in addition to the color management workflow.

Spot color printing needs special setups in the print environment as well as special preparation of the image or special treatment of the image in the job depending on the selected workflow or image type. The **ErgoSoft RIP** offers the following possibilities:

1. **Printing Spot Color Channels in TIFF or DCS Files**
   The image is created based on CMYK or RGB with additional spot color channels and saved as (CMYK or RGB) TIFF or DCS PostScript file. In this case, there is a separate color channel in the image for each spot color.
   Chapter "Printing Spot Color Channels" will explain the necessary settings for this method as well as the workflow for its usage.

2. **Printing Palette Colors using Spot Color Inks**
   The area in the image that is to be printed with a spot color ink is colored using a color with a name, e.g. a palette color or a customized swatch color. The image is saved as Encapsulated PostScript file.
   Chapter "Automatic Spot Color Printing" will explain the necessary settings for this method as well as the workflow for its usage.

3. **Using Spot Color Inks for Automatic Palette Color Replacement**
   The area in the image that is to be printed with (ink mixings containing) spot color inks is colored using a color with a name, e.g. a palette color or a customized swatch color. The image is saved as Encapsulated PostScript file.
   Chapter "Automatic Spot Color Replacement" will explain the necessary settings for this method as well as the workflow for its usage.

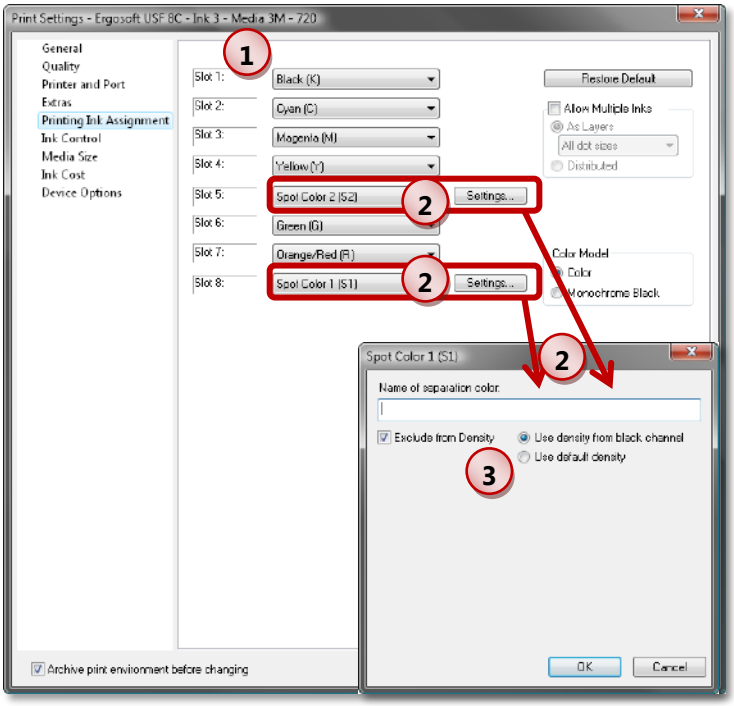
4. **Using Spot Color Inks for Manual Color Replacement**
   Any solid colored area in the image can be manually replaced by (ink mixings containing) spot color inks.
   Chapter "Manual Color Replacement and Spot Color Inks" will explain the necessary settings for this method as well as the workflow for its usage.

5. **Setting Printing Parameters for Certain Images**
   The global settings for the methods using spot color ink for automatic spot color replacement or for printing an extra color channel in the file (methods 2 and 3) can be overwritten for the currently selected image(s). These settings can be saved as image presets for easy re-use for certain images.
   This method works only in combination with one of the methods 2 and 3. Chapter "Setting Printing Parameters for Certain Images" will explain the necessary settings as well as its usage.

Basic Print Environment Configuration

In order to use spot color inks for printing, the print environment needs a certain configuration that is valid for all methods of spot color printing. Special configurations are described in the respective chapters.

Please note that this documentation will not explain the print environment settings in detail but just those settings that concern spot color printing. For more information about the print environment settings please refer to the manual part about Print Environments.



1 As basic requirement for spot color printing, the print driver (print environment) needs to offer enough slots for the four basic inks CMYK plus the needed spot color inks. In addition, it must allow full access to the ink selection for the slots.

2 For each slot select the color that is in the corresponding slot of the printer. Spot color inks are not named in the ink color selection list but simply numbered **Spot Color 1 (S1), Spot Color 2 (S2),** etc. It is up to you to note somewhere which of your spot color inks is set up in the respective slot. The order of the spot colors does not matter; it is only important that the slot settings reflect the cartridge settings in your printer.

3 The settings for the spot colors allow excluding the respective ink from the printer linearization (Density) and use either the linearization for the black ink or the default density linearization (dot gain curve) instead. This is needed when using spot color inks that cannot be calibrated such as metallic or fluorescent inks. When not having excluded the spot color ink from the printer linearization, the printer linearization must be executed including the spot color inks.

Please note that it might be necessary to save (close) the print environment after having configured the spot color settings before you are able to select a density linearization that does not include curves for the spot color inks when **Exclude from Density** is checked.

Spot color inks are never used for printer profile creation.

Printing Spot Color Channels

Preparing the Image

Create the image in CMYK, RGB or Lab. Add additional spot color channels. Some image editing software (e.g. CorelDraw) allows creating only 6-channel files by selecting 6 channel palette colors (such as Pantone Hexachrome….) and creating separations saved in DCS files. Save in TIFF with additional spot color channels or DCS format.

Please check in your image editing software whether it is possible to create either TIFF files with additional spot color channels or DCS files.

Importing the Image

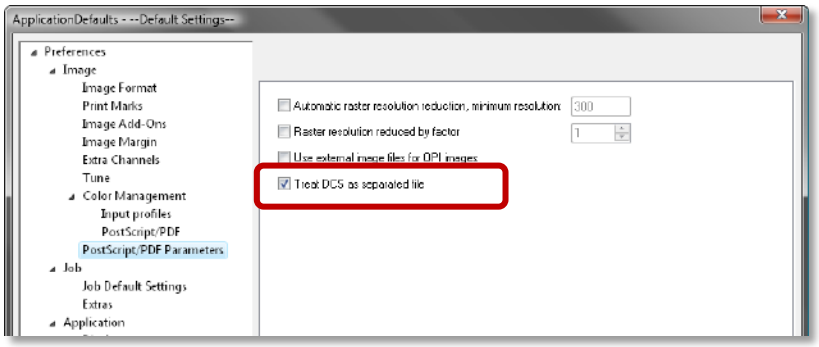
Multi-Channel TIFF Files

Multi-channel TIFF files are imported as usual. The color mode (RGB, CMYK, Lab) as well as the additional spot color channels are recognized automatically. Color Management is used: All color channels in the multi-channel TIFF file go through the density linearization as individual color channels; ink mixing and thus, the printer profile is considered for the basic (RGB, CMYK, Lab) channels.

Since the specified color for the additional channel is not known to the **ErgoSoft RIP,** the preview is created using colors Red, Green, and Blue in diminishing saturation for the additional spot color channels. Thus, the preview will look different from the preview in the image editing program you might use to edit the image.

The *Image information* function will also mention the additional spot color channels.

DCS Files (Multi-Channel PostScript Files)



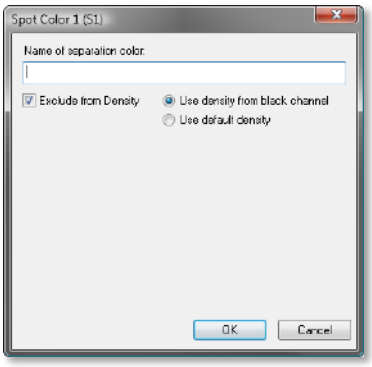
DCS files require that the field **Tread DCS as separated file** is checked in the settings of menu *Tools* > *Options* > *Preferences* > *Image* > *PostScript/PDF Parameters* when the image is imported. The color mode displayed in the status bar of the **ErgoSoft RIP** window must be “SEP”. Color Management is not used: All color channels in the DCS file only go through the density linearization as individual color channels; ink mixing is not considered.

Previews may not be created for DCS files when all layers are saved in one file; for multi-file DSC files, previews may be created. The *Image Information* function will mention the additional spot color channels as CMYKCustomColors in the PostScript options.

Because of the color management restrictions we strongly recommend not to use DCS files for spot color printing but using multi-channel TIFF files or the method described in chapter "Automatic Palette Color Replacement" instead.

Special Settings in the Print Environment

There are no special settings needed in the print environment for printing multi-channel TIFF and DCS files. It does not matter whether a **Name of separation color** is entered or not.

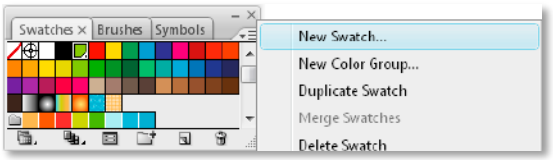


Automatic Spot Color Printing

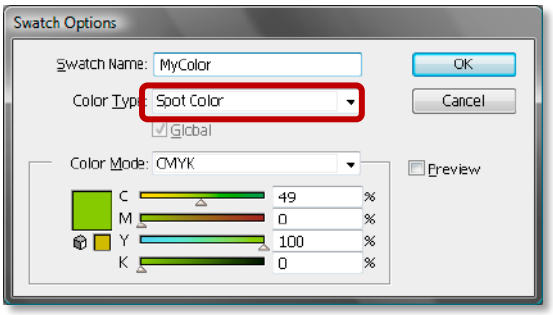
Preparing the Image

Many image processing programs such as Adobe InDesign or Adobe Illustrator write spot color names into the PostScript file. In the **ErgoSoft RIP,** a spot color channel can be assigned for such a spot color.

In e.g. Adobe Illustrator CS3, select the **New Swatch** option to create a new color swatch.



Now define the name of the color area that should be replaced and make sure that the type of the color is set to **Spot Color.**



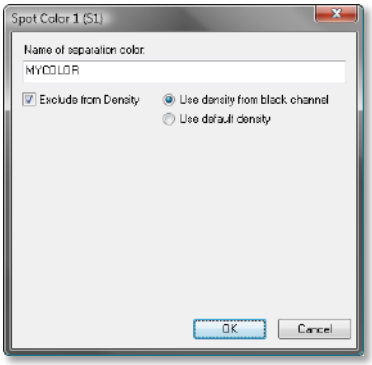
Now color the area that should be replaced in the image with the color you just created and save the image in the EPS file format.

Importing the Image

Import the image as usual. There is nothing special to be considered.

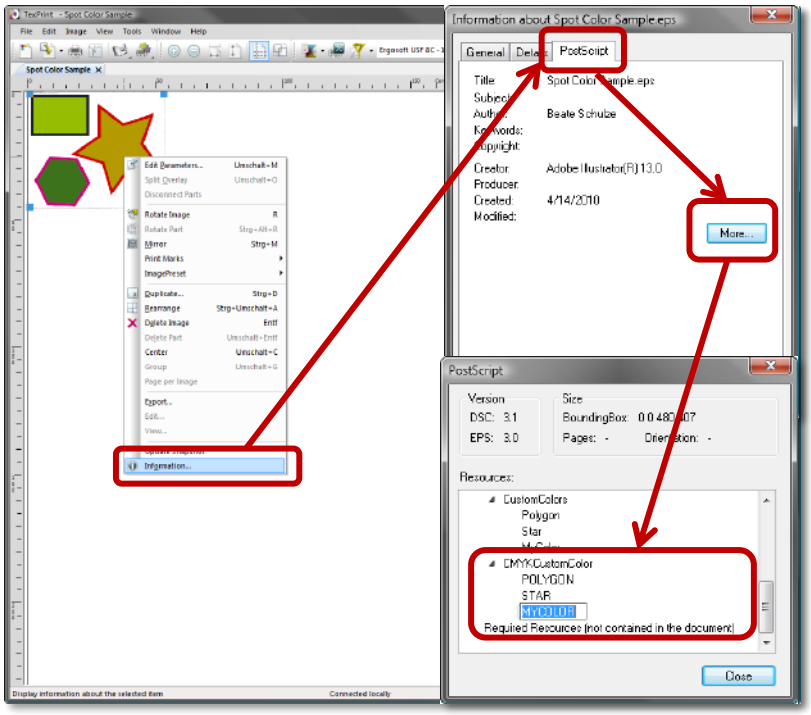
Special Settings in the Print Environment

This method requires that the **Name of separated color** is entered in the **Spot Color Settings** dialog.



When the image is printed, the palette color is extracted into a (temporarily) spot color channel and printed with the ink that is in the slot which is assigned to the palette color. A printer profile for the non-palette colors may be used.

Hint: You can copy the palette color name from the image information by selecting the name, clicking again with the left mouse button on it to select the text, and displaying a context menu with the copy command by clicking with the right mouse button on the selected text.



Automatic Spot Color Replacement

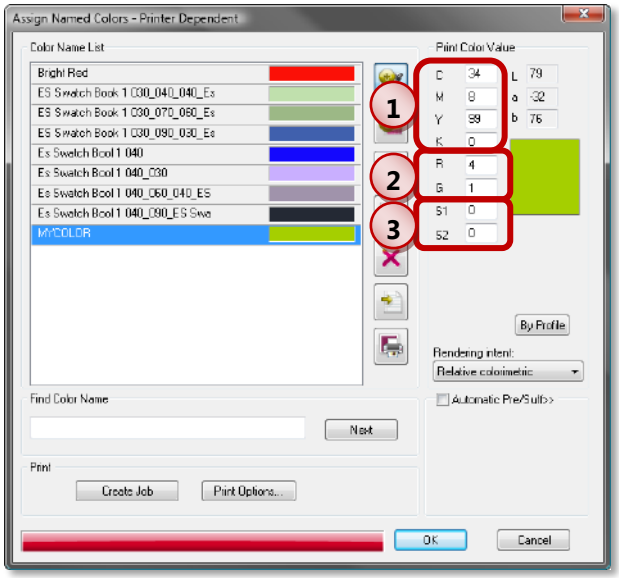
This method simply uses the **Named Colors** function to automatically replace colors in PostScript/PDF files in which the color area that should be replaced is clearly named through a spot color (color swatch saved in the file).

The following documentation does not describe the color replacement method in details but just the settings in the print environment needed when spot color inks are used.

For a detailed description of the color replacement method please refer to the manual part about Color Replacement, chapter “Automatic Color Replacement in PostScript and PDF Files”.

Named Colors Mixing with Spot Color Inks

The **Named Colors** function allows using spot color inks for the device dependent ink mixings.



The ink mixing list has 3 parts:

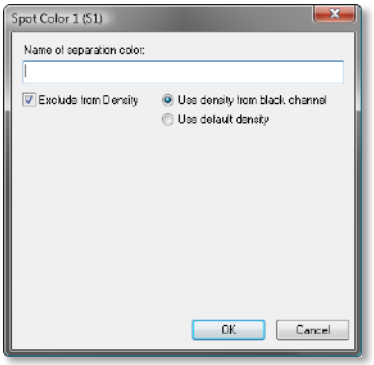
1. The basic inks cyan (C), magenta (M), yellow (Y) and black (K).

2. The additional profile channels orange/red (R), green (G), blue/violet (B) as well as 5 more profile channels (P8, P9, P10, P11, P12)

3. Additional spot color channels S1, S2, S3, … S6.

Special Settings in the Print Environment

To avoid priority conflicts with the Automatic Spot Color Printing method, we strongly recommend **not** entering a **Name of separated color** in the **Spot Color Settings** dialog.



Manual Color Replacement and Spot Color Inks

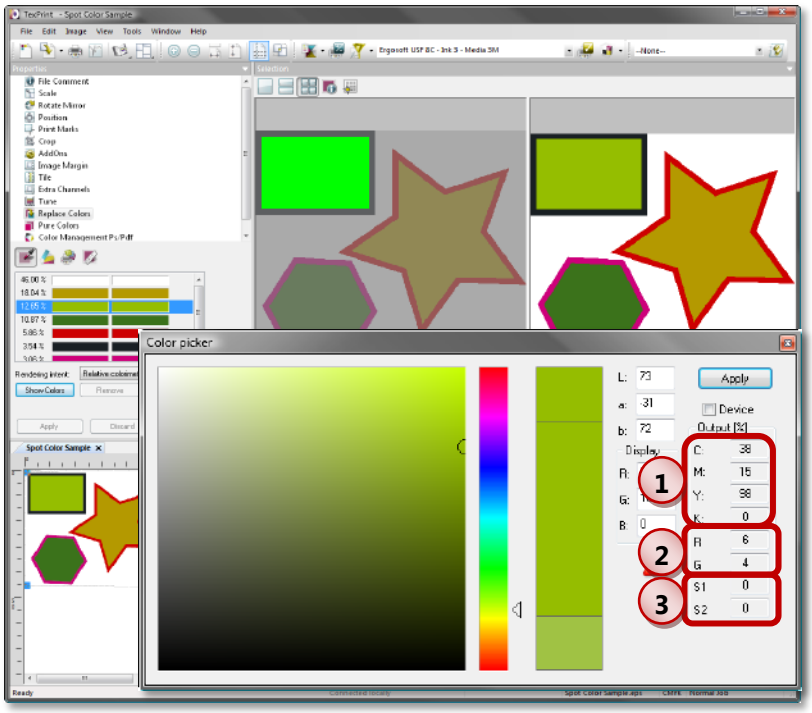
This method simply uses the **manual color replacement** function to replace colors in any file type.

The following documentation does not describe the color replacement method in details but just the settings in the print environment needed when spot color inks are used.

For a detailed description of the color replacement method please refer to the manual part about Color Replacement, chapter “Manual Color Replacement”.

Color Picker with Spot Color Inks

The **Color Picker** allows using spot color inks for the device dependent ink mixings.



The ink mixing list has 3 parts:

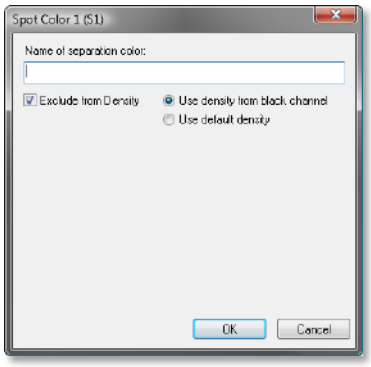
1. The basic inks cyan (C), magenta (M), yellow (Y) and black (K).

2. The additional profile channels orange/red (R), green (G), blue/violet (B) as well as 5 more profile channels (P8, P9, P10, P11, P12)

3. Additional spot color channels S1, S2, S3, … S6.

Special Settings in the Print Environment

To avoid priority conflicts with the Automatic Palette Color Printing method, we strongly recommend **not** entering a **Name of separated color** in the **Spot Color Settings** dialog.



Setting Printing Parameters for Certain Images

Sometime, preparations for printing with spot color ink in the images do not correspond to the settings in the print environment because e.g. another name for the spot color swatch is used or another order for additional color channels than the ones set up in the print environment. Instead of modifying the image or print environment for these cases, the **Extra Channels** preset or configuration can be used to set special parameters for the selected images. Using the **Extra Channels** configuration also allows printing images with different spot color printing settings in the same job.

For a detailed description of this method please refer to the application note about “Printing with White Ink or Finish”.

Examples for Setups

1 **CMYK (calibrated) with 2 spot colors:**
Printing Ink Assignment tab: 6 slots with colors (CMYK plus 2 spot colors)
1st spot color channel: printed with ink in slot "Spot Color 1"
2nd spot color channel: printed with ink in slot "Spot Color 2"
Printer profile: for CMYK
Density linearization: for CMYK plus all spot colors not excluded from density

2 **CMYK with orange and green (calibrated) and 1 spot color:**
Printing Ink Assignment: 7 slots with colors (CMYKOG plus 1 spot color)
1st spot color channel: printed with ink in slot "Spot Color 1"
Printer profile: for CMYKOG
Density linearization: for CMYKOG plus all spot colors not excluded from density

3 **CMYK with light cyan and light magenta (calibrated) and 2 spot colors:**
Printing Ink Assignment: 8 slots with colors (CMYK + LCM + 2 spot colors)
1st spot color channel: printed with ink in slot "Spot Color 1"
2nd spot color channel: printed with ink in slot "Spot Color 2"
Printer profile: for CMYK
Density linearization: for CMYK plus all spot colors not excluded from density

Please note that DCS files do not use the color management (printer profile). Because of this restriction we strongly recommend not to use DCS files for spot color printing but using multi-channel TIFF files or the method described in chapter "Automatic Palette Color Replacement" instead.