



# Application Notes

## Image Color Control



# **Image Color Control**

ErgoSoft AG  
Moosgrabenstr. 13  
CH-8595 Altnau, Switzerland

© 2010 ErgoSoft AG, All rights reserved.

The information contained in this manual is based on information available at the time of publication and is subject to change without notice. Accuracy and completeness are not warranted or guaranteed.

No part of this manual may be reproduced or transmitted in any form or by any means, including electronic medium or machine-readable form, without the expressed written permission of ErgoSoft AG.

Brand or product names are trademarks of their respective holders.

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.

Rev. 1.1

## Contents

Introduction .....	1
Image Color Management .....	1
Raster Data Color Management .....	1
PostScript/PDF Color Management.....	3
Color Management for OPI Images.....	5
Direct Image Color Control.....	6
Tuning .....	6
Pure Colors.....	7
Replace Colors .....	8

## Introduction

The tools for image color control are separated into two groups. The first group, the input color management, influences the complete image by using a certain profile or rule to convert the image color space into Lab. The second group, the direct color control, is used to modify the image or to control the output color of a certain part of the image to manually make sure that certain colors are printed as expected.

## Image Color Management

Images can be created using different sources and color settings. Thus, in order to convert the image color space correctly into Lab, the “correct” conversion must be used. This is done by using an input profile.

As a special case, PostScript files and PDF files can include objects with different color spaces as well as different object types. The **ErgoSoft RIPs** offer a sophisticated PostScript Color Management to deal with these files.



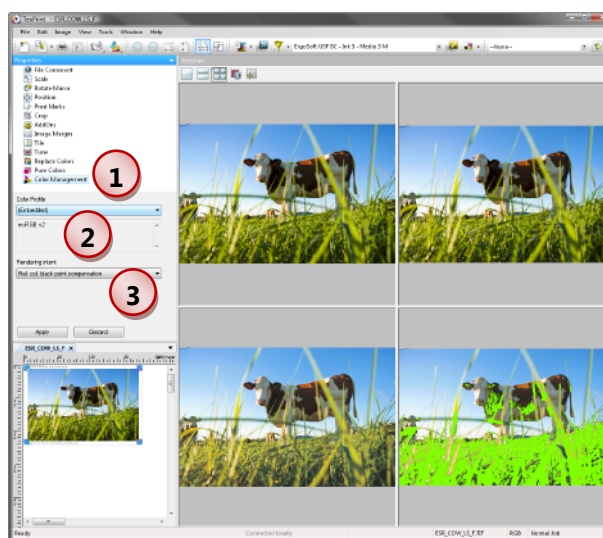
The color management can be set globally as preset for imported images and for each image separately. The global setting is done in menu *Tools > Options > Preferences > Image > Color Management* where you select **Input profiles** for raster data and **PostScript/PDF** for PostScript and PDF files. The color management for the selected image is set using the command **Color Management** resp. **Color Management PS/PDF** in the image *Properties* window.

## Raster Data Color Management

**1** To set the color management for the selected image(s), select **Color Management** in the *Properties* window.

**2** Select the color profile in the list that corresponds to the source of the image data. When only one image is selected, the effects of the selected color profile can be seen in the preview window.

When there is a color profile embedded in the image file that the **ErgoSoft RIP** can use, the list is enlarged by an entry “(Embedded)”. Profiles that are embedded in image files that are created with Adobe Photoshop version 5 or later can normally be used.



3 Select the **Rendering intent** to be used for printing the selected image when the corresponding conversion table is saved in the printer profile. When the conversion table is not saved in the printer profile the first conversion table is used (Automatic).

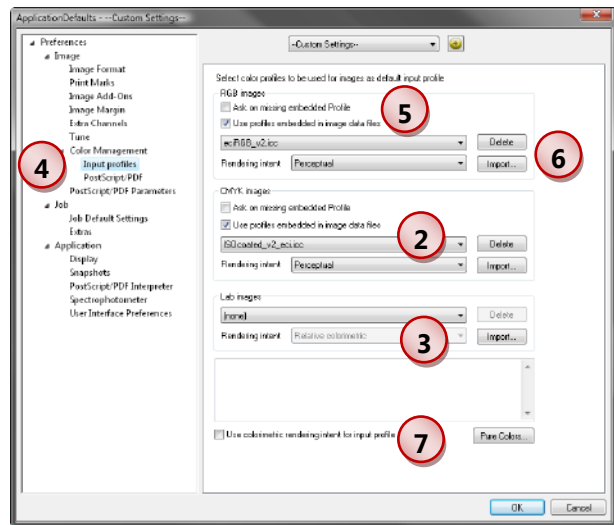
4 The global color management is set in menu *Tools > Options*. It allows the image data profile – separate for RGB, CMYK, and Lab images – to be specified that is to be used as default when images are imported that cannot be treated with the special PostScript color management such as TIFF files, JPEG files, DCS files, etc.

RGB input profiles are profiles that are able to convert RGB image data into Lab mode.

CMYK input profiles are profiles that are able to convert CMYK image data into Lab mode.

Lab input profiles are only needed in some special cases where – for a certain intention – a sort of conversion from one Lab basement to another Lab basement is needed.

The **ErgoSoft RIP** installation includes some standard RGB and CMYK profiles.



5 Mark **Use profiles embedded in image data files** to use the profile as input profile that is saved within the image file. Restriction: The image file has to be created using ADOBE PHOTOSHOP version 5.0 or higher. When **Ask on missing embedded profile** is checked, you have to select the input profile whenever an image without embedded profile is imported.

6 Clicking on **Delete** removes the selected profile after confirmation from the hard disk. Clicking on **Import** helps in importing color profiles to the folders in which the **ErgoSoft RIP** expects them to be.

7 Some special workflow simulations may require that the image data have to **Use colorimetric rendering intent for input profile** while the printout needs any other rendering intent.

For information about the rendering intent and about using image data profiles please refer to the manual part about Color Management.

## PostScript/PDF Color Management

1 To set the color management for the selected image(s), select **Color Management** in the *Properties* window.

2 Select a preset for PostScript/PDF files.

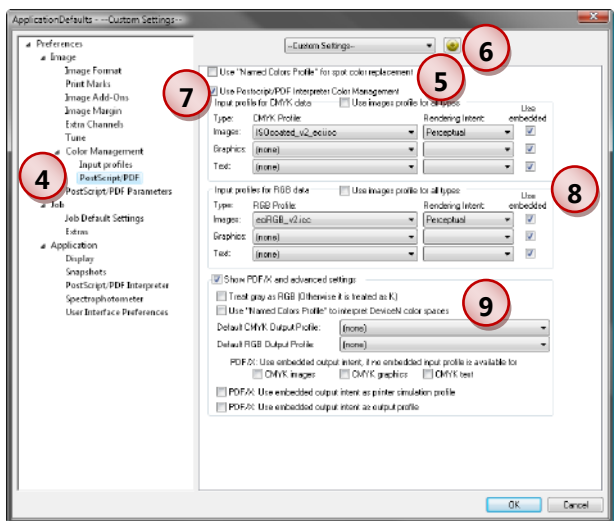
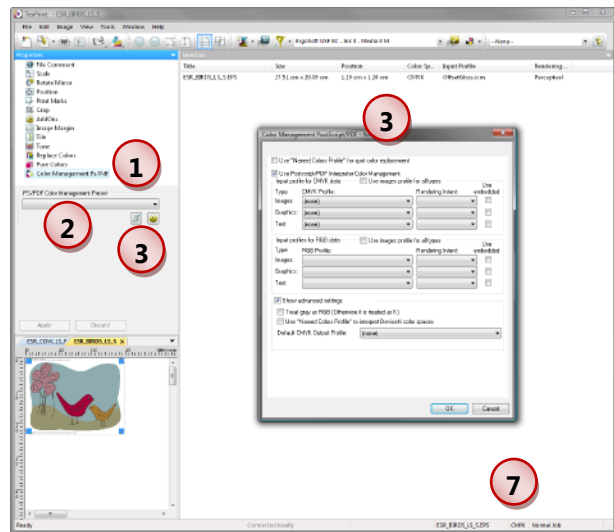
3 The current settings can be edited. Furthermore, a new preset can be created based on the current one.

4 The global color management is set in menu *Tools > Options*.

5 For automatic color replacement the spot color names in the PostScript or PDF file must match (case-sensitive) with color names in the Named Colors Profile.

6 The current settings can be saved as a preset.

7 For PostScript or PDF files, the color management of the PostScript interpreter can be used. Then, the color space of image is set to "separated" (SEP in the status bar of the program window) so that no additional color management is used.



The color management in the **ErgoSoft RIP** rasterizes PostScript files into the color space of the current print environment. It allows assigning default input profiles and rendering intents for the rasterization into the CMYK color space as well as into the RGB color space. These settings can be different from the default input profile and rendering intent for raster images.

When the PostScript file contains data of another color space than the output color space we strongly recommend to use the color management of the PostScript Interpreter.

8 Instead of assigning an input profile to the rasterized data the color management of the PostScript Interpreter can be controlled during the rasterization process:

- The color management can be specified separately for both CMYK and RGB data.
- Different input profiles and different rendering intents can be used for images (raster data), graphics (vector data), and text.
- Embedded profiles can be used instead of external profiles.

9 The PDF/X (only available for PDF files) and advanced settings allow to:

- Convert gray (monochrome) color spaces into RGB so that they are printed with all inks instead of printing them only with black and gray inks.
- When all channel names of a DeviceN color space match (case sensitive) with color names in the Named Colors Profile, the mixtures in the Named Colors Profile are used to convert the DeviceN color space into CMYK.
- If the current print environment does not use a printer profile, the **Default Output Profile** of the PostScript/PDF color management is used.
- When there is not an embedded input profile in the PDF file but an embedded output intent, the embedded output intent can be used as an input profile. Embedded input profiles take priority over the embedded output intent which takes priority over external input profiles.
- When **Use embedded output intent as printer simulation profiles** is checked, the intention of using a certain profile (Gamut) when creating the PDF file is taken into consideration during printing. This may result in a smaller gamut than the gamut that printouts with your printer normally have.
- The embedded output intent can be used instead of the printer profile provided in the print environment.

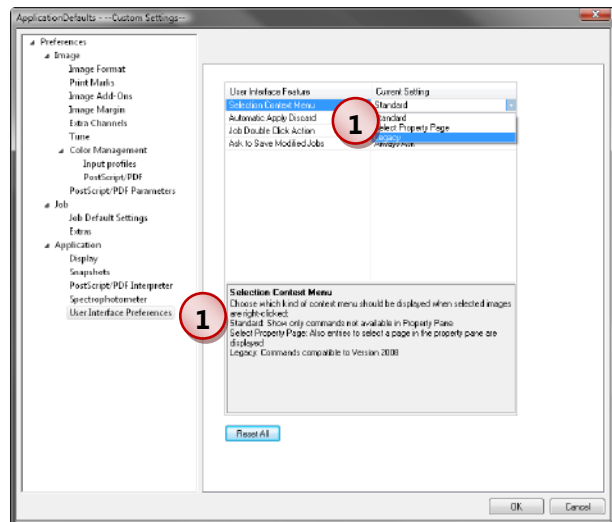
Please note that activating the color management of the PostScript Interpreter will treat PostScript files as separated files so that the color replacement and tuning functionality will not be available.



## Color Management for OPI Images

**1** To set the color management for the selected OPI image, you first have to activate the **Legacy** mode for the context menu using menu *Tools > Options > Preferences > Application > User Interface Preferences*.

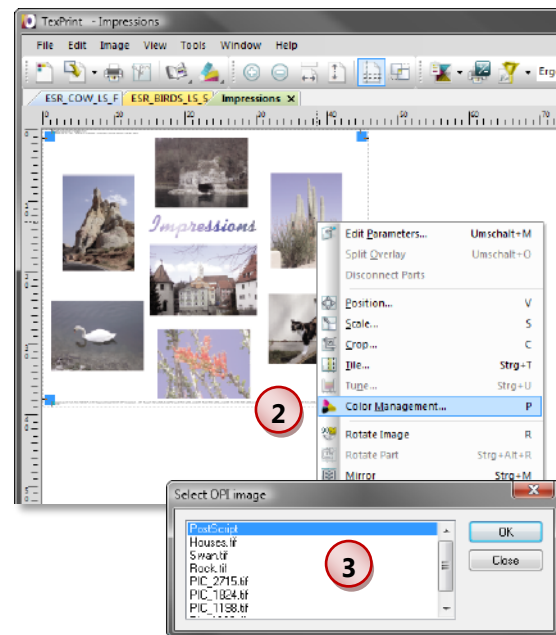
We recommend setting this configuration back to **Standard** when having finished working with the OPI image because this setting reduces the image context menu by all entries that are available directly in the image *Properties* window to enhance the clearness of the image context menu.



**2** Select **Color Management** from the *Image Context Menu* (right-click on the image).

**3** The **ErgoSoft RIP** allows a color profile for the PostScript part to be selected and for each image linked via OPI by marking the components one after the other. The mark can be moved to any component. Click on **OK** to start assigning a color profile. **PostScript** marks the PostScript part of the file. The linked images are listed by names.

When the desired color profiles have been assigned, the dialog box can be closed by clicking the **Close** button.



## Direct Image Color Control

In addition to the input color management, the **ErgoSoft RIP** offers some additional tools to control the colors in an image.

### Tuning

The **Tuning** tool can be used to make color corrections to the current image. Please note that this function is not intended to replace an image editing program; it is only meant to be a tool for global changes in the image.

Since it allows complex changes to the image within its restrictions, tuning presets can be created.

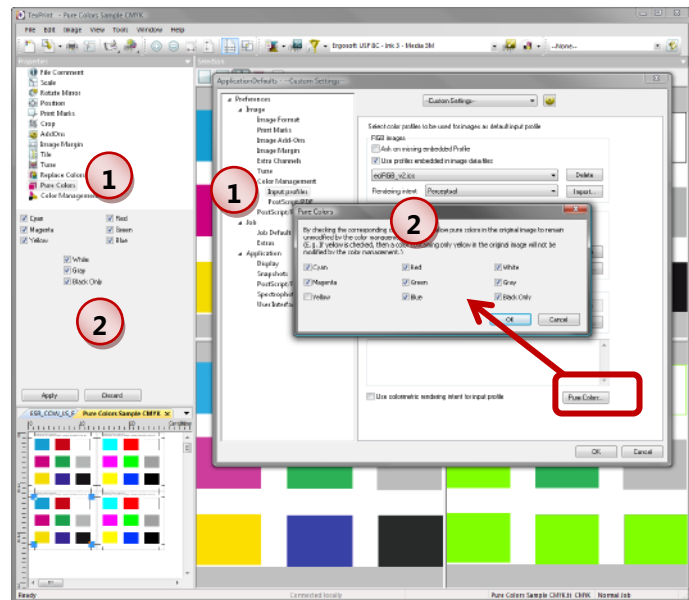
For more information please refer to the manual part about image presets ("Image Editing Automation").

## Pure Colors

The **Pure Colors** tool allows printing pure CMYK and/or RGB image colors automatically using pure inks without adding few dots in other inks. The settings can be done globally to be assigned when images are imported or for the selected image(s).

1 The pure color function is launched for global settings by selecting menu *Tools > Options* and for the selected image by selecting the function **Pure Colors** in the image *Properties* window.

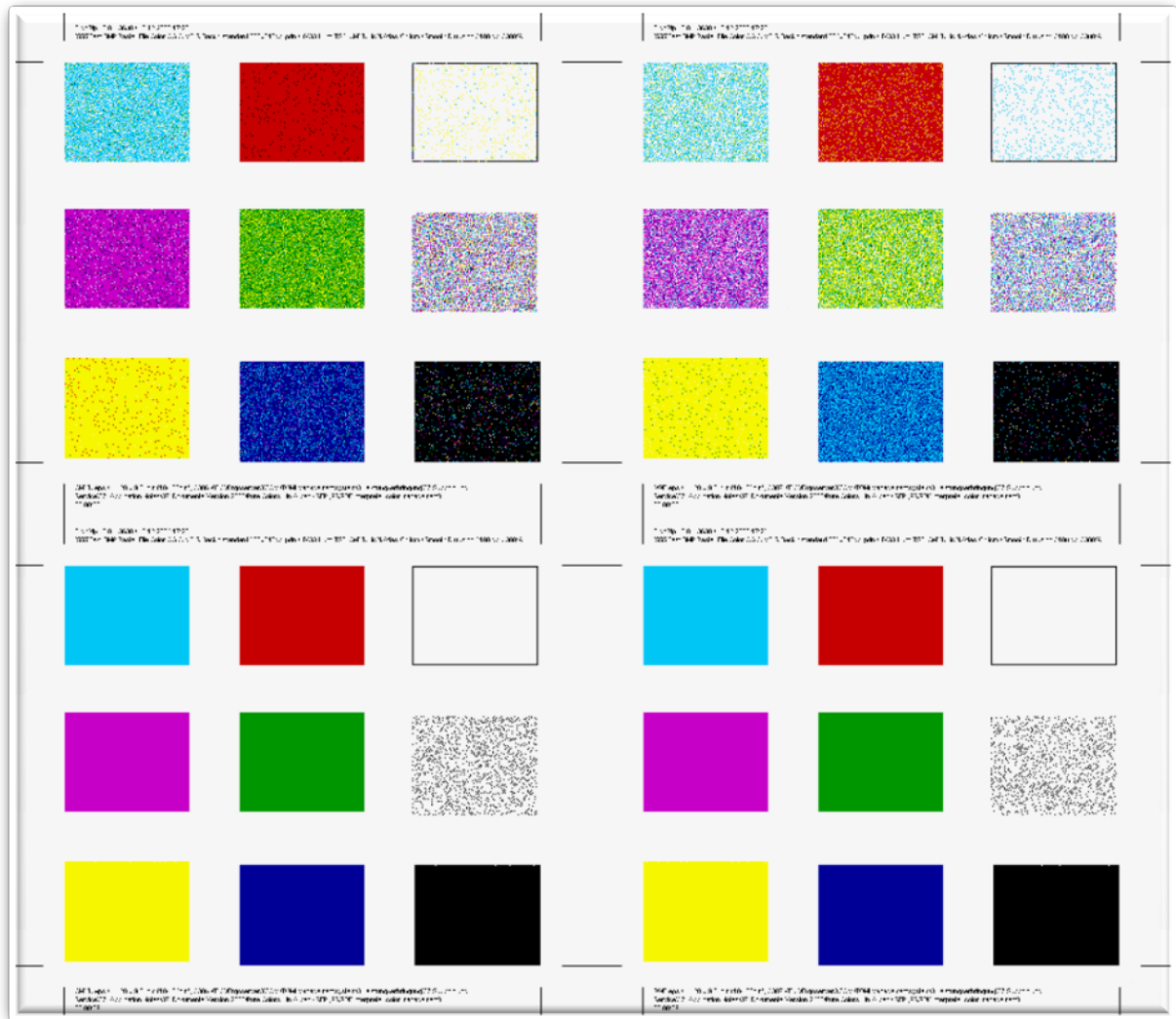
2 The dialog allows specifying the pure colors that should not be modified by the color management.



The colors for the **Pure Colors** tool must be realized as follows:

	in CMYK	in RGB
Cyan	100% C	255 G + 255 B
Magenta	100% M	255 R + 255 B
Yellow	100% Y	255 R + 255 G
Red	100% M + 100% Y	255 R
Green	100% C + 100% Y	255 G
Blue	100% C + 100% M	255 B
White	all values 0%	all values 255
Gray	any % K	R + G + B with same value, e.g. 175 R + 175 G + 175 B
Black only	100% K	all values 0

- 3 The sample below shows the resulting printout. The left images are CMYK with the values of above table, the right images are RGB with the values of above table. The upper images use input profile and go through the color management; the lower images use input profile and Pure Colors (all possibilities selected).



Please note that the printout uses a very rough raster for better visualization.

## Replace Colors

The color replacement functions allow customizing the ink mixture of certain colors in the images according to your needs and letting the color management control the ink mixtures of the rest of the image.

For more information please refer to the manual part about Color Replacement.