

REPORT: KNOW WHAT YOU'RE TALKING ABOUT – RGB AND CMYK COLOUR

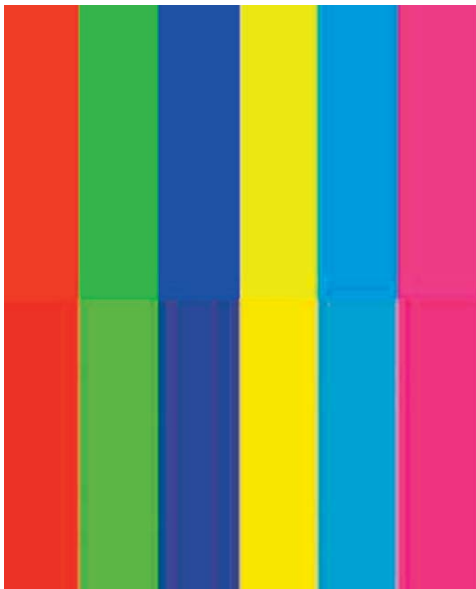
A spade might be a spade, but in the printing industry, red is not always red. And your colour job might just end up black and white if you don't understand the difference between red and red!

Provided by **ULTIMATE PRINT AUDITING**

RGB TO CMYK

This is a very important subject. If you use internal staff to create graphics or even final artwork for your print supplier, a good understanding of RGB vs CMYK will greatly increase the likelihood that your job will meet your expectations.

Examine the colour box below.



The top half is in RGB, and the bottom half consists of the same colours, but shown in CMYK. Commercial offset printing is done in CMYK, so if your print supplier receives a file in RGB, he will use an automated process convert it to CMYK.

As you can see, not all colours convert that well. It's true that most colours will appear pretty much as you wish them to appear, but rest assured the ones that don't will be the ones that ruin your job.

The best place for the colours to be converted is on your designer's computer, because he or she can then compensate if the conversion from RGB to CMYK is not exactly right.

WHAT IS THE RGB TO CMYK ALL ABOUT?

RGB and CMYK are known as 'colour spaces', and these 'colour spaces' create the colours you

see on all printed matter and on your computer screen right now.

RGB stands for Red, Green and Blue; and RGB is the 'colour space' used by computer monitors and digital cameras.

CMYK stands for Cyan, Magenta, Yellow and Black. All conventional and digital printing presses use CMYK.

Cyan (a blue-green colour tone), Magenta (a pink-reddish colour tone) and Yellow were originally intended to merge to produce all colours, but it later appeared that this was not the case. A mix of these three colours was supposed to make black, but it turned out that they made more of a muddy brown.

To alleviate this, the concept of adding black as a separate colour was introduced. This was the Key colour, which is where the 'K' in CMYK comes from. There are several reasons why K is used instead of B (for black). For one thing, the B is already in use (in RGB), which can be confusing. Also, the key colour doesn't have to be black . . . it depends on the colour of paper that is being printed on. Black is most common, though.

The problem in converting between the two colour formats is that RGB and CMYK have different colour 'gamuts'.

A colour gamut is the range of colours that a colour space can reproduce. RGB has a wider colour gamut than CMYK. That is, RGB is capable of reproducing more colours than CMYK. RGB tends to be able to reproduce colours at the extremes of red, green and blue that CMYK is incapable of reproducing.

In other words, bright reds, greens and blues will not be quite so bright when converted to CMYK. You will, for instance, see this in particular when converting a deep cobalt blue sky to CMYK.

It is highly likely that the images and background tints your artists work with in preparing your job will be RGB. Remember that output from digital cameras and scanners is normally RGB, as is the native format for clip art and stock photos.

At some stage they will need to be converted to CMYK.

The raster image processors (RIPs) that all print suppliers use to prepare files for printing have built-in RGB to CMYK conversion algorithms. These automated results can often be less than satisfactory. **And they'll sometimes convert all your colour files to greyscale or black-and-white.** Therefore, if your print supplier receives files contain elements in the RGB colour space, their own staff will usually convert them prior to sending files to their RIPs.

You will be charged accordingly, often as an overprices FMA charge.

If your corporation uses in-house staff to create artwork for printing, it is far better if they do the conversion. They can then see the result for themselves.

Simply put, very few colours have trouble converting from RGB to CMYK. But if you do it in-house, however, your staff can see any discrepancies and can do something about it. They can, for instance, open the image in Adobe PhotoShop and make adjustments that may recover some of the brightness lost in the conversion process.

Even though computer monitors display colours in the RGB colour space, your job will look more like the printed job if your artists convert it to CMYK and then view it on their monitor.

Ultimately, for the best results, make sure your job has been converted from RGB to CMYK before sending it to your print supplier.

CONVERTING TO CMYK COLOUR SPACE

Here is a list of a few programs with instructions on how to make sure you are working in the CMYK colour space. It is by no means comprehensive, just nominating the most common office-based software.

Microsoft Publisher 2000+

Microsoft Publisher has RGB as its default colour setting. It's easy to convert everything to the CMYK colour space or to start a new document using the CMYK colour space.

Use the following menu options:

Tools > Commercial Printing Tools > Colour Printing, then

Select Process Colors (CMYK).

Please be aware that all images placed in your layout need to be 'linked' and NOT 'embedded'. If they are 'embedded' then the CMYK colour space will NOT be maintained.

You can link the image by doing the following:

Select the following menu options: Tools > Commercial Printing Tools > Graphics Manager

Highlight the embedded image

Click Link

Click Browse to locate the original file and link to it.

You will then need to send BOTH the images and the layout file to your print supplier.

Adobe Photoshop

If you have an existing file, then select the following from the menu bar: Image > Mode > CMYK

If you are creating a new file, then select CMYK for the mode before you click "OK".

Corel Draw

Select each object you want to convert.

Select the Fill tool and click Fill Colour Dialog.

Make sure the Colour model is CMYK.

For each object with an outline: Select the Outline tool and click the Outline Colour Dialog. Make sure the Colour model is CMYK.

Adobe Illustrator

Use the following menu options.

For an existing file select File > Document Color Mode > CMYK Color

For a new file, select File > New and select CMYK colour for the Colour Mode.

Quark Xpress

Use the following menu options:

Edit > Edit Colours > Show Colours in Use > Highlight Colour and click Edit.

Change model to CMYK and deselect Spot colour.

Remember to send your printer both your layout and linked images.

PROGRAMS THAT DO NOT CONVERT TO CMYK

The following programs do not have the capability to allow you to convert to CMYK.

Adobe Photoshop "LE"

Adobe PhotoDeluxe

Microsoft Word

Microsoft Excel

Microsoft Powerpoint

Microsoft PhotoDraw