

## RGB vs. CMYK Colour Modes

RGB is one of the two most widely used colour modes and is used mainly for display on monitors. CMYK however is the only right colour mode for print.

### RGB

Red, Green, and Blue are "additive colours". If we combine red, green and blue light you will get white light. This is the principal behind the T.V. set in your living room and the monitor you are staring at now.



Additive colour, or RGB mode, is optimized for display on computer monitors and peripherals, most notably scanning devices.

### CMYK

Cyan, Magenta and Yellow are "subtractive colours". If we print cyan, magenta and yellow inks on white paper, they absorb the light shining on the page. Since our eyes receive no reflected light from the paper, we perceive black... in a perfect world! The printing world operates in subtractive colour, or CMYK mode.

In practice, printing subtractive inks may contain impurities that prevent them from absorbing light perfectly. They do a pretty good job with light colours, but when we add them all together, they produce a murky brown rather than black. In order to get decent dark colours, black ink is added in increasing proportions, as the colour gets darker and darker. This is the "K" component in CMYK printing. "K" is used to indicate black instead of a "B" to avoid possible confusion over Blue ink.



## Always deliver your digital images in CMYK-mode!

One of the most common errors made by inexperienced graphic designers is submitting RGB files. As a result we must ask if they would like us to convert to CMYK before we send the files for film output. Most of the time, the colour change that will occur is slight. However, every once in a while, the colour range after conversion is compressed during the transition to CMYK mode resulting in a complete change in colour tones. Be warned that there is absolutely no way to get that deep RGB blue using CMYK, no matter how much we want to.

### Tips to avoid disappointments

- The easiest way to ensure colour accuracy is to use PMS spot colours
- Keep your design simple.
- Unfortunately, there are no totally accurate means for viewing what the actual printed surface of a CMYK label will look like before you begin production. Even seasoned professionals cannot anticipate many of the undesirable effects that may occur from time to time while trying to colour match. CMYK Proofs are to be used only as guidelines.

### CMYK Workflow

When designing for CMYK printing there are a few application specific tips to follow:

#### Photoshop

Your scanner almost certainly generates RGB information. Don't worry, that's how it's supposed to work. In fact, you should leave your colour files in RGB mode until you need to finalize your project, or until you need to know CMYK ink values so you can match colours in another program. While you are working you can check how your files are going to look by turning on the "CMYK preview" mode.

Don't make repeated changes between RGB and CMYK mode, using the mode menu. Every time you switch, a little clarity is lost. One switch is no problem; 20 switches makes a difference.

So why not simply switch to CMYK mode as soon as possible?

- RGB files are 25% smaller and therefore 25% faster to work with and easier to store.
- The SWOP CMYK gamut is pretty small. If you ever want to reproduce those files for a different medium (such as the web), you'll have thrown away some potentially useful information.

### **Illustrator**

Stick to CMYK and Grayscale colour models when working on the paper parts of your project (booklets, traycards, etc.). If you use Pantone Coated colours on anything paper, make sure that you are willing to pay all the associated up charges. Stay away from RGB.

### **Pagemaker**

Menu choice WINDOW contains the "*Show Colours*" palette. This program functions much the same way as Illustrator and Quark in that you can add custom swatches for use in your document.