HP
HEADLINE PRINTERS

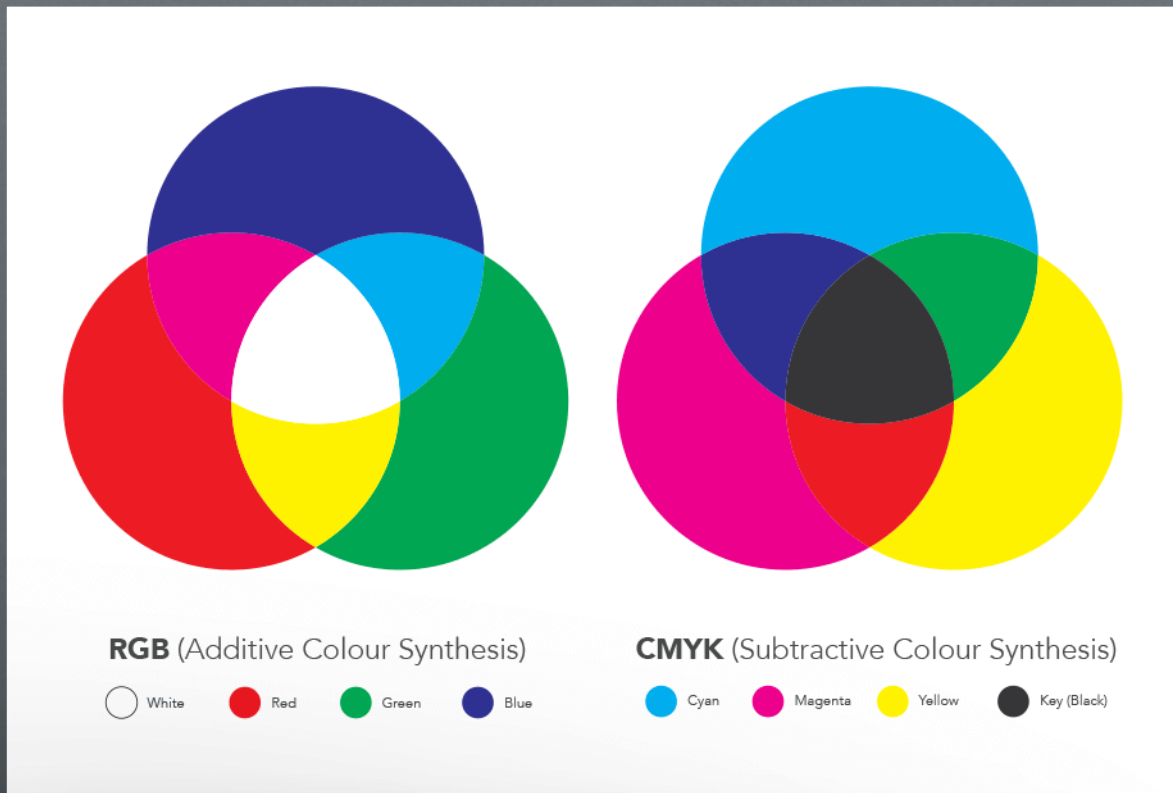EST. 1984

colour guide.

cmyk.

rgb.

This guide outlines the differences between RGB and CMYK colours, explaining why CMYK is the standard for commercial print documents. It also explains how to check colour settings in most commonly used software programs.

Please Note

When you order through our website, we do not check the colour set up for files you submit. All colours are automatically converted to CMYK. In certain cases, this may cause noticeable colour variation.

Colour Gamat Differences

With RGB colours, graphics are created from Red, Green and Blue. The CMYK colour palette uses Cyan, Magenta, Yellow and Key (Black).

RGB (Additive Colour Synthesis)

○ White　● Red　● Green　● Blue

CMYK (Subtractive Colour Synthesis)

● Cyan　● Magenta　● Yellow　● Key (Black)

CMYK colours are subtractive. This means that the canvas is white to begin with, and colours are added in which block out part of the spectrum.

RGB colours are additive. This means that the canvas is black to begin with, and colours are added to create the resulting image.

Why Print in CMYK?

The RGB colour spectrum is much larger than that of CMYK, which means colours can be created in RGB that aren't available in CMYK. This issue is made especially obvious with vivid fluorescent shades of orange and green.

Commercial printers press on white paper using CMYK as it achieves the best results. It's best to prepare files with this in mind. Here are a few examples of files submitted in RGB that have been automatically converted to CMYK, so you can see what we mean.

CMYK Colour Mode

RGB Colour Mode

Converting RGB To CMYK

Using software like Adobe Photoshop, it's possible to readjust the colour balance after conversion and more closely match what you'd intended. If using RGB while designing makes it worth it to spend time converting to CMYK afterwards, this is an option you might consider.

Before Conversion

After Conversion

After Adjustment

Creating Files In CMYK

When designing for print, best results are achieved by working in CMYK from the start. Doing so prevents any issues in trying to adjust colours later, which can be difficult or impossible to accomplish.

However, it's important to note that not all software programs are able to create files using CMYK colour. As an example, programs like Word and PowerPoint work in RGB, which would need to be converted before printing.

Adobe Photoshop

When using Photoshop, colour settings are determined when the document is created. You can also check colour settings on an open document by clicking Image and reviewing the mode in the screen on the right.

Adobe InDesign

When using InDesign, colours are converted once you export your document to a PDF. If you select the "pdf/x-1a:2001" preset, it will ensure that your document is CMYK.

Adobe Illustrator

When using Illustrator, colour mode is set right when the document is created. When saving your PDF, select the "pdf/x-1a:2001" preset from the drop down menu.

Microsoft Publisher

When using Publisher, open your document, click "file>info>commercial print settings" and then choose the CMYK colour model. This will let you set the colour mode you want your document created in.

*These are the most common choices for design and publishing software used for creating print files. If you've created your project in another program, key settings are often called "colour mode CMYK," or "process colours."

Dos and Don'ts: File Checking

Here are a few key tips to keep in mind when you're checking your file before sending it for print:

• Do use a printed CMYK colour swatch to check your colours, if you're unsure.

• DO check your proof on-screen using a colour calibrated monitor (if possible.)

• DO be aware that colours will vary from monitor to monitor, when they're uncalibrated.

• DO print yourself a sample using a commercial proof printer with the output profile set to Fogra 39 (if possible.)

• DO use Adobe Acrobat Pro's output preview tool to check your colours.

• DON'T check colours against samples from a desktop printer, as they will generally emulate an RGB colour gamut as opposed to CMYK.

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