

# TECHNICAL GUIDE

## INK

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FREQUENTLY ASKED QUESTIONS  
INK SAVING TECHNIQUES

Second Edition



## FREQUENTLY ASKED QUESTIONS

### 1. What is grey component replacement (GCR)?

GCR is a technique to reduce the amount of cyan, magenta and yellow inks used. It replaces the CMY components used to create grey tones, with black ink. This can save money and improve printability and margins.

### 2. Can an extended ink set save me money?

An extended ink set means that you can print certain colours with a dedicated ink, such as red, green or blue, rather than using a combination of CMYK to achieve the colour. This means you are using fewer inks and saving the cost of at least one of the process colours.

### 3. What is under colour removal (UCR)?

UCR reduces cyan, yellow and magenta used to limit the total ink used. It uses black mainly in the very dark areas of an image to enhance its contrast. By reducing the overall amount of ink, prints dry more efficiently, however the CMY ink densities must be carefully monitored to avoid a colour shift in the grey balance.

### 4. Is the data important for saving ink?

Ink saving software analyses the data in a page image before the page is printed. It uses this data to work out the optimum amount of each process colour to be printed.

### 5. What needs to be considered when calculating GCR and UCR?

The most important factor is the substrate, and to evaluate the optimum amount of ink to be laid down. You don't want to apply UCR/GCR too severely as this will affect image quality.

### 6. Are there any negatives associated with using UCR?

Since the near neutral tones are created using CMY, it might be difficult to maintain a correct grey balance if too much UCR is applied.

## **7. What are the main negative effects of using too much ink?**

The sheets will take longer to dry and might never dry properly. This can cause problems in post-press and using excess ink is an unnecessary expense.

## **8. Are there any drawbacks to using GCR?**

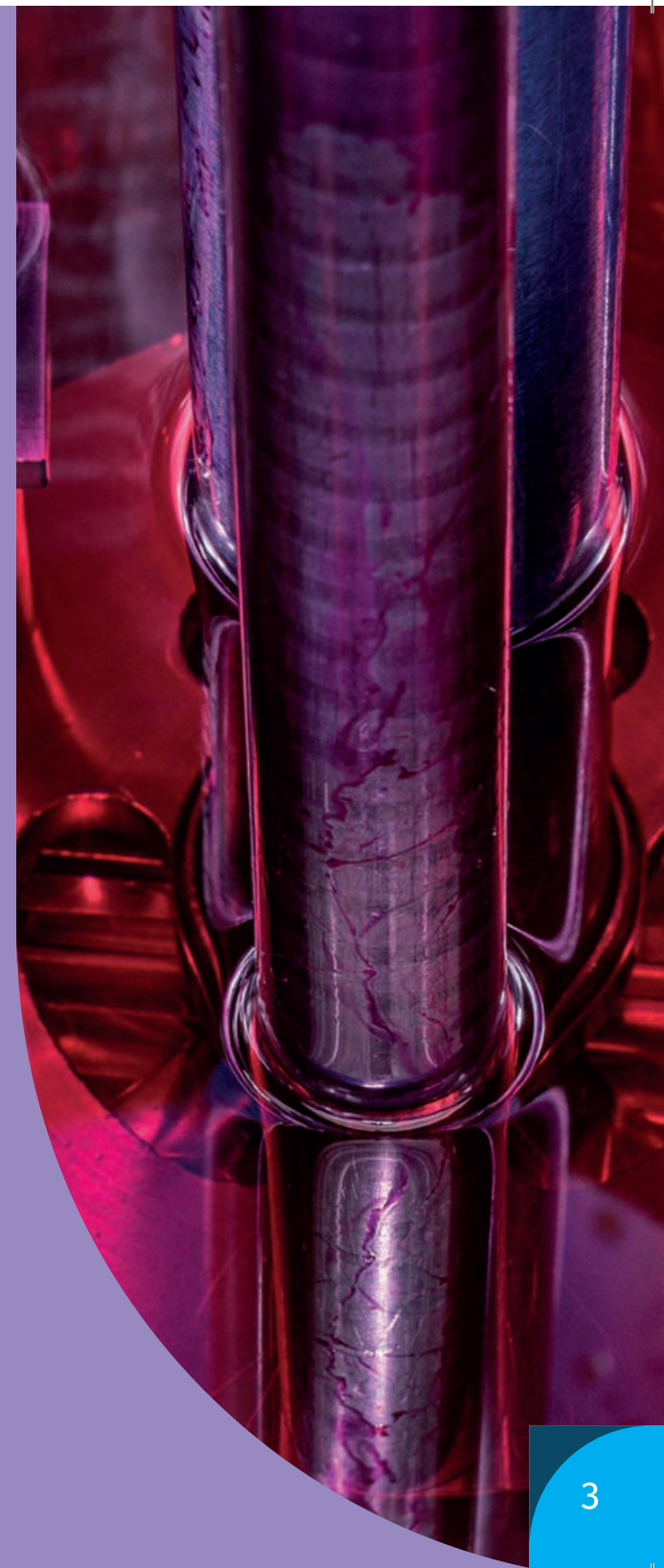
If applied excessively GCR might affect image quality, with images looking grey or washed out.

## **9. Why don't we use light yellow in digital printing?**

In theory a light version of yellow would help to achieve smooth vignettes in highlight areas. But the human eye is poor at detecting the light areas of yellow so there is no real benefit to providing light yellow alongside light cyan and light magenta.

## **10. How reliable is free ink saving software?**

The data management associated with ink optimisation is complex. Ink saving software needs to have been written specifically for professional print production and to manage colour without compromising the printed result's appearance.



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