Prisco®
SERVICE AND TECHNOLOGY FOR THE GRAPHIC ARTS®
TECHSOLUTIONS
VOLUME 02

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FLOCLEAR IN THE PRESSROOM

Our pressroom experience indicates that some FloClear customers still experience a conductivity increase over time - but we also find that this does not detract from the overall benefits of installing a FloClear filtration device.

The FloClear is a particulate filter that removes virtually all solid matter distributed within the recirculating fount, down to the sub-micron level. Suspended solids block light which in turn makes used fount appear dirty or cloudy; removing them by filtration immediately imparts clarity to the reservoir. Solid matter, however, is not what gives conductivity to used fount. Species that break apart (ionize) while dissolving do this.

Conductivity measures the fount's ability to conduct electricity; ionic species must be present for this to occur. Things that are dissolved – whether ionized or not - will for the most part pass untouched through the FloClear (or any other particulate filter).

Dissolved species that contribute to conductivity include ink additives and driers, low molecular weight portions of ink varnishes, and additives used in paper as well as paper fibers themselves. Salts, cations like calcium that come along with ink pigments (energy-curable inks are based on the same pigments as conventional inks), and plate cleaners can also create a rise in conductivity. Additionally, low molecular weight portions of monomers and oligomers that make up the backbone of energy-curable inks as well as small parts of any photo-initiators that are present will have a potent effect on a used fount's conductivity.

Why doesn't the system's conductivity increase at a steady rate? Because eventually, it reaches an equilibrium point - used fount is being taken away by the substrate and evaporating off the moving surfaces in the press, and fresh fount is continually metered into the reservoir to replace it. This equilibrium point will be higher in conductivity than when fresh. The higher conductivity reflects the amount and nature of what has been dissolved as well as the necessary buffer capacity of the fountain concentrate used and the reservoir's replenishment rate.

Why, then, do we actively encourage the use of advanced filtration devices like the FloClear in the press-room? Because, overall, they provide a lot of benefits to the printer and the offset printing process.

The primary function of fountain concentrate is to desensitize the grained non-image area of the printing plate. For this to happen, a fount must be able to deposit a desensitizer into the plate's grain via the press' water form. If the used fount applied via the water form contains suspended solids (dirt), these will be deposited in addition to or in place of desensitizer, reducing the plate's ability to print cleanly in the non-image area. The press operator often compensates by increasing the press' water metering speed settings, and the spiral of extra water – excess ink – extra water begins.

Gradually, the operating window narrows, print density becomes unstable, tinting and toning may occur, and color fidelity may be lost. The FloClear eliminates this variable by filtering out and retaining (down to a sub-micron level) these suspended solids, preventing them from being deposited into the plate grain.

There are, of course, other benefits to the FloClear including overall reduced fountain solution consumption (since the reservoir contents no longer need to be replaced entirely on a regular basis), reduced fountain solution expenditure, reduced press-room VOCs, and less money spent to dispose of used fountain solution safely.

We are occasionally asked if the FloClear removes and retains the gums and other desensitizers that are used in fountain concentrates. The answer is no; these ingredients are completely dissolved and therefore cannot be filtered out by a FloClear.

Sometimes we are asked why the color of the mixed fount in presses equipped with a FloClear occasionally fades or even disappears entirely as the press runs. Fountain concentrates are colored with soluble dyes, not insoluble pigments; the latter would immediately be filtered out by the FloClear's filters as well as by the press' OEM filters. Dyes are organic materials and sometimes adsorb onto the surfaces of the FloClear cartridges; the result is lightening or fading of the fount color.

This does not always occur, and other materials present in the used fount are also a factor. The dye is to give color to the fountain concentrate and mixed fount, and its presence or absence does not affect the performance of the printing press.

Your local Prisco office is happy to answer your questions:

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