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BCM Inks

Today, everyone seems to be interested in 'Green'. Ink suppliers are no different. We want to supply inks that are renewable, recyclable, reusable, or are in any way touted to be good for the environment and/or human health.

The U.S. and Canadian corrugated industry used more than \$300 million in inks last year. The majority was water-based flexo. Most people are under the assumption that water-based inks are 'Green'. This may or may not be the case.

This article will define what a sustainable 'Green' or 'sustainable' water-based flexo ink is and what ideas or processes ink suppliers offer to reduce/reuse/recycle.

An understanding of basic ink chemistry will help define a 'sustainable' water flexo ink. A

standard water-based flexo ink consists of four ingredients. They are:

**The pigment or colorant** – Pigments are organic or inorganic compounds. They are ground into a very fine powder-like consistency that gives the ink its color.

**The varnish or vehicle** – Varnishes act as a carrier for the pigment. They bind the pigment to the substrate. They are typically resins or emulsions. They help determine ink characteristics, such as gloss, stability, solubility and viscosity.

**The solvent** – The solvent in water-based inks is water. Water helps make an ink fluid. It is also easily removed by evaporation or absorption.

**The additive** – Additives are items such as wax, defoamer, and pH adjuster. They are the 'extras' that are put into the ink to adjust the ink's press characteristics.

Despite the assumption that water-based flexo inks are 'green,' this may not always be the case.

## What is... **SUSTAINABLE INK?**



**One of the most cost-effective ways to reduce, reuse and recycle ink is to install an ink blending system.**

## So, what is a sustainable water-based flexo ink?

A sustainable water-based flexo ink consists of pigments that contain no heavy metals. This means no lead, cadmium, hexavalent chromium, antimony, arsenic, mercury and/or nickel. It also has low or no volatile organic compounds. A volatile organic compound (VOC) as defined by the U.S. Environmental Protection Agency is "any compound of carbon which when emitted or volatilized into the air participates in atmospheric photochemical reactions that result in the formation of toxic ozone."

Some of the most common VOC's are alcohols, such as methyl, ethyl, and isopropyl, glycols and amines. You can determine your ink's ingredients by looking at a Material Safety Data Sheet (MSDS) and/or Technical Data Sheet (TDS) provided by your ink supplier.

A sustainable ink should also contain alternative, non-petroleum-based materials instead of petroleum-based products in the varnish portion of the ink. This alternative could be produced from renewable resources such as vegetable oils; i.e. soy, and/or paper rosins. Think about the environmental and cost impact of replacing just one pound of petroleum in each bucket of ink every day for a year.

A sustainable ink should also be certifiable. This means third party certification, such as ISO 14001, Ecologo, and/or Green Partner. The third party certification means a recognized or approved company has analyzed the ink ingredients and processes to ensure 'Green' compliance.

## How To Reduce / Reuse / Recycle

Besides using a sustainable water flexo ink in your plant, there are other ways you can reduce/reuse/recycle. Here are two ideas.

One of the most cost-effective ideas is to install and use an ink blending system. Ink blending systems provide the tools to reduce ink inventory, reuse or recycle inactive, obsolete, or one-time overages and reduce overall ink purchases. Your ink supplier can help you with

cost justification figures. In many cases, you'll be surprised how much money you can save while helping the environment, too.

Another idea is expanded gamut process ink usage. The addition of process orange, process green, and/or process violet to the standard CMYK enables companies to expand their print gamut, batch multiple items per press run, and minimize PMS ink inventory. This idea requires a six- or seven-color press. However, this investment may be well worth it based upon the production efficiencies achieved and reduction in ink inventory.

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'Green' or sustainable inks and processes are important to all of us. Ink suppliers realize they have a responsibility to 'sustain' our planet's resources, raw materials, and way of life for our children, grandchildren, and beyond. Therefore, the next time you need an ink, request 'Green'.



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