

Putting Print to the Test

Surrounded by brochures full of claims, counter-claims and convoluted ink durability theory, you could be easily forgiven for getting confused about what ink and printer combination can deliver what level of true durability.

Using the wisdom inherent in the old adage 'a picture paints a thousand words', we thought we would give you a more visual demonstration of the differences between our inks and those used by competing solvent inkjets.

The Test Kit

We take a roll of Metamark MD5 self-adhesive vinyl, a product approved for digital print production and one which most manufacturers of Eco-Solvent printers state is a vinyl compatible with their Eco-Solvent Plus inks.

We have two sets of ink and a set of solvent flush. The inks are our own Uniform CitroSOL, and a set of Eco-Solvent Plus inks as used in eco-solvent printers currently on the market. The flush is used to purge the system between tests to enable clean ink changeover.

The final product is a box of IPA wipes, specifically we use Solvent Cleaning Pads from RS Components (RS Stock No. 557-067).

The Test Procedure

1. We first install a set of Uniform CitroSOL inks into our CADET printer, and print some A4 sized samples of a vibrant image with plenty of colours as well as areas of heavy ink saturation. We then clean out the printers ink sub-system using standard solvent flush cartridges. Following this we install a set of Eco-Solvent Plus inks and run more A4 samples.

2. Whilst we can carry out the wipe test immediately on the prints produced using our CitroSOL inks, we leave the prints to dry for a period of 24 hours to ensure the Eco-Solvent ink has had the opportunity to fully react with the vinyl.

3. We then carry out the wipe test as illustrated below.



Eco-Solvent Plus Ink Test

Using the RS Solvent Cleaning Pads, even gentle wiping will easily and rapidly remove the ink from the surface of the prints produced using the Eco-Solvent Plus inks.

Ink ingress into the vinyl surface is minimal, and it is entirely possible to wipe all traces of ink from the vinyl.



A4 samples are printed onto Metamark MD-5, one of the most compatible digital vinyls, using both Uniform CitroSOL and Eco-Solvent Plus inksets.



Uniform CitroSOL Ink Test

Even quite aggressive rubbing makes no difference to the print, the active chemistry in CitroSOL inks has led to correct adhesion with ink etching into the vinyl surface and creating a wear resistant and highly durable finished print.

For the most demanding of applications, our ActivaSOL inks can give an even more durable print than CitroSOL.

So what does this prove?

We all know people don't run around armed with Solvent Cleaning Pads, their sworn mission to destroy digital print! We would also readily agree that for numerous applications Eco-Solvent inks can print to some uncoated substrates, and deliver a print of saleable quality that is satisfactory for many users.

However, this test does serve as a visual illustration of the claims that we make for our Uniform inks, and indeed our Uniform printers. Proving that for genuine outdoor durability that is wear resistant, without lamination, Uniform delivers.

Remember also that this level of Uniform durability has a number of other benefits; can you apply an application tape to an Eco-solvent print without damaging the print surface? Can Eco-solvent prints stand up the wear and tear they may be subjected to during delivery and installation? A print produced on a Uniform system is hardy and durable, it means you print once and once only.

The Process - How Solvent Inks Work

In simple terms solvents are present in inks for three primary reasons.

Firstly, they are needed to dissolve the film former (resin) in the ink. This is the material that is required to coat the colourants in the ink. Without the resin, the ink would be like a powder and would rub off any substrate printed to. Different solvent types are required to dissolve the film formers. Different film formers are required depending on the substrate to be printed. A 'strong' or 'active' solvent is necessary to dissolve acrylic or PVC resins.

Secondly, the choice of solvent can control the speed of drying. Obviously fast evaporating solvents dry much quicker than slower evaporating solvents.

Thirdly, solvents can provide the key to the substrate. Adhesion to porous substrates such as paper and board is obtained by the ink soaking into the substrate. Where a non-porous substrate such as PVC or an acrylic is printed, the solvent in the ink will take an active role by dissolving the surface of the substrate. If 'passive' or 'eco' solvents are used on difficult substrates the ink will 'sit' on the surface and can easily be removed by scratching or gently wiping with a weak solvent such as iso-propanol alcohol (IPA). These 'passive' or weak solvents are often considered as being eco-solvents.

The Benefit

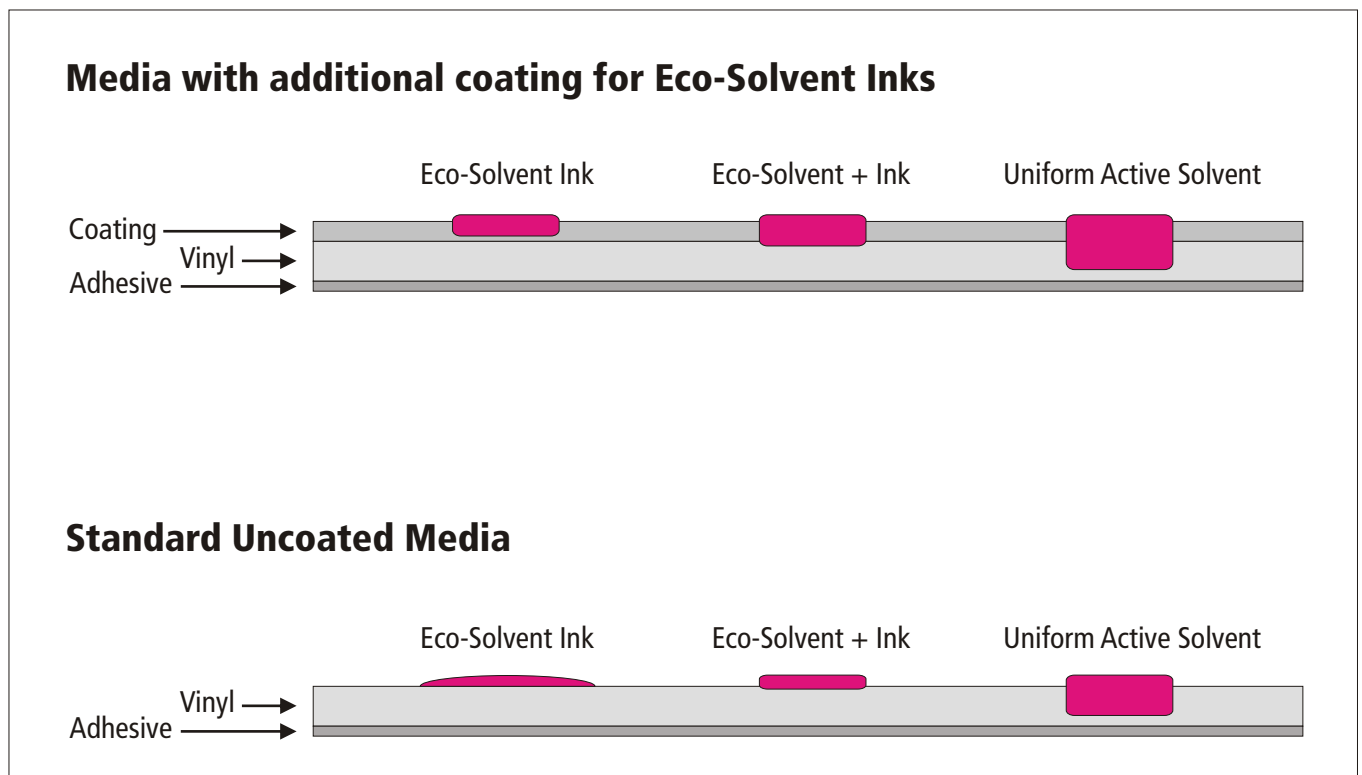
Graphics printed with Uniform True Solvent Inks will bond better to a far wider range of uncoated substrates, they will be more durable, offer better UV resistance, and withstand a greater degree of mechanical wear.

The Costs

Uncoated vinyls cost dramatically less than vinyls used with traditional water-based inkjet printers (Encad, HP etc) and up to half as much as specially treated media required with first-generation eco-solvent inks.

The Bottom Line

Uniform inks work better, cost less, and are more compatible. Uniform True Solvent Inks will outperform all types of first generation Eco-Solvent inks and second generation Eco-Solvent Plus inks.



Difference in chemical behaviour of Uniform Active Solvent Inks vs. Eco-Solvent Derivatives