

Aftermarket INK for Roland



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Paul Liu, Dr. Nicholas Hellmuth and Chuck Wong at B2 Sign, INC.

Introduction: After-Market Ink Evaluation

It all started four years ago, we, at FLAAR Reports, began a long-range project that aims to evaluate after-market third-party ink alternatives for all the major normal brands of printers such as:

- HP DesignJet
- Canon iPF
- Epson
- Mimaki
- Mutoh
- Roland

Understandably, the same ink which works in an Epson, Mimaki, Mutoh, and Roland can be usable in the scores of models of Chinese-made printers with the same DX4 DX5, DX6, and DX7 printheads.

As of the moment, we have several more years of research ahead of us, but for 2013, we decided to issue our findings based on the studies made last year (2012). The first of these is all about the after-market ink for Roland printers with DX heads. This is an ink that is developed and made in the high-tech area of Singapore, by SAM*INK®.

This study conducted also included two visits to the ink labs and factory, as well as visits to two end-users (in Singapore and USA). We will be issuing reports on after-market inks for HP latex printers shortly.

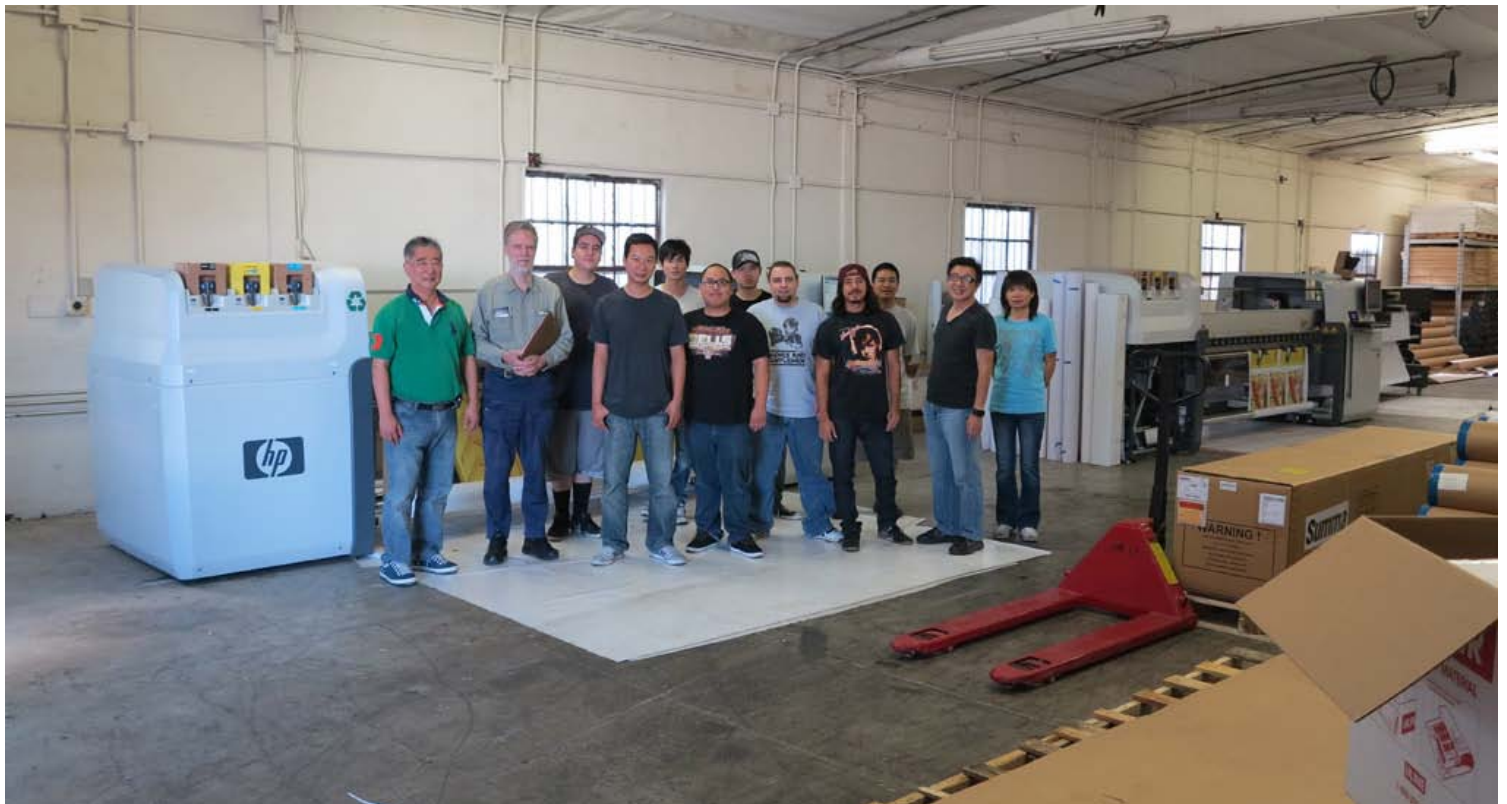
Two kinds of inks are used in Roland, Mimaki, Mutoh: eco-solvent and mild-solvent

Mild-solvent is also called low-solvent or lite-solvent. There are no industry-wide definitions to-date, but I consider mild-solvent, low-solvent, and lite-solvent all similar with each other.

These three solvent names are all different from the eco-solvent. Eco-solvent requires more coated media, which if I might add is more expensive. On the otherhand, the Mild-solvent requires less coated material. This makes its cost of use cheaper. Today, the best known examples of mild-solvent inks are the current Seiko ColorPainter printers and their earlier versions (rebranded as the HP Designjet 8000s, 9000s, and 10000s).

Since SAM*INK® is already turning out and making mild-solvent for the HP Designjet 8000s, 9000s, and 10000s, the company found it relatively easy to make a similar ink for Roland, Mimaki, and Mutoh. This mild-solvent ink also works in most other printers that use DX 5 printheads from Epson. Just be sure to check what DX printheads your printer has. With this knowledge, you can now purchase and use the best ink for it. (Realize that Epson itself tries to hide what model of printheads their printers use. Epson does not want anyone to use an after-market ink because obviously Epson wants the profit).

Remember that every printhead model prefers an ink made to work well with that printhead. From that we can surmise that an ink made for a Roland printer using an Epson DX4 head may not be the ink to consider for a Konica Minolta head.



Staff of B2 Sign INC. with Dr. Nicholas Hellmuth.



SAM*INK® ECO-SAM is stated by them as matched to the colors of Roland's OEM ink. This is standard policy: to have the after-market ink be the same color gamut.

To assist you to understand which Roland printers to consider using the SAM*INK®, we offer the following tabulation.

You must remember that water-based ink is very different than lite-solvent ink. The SAM*INK® for Roland printers is eco-solvent. The list below includes all printheads which Roland uses, and all ink types (eco-solvent, mild-solvent, and UV-cured). Today, there are many companies that modify Roland water-based printers to use with textile inks. There are a few companies in Europe and China that modify Roland printers to use UV or other inks. In the list below, we have included only the official printers of Roland DGA.



We are not aware and furnished with any complete tabulated list of Roland printers, but most RIP software companies have fairly good lists.

This is our first edition dated Feb. 2013 and as such we still need to get a lot more information to be sure that we have all the models and that our specs for each model are correct.

If you are in need of specific information, it is best for you to use Roland DGA as a source (though obviously they will not want you to utilize any after-market ink!); we have no connection or affiliation with Roland DGA. But as a professor-type of person, I do like to make tabulated comparative lists, and I will keep at this list over time until I can improve it. But, it may take some time as we are also making comparable lists of Mutoh, Mimaki, Canon, Epson, and HP printers).

Model	Ink(s) kind	How many Ink channel COLORS	DX which, or other brand,	Pico liter(s)	Comments, such as, should you dare consider this used?
AdvancedJet AJ-740	Mild Solvent	6	Konica Minolta	14 pL	
AdvancedJet AJ-740I	Mild Solvent	6	Konica Minolta	14 pL	
AdvancedJet AJ-1000	Mild Solvent	6	Konica Minolta	14 pL	
CAMM JET Pro II CJ-540	Pigmented/ Dye based	8	Piezo Inkjet	6-10 pL	
HI-FI JET Pro II FJ-540	Dye based/ sublimation	6	DX4-water Piezo Inkjet	6-10 pL	
HI-FI JET Pro II FJ-740	Heatwave Sublimation	6	DX4-water Piezo Inkjet	6-10 pL	
HiFi Express FP-740	Eco-Sol	4	DX5 Piezo Inkjet	1.5pL	
SOLJET Pro II SC-500 is a model in the list by SAM*INK®			DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SC-540	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SC-540 EX	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SC-545 EX	Eco-Sol	5	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SC-545 EXW	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SJ-500 I first saw this in the list of SAM*INK® (not in RIP lists).	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SJ-540	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SJ-540 EX	Eco-Sol	6	DX4 Piezo Inkjet	1.5pL	
SOLJET Pro II SJ-545 EX	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SJ-600 I first saw this in the list of SAM*INK® (not in RIP lists).	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SJ-640 EX	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SJ-645 EX	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II SJ-740	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	

Model	Ink(s) kind	How many Ink channel COLORS	DX which, or other brand,	Pico liter(s)	Comments, such as, should you dare consider this used?
SOLJET Pro II SJ-740EX	Eco-Sol	6	Epson 10000 Piezo	1.5pL	
SOLJET Pro II SJ-745EX	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II V SJ-1000EX is a model in the list by SAM*INK®	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro II V SJ-1045EX is the model in the list by SAM*INK®	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro III XC-540	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	

Comments: As you can see, my notes did not have the “W” or “MT” versions; the SAM*INK® list includes the “W” and “MT” versions, so these are the ones we listed for SAM*INK®.

For a more accurate list, it is best if you check with your local SAM*INK® franchisee; the list below is only a general tabulation list.

Model	Ink(s) kind	How many Ink channel COLORS	DX which, or other brand,	Pico liter(s)	Comments, such as, should you dare consider this used?
SOLJET Pro III XC-540MT	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro III XC-540W	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro III XJ-540	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro III XJ-640	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET Pro III XJ-740	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET SJ-1045	Eco-Sol	6		6-10 pL	
VersaCAMM SP-300 I first saw this in the list of SAM*INK® (not in RIP lists).	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM SP-300V	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM SP-300VI	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM SP-540V	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VP-300	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VP-300I	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VS-420	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VP-540I I first saw this in the list of SAM*INK® (not in RIP lists).	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
AdvancedJET AJ-1000i	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
Hi-Fi Express FP-740	Heat Sublimation	4	DX4 Piezo Inkjet	6-10 pL	

Model	Ink(s) kind	How many Ink channel COLORS	DX which, or other brand,	Pico liter(s)	Comments, such as, should you dare consider this used?
VersaArt RA-640	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaArt RE-640	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaArt RS-540 In list of SAM*INK®	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
VersaArt RS-640 In list of SAM*INK®	Eco-Sol		DX4 Piezo Inkjet	6-10 pL	
VersaCAMM SP-300i	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM SP-540i	Eco-Sol	4	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VS-300	Eco-Sol	4,6,8	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VS-420, I first saw this in the list of SAM*INK® (not in RIP lists).	Eco-Sol	4,6,8	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VS-540	Eco-Sol	4,6,8	DX4 Piezo Inkjet	6-10 pL	
VersaCAMM VS-640	Eco-Sol	4,6,8	DX4 Piezo Inkjet	6-10 pL	
VersaStudio BN-20	Eco-Sol / FPG Aqueous	4 or 5	DX4 Piezo Inkjet	6-10 pL	
SOLJET PRO III XC-540	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET PRO III XC-540MT	Eco-Sol	6	DX4 Piezo Inkjet	6-10 pL	
SOLJET PRO III XJ-540	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET PRO III XJ-540	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET PRO III XJ-640	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET PRO III XJ-740	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET SJ-1045	Eco-Sol	4 or 6	DX4 Piezo Inkjet	6-10 pL	
SOLJET SJ-1045EX is the model listed by SAM*INK®					
SOLJET Pro 4 XR-640	Eco-Sol	9	Dual Head Piezo	6-10 pL	
VersaUV LEC-330	Eco-UV	5	Dual Head Piezo	6-10 pL	
VersaUV LEC-540	Eco-UV	5	Dual Head Piezo	6-10 pL	
VersaUV LEJ-640	Eco-UV	6	Dual Head Piezo	6-10 pL	
VersaUV LEF-12	Eco-UV	6	Dual Head Piezo	6-10 pL	

Below is the list from SAM*INK® itself. Please bear in mind that they indicate their ink works in Roland printers with DX4 DX5, and DX7 printheads. Most Rolands use DX4 printheads.

SJ-500	(VersaCAMM) SP-300V
SJ-540	(VersaCAMM) SP-540V
SJ-540EX	SOLJET PRO III XC-540MT
SJ-600	SOLJET PRO III XC-540W
SJ-640EX	SOLJET PRO III XC-540
SJ-645EX	SOLJET PRO III XJ-640
SJ-740	SOLJET PRO III XJ-740
SJ-740EX	VersaArt RS-540 54"
SJ-745EX	VersaArt RS-640 64"
SJ-1000EX	VersaCAMM SP-300i
SJ-1045EX	VersaCAMM SP-540i
SC-500	VersaCAMM VP-300i
SC-540	VersaCAMM VP-540i
SC-540EX	VersaCAMM VS-300
SC-545EX	VersaCAMM VS-420
SC-545EXW	VersaCAMM VS-540
(VersaCAMM) SP-300	VersaCAMM VS-640



An after-market ink company puts a lot of effort into making sure their cartridges are easy to use on the designated printers.

Here are the Plug-N-Print cartridges used by SAM*INK® for Roland Versa Art and other Roland ECO Sol Max printers.



Some printer manufacturers rebrand media and substrates. The printer manufacturers then offer their own canned ICC profiles. This makes it easier to do color management. ECO-SAM ink is dedicated by SAM*INK® to be compatible to the ECO-Sol Max media.

To further save money, if you have your own RIP software (Wasatch, ErgoSoft, Caldera, etc) and your own color management system, then you can buy lower priced media.

You need to select which ink to choose

I made a rough count of all the brands of inks that offer a comparable ink for Roland, Mimaki, and Mutoh. All you have to do is visit any sign printing expo, anywhere in the world, and you will see several of these companies. If you go to the larger international expos you will see about 75% of these at a single trade show.

The after-market ink companies I know that are the best in the business include SAM*INK®, for several reasons. First, I have already visited their headquarters, ink factory, R&D facilities twice. Plus, I have visited and interviewed about four or five end-users who utilize their inks. In all cases, they prefer SAM*INK® to the original inks.

The inks for Roland printers with DX printheads was still new when I first visited the R&D labs of SAM*INK® in Singapore in 2010. This ink was being used in a Chinese printer from AStarjet. These are essentially the same Epson printheads as used in a Roland, Mimaki, or Mutoh printer, as well as, in several other Chinese printers.

Subsequently, I also visited a company outside Los Angeles which was happy with SAM*INK® for their HP latex printers and was initiating the use of SAM*INK® for their Roland Printers.



Roland VersaCAMM VP-54

How does FLAAR accomplish an evaluation?

For an evaluation of inks, we need to know more about the company and its inks. Apart from these two, we also visit the end-users. Several ink companies have already offered to pay us in exchange for them being allowed to advertise on the FLAAR site. We appreciate their recognition of the clout we have with our huge international readership, but we do not advertise an ink which we are not fully familiar with. As such, before we evaluate we first fly to the ink company and inspect the ink in their demo room, and then visit end-users.

Lab analysis of ink chemistry is not included in the evaluation as this would be too expensive. Formerly, I was a Research Professor at two universities and even with university backing it was not realistic to have funding to actually analyze each ink in a company. Plus, every ink batch is a bit different from the rest.

Instead, I have found that it is more realistic to inspect the ink company policy and standards. What I can't help but notice is how many ink companies are owned and operated by individuals who really understand and love to work with ink. Of course, obviously there are a few owners who are understandably in the business just for the profit. But, we prefer to evaluate the ink from family-run businesses, from companies where we know the owners, where we can see the sales representatives at most major expos. With such business, communication in both directions is easier and possible.

One difference among some bulk ink companies, when you switch to an after-market ink, the ink company hopes you will just keep buying their ink even if they are not actually providing tech support.. Here is where SAM*INK® is different from the rest. The franchisee staffs in each country are all trained in the ink factory. On how to handle each ink and each major printer. The result is that you are not just buying an ink, but are also, in the sense, acquiring an ink partner that will assist your company.



We heard about an ink company in China that offered solvent ink for \$8 a liter. An unfortunate distributor who tried and tested it, said: "it lasted only a few weeks outside before the colors faded." In other words, for every dollar you got is roughly equivalent to just about one week of outdoor longevity. You get what you pay for. As a side comment, however, there are one or two good ink companies in China. FLAAR hopes to visit more of them during 2011. But, in the meantime, we have already found two good quality ink companies: SAM*INK® and AT Inks.

SAM*INK® is made in Singapore, a high-tech area of the world.



SAM*INK® ECO-SAM is stated by them as matched to the colors of Roland's OEM ink. This is standard policy: to have the after-market ink be the same color gamut.