

EvoJet 1600 UV

Provisional technical datasheet

RIGID UV inks formulated for printing on Inkjet machines equipped with print heads with 7pl definition and higher such as Ricoh GEN 4 & 5, Konica Minolta > 7pl, and others

SUBSTRATES & APPLICATIONS

Specially formulated for printing on rigid substrates.

ADVANTAGES OF INK

EvoJet 1600 UV series offer an expanded substrate compatibility through an improved and superior surface hardness.

EvoJet 1600 UV series offer an expanded color gamut. Pigment particle size is sub-micron defined for extra fine resolution and controlled dot gain avoiding a maximum of satellite over spray.

There is no color difference with or without the varnish

Viscosity at 45 °C

Measures done at 45 °C/shear rate between 100 and 1000s⁻¹ - Rheometer Anton Paar MCR 102

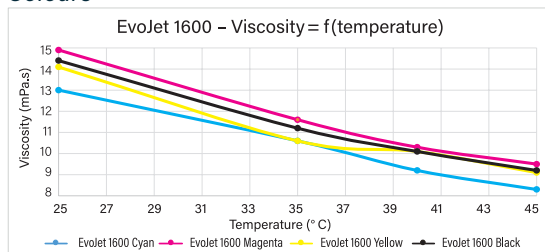
- Cyan : 8 - 9mPa.s
- Magenta : 9 - 10mPa.s
- Yellow : 8.5 - 9.5mPa.s
- Black : 9 - 10mPa.s
- Light Cyan : 10 - 11mPa.s
- Light Magenta : 10 - 11mPa.s
- White : 11.5 - 12.5mPa.s
- Varnish : 11.5 - 12.5mPa.s

Surface tension at 25 °C

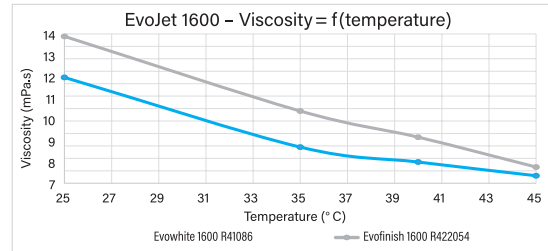
(± 0,5 mN/m) at a temperature of 25 °C (Krüss K11 tensiometer)

- Cyan : 23mN/m
- Magenta : 23.5mN/m
- Yellow : 23mN/m
- Black : 23.5mN/m
- Light Cyan : 23mN/m
- Light Magenta : 23mN/m
- White : 23.5mN/m
- Varnish : 24mN/m

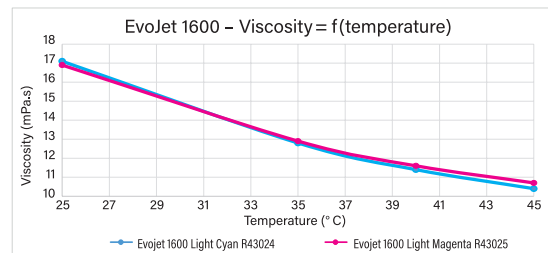
Colours



White and varnish



LIGHT colours



Density at 25 °C

at 25 °C (Krüss K11 tensiometer)- g/cm³

- Cyan : 1.07
- Magenta : 1.06
- Yellow : 1.06
- Black : 1.06
- Light Cyan : 1.08
- Light Magenta : 1.07
- White : 1.19
- Varnish : 1.07

Particles sizes

For all colors, Di50<400nm and Di90<1000nm (Cordouan Vasco DL 135 particle sizes analyser)

Pencil hardness

7 - 8H (this will depend on the printing and drying).

OUTDOOR DURABILITY

Color variance should be of minimum impact for a 2 year period for a proper use of EvoJet 1600 UV inks.

EvoJet 1600 UV is formulated to adhere on substrates with surface tensions higher than or equal to 42 mN/m, but it is highly recommended that all substrates are tested before use.

PRINT PARAMETERS

- Temperature: 18 to 25 °C
- Optimum humidity: 40 to 60% (without condensation)
- Operating humidity: 30 to 70% (without condensation)

CONVERSION

For optimal performances, it is recommended to thoroughly clean the ink system and jet assemblies with EvoClean flushing solvent. It is highly recommended to replace all filters. For further detailed info on how to proceed converting a printer with EvoJet 1600 UV inks, please consult our appropriate documentation.

CURING

Maximum adhesion, chemical and scratch resistance will not be reached before 48 hours after initial curing. EvoJet 1600 UV inks are formulated for optimum curing conditions at 300 to 400 mJ/cm² UV dose with mercury lamps and 395 nm, >7,5W/cm² for LED curing.

HEAD TENSIONS

Tension too high:

Volume of droplets too big, needs more ink to flow through the sub tank and high risks of ink shortness in the sub tank; results in ink gradually fading out (ink starvation) during printing. Very difficult to align printing heads especially when not all heads are over charged with the same % voltage. Ink droplets are fired with a deviation.

Over tension of the head will cause air bubbles in the print head causing firing problems at start up and beginning of every printing file. Need to respect the voltages indicated on the printing heads. Strongly recommended to 'match' the printing heads in function of tension on one and the same printer.

VACUUM

If tension of the printing head is too high, it needs to be compensated with up scaling the negative pressure. Very difficult to set negative pressure especially when not all heads are over charged with the same voltage.

PROFILE

To have a good printed dot resolution and optimum adhesion, the ink channel linearization and ink limit need to be set very carefully.

To have a maximum color gamut, the ink channel linearization and ink limit need to be set very carefully before calculating the ICC profile.

TEMPERATURE

In order to obtain good printing results following settings are critical:

Print head tension as indicated.

Temperatures:

Subtank 40 °C – Print heads 38 – 42 °C Negative pressure.

MACHINE STOPPAGE

To avoid print head degradation, inks should be flushed from the print heads before putting the printer at rest for longer time periods.

PACKING

Available in 1L bottle

STORAGE

For optimum performances and durability EvoJet 1600 UV inks has to be stored under 30 °C.

Shelf life from date of manufacture is:

- All colors: 24 months
- White: 12 months
- Evoclean: 36 months

Always stir the ink well before use, especially the whites (risk of sedimentation during long-term storage).

HEALTH AND SAFETY

The vast majority of printing inks and related products formulated by Encre DUBUIT contain no substances of very high concern. Our products comply with the requirements of Directives 2011/65/EU (RoHS 2), 2015/863/EU (RoHS 3) and 94/62/EC (heavy metal concentration levels present in packaging). For more information about our regulatory compliance, please consult our Eco System document, available on request.



PRODUCTS	ARTICLE CODE	DESCRIPTION
PROCESS COLOURS		
EvoJet 1600 Black R41093	BEVO41093L	
EvoJet 1600 Cyan R41089	BEVO41089L	
EvoJet 1600 Magenta R41252	BEVO41252L	
EvoJet 1600 Yellow R41092	BEVO41092L	
WHITE		
Evowhite 1600 R41086	BEVO41086L	
VARNISH		
Evofinish 1600 R42054	BEVO42054L	
MAINTENANCE		
EvoClean	HLM 3556	Cleaning and « flush » solvent
Wipers Superpolx	N1200A0909	9"x 9" per boxes of 150 formats
Swab	NTX712A	Large rectangular printing head swab for printing head cleaning

MEASURING LIGHT FASTNESS

Light Fastness is usually measured by exposing ink prints under light radiation produced by Xenon tube in comparison with master prints.

Those witness are called Blue Wool.

A standard blue wool textile fading test card is placed in the same light conditions as the sample under test.

A rating between 1 and 8 is awarded by identifying which one of the eight strips on the blue wool standard card has faded to the same extent as the sample under test

1 - denotes extremely poor colour fastness while 8 - is credited as being lightfast and permanent.

8 –		Exceptional
7 –		Excellent
6 –		Very good
5 –		Good
4 –		Quite good
3 –		Moderate
2 –		Low
1 –		Very low

EVOJET PROCESS COLOURS RATING:

Evojet Process Colors	
Cyan	7/8
Magenta	7/8
Yellow	7/8
Black	8
Light Cyan	7
Light Magenta	6/7

These values mean that EVOJET inks are suitable for outdoor use for 2 years if placed vertically and referred to the middle European climate.

It is recommended to test the final print in real outdoor conditions.

The Light Fastness of a print is the result of the combination:

Ink light fastness + printing conditions + life cycle conditions

Encres DUBUIT guarantees the quality of our products. However, we cannot guarantee the final result, because we exercise no control over individual operating procedures. Our responsibility is limited solely to the exchange of ink or varnish. The quality of a substrate to be printed can vary, as well as an overprinted ink; therefore, the above information is given in good faith based on the state of our art and prior experience. This statement also applies to our technical assistance. When using our inks and varnishes on a new substrate or when changing operating procedures, we strongly recommend testing first a full-scale production to ensure compatibility. Please refer to our General Conditions of Sales.