


Technical Product Information			
ROTOSTAR UV/LED FPG 730 500 nl Silver			
Article-No.: 0027392...	Product Name: ROTOSTAR UV/LED FPG 730 500 nl Silver		
REVISION: 0	EDITION: NOVEMBER 2022	IDENT-NO.: 00551.E	PAGE 1 OF 2

Product description:

ROTOSTAR UV/LED FPG 730 500 nl silver is radical curing, solvent free, stable one-component UV-Flexo ink based on aluminium non-leafing pigments for paper, board and appropriate non absorbent substrates based e.g. top coated self adhesive polyolefins.

Migration:

- The formulation is specifically developed for food packaging applications.
- All ingredients are listed on Swiss Ordinance 817.023.21 appendix 1 or 6.
- Raw materials are selected with preference for high purity materials.
- White spirit and mineral oil are excluded from the production of pigments.
- GMP compliant production (minimized risk of cross contamination).

The above fundamentally differentiates ROTOSTAR UV /LED FPG 730 series from standard UV Flexo inks.

Therefore ECKART recommends this ink series for selected production of packaging for food, beverages and tobacco (indirect food contact). Nevertheless, the customer must proof the suitability of this inks series for the specific application via a migration test or other measures (e.g. use of functional barriers in the packaging design). The inks are not recommended for direct food contact.

What is LED curing?

UV-curing methods can be differentiated by the light source which is used. Mercury vapor lamps are the industry standard for curing products with ultraviolet light. These lamps emit a spectral output in the UV region of the light spectrum. The light intensity occurs in the 240 nm-270 nm and 350-380-nm. This intense spectrum of light is what causes the rapid curing of the standard UV inks. In the last few years an emerging type of UV curing technology called UV LED curing has entered the marketplace. This technology is growing rapidly in popularity as it is less energy consuming than mercury vapor lamps. LEDs used to be much more expensive but last up to 10 times longer and can be cycled on and off frequently as they require no startup or cool down period.

As LED lamps are only emitting one decent wavelength, inks with a curing especially optimized for this curing method are necessary.

Organoleptic properties (taint and odour):

In all cases the printed material / package have to be tested to ensure that the organoleptic properties satisfy the packaging specification.

Application:

ROTOSTAR UV/LED FPG ink is a UV /LED curing ink for flexo printing on paper, board and different film substrates, for labels, flexible. Suitable for packaging and carton folders as well as for narrow-web as well as wide-web applications.

These ink can be also printed onto PE, OPP and PET.

As with all metallic inks the substrate has a big influence on the final result. Very absorbent or uneven substrates often cause poor pigment orientation resulting in inferior brilliance. This is true not only for optical properties as brilliance and hiding power, but also for printing properties such as adhesion, transfer and curing. In some cases, the use of primers for an improvement of the substrate surface is advantageous.

Product properties:

ROTOSTAR UV/LED FPG 730 500 n.l. ink is based on non-leafing aluminium pigments and is distinguished by very good colorability and overprintability

ROTOSTAR UV/LED FPG 730 500 n.l. silver can be blended with the leafing ink ROTOSTAR UV FPG 77504 Silber (021883...) in any ratio. Thereby, properties such as brilliance, coverage and colorability can be optimally adapted to the respective requirements.

The non-leafing properties of the metallic pigments show a very good intermediate adhesion and rub resistance. Every surface finishing (lacquers, laminates ...) will decrease the metallic brilliance.

In each respective case, individual tests are necessary because of the multiple factors influencing the final result.

Curing speed:

On many substrates the ROTOSTAR UV/LED FPG inks will exhibit good cure at printing speeds of 80 m/min (MEK-test), when using a UV-lamp with power of 140 Watt/cm.

Migration is depends on many factors, e. g. not fully cured ink lay down is a migration risk. Strong absorbent and transparent substrates can have a negative impact to the curing properties of the inks.

Migration limits will not be kept with insufficient curing.


Adhesion:

ROTOSTAR UV/LED FPG inks show good adhesion to on coated label papers, PE and OPP films, with excellent results. Corona treatment is recommended, also by using coated papers. Maximum adhesion takes effect after around 24 hours.

Additional product properties:

ROTOSTAR UV/LED FPG	730 500 nl silver
Pigment content	appr. 10 %
Pigment size (D₅₀)	appr. 5.0 µm
Solvent content	0 %
VOC	0 %

For specifications of our products, please refer to the technical data sheet.

Technical Product Information		
ROTOSTAR UV/LED FPG 730 500 nl Silver		
Article-No.: 0027392...	Product Name: ROTOSTAR UV/LED FPG 730 500 nl Silver	

REVISION: 0	EDITION: NOVEMBER 2022	IDENT-NO.: 00551.E	PAGE 2 OF 2
--------------------	-------------------------------	---------------------------	--------------------

Recommended printing parameters:

Anilox configuration:

The metallic effect depends on the ink lay down. The more hiding power, the higher the brilliance. The following parameters have shown to be useful:

	L/cm	L/inch	Volume cm ³ /m ²	Volume BCM/in ²
Full areas & coarse lines	80-120	200-300	12-15	8.0-10.0
Fine lines	140-170	360-440	7-10	4.5-6.5

Printing speed:

At 140 Watt/cm UV-lamp capacity, 15 cm³/m² Anilox volume a printing speed of 90 m/min can be achieved. Dependent on substrate, the printing speed varies.

Printing viscosity:

ROTOSTAR UV/LED FPG inks are supplied with printing viscosity.

Dilution:

The inks are already adjusted to printing viscosity. It's not recommended to add reactive diluents, as a negative impact to optical effect, curing speed and stability and the low migration properties of the ink could occur. If it's necessary to adjust the viscosity, this can be achieved by a low addition of diluents.

Migration properties have to be re-checked as dilution of the ink might influence curing properties and thus migration.

Cleaning recommendations:

ROTOSTAR UV/LED FPG inks can be cleaned by using conventional UV cleaning agents. Also with esters or ester/alcohol mixtures the uncured inks can be removed easily from the cylinders. Please refer to the safety data sheet and the safety guidelines given there.

Handling:

ROTOSTAR UV/LED FPG inks are stable, brilliant one-component inks with low migration characteristics. Blending of ROTOSTAR UV-inks with other components should only be done on Eckart's recommendation. Please contact Eckart Technical Support for further advice.

Metallic inks tend to settle because of the high specific gravity of the pigment. This is normal and not due to a lack of quality. The inks can be easily stirred up and homogenised again. This should be done before viscosity is checked. No pigment settling should be left on the bottom of the container.

When handling with UV-inks, please refer to the safety data sheet and the safety guidelines given there.

Storage and transportation:

ROTOSTAR UV/LED FPG inks should be stored at temperatures below 25°C. Direct sunlight should also be avoided. High temperatures can lead to gelling. Low temperatures can result in the separation of low soluble binder components. Opened containers should never be exposed to the direct sunlight, since this results in a preliminary polymerisation.

Shelf life: 6 months

Important: ECKART cannot guarantee shelf life stability for used products. Often enough used inks are printed again; we recommend optical tests prior to commercial use. Additionally, used ink should be stored in a drum with air vent valve as possible contaminations (e. g. water content in solvents) can lead to gassing.

For further information or samples, please contact:

ECKART GmbH
Güntersthal 4
91235 Hartenstein
Germany

mail: Info.eckart@altana.com

www.eckart.net

The data on this technical information sheet correspond with the current status of our knowledge and experience. The liability for the application and processing of our products lies with the buyer, and he is also responsible for observing any third party rights. We reserve the right to alter any product data as a result of technical progress or further developments in the manufacturing process.