Technical Product Information	
ROTOSTAR UV FP-Series	ECKART Effect Pigments

Article-No.:	Product Name:
014129.. 022836.. 072546.. 072744 .	ROTOSTAR UV FP 66-41001Silver ROTOSTAR UV FP 66-40501 Z Silver ROTOSTAR UV FP 66-10601 Z RG ROTOSTAR UV FP 66-70606 Z PG

Product description:

ROTOSTAR UV FP 66 series are radical curing, solvent free, stable one-component UV-Flexo inks based on bronze pigments for paper, board and different non-absorbent substrates.

ROTOSTAR UV FP 66 inks offer a very high metallic effect in combination with a good rub resistance and adhesion performance.

The radiation curing (UV light) ink series ROTOSTAR UV FP 66 may release odour-generating by-products during the drying process and is neither low-migration nor low-odour. Therefore it might contain unevaluated substances with the potential to migrate. Further essential measures for food packaging inks like specific raw material selection, analytic control of raw materials and final products on composition and impurities, GMP production, can not be guaranteed for our ink ROTOSTAR UV FP 66. Therefore ECKART does not generally recommend this ink series for the production of packaging for food, beverages and tobacco, without the customer proving 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).

Application:

ROTOSTAR UV FP, including Hg lamp curing series FP66 and LED curable series FP69, are suitable for flexo printing on paper, board and different film substrates, for labels, flexible packaging and carton folders. For narrow-web as well as wide-web applications.

In our experience the ink will print and adhere satisfactorily to top coated self adhesive label substrates such as polyethylene, polypropylene and polyester.

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 effect. In some cases, the use of primers for an improvement of the substrate surface is advantageous.

ROTOSTAR UV FP inks are suitable for in-line over varnishing with an appropriate UV Varnish. It is recommended to cure before the UV Varnish is applied, to achieve optimum results.

Product properties:

Curing speed:

ROTOSTAR UV FP 66 inks, on many substrates, will exhibit good cure at printing speeds of 80 m/min (MEK-test), when using an UV-lamp with power of 140 Watt/cm.

ROTOSTAR LED FP 69 inks is based on FP 66, and developed for curing at 385nm LED light source.

Strong absorbent substrates can have a negative impact on the curing properties of the ink.

Rub resistance:

Completely cured ROTOSTAR UV FP inks provide a good rub resistance on many substrates. To meet high demands on rub resistance an overprint varnish should be applied, ideally in-line with additional curing.However, any finishing reduces the metallic effect.

Adhesion:

When using non or low absorbent substrates, corona treatment is recommended. Also by using highly coated papers, the adhesion can be improved significantly in this way.
Maximum adhesion takes effect after around 24 hours.

Due to the large variety of films, it is recommended to test the suitability of ROTOSTAR UV FP inks prior to any commercial use.

Organoleptic Properties (Taint and Odour):

ROTOSTAR UV FP inks have not been formulated with low taint or odour (Robinson test). In all cases, the final packaging needs to be tested to ensure that the organoleptic properties meet the required specifications.

Migration:

ROTOSTAR UV/LED FP inks have not been formulated to exhibit low migration. We would not recommend the ink for use on primary food packaging or in any other areas where low migration is an essential requirement.

Please note, that these ink can be used for secondary food packaging and packaging where a functional barrier exists between the primary packaging and the product.

Additional product properties:

ROTOSTAR UV FP 66	10601 rg	70606 pg	40501 Z silver	41001 silver
Pigment content %	30	30	13	12
Pigment size (D_{50}) µm	6	6	5	10
VOC%	0	0	0	0

ROTOSTAR LED FP 69	10601 Z rg	30601 Z pg	40501 Z silver
Pigment content %	30	30	13
Pigment size (D_{50})µm	6	6	5
VOC %	0	0	0

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

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, a printing speed of 80 m/min can be achieved for UV FP66 inks. Dependent on substrate and film thickness the printing speed varies.

Printing viscosity:

ROTOSTAR UV 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 of the ink could occur.
If it's necessary to adjust the viscosity, this can be achieved by a low addition of reactive diluents like TPGDA or TMP(EO)TA at press-side.
If unavailable, up to 5% of Methoxypropanol or N-Methylpyrrolidon can be added.

Extender:

This additive is designed for individual modification of ink properties and should be added only shortly before printing. A negative effect on optical properties may occur. This should be checked before commercial use.

Cleaning recommendations:

ROTOSTAR UV 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 inks are stable, brilliant one-component inks. that can be printed without modification. Blending of with other components should only be done on ECKART's recommendation in order to avoid a possible decrease in quality.

Metallic inks tend to settle during storage 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 UV-inks, please refer to the safety data sheet and the safety guidelines given there.

Storage and transportation:

ROTOSTAR UV 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 these results in a preliminary polymerisation.

Shelf life: 9 months

Important: ECKART strongly recommends disposing of used ink after running on press, as the shelf-life of this material can be greatly reduced due to various factors such as light, heat, contaminants etc.

ECKART cannot guarantee the shelf life of printing ink which has been previously used or modified, nor for ink which has been stored out with the conditions above.

For further information or samples, please contact:

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