Technical Product Information

TOPSTAR UV FPG and TOPTSTAR UV/LED FPG

Article-No:	Product name:
027255… 027456… 027463…	TOPSTAR UV FPG 721 1000 Silver TOPSTAR UV LED FPG 726 100 Silver TOPSTAR UV LED FPG 726 200 Silver

Product description:

TOPSTAR UV FPG is a radical curing and TOPSTAR UV/LED FPG are radical and led curing, solvent free, stable one-component UV inks for paper, board and different non-absorbent substrates based on leafing METALURE® pigments.

Migration:

- The formulation of TOPSTAR UV FPG 721 and TOPTSTAR UV/LED FPG 726 Silver are specifically developed for food packaging applications (indirect food contact); FPG = Food Packaging Grade
- 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
TOPSTAR UV FPG and TOPSTAR UV/LED FPG products from standard UV Offset inks.

Therefore ECKART recommends TOPSTAR UV FPG and TOPSTAR UV/LED FPG products 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.

Application:

TOPSTAR UV FPG and UV/LED FPG products are suitable for offset or letterpress printing on paper, board and different plastics, for example, PS labels.

The selection of the substrate has an enormous impact on the final result of TOPSTAR UV FPG and UV/LED FPG products. This is true not only for optical properties brilliance and hiding power, but also for printing properties such as adhesion and transfer.

Very absorbent or uneven substrates often cause a bad pigment orientation resulting in inferior brilliance. Additionally these substrates can negatively influence transfer properties, adhesion and curing by absorbing essential parts of the binder.

In some cases it might be advantageous to print a suitable primer first, in order to improve surface properties of the substrate.

Product properties:

Rub resistance:

TOPSTAR UV FPG and UV/LED FPG inks are based on leafing METALURE® pigments leading to low to middle rub resistance properties even if the ink film is fully cured. For better protection an UV lacquer could be applied, however a decrease in brilliance will result.

Intercoat adhesion:

The leafing METALURE® pigments in the TOPSTAR UV FPG and UV/LED FPG silver inks cause poor intercoat adhesion properties.

Over lacquers or other types of downstream finishing (i.e. laminates) will cause a decrease in the metallic brilliance and proper testing is recommended before commercial production runs.

Additional product properties:

TOPSTAR	UV/LED FPG 726 100 Silver	UV/LED FPG 726 200 Silver	UV FPG 721 1000 Silver
Pigment content	appr. 6.5%	appr. 6%	appr. 5%
Pigment size (D_{50})	appr. 7 µm	appr. 10 µm	appr. 10 µm
Color shade	Bright	Chrome	Chrome
Viscosity	35 – 55 pas	35 – 55 pas	35 – 55 pas
Production	GMP	GMP	GMP

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

Recommended printing parameters:

Printing speed:

The maximum printing speed depends on press conditions, conditions of the UV lamps, substrate and chosen design. Press speeds up to 15.000 sheets per hour are possible.

Print Density:

For correct measurements the densitometer has to have a polarisation filter. The reference values given in the list below might change depending on press conditions, substrate, etc.

TOPSTAR UV FPG and TOPSTAR UV/LED FPG	Colour density (wet)	Filter
721 1000 / 726 100 / 726 200	0.9 – 1.1	Cyan

Fountain solution:

TOPSTAR UV FPG and TOPSTAR UV/LED FPG inks can be used with most commercially available fountain solutions. To avoid drying problems and tarnishing during the run, an ideal pH would be in the range of 5 - 5.5. Avoid high pH levels as this may lead into poor printability.

Alcohol in damping units can be beneficial to metallic inks (up to 10%). TOPSTAR UV FPG and TOPSTAR UV/LED FPG inks also print perfect with a wide range of alcohol free fountain solutions. For best printing results please contact your press chemical supplier.

Printing plates:

The polymer layers of printing plates are very sensitive to mechanical influences, but differences in the chemical nature of the polymers show significant differences in sensitivity. CTP plates are known to be more sensitive than conventional plates.

Metallic inks are by nature abrasive and might destroy the plates within a certain number of impression, depending from the pigment grade and kind of plate used.

Independent from the kind of plate used we recommend baking the plate to prolong its life.

Dilution:

The TOPSTAR UV FPG and UV/LED FPG inks are press ready and should not be diluted.

If necessary 1 - 3% of reactive diluents like GPTA, TPGDA or TMP(EO)TA could be added press side, but caution must be used since there is a risk that properties like water pick up or even the stability of the ink will change significantly.

Additives:

Not recommended. Any modification might impact the stability or the optical properties of the ink and is taken on own risk.

Cleaning recommendations:

Commercial UV products can be used.

Contamination of the ink with cleaning agents should be avoided in order to maintain stability and optical properties.

Please refer to the safety data sheet for safety instructions.

Handling:

TOPSTAR UV FPG and UV/LED FPG inks are stable, one-component, press ready ink - no modifications are needed or recommended. However, blending of TOPSTAR UV FPG ink with other components should only be done per ECKART's recommendations in order to avoid a possible decrease in quality.

Used ink should not be refilled in the tin as emulsified fountain solution might react with the metallic pigments causing gelling, oxidation or even gassing.

Please contact ECKART's Technical Support for further information.

Storage and transportation:

TOPSTAR UV FPG and UV/LED FPG inks should be stored below 25°C. High temperatures as well as very low temperatures during storage and transportation should be avoided as those conditions might damage the product (polymerisation or precipitation of binder/additive with low solubility).

Direct sunlight has to be avoided.

It is recommended to keep the tins shut and avoid unnecessary opening.

Shelf life: 6 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 outwith the conditions above.

For further information or samples, please contact:

ECKART GmbH
Güntersthal 4
91235 Hartenstein
Germany

mail: Info.eckart@altana.com

www.eckart.net