Product description:

The products of the ROTOSTAR Aqua FP 03 series are water borne flexo printing inks, specific developed for tissue applications.

- Very high brilliance
- Very good printability
- Ideal for printing on high absorbent substrates
- Suitable for tissue applications (DIN EN 646)
- Minimised foaming
- Low pigment settling

The ink series ROTOSTAR Aqua FP 03 is water based and all raw materials are selected according to the Swiss Ordinance (SR 817.023.21). Further essential measures for food packaging inks like analytic control of raw materials and final products on composition and impurities, GMP production, can´t be guaranteed for this ink series ROTOSTAR Aqua FP 03. Due to our production processes for this product, we cannot guarantee necessary measures for FCM (Food Contact Materials), such as special raw material selection, control of raw materials and end products regarding composition and impurities or production according to GMP.
A SoC is therefore not available for this product.
When using this product in indirect food contact, the suitability for this application has to be tested before commercial use by the user through suitable analyses.

Application:

ROTOSTAR Aqua FP 03 products are water borne flexo printing inks, ideal suitable for printing on high absorbent substrates, e.g. tissue. Furthermore suitable for paper and carton board substrates, e. g. wall paper, gift wrap, corrugated board, flexible paper, folding carton, etc. For narrow web and wide web applications.

As with all metallic inks the substrate has an 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 and transfer. In some cases, the use of primers to improve the substrate surface is advantageous.

Product properties:

Rub resistance and lamination properties:

ROTOSTAR Aqua FP 03-21002 Rich Pale Gold is based on leafing bronze pigments and is optimized for highest brilliance and good rub resistance. An over-lacquer is recommended for applications with high requirements of rub resistance.

ROTOSTAR Aqua FP 03-41001 Silver is based on leafing cornflake pigments and is optimized for adhesion and rub resistance. An over-lacquer is recommended for applications with high requirements of rub resistance.

Intermediate adhesion during lamination and overcoating, especially with high area coverage, should be tested in each individual case.

Over-printability:

Products of the ROTOSTAR Aqua FP 03 series can be over-varnished in-line to improve the rub resistance. To improve the intercoat adhesion between process colour and metallic ink, it might be useful to adjust the surface tension of the colour ink. In each respective case, special tests are necessary because of the multiple factors influencing the final result.

Adhesion:

Adhesion on coated paper qualities is usually good. Final tests need to be taken before any commercial use.

Chemical resistance:

Resistance to	Assessment	Tested according
Water	confirmed	DIN EN 646
Alkali	confirmed	ISO 2836
Sodium carbonate	confirmed	DIN EN 646
Artificial saliva	confirmed	DIN EN 646
Solvent / Alcohol	confirmed	ISO 2836

Additional product properties:

ROTOSTAR Aqua	FP 03-21002 Rich Pale Gold	FP 03-41001 Silver
Pigment content	approx. 21 %	approx. 7%
Pigment size (D_{50})	approx. 10 µm	approx. 15 µm
Solid content	approx. 52 %	approx. 41 %
pH-Value	7.0 – 9.5	7.0 – 9.5

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

Recommended printing parameters:

Anilox configuration:

The final choice of the anilox depends on the details of the design. As higher the cell volume as better is the achievable metallic effect.

The following parameters have shown to be useful:

	L/cm	L/inch	Volume cm^3/m^2	Volume BCM/in^2

Solid area & broad lines:	48-100	120-250	8-14	5-9
Fine Lines	80-160	200-400	6-8	4-5

Printing speed:

The maximum printing speed depends on press conditions, substrate and chosen cell volume. With sufficient heating power, printing speeds of 150 m/min and more should be possible.

Printing viscosity: 25 – 35 s (DIN 4 cup)

For individual applications a viscosity out of this range might be useful.

Water might evaporate during the printing, which would lead to an increase of viscosity and this might impact the print quality in a negative way. Check viscosity during printing regularly and adjust, if necessary with water.

Dilution:

The inks should be diluted to print viscosity with water.

If the ink drying is too fast, retarders (e. g. propylene glycol – max. 10%) could be used for viscosity adjustments.

Cleaning recommendations:

ROTOSTAR Aqua inks can be easily cleaned with water. If water is not sufficient, usual available cleaners can be used. Also a 50/50 blend of water with alcolols (ethanol, isopropanol, etc.) and further add ons (e. g. wetting aids, alkaline cleaners, etc.) can be used.

In any case contamination of the ink with cleaning agents must be avoided in order to maintain stability and optical properties.
Please refere to the safety data sheet for safety instructions.

Handling:

The ROTOSTAR Aqua FP 03 products are stable one-component inks with excellent metallic effects and high brilliance. The inks can be printed as delivered or adjusted to print viscosity. However, blending of ROTOSTAR Aqua inks with other components should only be done on ECKART's recommendations in order to avoid a possible decrease in quality.
Metallic inks tend to settle because of the high specific gravity of the metallic pigments. 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 check. No pigment settling should be left on the bottom of the container.

Please refer to the Safety Data sheet of ROTOSTAR Aqua FP 03 for further handling guidelines.

Storage and transportation:

All ROTOSTAR Aqua FP 03 products should be stored at temperatures below 25°C. High temperatures as well as very low temperatures should be avoided as these conditions could damage the product (oxidation/ gassing or flocculation of binder/additives with low solubility).

Keep the drums tightly shut and avoid unnecessary opening.

Shelf life: 12 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.

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