

Technical Product Information



ROTOSTAR Aqua FPG 7401 series

Article no.:	Product name:	Article no.:	Product name:
025508...	ROTOSTAR Aqua FPG 74011 rg	025404...	ROTOSTAR Aqua FPG 74014 silver
025507...	ROTOSTAR Aqua FPG 74012 rpg	025407...	ROTOSTAR Aqua FPG 74015 premium silver
025853...	ROTOSTAR Aqua FPG 74013 pg		

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Product description:

ROTOSTAR Aqua FPG products are water based flexo inks. These one-component inks are based on leafing or non-leafing bronze and aluminum pigments, which characterized by the following technical properties:

- Excellent balance of metallic brilliance and coverage
- Very good rub resistance
- Good anti-settling properties
- Low foaming
- Good printability on paper and board substrates
- Suitable for flexo and tower coater printing process

Migration:

- The formulation is specifically developed for food packaging applications; under selected test conditions migration limits are underscored
- 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 of ROTOSTAR Aqua FPG 7401 products (minimized risk of cross contamination).
- Certificate of compliance is for ROTOSTAR Aqua FPG 74014 silver and ROTOSTAR Aqua FPG 74015 premium silver available.

The above fundamentally differentiates ROTOSTAR Aqua FPG 7401 series from standard water based 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.

Application:

ROTOSTAR Aqua FPG 7401 printing inks are water based flexo inks, suitable for flexo printing on coated and uncoated papers or board substrates, e.g. corrugated board, flexible packaging and coated folding carton for narrow web and wide web applications.

As with all metallic inks, the substrate has an influence on the print result. High absorbent or uneven substrates often cause poor pigment orientation resulting in inferior brilliance. In some cases, the use of primers to improve the substrate surface is advantageous.

The optical properties such as brightness and coverage also the printing properties, such as adhesion, transfer and so on, are depending on substrate.

For high absorbent substrates, it is possible to dilute the inks with Varnish to reduce the pigment / binder ratio.

Product properties:

Rub resistance and lamination properties:

The ROTOSTAR Aqua FPG 74011 rg, 74012 rpg, 74013 pg bronze inks and 74015 premium silver ink based on leafing pigments and optimized for highest brilliance with good coverage, but these products provides also a good rub resistance, because they are formulated with wax.

For applications with high requirements on rub resistance, we recommended overprint varnish or added wax.

As a result of the leafing behaviour, the intercoat adhesion in the case of lamination or over-lacquering cannot be taken for granted.

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

The ROTOSTAR Aqua FPG 74014 silver based on non-leafing pigments and is optimised for adhesion and rub resistance. The ink is formulated with wax. For applications with high requirements on rub resistance, an overprint varnish is not necessary.

When choosing additives, attention should be paid to their suitability for the intended use.

Overprintability:

The products of the ROTOSTAR Aqua FPG 7401 series can be overvarnished 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.

Tinting or add another varnish system is possible, but the compatibility should also be checked before use.

When choosing a varnish, attention should be paid to its suitability for the intended use.

Adhesion:

Adhesion on coated paper qualities is usually good. The adhesion on film is dependent on the substrate. Final tests need to be taken before any commercial use.

Additional product properties:

ROTOSTAR Aqua	FPG 74011 rg FPG 74012 rpg FPG 74013 pg	FPG 74014 silver	FPG 74015 premium silver
Pigment content	approx. 40.0 %	approx. 17 %	approx. 17 %
Pigment size (D ₅₀)	approx. 6 µm	approx. 10 µm	approx. 10 µm
Pigment type	Leafing Cornflake	Non-leafing Cornflake	Leafing Silver dollar
Solid content	ca. 64 %	ca. 43%	ca. 43%
pH value	7.0 – 9.5	7.0 – 9.5	7.0 – 9.5
Gloss	**	**	***
Coverage	***	**	***

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

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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

	L/cm	L/inch	Volume cm ³ /m ²	Volume BCM/in ²
Solid area & broad lines:	60-100	150-250	8-12	5-8
Fine Lines	100-160	250-400	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 affect 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 FPG 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 alcohols (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 refer to the safety data sheet for safety instructions.

Handling:

The ROTOSTAR aqua FPG 7401 series 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 FPG 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 FPG 7401 series for further handling guidelines.

Storage and transportation:

All ROTOSTAR aqua FPG series 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: 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 out with the conditions above.

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