


Technical Product Information			
METALSTAR Eco 14 Pantone series			
Article-No.: 028089..M1 028097.. 028100..M1 028099.. 028091..M1 028098..	Product name: METALSTAR Eco 14 0871 Pantone 871 METALSTAR Eco 14 0872 Pantone 872 METALSTAR Eco 14 0873 Pantone 873 METALSTAR Eco 14 0874 Pantone 874 METALSTAR Eco 14 0875 Pantone 875 METALSTAR Eco 14 0876 Pantone 876	Article-No.: 028094..M1	Product name: METALSTAR Eco 14 0877 Pantone 877
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Conventional sheetfed offset ink, mineral oil free

Product description:

METALSTAR Eco 14 Pantone series are sheet-fed offset inks formulated using vegetable ester technology (mineral oil free).

- Mineral oil free formulation
- With excellent printability
- Oxidative drying
- For press stability
- To meet today's demands
- Optimized for easy handling
- Very good optical effects, like gloss and metallic effect, comparable to mineral oil based inks

The oxidative drying ink series METALSTAR Eco 14 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't be guaranteed for this ink series METALSTAR Eco 14. **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 ink series for the specific application via a migration test or other measures (e.g. use of functional barriers in the packaging design).**

The formulations of the products in this ink series comply with the French mineral oil regulation that will come into force in 2025 and meet the required limits. The background to this legislation is the safe recycling of paper and cardboard packaging. This can only be guaranteed if the recycled material has a low mineral oil content.

The following limits will apply from January 2025:

MOSH (16 to 35 carbon atoms): < 0,1%
 MOAH (1-2 aromatic rings): < 0,1%
 MOAH (3-7 aromatic rings) < 1 ppm

Application:

METALSTAR Eco 14 Pantone series are suitable for offset-sheetfed printing. The inks based on a leafing cornflake pigments.

Ideal suitable for printing on paper and carton (e.g. labels, folding carton), especially for print jobs with high demands on intercoat adhesion.

As with all metallic inks, the substrate has an influence on the final result. This is true not only for optical properties as brilliance and hiding power, but also for printing properties such as adhesion and transfer.

Very absorbent or uneven substrates often affecting:

- The pigment orientation and consequently the brilliant effect.
- Transfer properties and adhesion, as essential parts of the binder might penetrate.

The METALSTAR Eco 14 gold inks in PANTONE® colours are fully licensed by Pantone, Inc. and comply with colour specification. Changes in the colour specification are possible at any time on request by Pantone, Inc. and not seen as a lack of quality. Variations in colour shade can be caused by different substrates, lacquers, laminates or printed colour densities.

In some cases, the use of primers to improve the substrate surface is advantageous.

Product properties:

Rub resistance:

METALSTAR Eco 14 Pantone series is based on leafing pigments and provides good brilliance and is optimized for good rub resistance. For applications with high demands on rub resistance, an OPV (oil-based or water-based over print varnish) is necessary. However, it will reduce the brilliance.

Intercoat adhesion and lamination properties:

The leafing properties of the metallic pigments can cause problems with all kind of finishing. The intercoat adhesion with oil-based and water-based lacquers is good. UV lacquers and laminates should be avoided.

Every surface finishing (lacquers, laminates, etc.) will decrease the metallic brilliance.

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

Chemical resistance:

For bronze based printing inks of this series applies: The different shades of gold bronze pigments based on an alloy of copper and zinc (brass) in different ratios. These alloys can react with chemicals or natural materials and might change colour shade up to completely decompose the metal pigments. Carefully testing of all materials involved in the whole production process, although not directly involved in the printing process, is absolutely necessary before commercial print runs.

Additional product properties:

	METALSTAR Eco 14 Pantone Gold series
Pigment content	appr. 45 %
Pigment size (D₅₀)	appr. 2.5 µm

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

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	METALSTAR Eco 14 0877 Pantone 877
Pigment content	appr. 15,6 %
Pigment size (D ₅₀)	appr. 6 µm

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, substrate and chosen design. Recommended press speed is between 8.000 – 12.000 sheets per hour.

Print Density:

Measurements need to be taken with a densitometer including polarisation filter. The given guiding values might change depending on press conditions, substrate, etc.

	Colour density (wet)	Filter
METALSTAR Eco 14 Pantone Gold series	1.3	Y
METALSTAR Eco 14 Pantone Silver	0.9 – 1.1	C

Fountain solution:

All METALSTAR inks can be used with most commercially available fountain solutions. The pH should be kept as neutral as possible to avoid drying problems and tarnishing during print run. Ideal would be pH: 5 – 5.5.

Avoid high pH levels as this might influence printability in a negative way.

Alcohol in damping units can be beneficial to metallic inks (max. 10%). METALSTAR inks print perfect with a wide range of alcohol free fountain solutions. For best printing results, please contact your press chemical supplier.

Printing plates:

Polymer layers of printing plates are sensitive to mechanical influences. Differences in the chemical nature of the polymers show significant variances in sensitivity, e.g. CTP plates are known to be more sensitive compared to usual plates.

All metallic inks are abrasive by nature and might reduce the plate life cycle, depending on pigment grade, the kind of plate and the number of impressions.

We recommend baking the plate to prolong its life.

Dilution:

METALSTAR inks are press ready and should not be diluted. Max. 1-3% of mineral oil free diluent could be added on your own risk. Do not use mineral oil to reduce these inks.

Additives:

To improve rub resistance 2-4% wax paste could be added press side. This might have a negative effect on stability and optical properties and should be tested beforehand.

Cleaning recommendations:

METALSTAR inks can be easily cleaned by commercial available products. 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 METALSTAR Eco 14 are stable one-component, press-ready inks with good metallic effects. However, blending of METALSTAR inks with other components should be only done on ECKART's recommendations in order to avoid a possible decrease in quality.

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

Please refer to the Safety Data sheet of METALSTAR Eco 14 for further handling guidelines.

Storage and transportation:

All METALSTAR inks 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. Once opened – an anti-skinning agent could be used to avoid skinning.

Shelf life gold inks:	12 months
Shelf life silver inks:	18 months

For further information or samples, please contact:

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