


Technical Product Information			
ULTRASTAR GX-Series			
Article-No: 020779..	Product Name: GX-7003 Silver		
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Product description:

ULTRASTAR GX-7003 is a solvent based gravure ink based on METALURE® VMP-dispersions for mirror effects on film.

Mirror effects (reverse printed) and highest brilliant effects (surface printed) are possible utilizing ULTRASTAR GX-7003 silver. The ink provides additionally excellent hiding power.

The ink series ULTRASTAR is solvent based, but 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 series ULTRASTAR.

Application:

ULTRASTAR GX-7003 is a solvent based gravure ink. Ideal suitable for printing on film. e. g. self-adhesive labels and flexible packaging.

ULTRASTAR GX-7003 is developed for reverse printing on transparent films to create mirror effects which can substitute metalized substrates, foil blocking or de-metalizing processes. The inks achieve highest brilliant effects surface printed onto transparent or opaque films.

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 such 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:

ULTRASTAR GX-7003 is based on non-leafing pigments. The split proof and the lamination properties are excellent as long as the adhesion to the substrate is given.

The rub resistance is very good on almost all substrates. Overlacquering is therefore neither necessary nor recommended as this would reduce the metallic effect.

Adhesion:

ULTRASTAR GX-7003 is recommended for OPP, pre-treated PET und PE. Pre-treated films (preferably in-line corona treated) give usually excellent adhesion.

Due to the large variety of films individual tests before any commercial use is necessary.

Adhesion can be improved by adding *ULTRASTAR FAP-90 adhesion promoter*.

Additional product properties:

ULTRASTAR	GX-7003 Silver
Pigment content	ca. 5,5%
Pigment size (D₅₀)	ca. 10 µm
Solid content	ca. 8%
Binder	Polyvinylbutyral (PVB)
Solvents	Alcohol & Ester

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

The supply viscosity of ULTRASTAR GX-7003 offers flexibility to the user (e. g. to direct blend the ink with process colors; to adjust the drying; to adjust the individual print viscosity).

Recommended printing parameters:

Cylinder configuration:

Both etched and engraved cylinders are suitable (depending on the design). The following parameters have shown to be useful:

Reverse and surface print on transparent film:

Line count: 70 lines/cm (180 lines/inch)
 Cell diameter: 165 µm
 Channel: 25 µm
 Graver angle: 120 °

For more coverage cylinders with 60 lines/cm (150 lines/inch) and suitable cell depth are recommended. In order to apply less ink use cylinders with 80 – 100 lines/cm (200 – 250 lines/inch).

Surface print on opaque film:


Line count: 100 lines/cm (250 lines/inch)
 Cell diameter: 117 µm
 Channel: 18 µm
 Graver angle: 120 °

For higher film weights or hiding power, cylinders with 60 – 80 lines and appropriate cell depth are recommended. However, the metallic effect could be reduced by printing too high film weights.

Printing speed:

The maximum printing speed depends on individual press conditions, substrate and chosen cell volume.

Normally the effect improves with increasing printing speed. The ink is suitable for highest printing speeds.

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Printing viscosity: 13 – 15 s (DIN 4-cup)
19 – 21 s (Zahn 2-cup)

The ideal printing viscosity also depends on cylinder configuration and may vary from the given data.

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

Dilution:

ULTRASTAR GX-7003 should be adjusted to printing viscosity with alcohol (e.g. ethanol or isopropyl alcohol). For slower drying methoxy propanol could be used as a retarder.

The amount of solvent may depend on the chemical nature of the solvent.

Additive:

	Additive	Dosage
Adhesion promoter	ULTRASTAR FAP-90	max. 1%

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:

ULTRASTAR GX-7003 can be removed from the cylinder with alcohols or alcohol/ester blends at any time.

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:

ULTRASTAR 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 ULTRASTAR 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 ULTRASTAR GX-7003 for further handling guidelines.

Storage and transportation:

All ULTRASTAR 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).

As the solvents in all ULTRASTAR inks are highly volatile, it is recommended to keep drums tightly shut and avoid unnecessary opening.

ECKART cannot guarantee shelf life stability for used products. Often enough used inks are printed again, we recommend optical tests prior to commercial use. Additionally, used ink should be stored in a drum with air vent valve as possible contaminations (e. g. water content in solvents) can lead to gassing.

Shelf life: 12 months

For further information or samples, please contact:

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