

Ultra Pack UVFP



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UV-curable screen printing ink for pretreated polyethylene and polypropylene, designed as food packaging ink for printing on the non-food contact side, proven low migration based on real-life parameters

Fast curing, high degree of gloss, excellent water and filler resistance, thixotropic adjustment, flexible ink film, universal use

Field of Application

Substrates

Ultra Pack UVFP is suited for the following substrates:

- Pre-treated Polyethylene (HDPE/MDPE/LDPE)
- Pre-treated Polypropylene (PP)

Before printing onto PE and PP, please keep in mind that the substrate surface must be pretreated by flaming or corona. With this process, surface tension will rise and a very good adhesion from 44 mN/m is possible. The surface treatment can be tested by appropriate test inks.

The substrate surface must be absolutely free of contaminating residues such as grease, oil, and finger sweat.

Since all the print substrates mentioned may be different in printability even within an individual type, preliminary trials are essential to determine the suitability for the intended use.

Characteristics

All Ultra Pack UVFP shades are brilliant and high-gloss at best possible opacity.

Ink Adjustment

The ink should be stirred homogeneously before printing and if necessary during production.

For the processing of the low-migration ink UVFP it is important to use only thoroughly cleaned stencils, squeegees, ink pumps, as well as tubes (in the case of an automatic ink supply), and injectors for the manual ink filling of the stencil, etc. in order to avoid any contami-

nation with other chemicals.

Please note:

All data referencing low migration of specific substances have taken place with only the supplied ink. Other chemicals added to the ink may affect the properties of this ink.

Use as 2-component ink

Depending upon the substrate or the requirements, hardener / adhesion modifier can be added to the ink before printing. Max. addition 5 %.

When using G-HX, the processing and curing temperature must not be lower than 15 °C as irreversible damage can occur. Please also avoid high humidity for several hours after printing as the hardener is sensitive to humidity.

Pre-reaction time

It is recommended to allow the ink/hardener mixture to pre-react for 15 min.

Pot life

The ink/hardener mixture is chemically reactive and must be processed within 8 h (referred to 20-25 °C and 45-60 % RH). Higher temperatures reduce the pot life. If the mentioned times are exceeded, the ink's adhesion and resistance may be reduced even if the ink still seems processable.

Drying

Ultra Pack UVFP is a fast curing UV ink for a printing speed of up to 5000 bottles per hour. A UV-curing unit of 120 to 200 W/cm is therefore necessary. The curing speed of the ink is generally depending on the kind of UV-curing unit (reflector), the number, age and power of the UV-lamps, the printed ink film thickness, the colour shade, the substrate in use, as well as the printing speed.

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The adhesion of the ink is usually tested by a tape test after the ink film has cooled down to room temperature (approx. 20 °C).

Ultra Pack UVFP shows extremely good tape and scratch resistance straight from the printing press, but is yet a post-curing UV ink which will achieve its best adhesion and resistances after 24 h.

As with all UV-curable printing inks, the presence of residual monomers and photoinitiators' decomposition products cannot be completely ruled out even after sufficient curing. If these traces are relevant for the application, this must be taken into account in individual cases, as this depends on the actual printing and curing conditions.

Please make sure that waste prints are also completely cured, otherwise they are subject to the same disposal rules as liquid ink residues (hazardous waste).

Stress resistance

After proper and thorough drying, the ink film exhibits outstanding adhesion as well as rub, scratch and block resistance and is resistant to certain solvents like alcohol, petrol, MEK (100 double rub strokes), and limited resistance to finger sweat, and common alkaline and acid fillers. High opaque shades may have reduced resistances. These resistances can be further improved by adding hardener.

Range

Basic Shades

922	Light Yellow
924	Medium Yellow
926	Orange
932	Scarlet Red
934	Carmine Red
936	Magenta
950	Violet
952	Ultramarine Blue
956	Brilliant Blue
960	Blue Green
962	Grass Green
970	White
980	Black

High Opaque Shades

170	Opaque White
171	Opaque White, silicone-free
180	Opaque Black

Further Products

904	Special Binder
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The silicone-free opaque white 171 is used as pre-print for flexo overprints. All shades are intermixable (except 171). Mixing with other ink types or auxiliaries must be avoided in order to maintain the special characteristics of this ink.

Auxiliaries

All data referencing low migration of specific substances have taken place with only the supplied ink. Other chemicals added to the ink may affect the properties of this ink.

G-HX	Hardener	5%
UR 4	Cleaner (flp. 52°C)	
UR 5	Cleaner (flp. 72°C)	
G-UR 5	Cleaner (flp. 72°C)	

Hardener G-HX 5 is recommended for all applications according to EuPIA GMP. G-HX is sensitive to humidity and is always to be stored in a sealed container. Shortly before use, the hardener must be added to the ink and stirred homogeneously. The mixture ink/hardener is not storable and must be processed within pot life.

Cleaner UR 4 is only recommended for the final cleaning of the working equipment.

Cleaner UR 5 is recommended for manual or automatic cleaning of the working equipment.

Cleaner G-UR 5 is recommended for all applications according to EuPIA GMP.

Printing Parameters

Selection of the fabric depends on the printing conditions, the required curing speed and productivity, as well as the requested opacity. Generally, fabrics of 140-31 to 180-31 can be used.

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All commercially available capillary films (15-20 µm) or solvent resistant photo emulsions and combined stencils can be used for UV-inks.

Shelf Life

Shelf life depends very much on the formula/reactivity of the ink system as well as the storage temperature.

For an unopened ink container it is 2 years.

We recommend our products to be stored in a dark, dry and well-ventilated surrounding, providing an ambient temperature of 5 °C - 35 °C. Please protect from heat and direct sunlight. If storage conditions do not comply with this recommendation, the shelf life is no longer guaranteed.

Note

Our technical advice whether spoken, written, or through test trials corresponds to our current knowledge to inform about our products and their use. This is not meant as an assurance for certain properties of the products nor their suitability for each application.

You are, therefore, obliged to conduct your own tests with our supplied products to confirm their suitability for the desired process or purpose. The foregoing information is based on our experience and should not be used for specification purposes. All characteristics described in this Technical Data Sheet refer exclusively to the standard products listed under "Range", provided that they are processed in accordance with their intended use and only when used with the recommended auxiliaries. The selection and testing of the ink for specific applications is exclusively your responsibility. Should, however, any liability claims arise, they shall be limited to the value of the goods delivered by us and utilised by you with respect to any and all damages not caused intentionally or by gross negligence.

Labelling

For Ultra Pack UVFP there are current Material Safety Data Sheets available according to EC regulation 1907/2006, informing in detail

about all relevant safety data including labelling according to EC regulation 1272/2008 (CLP regulation). Such health and safety data may also be derived from the respective label.

Safety rules for UV printing inks

UV-inks contain some substances which may irritate the skin. Therefore, we recommend to take utmost care when working with UV-curable printing inks. Parts of the skin soiled with ink are to be cleaned immediately with water and soap. Please read the notes on labels and safety data sheets.

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