



Technical Data Sheet

Flexo printing ink

1. APPLICATION FIELDS:

Free radical curing UV flexo printing ink series for self adhesive labels, flexible packaging and foldable cartons:

- corona pre-treated PE, BOPP, OPP and OPP co-extruded
- Top coated PP and PE
- Pre-coated PET
- PVC
- NC-lacquered aluminium
- coated and uncoated paper
- cardboard articles

Substrates may differ in their chemical structure or method of manufacture. A test for suitability must always be carried out before printing. Antistatic, mould release agents and slip additives may have negative effects on adhesion, and should be detected and removed prior to printing.

2. CHARACTERISTICS:

UVFX corresponds to the newest requirements of the label market and is therefore silicone free and contains no ITX. All colours keep their low viscosity also during storage over the guaranteed shelf life. Due to the low viscosity level, the ink series has excellent printing properties.

The inks of the UVFX series are constitutionally free from toxic elements and solvents. The raw materials used meet with the limits stipulated by the EEC regulation EN 71 (Safety of Toys), part 3 (Migration of Certain Elements) of December 1994.

UVFX shows excellent results in combination printing, too. The products are distinguished by the high colour strength and brilliance.

3. RANGE OF COLOURS:

3.1 PROCESS COLOURS:

Process Yellow	UVFX-2018
Process Magenta	UVFX-3041
Process Cyan	UVFX-5028
Process Black	UVFX-9009

3.2 BASE COLOURS:

Yellow C	UVFX-2016
Orange 021C	UVFX-3038
Warm Red C	UVFX-3039
Red 032C	UVFX-3040

Rubine Red C	UVFX-3042
Rhodamine Red C	UVFX-3044
Purple C	UVFX-3045
Violet C	UVFX-5030
Blue 072C	UVFX-5031
Reflex Blue C	UVFX-5032
Process Blue C	UVFX-5027
Green C	UVFX-6008
Black C	UVFX-9010
Transparent White	UVFX-0007

UVFX can be used to produce accurate simulations of the colours in the solid coated PANTONE colour formula guide. Mixing formulae are available.

The formulations are based on our 13 basic inks and transparent white and are matched using the IGT print equipment, anilox rolls of 180 L/cm = 450 L/inch - volume of 4 cm³/m²

3.3 ADDITIONAL PRODUCTS:

Opaque White	UVFX-1006
Silver	UVFX-4003
Rich Gold	UVFX-4004

With regard to Gold and Silver the line of colours will be gradually completed.

3.4 SPECIAL PRODUCTS:

Further colour shades and specialities can be elaborated, if higher resistance properties are required such as good fastness according DIN EN 646, weather resistance for exterior storage and higher light fastness. Detailed information will be given on request.

4. ADDITIVES:

UV Thinner	UVFX-VD
Curing Promoter	UVFX-HB

The viscosity can be adjusted with UVFX VD Thinner at a maximum addition of 5 %.

The Curing Promoter UVFX-HB increases the reactivity and therefore the curing speed of the ink. A maximum addition of 3% is recommended.

Levelling Aid UVFX-VM
In order to further enhance the flow characteristics of the ink, an addition of approx. 0,5 – 2 % of the Levelling Aid UVFX-VM can be used.

UVFX

5. PRODUCT RESISTANCE AND LIGHT FASTNESS:

	soap	alkali	alcohol	acid	light-fastness
Process Yellow	-	4	3-4	4	5-6
Process Magenta	2	3	2-3	3	5
Process Cyan	5	5	4-5	5	8
Process Black	5	5	4-5	5	8
Yellow C	5	5	5	5	6-7
Orange 021 C	5	5	5	5	6
Warm Red C	5	5	3-4	5	4
Red 032 C	5	5	4-5	5	6-7
Rubin Red C	2	3	2-3	3	5
Rhodamine Red C	-	5	5	5	8
Purple C	-	5	5	5	8
Violet C	-	5	5	5	8
Blue 072 C	-	5	4-5	5	8
Reflex Blue C	-	5	4-5	5	8
Process Blue	5	5	4-5	5	8
Green C	5	5	5	5	7-8
Black C	5	5	5	5	8

Product Resistance : 1 = poor 5 = good
 Light Fastness : 1 = poor 8 = good
 - : not tested

6. COMBINATION PRINTING:

UVFX shows also excellent results in combination with Rotary Screen, Offset or Letterpress Printing. The ink typically offers superb results of intercoat adhesion on these

ink systems or vice versa. Over printability is excellent with no reticulation.

For optimal results in rotary screen printing we highly recommend the usage of our silicone free opaque white.

6.1 THERMAL TRANSFER:

A UVFX printed ink layer can be overprinted with thermal transfer ribbons.

6.2 HOT-FOIL STAMPING:

A UVFX printed ink layer can be hot-foil stamped.

6.3 COLD-FOIL STAMPING:

UVFX is designed for excellent foil blocking results also at high speed printing.

6.4 LASER OVERPRINTING:

Experience shows that UVFX is over printable with many of the available laser printers, since UVFX is heat resistant when cured properly.

6.5 LAMINATION:

A UVFX printed label can be easily laminated.

7. PROCESSING INSTRUCTIONS:

7.1 PRE-TREATMENT:

We recommend a corona pre-treatment of at least 38 – 44 dyn/cm.

7.2 RECOMMENDED ANILOX ROLLER CONFIGURATIONS:

Parameter	Process Colours	Text	Area
Line / cm	320-400	200 - 240	140 – 160
Line / inch	800 – 1000	500 - 600	350 - 400
Volume cm ³ /m ²	3.0 – 4.0	4.5 – 5.5	7.5 – 9.0
Angle / Grade	60°	60°	60°

7.3 PRINTING EQUIPMENT:

UVFX ink series is suitable for all commonly used UV Flexo Printing machines. While changing from one ink series to another, e.g. changing from solvent based/containing or water base/containing or from cationic to radical UV curing systems, a proper cleaning of all machine parts and components is necessary in order to avoid any incompatibility problems due to the different chemical character of the different ink systems.

Individual ink systems among one another can influence the printing results negatively.

Ink series UVFX can be printed with all printing plate types developed for the usage of free radical curing UV inks. The relevant printing plates are available for example from BASF-Drucksysteme, DuPont or Asahi.

8. CURING CONDITIONS:

Suitable for medium pressure mercury lamps with 120 - 200 W/cm. UVFX has good curing properties and is suitable for a printing speed up to 150 m/min depending on the colour shade, UV lamp configuration, ink colour, anilox roller and transferred film weight.

The cleaning cycles of the reflectors and the position time of the UV lamps described by the machine manufacturer should always be observed

9. CLEANING:

We recommend the below products:

Anilox and machine cleaner	34 622
Printing plate cleaner	35 352

The advice given by the printing plate manufacturers regarding the cleaning of the printing plate should always be observed.

10. SHELF LIFE:

A shelf life of 12 months is guaranteed when storing the inks at 21°C and in the original packing container. At higher storage temperatures the shelf life will be reduced.

An exception are the UVFX metallic colours which are expected to have a shelf life of up to 6 months.

Opened containers should be closed as prompt as possible to prevent a polymerisation of the inks due to the UV parts in the daylight.

11. PRECAUTIONS:

For further information on the safety, storage and environmental aspects concerning these products please refer to the Material Safety Data Sheet (MSDS).

Additional technical information may be obtained from our staff of the Technical Application Department.

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