

SERIES UVFX

Technical Data Sheet

Flexo printing inks

1. APPLICATION FIELDS:

Free radical curing UV flexo printing ink series for self-adhesive labels, flexible packaging and wrap around labels

- corona pre-treated PE, PP, OPP
- Top coated PP and PE
- Paper and Thermal paper

UVFX Series is also suitable for printing tubes made of:

- corona and flame pre-treated PE, HDPE, HDPE/LDPE

Substrates may differ in their chemical structure or method of manufacture. A test for suitability must always be carried out before printing.

2. CHARACTERISTICS:

UVFX corresponds to the newest requirements of the label and tube market and is **free from Benzophenone and 4-Methylbenzophenone**. 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 used raw materials comply with the limits of metal elements stipulated by the actual EEC regulation *EN 71-3 (Safety of Toys), part 3* (Migration of Certain Elements).

For Gold- and Silver as well as Metallic inks it is recommended to proof if the thresholds for aluminum, copper and zinc are respected.

3. RANGE OF COLOURS:

3.1 PROCESS COLOURS:

Process-Yellow	UVFX-2165
Process-Magenta	UVFX-3323
Process-Cyan	UVFX-5389
Process-Black	UVFX-9067

3.2 BASIC COLOURS:

Yellow LF*	UVFX-2167
Orange 021	UVFX-3324
Warm Red LF*	UVFX-3333
Red 032	UVFX-3326
Rubine Red LF*	UVFX-3327
Rhodamine Red LF*	UVFX-3328
Purple	UVFX-5393
Violet LF*	UVFX-5390
Blue 072	UVFX-5395
Reflex Blue LF*	UVFX-5391
Process Blue	UVFX-5409
Green	UVFX-6144
Mixing Black	UVFX-9068
Transparent White	UVFX-0059

3.3 ADDITIONAL PRODUCTS:

Opaque White	UVFX-1044
Sleeve White (COF 0,17)	UVFX-1072

Bronze colours:

Please see our separate "UVFX Metallic" Data Sheet for further information regarding our brilliant metallic tones.

4. ADDITIVES:

The UVFX inks are ready to use.

5. PRODUCT RESISTANCE AND LIGHT FASTNESS:

	Light-fastness	Alkali	Solvent
Process-Yellow	4 - 5	5	4 - 5
Process-Magenta	4 - 5	2	3
Process-Cyan	7	5	5
Process-Black	7	5	5
Yellow LF*	6	5	4
Orange 021	5	5	4
Warm Red LF*	5	5	3
Red 032	5	5	3 - 4
Rubin Red LF*	6 - 7	2	3
Rhodamine Red LF*	7	2	2
Purple	4	2	2
Violet LF*	7	2	2
Blue 072	7	5	7
Reflex Blue LF*	7	5	5
Process Blue	7	5	5
Green	7	5	5
Mixing Black	8	5	5
Opaque White	8	5	5

* lighfast pigmentation

Resistance in order with DIN ISO 2837, 2838 and

LF in order with DIN ISO 105 B01:

Product Resistance : 1 = poor 5 = good

Light Fastness : 1 = poor 8 = good

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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.

The UV curing flexo inks are suitable for hot foil stamping and varnishing.

7. PROCESSING INSTRUCTIONS:

7.1 PRE-TREATMENT:

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

7.2 RECOMMENDED ANILOX ROLLER CONFIGURATIONS:

Parameters	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/degree	60°	60°	60°

Recommended anilox roller for tube printing:

Line: 350 - 400 lines/cm

Volume: 2 - 4 cm³/cm²

7.3 PRINTING EQUIPMENT:

UVFX ink series is suitable for all commonly used UV flexo printing machines.

Ink series UVFX can be printed with all printing plate types developed for the usage of free radical curing UV inks.

The inks should be stirred well before use.

8. CURING CONDITIONS:

Suitable for medium pressure mercury lamps with 120 - 200 W/cm. The optimum energy output is 70 - 100 Millijoule/cm², measured by Kühnast-Integrator under lab condition. UVFX has good curing properties and is suitable for a printing speed up to 100 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	34622
Printing plate cleaner	35352

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

If cleaning is not performed by fully automatic cleaning equipment, personal safety regulations must be followed.

10. SHELF LIFE:

A shelf life of 24 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, from frost the inks should be protected.

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:

UV inks may cause irritations and can increase the sensitivity of the skin, possibly leading to hypersensitivity. Therefore, the use of disposable gloves and protective goggles is strongly recommended.

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 Product Management Department.

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