



SERIES UVFX-LM

Technical Data Sheet

Flexo printing inks

1. APPLICATION FIELDS:

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

- Corona pre-treated PE, PP and OPP
- Top coated PE, PP and OPP
- Pre-treated PET
- PVC

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-LM corresponds to the latest requirements of the label market and has the following features:

- Low migration, comply with the current "Nestlé Guidance Note on Packaging Inks"
- In accordance with positive list 1A of the EuPIA Suitability List of Photoinitiators as well as the specifications of the Swiss EDI Ordinance on Consumer Goods (SR 817.023.21) for inks applied to the non-food contact surface of food packaging
- Free from ITX, benzophenone, 4-methylbenzophenone (4-MBP) as well as formulated free from Bisphenol A
- Silicone-free, barium-free and low-odour
- Very good chemical resistance

The inks of the UVFX-LM series are constitutionally free from toxic elements and solvents.

The migration behaviour depends on many manufacturing process parameters, such as curing conditions, ink application and substrate, and thus has an influence on conformity. Therefore we recommend having a specimen certified by an independent testing laboratory.

3. RANGE OF COLOURS:

The basic ink mixing system consists of 13 basic colours and may be used for the mixing of a wide colour shade range. Mixing formulations for Pantone®, HKS, RAL, NCS, etc. are available on request.

3.1 Basic Colours:

Yellow C	UVFX-2153LM
Orange 021 C	UVFX-3307LM
Warm Red C	UVFX-3308LM
Red 032 C	UVFX-3309LM
Rubine Red C	UVFX-3310LM
Rhodamine Red C	UVFX-3311LM
Purple C	UVFX-3312LM
Violet C	UVFX-5376LM

Process Blue C	UVFX-5377LM
Blue 072 C	UVFX-5378LM
Reflex Blue C	UVFX-5379LM
Green C	UVFX-6134LM
Black C	UVFX-9062LM

3.2 Process colours:

Process-Yellow	UVFX-2154LM
Process-Magenta	UVFX-3313LM
Process-Cyan	UVFX-5380LM
Process-Black	UVFX-9061LM

3.3 Process colours lightfast:

Process-Yellow LF	(blue wool scale >7)	UVFX-2181LM
Process-Magenta LF	(blue wool scale >6)	UVFX-3355LM*

3.4 Additional products:

Varnish/Transparent White	UVFX-0057LM
Opaque White	UVFX-1059LM
Opaque Black	UVFX-9063LM

4. ADDITIVES:

The products of ink series UVFX-LM are ready to use.

5. PRODUCT RESISTANCE AND LIGHT FASTNESS:

	soap	alkali	alcohol	acid	light-fastness
Process-Yellow	-	4	3-4	4	4
Process-Magenta	2	3	2-3	3	5
Process-Cyan	5	5	4	5	8
Process-Black	5	5	4-5	5	8
Yellow C	-	4	3-4	4	4
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 C	5	5	4-5	5	8
Green C	5	5	5	5	7-8
Black C	5	5	5	5	8

Resistance in order with DIN ISO 2836 and LF in order with DIN ISO 12040: Product Resistance : 1 = poor 5 = good, Light Fastness (LF) : 1 = poor 8 = good (input: requirement of supplier)

SERIES UVFX-LM

6. COMBINATION PRINTING:

UVFX- LM 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 highly recommend the use of our **silicone-free** opaque white 965UV1425LM.

7. FURTHER PROCESSING:

All with UVFX-LM printed substrates - after proper curing- can be used for further processing:

- Thermal transfer
- Hot-foil stamping
- Cold-foil stamping

A special product suitability test is recommended.

8. PROCESSING INSTRUCTIONS:

8.1 Pre-treatment:

We recommend a corona pre-treatment of at least 38 mN/ m for untreated PE or 48 mN/ m for untreated PP.

8.2 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°

8.3 Printing equipment:

UVFX- LM ink series is suitable for all commonly used UV Flexo Printing machines.

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

9. 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.

10. 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 instructions must be followed.

11. SHELF LIFE:

A shelf life of **9** 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.

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

**Exception: Process-Magenta LF UVFX-3355LM shelf life 4 month*

12. 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.

A. M. RAMP & Co. GmbH
Lorsbacher Strasse 28
D-65817 Eppstein

Tel: +49 (0) 6198-304-0
FAX: +49 (0) 6198-304-287
E-Mail: info@ruco-inks.com
www.ruco-inks.com

