

1. APPLICATION FIELDS:

Free radical curing UV flexo printing ink series for 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:

UFlex L-100 corresponds to the newest requirements of the packaging and label market. The inks are therefore silicone free and contain 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 UFlex L-100 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.

The products are distinguished by the high colour strength and brilliance and have been especially developed for lamination.

3. RANGE OF COLOURS:

3.1 PROCESS COLOURS:

Process Yellow	2/114734 L-100
Process Magenta	3/114735 L-100
Process Cyan	5/114736 L-100
Process Black	9/114737 L-100

Detailed information regarding the basic colour range are available upon request.

UFLEX L-100 can be used to produce accurate simulations of the colours in the solid coated PANTONE colour formula guide. Mixing formulations are available upon request.

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 1/114752 L-100

3.4 SPECIAL ADJUSTMENTS:

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 by adding max. 5% UVFX-VD UV-Thinner.

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.

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

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	soap	alkali	alcohol	acid	light-fastness
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 C	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 = very good
 Light Fastness : 1 = poor 8 = very good
 - : not tested

6. ADDITIONAL INFORMATION:

6.1 THERMAL TRANSFER:

An UFlex L-100 printed ink layer can be overprinted with thermal transfer ribbons.

6.2 HOT-FOIL STAMPING:

An UFlex L-100 printed ink layer can be hot-foil stamped.

6.3 COLD-FOIL STAMPING:

UFlex L-100 is designed for excellent foil blocking results also at high speed printing.

6.4 LASER OVERPRINTING:

Experience shows that UFlex L-100 is over printable with many of the available laser printers, since UFlex L-100 is heat resistant when cured properly.

6.5 LAMINATION:

UFlex L-100 was especially developed for laminating. We recommend a laboratory examination of the substrates because the composition and additives can vary.

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:

UFlex L-100 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.

The above statements are accurate to our best knowledge and belief. However, due to the great number of possible influences during the manufacture of the substrate and the variation in the application process we suggest that suitability testing take place under actual conditions before production. No legally binding guarantee of certain properties or of the suitability for a definite application purpose can be derived from the above information.

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Ink series UFlex L-100 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.

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

8. CURING CONDITIONS:

Suitable for medium pressure mercury lamps with 120 - 200 W/cm. UFlex L-100 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.

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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 UFlex L-100 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).