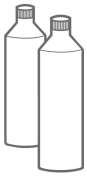

SERIE 940LED-LM

Technical data sheet **LED screen printing inks**

1. APPLICATION FIELDS:

Universal, low-migration, radical curing, and glossy screen printing ink for LED curing intended to print on plastic hollow bodies made of polyolefins.

Substrates may differ regarding their surface properties (heat treatment) or method of manufacture. A suitability test must therefore always be carried out before printing.

2. CHARACTERISTICS:

The screen printing ink cures under LED curing as well as under conventional UV curing (Hg-, Fe-doped).

The inks of the **940LED-LM** series are:

- 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
- Completely barium-free and low-odor

and is characterized by

- Very good flow properties
- Good solvent and water resistance
- Partly chlorine-free (see point 3.1)
- Excellent filling material resistance after 48 hours

The inks of the **940LED-LM** series are particularly recommended for printing food and cosmetic packaging.

A special product suitability test prior to any kind of further processing is required.

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 11 basic colours and may be used for the mixing of a wide colour shade range.

3.1 Basic colours:

Yellow	M01	940LED20209LM
Yellow	M02 *	940LED20210LM
Orange	M03 *	940LED31617LM
Red	M05	940LED31616LM
Pink	M06	940LED31615LM
Violet	M07 *	940LED51690LM
Blue	M08	940LED51688LM
Green	M09 *	940LED60735LM
White	M11	940LED1507LM
Black	M12	940LED9394LM
Clear Base	M 0	940LED0360LM

* products contain chloric pigments

3.1 Chlorine - free pigmented products:

Yellow	M21	940LED20207LM
Orange	M31	940LED31614LM
Violet	M71	940LED51689LM

3.2 High opaque products:

Opaque white	940LED1511LM

4. ADDITIVES:

The inks of the **940LED-LM** series are ready for printing.

In the case of particularly high resistance requirements the addition of adhesion modifier is recommended. However, the addition of adhesion modifier to UV cur-able ink will lead to a processing time (potline) of 4 - 8 hours at 21 °C depending on the colour shade. Higher processing temperatures will result in a shorter pot life.

Overprinting must take place within 12 hours at 21 °C in case an adhesion modifier is added.

Adhesion Modifier (max. addition 2 % - 4 %) 100VR1491

The use of thinner and curing promoter affect the low-migration properties of the ink. For low-migration requirements it is recommended to not to use any additives.

Solvent based thinners are not allowed to use due to the risk of equipment damage or danger of explosion.

If you have technical questions, please contact our product management.

5. PROCESSING INSTRUCTIONS:

Due to the high reactivity, direct daylight should be avoided.

5.1 Pre-treatment:

To ensure proper adhesion, polyethylene (PE) or polypropylene (PP) are pre-treated by flame treatments or CORONA discharge. The surface tension should be at least 42 mN/m for PE and 52 mN/m for PP.

5.2 Stencils / Printing Equipment:

Thanks to the favorable deep curing capabilities, a higher opacity can be achieved by sufficient curing, in particular with mesh 120-31. Screen print meshes between 120-31 and 165-27 F/cm are generally suitable for printing.

Suitability testing prior to printing is always recommended.
Inks of the **940LED-LM** series can be used with all screen-printing machines with screen printing stencils commonly used for industrial applications.

As a squeegee material, products which are resistant to acrylic esters are to be used.

5.3 Curing conditions:

The inks of the **940LED-LM** series were formulated for LED lamps (radiation intensity: at least 8 W/cm²) with a wavelength of 395 nm. Conventional UV lamps (Hg- or Fe-doped) may be used as an alternative (power 160 - 200 W/cm).

Additional information:
It should be noted that too low a lamp intensity, too high a machine speed or too high an ink film thickness has a negative impact on the curing, adhesion and migration properties of the ink.

Uncured prints are hazardous waste, and it is therefore advisable to always cure the waste paper under the lamp. After curing, they can be disposed of and safely incinerated.

The inks should be stirred well before use.

7. CLEANING:

Screens, squeegees and other equipment can be cleaned using the **RUCOINX** screen cleaner 100VR1272.

If cleaning is not performed by fully automatic cleaning equipment, personal protective equipment is mandatory.

Biodegradable cleaner	100VR1272

8. SHELF LIFE:

A shelf life of 6 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.

9. 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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