



SERIES 085UV-LM



Technical Data Sheet

UV Dry Offset Printing Ink

1. APPLICATIONS FIELDS

Specifically designed UV dry offset inks for printing onto cups, pails, buckets and lids made of

- Polyolefins (PE/PP)
- Polystyrene.

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

The UV dry offset printing inks of series 085UV-LM show the following characteristics

- Nestlé conformity
- low migration (< 10 ppb)
- high reactive formulation
- high abrasion resistance properties

They are formulated for high machine speeds (up to 700 pieces/ min). Due to the high colour density of ink series 085UV-LM it is possible to print with reduced ink film layers. A product suitability test is recommended prior to production.

The UV dry offset inks feature a very good printability. The products of printing ink series 085UV-LM are formulated and produced in such a way that articles decorated with these inks will fulfill the requirements of Article 3 (General requirements) of Regulation (EC) No 1935/2004 ("Framework Regulation"). They meet the requirements of the "EuPIA-Guideline on Printing Inks Applied to the Non-Food Contact Surface of Food Packaging Materials and Articles", as well.

The inks of this series are ITX free and suitable for printing on the outside of food packaging.

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 of the produced food packaging certified by an independent testing laboratory.

The inks of 085UV-LM series are constitutionally free from toxic elements and solvents.

The used raw materials also comply with the limits of metal elements stipulated by the actual EEC regulation *EN 71 (Safety of Toys), part 3* (Migration of Certain Elements).

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

3. RANGE OF COLOURS

3.1 Basic Colours

Yellow	P01	085UV2019LM
Yellow	P02	085UV2037LM
Orange	P03	085UV3048LM
Red	P04	085UV3050LM
Red	P05	085UV3049LM
Red	P51	085UV3125LM
Pink	P06	085UV3051LM
Violet	P07	085UV5035LM
Reflex blue	P08	085UV5037LM
Blue	P09	085UV5036LM
Green	P10	085UV6009LM
White	P11	085UV1009LM
Black	P12	085UV9012LM
Transparent White	P00	085UV0024LM

When mixing colour shade formulations that require higher opacity or printing transparent substrates, we recommend partially replacing Transparent White P00 with White P11.

3.2 High Opacity Formulations

White	(high opacity)	085UV1010LM
Black	(high opacity)	085UV9013LM
Pre-Print White		085UV1030LM

3.3 4-colour set, according to Pantone process inks

For printing 4-colour set the following process colours are available:

Process Yellow	085UV2035LM
Process Magenta	085UV3087LM
Process Cyan	085UV5078LM
Process Black	085UV9047LM

4. ADDITIVES

The 085UV-LM ink series is ready to use.

Raster paste can be added to reduce "Dot Gain" and to achieve sharper dots.

Transparent White (max. addition: 10%)	085UV0024LM
Raster Paste (max. addition: 10%)	085UV0043LM

Curing Promoter (max. addition: 4%) HB1-LM
- designed for better surface curing

Curing Promoter (max. addition: 4%) HB2-LM
- designed for better depth curing. Providing a better adhesion to the substrate.

085UV-LM

5. LIGHT FASTNESS AND PRODUCT RESISTANCE

Basic colour		Light fastness	H2O	H+	OH-	soap	butter
085UV2019LM	P01	7	5	5	5	-	5
085UV2037LM	P02	4	-	5	5	5	5
085UV3048LM	P03	6-7	5	5	5	5	5
085UV3050LM	P04	7	5	5	5	5	5
085UV3049LM	P05	5	5	4	4-5	3-4	5
085UV3125LM	P51	6	-	5	5	5	5
085UV3051LM	P06	6-7	-	5	5	5	-
085UV5035LM	P07	7-8	5	5	5	-	-
085UV5037LM	P08	7-8	5	5	5	-	-
085UV5036LM	P09	8	5	5	5	5	5
085UV6009LM	P10	8	5	5	5	5	5
085UV1009LM	P11	8	5	5	5	5	5
085UV9012LM	P12	8	5	5	5	5	5
085UV9013LM	HD	7-8	5	5	5	5	5

light fastness : 1 = bad 8 = good
- : not tested

product resistance : 1 = bad 5 = good
(These details are based on publications of pigment suppliers.)

6. PROCESSING INSTRUCTIONS

6.1 Pre-treatment

Pre-treatment of polyolefines (PE/PP) must be performed by CORONA-discharge or flame in order to insure the adhesion of the UV printing ink to the substrate. Printing on PE requires a surface tension of minimum 42 mN/ m. PP requires 44 – 48 mN/ m (in exceptional cases 42 mN/ m).

6.2 Curing Conditions

The varying UV absorption of the individual colours results in a range of curing properties depending on colour and opacity. All colours of the 085UV-LM series can be cured by the use of medium pressure mercury vapour lamps (at 100 - 120 W/cm).

The minimum recommended energy output is 50 - 100 mJ/cm² (measured with Kühnast-Integrator under Lab condition). The Ink film shows its final properties 12 hours after UV curing.

However, it must be noted, that low radiation intensity, excessive machine speeds or excessive film thickness can have a negative influence on the curing properties and adhesion.

Uncured prints are considered a hazardous waste. Therefore, we recommend to cure misprints under the UV lamp as a matter of principle. After curing, spoilage can be disposed by conventional methods and may be incinerated without causing any difficulties.

7. CLEANING

Printing plates / Clichés can be cleaned with the plate cleaner 35352 and the rollers of the ink fountains should be cleaned with the roller cleaner 34622. If cleaning is not performed by fully automatic cleaning equipment, personal safety regulations must be followed.

Cleaning liquids that are contaminated with UV products should not be used for the washing of working materials that were used with conventional screen printing inks. Solvents that contain UV residue are not suitable for reclamation and must be treated as a separate waste.

Plate cleaner 35352
Roller cleaner 34622

8. 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.

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 Technical Application Department.

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