



# SERIES 965UV/MA



## Technical Data Sheet

## UV screen printing inks

### 1. APPLICATION FIELDS:

Universal low viscous UV screen printing ink for printing on plastic film, especially in rotary screen printing, applicable for

- TC Polyolefins like TC Polyethylene (PE) and TC Polypropylene (PP)
- Polyolefins like Polyethylene (PE), Polypropylene (PP)
- TC Polyester
- PVC and other plastic films
- Paper and cardboard

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 inks of series 965UV/MA show the following features:

- Low-migration
- Barium-free
- High reactivity (for excellent curing and adhesion even when printing at high machine speeds up to 60 m/min.
- Good solvent and water resistance after 12 hours
- Very good levelling

The inks of series 965UV/MA can be especially recommended for printing on exterior food packaging.

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 as well as Metallic inks it is recommended to proof if the thresholds for aluminium, copper and zinc are respected.*

### 3. RANGE OF COLOURS:

The basic ink mixing system consists of 10 basic colours and may be used for the mixing of a wide colour shade range. Field proven mixing formulations exist for Pantone®, HKS, RAL, NCS, etc.

#### 3.1 Basic Colours:

Yellow	M01	965UV20107MA
Yellow	M02	965UV20108MA
Orange	M03	965UV31347MA
Red	M05	965UV31348MA

Pink	M06	965UV31349MA
Violet	M07	965UV51458MA
Blue	M08	965UV51459MA
Green	M09	965UV60589MA
White	M11	965UV1433MA
Black	M12	965UV9339MA
Varnish	M 0	965UV0307MA

#### 3.2. High opaque products:

Opaque White (silicone-free)	965UV1425MA
Opaque Black	965UV9341MA

#### 3.3 Euro-Colours / 4-Colour Process Printing Inks:

The following process printing inks are available:

Process-Yellow	965UV20109MA
Process-Magenta	965UV31350MA
Process-Cyan	965UV51460MA
Process-Black	965UV9340MA

### 4. ADDITIVES:

#### 4.1 UV-Thinner

The inks of the 965 UV/MA series are ready to use.

If further viscosity reduction is desired, UV-thinner may be added. In order to increase curing, the addition of reactive thinner is recommended.

UV-Thinner (max. addition 2-5 %)	965UV0014
Reactive-Thinner (max. addition 2-5%)	945UV0312

The above recommendation has to be observed for a better adhesion by not affecting the migration behaviour. In general, no solvent-based thinners should be used in order to avoid machine damages and the risk of explosion.

#### 4.2 Adhesion Modifier:

In the case of particularly high resistance requirements the addition of adhesion modifier is recommended. However the addition of adhesion modifier to UV curable ink will lead to a processing time (pot life) 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%)	100VR1259
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## 5. PROCESS INSTRUCTIONS:

### 5.1 Pre-treatment:

Pre-treatment of polyolefins (PE/PP) must be performed by CORONA-discharge in order to insure the adhesion of the UV screen printing ink to the substrate. In case of PE, surface tension needs to be at least 42 mN/m (Dynes/cm), in case of PP at least 48 mN/m (Dynes/cm).

### 5.2 Stencils / Printing Equipment:

Suitable mesh types are: RotaMesh® RM 305/17%, RM 305/13% or mesh type Screeny® KM and KS which are used on rotary screen printing machines.

Any acrylic acid ester resistant squeegee material may be used.

### 5.3 Curing conditions:

The ink series 965UV/MA can be cured by the use of medium pressure mercury vapour lamps (at least 120 W/cm). The optimum energy output is 100 - 150 Millijoule/cm<sup>2</sup>. UV curing is followed by a 24 hour post-cure phase after which the ink film is fully cured and has its final properties. 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.

Un-cured prints are considered a hazardous waste. Therefore, it is recommended 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.

### 5.4 Preparation for printing with silicone-free inks:

When printing with silicone-free inks, we must take into consideration that equipment like pumps, syringes, containers, squeegees and screens have to be silicone free.

Therefore they have to be cleaned with alcohol for example isopropanol.

Screens from washers/automated screen cleaning equipment must be cleaned by hand prior to using to insure that no silicone contamination/residue is left remaining on the screen.

*Before printing, we recommend to stir the ink.*

## 6. CLEANING:

Screens and squeegees as well as other operating materials can be cleaned with the RUCO screen cleaner 32335. The cleaning has to be done carefully and separate from the cleaning of silicon added inks. Any contamination by silicone has to be carefully avoided.

If cleaning is not performed by fully automatic cleaning equipment, protective gloves must be worn. 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.

Universal Cleaner 32335  
Cleaning agent for cleaning equipment 100VR1240C

## 7. 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.

## 8. 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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