

# 945UV



# RUCO

## Technical Data Sheet

## UV Screen Printing Inks

### 1. APPLICATION FIELDS

Universal UV screen printing ink for the printing of container, suitable for substrates made of ABS, PC, PS, PVC, pre-treated Polyolefines such as PE/ PP. Ink series 945UV is suitable also for container made of PET and PETG, but limited suitable for PA.

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

This UV ink series is very reactive in nature, assuring good curing and adhesion even when printing at machine speeds up to 5000 pieces/ hour for all industrial screen printing machines.

The inks of the series 945UV are designed in high gloss, brilliant, good levelling and printability.

The inks of the 945UV 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.

### 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. Field proven mixing formulations exist for Pantone®, HKS, RAL, NCS, etc (see 5.2).

#### 3.1 Basic Colours:

Yellow	M1	945UV20026
Yellow	M2	945UV20027
Orange	M3	945UV31213
Red	M5	945UV31214
Pink	M6	945UV31215
Violett	M7	945UV51360
Blue	M8	945UV51361
Green	M9	945UV60527
White	M11	945UV1398
Black	M12	945UV9317
Varnish	M 0	945UV0007

#### 3.2 Special Products:

Opaque White	945UV1429
Opaque Black	945UV9337

### 4. ADDITIVES

#### 4.1 Thinner:

The inks of the 945UV 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.

In general, no solvent-based thinners should be used due to flammable nature of the solvents.

UV Thinner (max. addition: 2-5 %) 945UV0014

Reactive Thinner (max. addition: 2-5 %) 945UV0010

#### 4.2 Adhesion Modifier:

In the case of particularly high resistance requirements and in special quality of PET the addition of adhesion modifier is recommended. However the addition of adhesion modifier to UV curable ink will lead to a processing time (potlife) of 4-8 hours at 21°C depending on the colour shade. Higher processing temperatures will result in a shorter potlife.

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

Adhesion Modifier (max. add.: 2 %) HV 100VR1259

### 5. PROCESSING INSTRUCTIONS

#### 5.1 Pre-treatment:

In some cases of PET substrates the carefully flame pre-treatment or CORONA-discharge is necessary, surface tension needs to be at least 40 mN/m.

In case of PE, surface tension needs to be at least 42 mN/m, in case of PP at least 52 mN/m.

A test for suitability must always be carried out before printing.

#### 5.2 Stencils / Printing Equipment:

Screen printing meshes between 120-31 threads/cm and 150-31 threads/cm are suitable for printing with 945UV inks. The colour mixing formulations are based on 165-34 threads/cm mesh. However, test prints and approval of the colour are generally recommended for the respective print jobs. Any acrylic acid ester resistant squeegee material may be used.

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## 5.3 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 945UV series can be cured by the use of medium pressure mercury vapour lamps (at least 160 W/cm).

The optimum energy output is 150 - 250 Millijoule/cm<sup>2</sup>, measured with Kühnast UV- Integrator under laboratory condition. UV curing is followed by a 12 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.

## 6. CLEANING

Screens and squeegees as well as other working materials can be cleaned with the RUCO screen cleaner 32335. 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	UR	32335
Cleaner for cleaning equipment	WR	100VR1240C
Bio degradable Cleaner	BR	100VR1272

## 7. SHELF LIFE

A shelf life of or 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 Technical Application Department.

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