

# FLUORESCENT INKS

PRELIMINARY VERSION



## Technical Data Sheet

## UV screen printing inks

### 1. APPLICATION FIELDS:

For the different specific applications of the RUCO UV screen printing ink series 920 UV, 970 UV/CD, 983 UV, 985 UV, 990 UV (see technical data sheets of the ink series) inks with day glow effect can be achieved.

### 2. CHARACTERISTICS:

Fluorescent inks are commonly only used in very small quantities. Therefore fluorescent pigment, transparent binder and UV thinner are supplied separately and mixed to homogenous inks according prescribed mixing formulations.

The fluorescent inks of the mentioned 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 fluorescent inks of these series may also be used for printing on the outside of food packaging and will exhibit good solvent and water resistance after 12 hours.

### 3. MIXTURE OF THE FLUORESCENT INKS:

The fluorescent inks consist of a powdery pigment, a transparent binder and of a small quantity of UV thinner depending on the pigment type.

For the production of the fluorescent inks the pigments have to be homogeneously mixed into the transparent binder and the UV thinner with a dissolver. Depending on the ink series the mixing time varies from 10 – 20 minutes. The temperature of the ink should not exceed 40°C.

#### 3.1 Fluorescent Pigments:

Yellow, greenish No. 1	360 TL 2000
Yellow, greenish No. 2	360 TL 2001
Yellow, reddish	360 TL 2002
Orange, reddish	360 TL 3000
Orange, yellowish	360 TL 3001
Pink	360 TL 3002
Magenta	360 TL 3003
Magenta, bluish	360 TL 3004
Blue	360 TL 5000
Green	360 TL 6000

### 3.2 Transparent Binders:

Bronze varnish	920 UV 0003
Clear Base	970 UV 0166 CD
Bronze varnish	983 UV 0003
Bronze varnish	985 UV 0003
Bronze varnish	990 UV 0003

### 3.3 Thinners:

UV Thinner	920 UV 0014
UV Thinner	970 UV 0014
UV Thinner	983 UV 0014
UV Thinner	985 UV 0014
UV Thinner	990 UV 0014

### 4. MIXING FORMULATIONS OF THE PANTONE® COLOUR SHADES:

With the mentioned components of the standard RUCO fluorescent inks the Pantone® colour shades 801 C – 814 C can be mixed in the mentioned ink series. The attached tables show the necessary weight parts of fluorescent pigments, transparent binders and basic colours shades of ink series 970 UV/CD.

### 5. PROCESSING INSTRUCTIONS:

#### 5.1 Production of the fluorescent inks:

For further notes please refer to the respective technical data sheets of the according ink series.

#### 5.2 Stencils / Printing Equipment:

Screen printing meshes between 120-34 threads/cm and 150-31 threads/cm are suitable for printing with these fluorescent inks.

The colour mixing formulation are based on a 150-31 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.

#### 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 fluorescent inks can be cured by the use of

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medium pressure mercury vapour lamps (at least 160W/cm).

The optimum energy output is 250 – 300 Millijoule/cm<sup>2</sup>. 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.

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## 6. CLEANING:

Screens and squeegees as well as other working materials can be cleaned with the RUCO screen cleaner 32 335. 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	32 335
Cleaner for cleaning equipment	WR 100 VR	1240C
Bio degradable Cleaner	BR 100 VR	1272

## 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 Technical Application Department.

