

970 UV/CD SERIES



Technical Data Sheet

UV screen printing inks

1. APPLICATION FIELDS:

Special UV screen printing ink in a thixotropic formulation for the printing of Compact Discs with very good adhesion on all current UV CD lacquers and polycarbonate.

Lacquers may differ in their chemical structure or method of manufacture. A test for suitability must always be carried out before printing.

2. CHARACTERISTICS:

This series of high gloss UV ink is very reactive in nature, assuring good curing and adhesion even when printing at high machine speeds.

Thus, this ink series is excellently suitable for both, inline and offline printing.

The inks of the 970 UV/CD 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 12 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 6.2).

3.1 Basic Colours:

Light Yellow	G 1	970 UV 2193 CD
Medium Yellow	G 2	970 UV 2194 CD
Orange	G 3	970 UV 3336 CD
Light Red	G 4	970 UV 3337 CD
Red	G 5	970 UV 3306 CD
Pink	G 6	970 UV 3339 CD
Violet	G 7	970 UV 5375 CD
Blue	G 8	970 UV 5328 CD
Green	G 91	970 UV 6715 CD
Brown	G 10	970 UV 8167 CD
White	G 11	970 UV 1117 CD
Black	G 12	970 UV 9106 CD
Clear Base		970 UV 0031 CD

3.2 Special Products:

3.2.1 High Opacity Formulations:

White	(high opacity)	900 UV 1349 CD
Black	(high opacity)	970 UV 9195 CD

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

For 4-colour process printing according to DIN 16538, 4 Euro-basic colours are available:

Euro-Yellow	970 UV 2217 CD
Euro-Magenta	970 UV 30246 CD
Euro-Cyan	970 UV 5434 CD

Lower pigmentation:

Euro-Yellow	970 UV 2618 CD
Euro-Magenta	970 UV 3696 CD
Euro-Cyan	970 UV 5735 CD

The Halftone Black 970 UV 9200 CD can be used with all mentioned 4-Colour Process Printing Inks:

Halftone Black	970 UV 9200 CD
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For additives see "Additional Products"

3.4 Bronze Colours:

see separate "Bronze Colours" leaflet

4. ADDITIONAL PRODUCTS:

When printing 4-colour process halftones, the transparent paste (reactive to UV light) can be used to reduce the colour density of the process colours. Raster paste can be added to reduce "Dot Gain" and to achieve sharper dots.

Overprinting Lacquer	970 UV 0126 CD
Transparent Paste (max. addition: 10 %)	970 UV 0124 CD
Raster Paste (max. addition: 10 %)	970 UV 0078 CD

5. ADDITIVES:

5.1 Thinner:

The inks of the 970 UV/CD 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.

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

UV Thinner (max. addition: 2-5 %) 970 UV 0014 CD
Reactive Thinner (max. addition: 2-5 %) 970 UV 0010 CD

5.2 Adhesion Modifier:

Whenever high abrasion resistance is required, the addition of an 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 100 VR 1259

5.3 Levelling Agent:

The levelling of the ink surface can be optimised by the use of a levelling agent.

Levelling Agent (max. add.: 0,5-1 %) VM 100 VR 133

6. PROCESSING INSTRUCTIONS:

6.1 Stencils / Printing Equipment:

Screen printing meshes between 140-31 (34) threads/cm and 180-27 threads/cm are suitable for printing with UV inks.

The colour mixing formulations 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. The 970 UV/CD series can be used with all screen printing machines with screen printing stencils currently used for industrial applications.

Any acrylic acid ester resistant squeegee material may be used.

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

The optimum energy output is 250 - 300 Millijoule/cm². 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.

7. 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

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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