

1. APPLICATION FIELDS:

UV scratch off inks are developed for the production of durable elastic printed films onto pre-printed motives.

For pre-printing the motives we recommend our UV letterpress inks of the ink series 010 UV.

The special properties of these inks allow that the ink film can be scratched off with a hard object (e.g. a coin). Substrates may differ in their chemical structure or method of manufacture. A test for suitability must always be carried out before printing.

2. CHARACTERISTICS:

UV scratch off inks are durable and flexible. This property can be extremely influenced by the printing conditions as ink film thickness, printing speed and efficiency of the UV lamps.

The UV products 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 PRODUCTS:

3.1 One component scratch off inks:

Scratch off Silver (high reactivity)
For flat bed printing 960 UV 226

Scratch off Silver
For rotary Screen Printing 960 UV 387

Scratch off Silver for CD decoration 960 UV 364

additional products:

Scratch off White 960 UV 227
There is an option to do overprinting with the 985 UV series in order to achieve a tinted colour

Scratch off Black 960 UV 238
This scratch off ink has an excellent opacity and a perfect light blocking effect

3.2 Two component scratch off inks:

The Scratch off Gold is delivered as a two component system consisting of:

Bronze Varnish 960 UV 374

Gold powder 360 RS 4013
For rotary Screen Printing

Recommended mixture ratio:

10 weight parts bronze varnish: 3 weights part gold powder

4. RELEASE LACQUER:

In order to guarantee good scratch off properties a release lacquer has to be applied onto the substrate. The surface of the absorbent material is then sealed.

For the CD decoration the application of the lacquer 960 UV 342 is recommended.

UV screen printing lacquer 960 UV 394

UV flexo printing lacquer 960 UV 188

UV offset printing lacquer 960 UV 340

UV screen printing lacquer 960 UV 342

5. PROCESSING INSTRUCTIONS:

5.1 Thinner:

The scratch off inks are ready to use. If further viscosity reduction is desired, UV thinner may be added. In order to increase curing the addition of a 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 %) 985 UV 0014

Reactive thinner (max. addition: 2 – 5 %) 985 UV 0010

5.2 Overprinting:

In case a multi-coloured motives are printed onto the UV scratch off ink we recommend an Opaque White as an intermediate layer to be applied by the screen printing process. A very smooth surface can be achieved with this Opaque White (necessary ink thickness should be 15 µm) which can be easily overprinted with motives by UV screen, UV letterpress and UV flexo printing processes.

Opaque White 995UV1108

SCRATCH OFF INKS

5.3 Stencils / Printing Equipment:

Screen printing meshes between 100-34 threads/cm and 120-31 threads/cm or Rotamesh® RM 125/25 % and Screeny® HV are suitable for printing with these scratch off inks. In any case test prints and approval of the inks are generally recommended for the respective print jobs.

The scratch off inks can be used with all flat bed screen printing machines as well as rotary screen printing machines currently used for industrial applications. Any acrylic acid ester resistant squeegee material may be used.

5.4 Curing Conditions:

The varying UV absorption of the individual scratch off inks results in a range of curing properties depending on the colour shade and opacity. It is necessary that the ink film still is soft (i.e. the scratch off with a coin is possible) but wipe resistant.

All scratch off inks 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 curing phase after which the ink film will be fully cured and exhibit 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 of the ink.

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 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 Cleaner	BR 100 VR	1272

7. SHELF LIFE:

A shelf life of 6 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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