



Technical Data Sheet

UV screen printing ink

1. APPLICATION FIELDS:

Universal high-gloss 2 component UV screen printing ink for the printing of glass and ceramics.

Substrates may differ in their surface properties or method of manufacture. Therefore, a test for suitability must always be carried out before printing.

2. CHARACTERISTICS:

This 2 component UV screen printing ink cures under UV lamps, an additional influence of heat is not necessary.

The inks of the 935 UV series are suitable for multi-colour inline printing and excel for their resistance against chemical and cosmetic agents as well as typical liquids in the beverage industry.

The optimal adhesion and scratch resistance can be achieved after 48 hours (storage at room temperature). The water and dishwasher resistance and ice water or frost resistance will be achieved only after approximately 72 hours (storage at room temperature).

If the storage temperature is less than 21 °C, the post curing effect will be reduced and the time to achieve the resistance.

A special product test is recommended prior to production. The inks of the 935 UV 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 colour mixing system consists of 11 basic colours and may be used for the mixing of a wide colour shade range.

3.1 Basic Colours:

Light Yellow	M 1	935 UV 2970
Medium Yellow	M 2	935 UV 2971
Orange	M 3	935 UV 31030
Red	M 5	935 UV 31031
Pink	M 6	935 UV 31032
Violet	M 7	935 UV 51200
Blue	M 8	935 UV 51201
Green	M 91	935 UV 60437
White	M 11	935 UV 1353
Black	M 12	935 UV 9292
Clear Base		935 UV 0007

3.2 Special Products:

3.2.1 High Opacity Formulations:

White (high opacity) 935 UV 1351
Pre-print White for multicolour printing

Pre-print white 935 UV 1381
Specially created White ink for multicolour printing.

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	935 UV 20001
Euro-Magenta	935 UV 31127
Euro-Cyan	935 UV 51285
Halftone Black	935 UV 9304

3.4 Bronze Colours:

3.4.1 Brilliant Silver (2 K-Non-Leafing):

This abrasion resistant pigment is produced in a special process. The particles have a flat structure, can be well wetted by the binder and therefore stand out for their high brilliance.

Bronze Varnish	935 UV 0003
Brilliant Paste	360 RS 4058

Recommended mixture ratio:
6 weight parts Bronze Varnish : 1 weight part Brilliant Paste

3.4.2 Brilliant Gold:

The special brilliant Gold effect can be achieved by overprinting of Brilliant Silver using Transparent Brilliant Gold. The best metal effect can be reached by using a finer mesh count like 180-27 threads/ cm.

Transparent Brilliant Gold	935 UV 20003
----------------------------	--------------

4. ADDITIONAL PRODUCTS:

Printing Lacquer	935 UV 0266
Raster Paste (max. addition: 10 %)	935 UV 0012

The above statements are accurate to our best knowledge and belief. However, due to the great number of possible influences during the manufacture of the substrate and the variation in the application process we suggest that suitability testing take place under actual conditions before production. No legally binding guarantee of certain properties or of the suitability for a definite application purpose can be derived from the above information.

935 UV

5. ADDITIVES:

5.1 Thinner:

The inks of the 935 UV 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 the flammable nature of the solvents.

UV Thinner (max. addition: 2-5 %)	935 UV 0014
Reactive Thinner (max. addition: 2-5 %)	935 UV 0010

5.2 Adhesion Modifier:

For optimum water and dishwasher resistance on glass adhesion modifier must be added. However, it must be noted, that the maximum pot life of the ink mixed with adhesion modifier is approx. 8 hours at 21 °C.

Adhesion Modifier (max. add. 4 %)	HV 100 VR 1410
(for all inks, lacquers; except Black)	

Adhesion Modifier (max. add. 10 %)	HV 100 VR 1410
(for Black 935 UV 9292)	

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 1297
--------------------------------------	----------------

6. PROCESSING INSTRUCTIONS:

6.1 Pre-Treatment

Many glass containers are hot and cold end coated in order to improve the scratch resistance and obtain a transport protection. Therefore to achieve a good adhesion of ink on the glass, a flame, Pyrosil or UVITRO® pre-treatment of the glass surface is necessary.

In dependence of different (or: in varying) cold end coatings a special product test is recommended prior to production.

6.2 Stencils / Printing Equipment:

Screen printing meshes between 120-31 and 165-27 are suitable. The mixtures worked out by 165-27.

A special product test is recommended prior to production.

The 935 UV series can be used with all screen-printing machines with screen printing stencils currently used for

industrial applications. Any acrylic ester resistant squeegee material may be used.

6.3 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 935 UV series can be cured by the use of medium pressure mercury vapour lamps or iron dotated lamps (at least 160 W/cm).

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.

The type of reflector, the dotation of UV lamp and finally the size and colour of glass (for example of container) will have influence to the curing process and adhesion of UV ink series.

Uncured 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

935 UV

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.

A.M. RAMP & Co. GmbH
Lorsbacher Strasse 28
D-65817 Eppstein

Tel: +49 (0) 6198-304-0 FAX: +49 (0) 6198-304-287
E-Mail: info@ruco-inks.com
www.ruco.de



The above statements are accurate to our best knowledge and belief. However, due to the great number of possible influences during the manufacture of the substrate and the variation in the application process we suggest that suitability testing take place under actual conditions before production. No legally binding guarantee of certain properties or of the suitability for a definite application purpose can be derived from the above information.

ATM-GB-935 UV-070730_1