



SERIES 935UV



Technical Data Sheet

UV Screen Printing Inks

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 suitability test must always be carried out before printing.

2. CHARACTERISTICS

This 2 component UV screen printing ink cures under UV lamps, an additional **post heat treatment is not required**. The inks of the 935UV series are suitable for multi-colour inline printing and excel for their resistance against chemical and cosmetic agents as well as typical beverage industry liquids.

Optimal adhesion and scratch resistance can be achieved after 48 hours (storage at room temperature). 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 final properties and resistances is prolonged.

A special product suitability test is recommended prior to production.

The inks of the 935UV series are constitutionally free from toxic elements and solvents.

3. RANGE OF COLOURS

The basic colour mixing system consists of 11 basic colours and may be used for mixing of a wide colour shade range.

3.1 Basic Colours

Light Yellow	M 1	935UV2970
Medium Yellow	M 2	935UV2971
Orange	M 3	935UV31030
Red	M 5	935UV31031
Pink	M 6	935UV31032
Violet	M 7	935UV51200
Blue	M 8	935UV51201
Green	M 9	935UV60437
White	M 11	935UV1353
Black	M 12	935UV 9292
Clear Base		935UV0007

3.2 Special Products

3.2.1 High Opacity Formulations:

White (high opacity)	935 UV 1386
Black (high density)	935 UV 9315

3.3 4-Colour Process Printing Inks

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

Process Yellow	935UV20001
Process Magenta	935UV31127
Process Cyan	935UV51285
Halftone Black	935UV9304

Higher viscosity and high pigmentation for dark substrates e.g. beer bottles

Europa-Gelb	935UV20013
Europa-Magenta	935UV31167
Europa-Cyan	935UV51309
Rasterschwarz	935UV9304

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	935UV0003
Brilliant Paste	360RS4058

Recommended mixture ratio:

5-6 weight parts Bronze Varnish : 1 weight part Brilliant Paste

3.4.2 High Brilliant Silver:

The high brilliant Silver effect can be achieved using 180-27 mesh count. In order to improve the opacity onto transparent glass we recommend using 150-31 mesh count.

For over varnishing Bronze varnish 935UV0003 can be used.

High Brilliant Silver	935UV4374
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3.4.3 Hot foil Imitation/ Brilliant metal effect:

The special hot foil imitation effect can be achieved by overprinting the Brilliant Silver 935UV4374 using Imitation colour shades.

The best metallic effect can be reached by using a finer mesh count of 180-27 threads/ cm.

Transparent Gold	935UV20003
Transparent Red	935UV 31268
Transparent Blue	935UV 51399

4. ADDITIONAL PRODUCTS

Raster Paste (max. addition: 10 %)	935UV0012
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As a overprinting varnish (high gloss and transparency) is 935UV0335 recommended.

OPV	935UV0335
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5. ADDITIVES

5.1 UV - Thinner

The inks of the 935UV 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.

UV Thinner (max. addition: 2-5 %)	935UV0014
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Reactive Thinner (max. addition: 2-5 %)	935UV0010
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5.2 Adhesion Modifier

For optimum chemical and mechanical resistances as well as water and dishwasher resistances onto glass adhesion modifier must **always** 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 %) (for all inks, lacquers; except Black)	HV 100VR1410
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Adhesion Modifier (max. add. 10 %) (for Black 935UV9292 and 935UV9315)	HV 100VR1410
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The addition of 10% 100VR1410 into the black ink is strongly recommended for multicolour printing.

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 100VR1297
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6. PROCESSING INSTRUCTIONS

6.1 Pre-Treatment

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

In dependence of different hot and cold end coatings a special product suitability test is recommended prior to production.

6.2 Stencils / Printing Equipment

Screen printing meshes between 120-31 and 165-27 are suitable.

A special product test is recommended prior to production.

The 935UV 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 935UV series can be cured by the use of medium pressure mercury vapour lamps (at least 160 W/cm). When printing high opaque colours we recommend iron doped lamps.

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 doping of UV lamp and finally the size or shape and colouring of glass will influence the curing process and adhesion of the UV ink series.

Uncured prints are considered hazardous waste. Therefore, it is recommended to cure misprints under the UV

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lamp. After curing, waste can be disposed of by conventional methods.

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, personal safety equipment is required.

Universal Cleaner		UR 32335
Cleaner for cleaning equipment	WR	100VR1240C
Bio degradable Cleaner	BR	100VR1272

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 safety, storage and the environmental aspects regarding these products, please refer to the Material Safety Data Sheet (MSDS).

Additional technical information can be obtained from our Technical Application Department.

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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.

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