

1. APPLICATION FIELDS:

Versatile two component ink for screen printing on glass, acrylates, lacquered surfaces, metal, thermosets, polyamide, polycarbonate, pre-treated polyethylene (PE) and polypropylene (PP), polyurethane and rigid PVC.

Substrates may differ in their chemical structure or method of manufacture. A test for suitability must always be carried out before printing. Antistatic, Mould Release Agents and Slip Additives may have negative effects on adhesion, and should be detected and removed prior to printing.

2. CHARACTERISTICS:

This glossy, physically drying and chemical reactive screen printing ink exhibits good mechanical and chemical resistance, as well as a good flexibility. The colour shades of 10 KK are light fast, weather resistant and guarantee high opacity. A special product test is recommended prior to production.

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 inks of this series may also be used for printing on the outside of food packaging.

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:

3.1.1. Standard ink series:

The basic colours of series B exhibit better light fastness as well as higher opacity than series G.

Light Yellow	B 1	10 KK 2291
Medium Yellow	B 2	10 KK 2292
Orange	B 3	10 KK 3851
Light Red	B 4	10 KK 3852
Red	B 5	10 KK 3853
Pink	B 6	10 KK 3854
Violet	B 7	10 KK 5851
Blue	B 8	10 KK 5852
Green	B 91	10 KK 6722
Brown	B 10	10 KK 8337
White	B 11	10 KK 1055
Black	B 12	10 KK 9029
Clear Base		10 KK 0026

3.1.2. Basic colours with less light fastness:

Light Yellow	G 1	10 KK 2242
Medium Yellow	G 2	10 KK 2243
Orange	G 3	10 KK 3737
Light Red	G 4	10 KK 3738
Red	G 5	10 KK 3739
Pink	G 6	10 KK 3740
Violet	G 7	10 KK 5752
Blue	G 8	10 KK 5720
Green	G 91	10 KK 6702
Brown	G 10	10 KK 8290
White	G 11	10 KK 1045
Black	G 12	10 KK 9025
Clear Base		10 KK 0026

3.2 Special Products:

3.2.1 High Opacity Formulations:

White	(high opacity)	10 KK 1047
Black	(high opacity)	10 KK 9026

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	10 KK 2187
Euro-Magenta	10 KK 3561
Euro-Cyan	10 KK 5629
Halftone Black	10 KK 9035

3.4 Bronze Colours:

see separate "Bronze Colours" leaflet

4. ADDITIONAL PRODUCTS:

Raster paste can be added to reduce "Dot Gain" and to achieve sharper dots.

Overprinting Lacquer	10 KK 011
Raster Paste (max. addition: 10 %)	10 KK 0018

5. ADDITIVES:

5.1 Thinner:

Prior to production, the screen printing ink has to be adjusted to the printing viscosity by the addition of thinner.

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Thinner, very fast (addition: 15 - 25 %)	VS 35 353
Thinner, standard (addition: 15 - 25 %)	VD 38 571
Thinner, for glass (addition: 15 - 25 %)	100 VR 1390

5.2 Retarder

Retarder will influence the drying time of the ink under different climate conditions. Retarder VZ 35 928 is a medium drying retarder, VZ 34 392 is a very slow drying retarder. While using the ink under extreme climate conditions (Temperature higher than 28°C) it is recommended to use the retarder VZ 35 928 as a thinner to adjust the viscosity of the ink.

Retarder, standard (addition 5 – 10 %)	VZ 35 928
Retarder, slow (addition max. 5 %)	VZ 34 392

It must be noted that an excessive addition of retarder may negatively influence the ink transfer and bulk good resistance, due to the slow evaporation of the retarder.

Retarder VZ 34 392 should only be used in conjunction with thinner VD 38 571 or retarder VZ 35 928.

Special Retarder, very slow (addition max. 10 - 20%)	100 VR 1170
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5.3 Hardener:

Hardener 37172 is the standard hardener. The mixing ratio is 5 parts of ink with 1 part of hardener. At room temperature of 20° C a pot life of approximately 12 hours can be achieved. For printing onto glass hardener 100 VR 1294 is recommended in order to achieve a better adhesion and resistance. Afterwards heat treatment at 180° C for 25 min is required.

Hardener, standard (addition max. 20 %)	37172
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Hardener, for printing on glass (addition max. 5 %)	100 VR 1294
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Please note that the final chemical and physical resistance of the inks of series 10 KK is only achieved after 36 hours at room temperature of 20° C.

During processing and drying of the printed ink, the temperature should not be lower than 15° C otherwise the chemical crosslinking is stopped. Also avoid high humidity for several hours after printing as the hardener is sensitive to humidity. While using hardener please note that multi-colour jobs have to be printed during 36 hours. The completely dried ink can not be overprinted.

5.4 Levelling Agent:

The levelling of the ink surface can be optimised by the use of a levelling agent. It must be noted that excessive addition of levelling agent can have a negative influence on the overprintability.

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

6. PROCESSING INSTRUCTIONS:

6.1 Pre-treatment:

Pre-treatment of polyolefines (PE/PP) must be performed by Flame Treatment or CORONA-discharge in order to insure the adhesion of the UV screen printing ink to the substrate. In case of PE, surface tension needs to be at least 42 mN/m (Dynes/cm), in case of PP at least 52 mN/m (Dynes/cm).

6.2 Stencils/Printing Equipment:

The inks of 10 KK series can be printed with all commonly available screen printing meshes. They can be used with all screen printing machines with printing speeds of about 800 - 1.600 pieces/hour with screen printing stencils currently used for industrial applications. The colour mixing formulations are based on a 120-34 threads/cm mesh.

6.3 Curing Conditions:

The inks of 10 KK series are physically drying through the evaporation of solvent within 1 hour. While multi-colour printing we recommend an intermediate drying process by infrared lamps or hot air blower. The final drying will be achieved at 70 – 80 °C during 4 – 6 minutes.

7. CLEANING:

Screens and squeegees and 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.

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.

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9. PRECAUTIONS:

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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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-10 KK-070730-4