

Technical Data Sheet

Screen printing inks

1. APPLICATION FIELDS:

Two component screen printing ink for the print onto glass, 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 high glossy, physically drying and chemical reactive two component screen printing ink exhibits good mechanical and chemical resistance, as well as a good flexibility. The colour shades of 110GK are light fast, weather resistant and guarantee high opacity. A special product test is recommended prior to production.

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.

3.1 Basic colours:

The basic colours of series B exhibit very good light fastness as well as higher opacity.

Light Yellow	B 1	110GK2276
Medium Yellow	B 2	110GK2280
Orange	B 3	110GK3735
Light Red	B 4	110GK3717
Red	B 5	110GK3737
Pink	B 6	110GK3736
Violet	B 7	110GK5602
Blue	B 8	110GK5581
Green	B 9	110GK6471
White	B 11	110GK1096
Black	B 12	110GK9068
Clear Base		110GK0069

3.2 Special Products:

3.2.1 High Opacity Formulations:

White	(high opacity)	110GK1100
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3.3 Euro-Colours / 4-Colour Process Printing Inks:

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

Process-Yellow	110GK2283
Process-Magenta	110GK3744
Process-Cyan	110GK5608
Halftone Black	110GK9080

4. ADDITIONAL PRODUCTS:

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

Overprinting Lacquer	110GK0068
Raster Paste (max. addition 10%)	110GK0084

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.

Thinner, very fast (addition 15 - 25%)	35353
Thinner, standard (addition 15 - 25%)	38571

5.2 Retarder:

Retarder will influence the drying time of the ink under different climate conditions. Retarder 35928 is a medium drying retarder, 34392 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 35928 as a thinner to adjust the viscosity of the ink.

Retarder, standard (addition 5 – 10%)	35928
Retarder, slow (max. addition 5%)	34392

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 34392 should only be used in conjunction with thinner 38571 or retarder 35928.

5.3 Hardener:

Hardener 100VR1433 is the standard hardener. At room temperature of 20°C a pot life of approximately 12 hours can be achieved. For printing onto glass hardener 100VR1294 is recommended in order to achieve a better adhesion and resistance. Afterwards heat treatment at 80°C for 25 minutes is required.

Hardener, standard (addition 20%)	100VR1433
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SERIES 110GK

Hardener, for printing on glass (addition 10%) 100VR1294

Please note that the final chemical and physical resistance of the inks of series 110GK 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. addition 0,5 – 1%) 100VR133

6. PROCESSING INSTRUCTIONS:

6.1 Pre-treatment:

Pre-treatment of polyolefins (PE/PP) must be performed by Flame Treatment or CORONA-discharge in order to insure the adhesion of the 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 110GK 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 – 1600 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 110GK series are physically drying through the evaporation of solvent within 15 min. at 20°C (grip dry). This physical drying will be accelerated at 70 – 80°C during 2 – 3 minutes. While multi-colour printing we recommend an intermediate drying process by infrared lamps or hot air blower.

The following chemical reaction of ink and hardener is finished at room temperature after approx. 6 days. The printed ink film has then achieved his final hardening and exhibits maximum resistance. The ink-hardener system is also reacting at temperatures below 18°C. The hardening reaction will be finished after a longer period than mentioned.

7. CLEANING:

Screens and squeegees and as well as other working materials can be cleaned with the RUCO screen cleaner 32335. If cleaning is not performed by fully automatic cleaning equipment, protective gloves must be worn.

Universal Cleaner	32335
Cleaner for cleaning equipment	100VR1240C
Bio degradable Cleaner	100VR1272

8. SHELF LIFE:

A shelf life of 24 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:

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 Product Management Department.

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