

Technical Data Sheet

Screen printing inks

1. APPLICATION FIELDS:

Versatile one component ink for screen printing on ABS, acrylic glass, lacquered surfaces, rigid PVC, paper, carton, polyamide, polycarbonate, polystyrole.

The special version 450 JK/PP is suitable for the printing onto not pre-treated Polypropylene (PP). 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 screen printing ink exhibits good mechanical and chemical resistance, as well as a good flexibility. The colour shades of 450 JK 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.

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 6.1).

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	450 JK 2025
Medium Yellow	B 2	450 JK 2026
Orange	B 3	450 JK 3078
Light Red	B 4	450 JK 3079
Red	B 5	450 JK 3080
Pink	B 6	450 JK 3081
Violet	B 7	450 JK 5058
Blue	B 8	450 JK 5059
Green	B 91	450 JK 6311
Brown	B 10	450 JK 8011
White	B 11	450 JK 1006
Black	B 12	450 JK 9008
Clear Base		450 JK 0003

3.1.2. Basic colours with less light fastness:

Light Yellow	G 1	450 JK 2004
Medium Yellow	G 2	450 JK 2005
Orange	G 3	450 JK 3207
Light Red	G 4	450 JK 3015
Red	G 5	450 JK 3016
Pink	G 6	450 JK 3017
Violet	G 7	450 JK 5011
Blue	G 8	450 JK 5012
Green	G 91	450 JK 6269
Brown	G 10	450 JK 8002
White	G 11	450 JK 1002
Black	G 12	450 JK 9001
Clear Base		450 JK 0003

3.2 Special Products:

3.2.1 High Opacity Formulations:

White	(high opacity)	450 JK-1025
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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:

Euro-Yellow	450 JK 2003
Euro-Magenta	450 JK 3011
Euro-Cyan	450 JK 5008
Halftone Black	450 JK 9016

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	450 JK 0011
Raster Paste (max. addition: 10 %)	450 JK 0002

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.

450 JK SERIES

Thinner, very fast (addition: 15 - 25 %) VS 35 353
Thinner, standard (addition: 15 - 25 %) VD 38 571

While printing on plastics such as ABS, acrylic glass and styrene tension corrosion can appear while using certain solvents. In order to avoid such effect the special thinner 35 696 should be used.

Special Thinner (addition: 15 - 25 %) 35 696

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
Retarder for Polystyrole (addition max. 5 %) VZ 38 693

It must be noted that an excessive addition of retarder may negatively influence the ink transfer and bulk goods 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.

5.3 Adhesion Modifier:

In order to achieve an adhesion onto not pre-treated Polypropylene (PP) the addition of adhesion modifier HV 100 VR 1260 is recommended. Please note that the addition of adhesion modifier HV 100 VR 1260 will increase the drying of the ink.

The special version 450JK/PP corresponds to an addition of 10 % HV 100 VR 1260.

Adhesion Modifier (addition 10 – 20 %) HV 100 VR 1260

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 Stencils/Printing Equipment:

The inks of 450 JK series can be printed with all commonly available screen printing meshes. They can be used with all screen printing machines for printing speeds of about 1.800 – 3.600 pieces/h with screen printing stencils currently used for industrial applications. The colour mixing formulations are based on a 120-34 threads/cm mesh.

6.2 Curing Conditions:

The inks of 450 JK series are physically drying through the evaporation of solvent within 5 min. at 20 °C. While multi-colour printing we recommend an intermediate drying process by infrared lamps or hot air blower. The final drying will be achieved at 50 °C during 15 seconds.

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.

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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