

Product Data Sheet

Screen Printing Ink

SunChemical[®]
Coates Screen Inks

PK-JET

Solvent Based Screen Ink Range, 1-Component

APPLICATION

Screen printing inks for printing on thermoplastics, especially rigid and plasticized PVC, also for PMMA (acrylic glass), cellulose acetobutyrate and polystyrene (PS).

PROPERTIES

- Screen inks PK-JET are solvent based 1-component screen printing inks. They dry by evaporation of solvents and result in a semi-gloss to satin gloss finish.
- Screen inks PK-JET are quick drying and show a good printability.
- PK-JET inks show good weather resistance.
- Prints applied with PK-JET inks on thermoplastics show good forming properties (deep drawing, edge bending). As there are various forming conditions, we strongly recommend to carry out pre-tests.
- PK-JET inks are suitable for double-sided stickers. In addition to highly opaque white colours we also offer obliterating grey PK-JET 74 (light blocking layer)
- PK-JET screen inks can also be applied to PMMA by spray coating.
- Note: When printing thermoplastics or plastic injection moulds, which are sensitive to tension cracks, pre-tests are absolutely essential.

COLOUR SHADES - OVERVIEW

- Mixing System: C-MIX-2000 12 colour shades for mixing of RAL, PMS and HKS colours.
- Opaque: Standard Colour shades with medium to good opacity.
- Special colour shades are available upon request.
- More information about available colour shades in the detailed tables in section Colour Shades.

CHOICE OF PIGMENTS AND LIGHT FASTNESS

Colour shades of PK-JET ink range contain pigments with a high light fastness. Light fastness and weather resistance will reduce if thinner layers are applied or if base colours are mixed with a high ratio of white or varnish.

Applied on suitable substrates screen printing inks PK-JET are suitable for outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING

- Screen printing inks PK-JET are not supplied in a ready-to-print adjustment.
- Depending on local conditions the ink is adjusted for printing by addition of 10 to 20 % by weight thinner or retarder (stir with mixer, agitator).
- Prior to printing, the inks should be stirred well to obtain a homogeneous dispersion of all ingredients.

THINNERS / RETARDERS

For adjustment of screen inks PK-JET, the following products are available:

Thinner:	■ VD 30	Standard thinner, quick
	■ VD 60	Standard thinner (mild odour)
Retarder:	■ VZ 10	Quick retarder
	○ VZ 20	Medium retarder
	○ VZ 30	Very slow retarder
	○ VZ 40	Very slow retarder
■= Preferred ○= Suitable		

Depending on printing conditions, the products listed above can be mixed into the inks individually or as mixtures. Please note that depending on evaporation rate of the thinner/retarder used drying times may be longer.

Thinner/retarder should be mixed into the ink thoroughly using a mixer or agitator. In addition, inks should be stirred well prior to each processing to obtain a homogeneous dispersion of all ingredients.

ADDITIONAL AUXILIARY AGENTS

Application	Product	Addition in % by weight	Additional Information
Retarder paste	VP/K	Max. 10%	Possibly slightly reduced gloss
	LAB-N 111420/VP	Max. 10%	Gloss slightly reduced
Viscosity increase	Thickening powder	Max. 3%	Stir with mixer
Matting	Matting powder	Max. 5%	Stir with mixer
Flow agent	VM 2	0.3 -0.5%	Do not overdose!

OVERPRINTING

Generally, it is not necessary to overprint PK-JET inks with varnish. However, if required overprinting with PK-JET/E50 is possible.

BRONZE COLOURS, MIXING OF BRONZE INKS

Bronze colours may be available upon request.

Printers can mix bronzes themselves using bronze pastes B 75, B 76, B 77 and B 79 as well as bronze powder B 78-POWDER. For examples of colour shades please refer to our Bronze Colour Card.

These "B" bronze pastes and "B" bronze powder are mixed with bronze binder PK-JET/B prior to processing.

Mixing ratios in parts by weight:

Gold bronze paste/powder to PK-JET/B = 1 : 3 - 4

Silver bronze paste to PK-JET/B = 1 : 4 - 6

Bronzes B 75 to B 79 are prone to oxidation (exception B 78-POWDER). Therefore, they should be overprinted, e.g. with PK-JET/E50. B-bronzes are not recommended for long-term outdoor applications.

B 78-POWDER does not tend to oxidation. The pale copper shade will not darken with time. Colour of inks mixed with B 78-POWDER is similar to colour 78/AB as shown on our "bronze colour card".

Note: When overprinting bronze colours with varnish or other colour shades, it is essential to carry out pre-tests to check intermediate adhesion of the ink layers (fingernail test, tape test). Possibly mixing ratio needs to be changed to a higher varnish ratio (between 10 – 30%).

DRYING

PK-JET screen printing inks dry physically, i.e. by evaporation of solvents.

Drying times below are only approximate as drying properties depend on various factors:

- Type and amount of thinners/retarders used.
- Thickness of printed ink layer; number of overprinted ink layers.
- Rack drying or tunnel dryer.
- Temperature, air supply, speed of air stream.
- Type of substrate/material printed.

Depending on local conditions, drying time in a drying frame (rack) is approx. 5-10 minutes at room temperature (20°C). Drying time using an efficient tunnel dryer (e.g. 2 hot air and 1 cold air section) is about 20 - 30 seconds at a temperature of 50°C.

Note: Addition of retarders may result in much longer drying times!

SCREEN FABRIC / STENCILS

PK-JET inks have been formulated for printing with fabrics ranging from 77 to 140 threads/cm. Suitability for printing with coarser or finer fabrics should be determined by corresponding pre-trials.

All copy emulsions and capillary films suitable for solvent based screen inks can be used, such as our program of SunCoat or Murakami products.

CLEANING

Stencils and tools can be cleaned with our universal cleaning agents URS or URS 3.

PACK SIZE

Screen printing inks PK-JET are delivered in 1 litre containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, PK-JET inks generally have a shelf life of 5 years from date of production.

For exact date of expiry, please refer to the label.

SAFETY DATA SHEETS

Read safety data sheet prior to processing

Safety data sheets comply with Regulation (EC) No. 1907/2006 (REACH), Appendix II.

CLASSIFICATION AND LABELLING

Hazard classification and labelling comply with Regulation (EC) No. 1272/2008 (CLP/GHS).

CONFORMITY

Coates Screen Inks GmbH does not use any of the substances or mixtures for the production of printing inks, which are banned according to the EUPIA (European Association of the Printing Inks Industry) exclusion policy.

Further compliance confirmations are available upon request.

ADDITIONAL INFORMATION ABOUT OUR PRODUCTS

Product data sheets: Auxiliary Agents for Screen Printing HM

Brochures: Solvent Based Screen Printing Inks

Internet: Various technical articles are available for download on www.coates.de, section "SN-Online"

FOR COLOUR RANGES, PLEASE REFER TO NEXT PAGE.

COLOUR SHADES

C-MIX 2000 BASE COLOUR SHADES					
Mixing system for matching of PMS, HKS, RAL colours (on white substrates) Start formulations available in data base „Formula Management C-MIX 2000“ According to colour card C-MIX 2000					
primrose	PK-JET/Y30	red	PK-JET/R50	green	PK-JET/G50
golden yellow	PK-JET/Y50	magenta	PK-JET/M50	black	PK-JET/N50
orange	PK-JET/O50	violet	PK-JET/V50	white	PK-JET/W50
scarlet	PK-JET/R20	blue	PK-JET/B50	varnish	PK-JET/E50
STANDARD Colour Range (medium opacity)					
According to colour card STANDARD 1 for screen printing inks Availability of further standard shades upon request					
medium yellow	PK-JET 11/NT-NEU	light green	PK-JET 40/NT-NEU		
bright red	PK-JET 21/NT-NEU	fir green	PK-JET 41/NT-NEU		
light blue	PK-JET 30/NT-NEU	white	PK-JET 60/NT-NEU		
ultra marine	PK-JET 32/NT-NEU	black	PK-JET 65/NT-NEU		
SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes					
Information about availability upon request					
white, highly opaque	PK-JET 60/HD-NT-NEU	black, highly opaque	PK-JET 65/HD-NT-NEU		
white, extra high opacity	PK-JET 60/129-HD-NT	obliterating grey	PK-JET 74		
white, extra high opacity, matt	PK-JET 60/135-HD-MT	transparent paste	PK-JET/TP		
4 COLOUR PROCESS INKS (CMYK)					
According to colour card STANDARD 1 for scree printing inks					
Upon request.					
AB – BRONZE INKS					
According to Bronze Colour Card					
Upon request.					

Matching of PMS, RAL, NCS colours and special shades upon request.

The statements in our product and safety data sheets are based on our present experiences, however they are no assurance of product properties and do not justify a contractual legal relationship. We provide these details to inform customers about our products and their possible applications. However, on account of various factors influencing processing of our products it is absolutely essential to carry out printing trials under local production conditions. Choice of individual ink types and their suitability for the intended application is the sole and entire responsibility of the user. We do not assume any liability for any problems of technical or process-related nature. Any liability shall be limited to the value of the goods delivered by us and processed by the user.

All former product data sheets are no longer valid.

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