

Product Data Sheet

Screen Printing Ink

J

Solvent Based Screen Ink Range, 1-Component

APPLICATION

Screen printing inks for printing on thermoplastics, especially rigid and plasticized PVC, pre-treated (primer) polyester foils. To a limited extent suitable for PMMA (acrylic glass) and polycarbonate. Very limited suitability for various kinds of polystyrene and its copolymers.

Due to the different properties of the substrates, pre-tests are always essential.

PROPERTIES

- Screen inks J are solvent based 1-component screen printing inks with a good printability. They dry quickly by evaporation of solvents and result in a semi-gloss to matt finish.
- The colour shades of J range have been formulated without silicone (exception: varnish J/E50 contains silicone).
- J inks show good weather resistance.
- Prints applied with J inks also show good alcohol resistance (ethanol/spirit).
- This ink range exhibits good flexibility. Therefore, J inks are suitable for pre-treated polyester foils used for decoration of membrane switch overlays and for the production of double-sided PVC stickers.
- Colour shades of J range are high frequency weldable (exception: standard black / bronze colours). For black weldable J 66 and for silver J 79/HF are available.
- As adhesion promotor for printing of conventional offset inks on PVC substrates offset bases are available (J 72 and adjustments).
- Adjusted with quickly evaporating thinners, e.g. VD 40, JVSP, J inks can also be used for roller or spray coating applications.
- Note: When printing thermoplastics or plastic injection moulds, which are sensitive to tension cracks, especially PS, PC and PMMA, 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.
Standard HD Highly opaque colour shades.
- Process Inks: "180" colours 4 transparent colour shades according to ISO 2846-4.
- Offset Base: J 72 range
- Obliterating Grey: J 74 "highly opaque intermediate ink layer"
- 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 J 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 J are suitable for outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING

- Screen printing inks J are not supplied in a ready-to-print adjustment.
- Depending on local conditions the ink is adjusted for printing by addition of 10 to 15 % 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 J, the following products are available:

Thinner:	<input type="radio"/> VD 20	Very quick thinner, good solving power
	<input checked="" type="checkbox"/> VD 30	Quick thinner, very high solving power
	<input checked="" type="checkbox"/> VD 60	Standard thinner (mild odour)
	<input type="radio"/> JVH	Slow thinner
Retarder:	<input checked="" type="checkbox"/> VZ 05	Quick retarder, high solving power
	<input type="radio"/> VZ 10	Quick retarder
	<input type="radio"/> VZ 20	Medium retarder
	<input checked="" type="checkbox"/> VZ 25	Medium retarder
	<input type="radio"/> 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.

ADJUSTMENT FOR SPRAY COATING APPLICATION

J inks can also be roller coated or applied with a spray gun. For these applications, J inks are thinned with quick evaporating thinners such as VD 20 or VD 40 (preferred for roller coating) or JVSP (spray coating). Addition of thinner, usually >30%, depends on the required processing viscosity.

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. 2%	Stir with mixer
Flow agent	VM 2	0.3 - 0.5%	Do not overdose!
Anti floating agent	LAB-N 561248	1 - 1.5%	Stir with mixer

OVERPRINTING

Generally, it is not necessary to overprint J inks with varnish. However, overprinting to increase chemical resistances is possible with the following solvent based special varnishes:

- J/E50: 1-component, Standard varnish of C-MIX colour range
- Z 70/114-PVC: 2-component, for PVC substrates, high solvent resistance
- Note: Pre-tests to determine suitability are essential!

BRONZE COLOURS, MIXING OF BRONZE INKS

Bronze colours are 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 J/B or varnish J/E50 prior to processing.

Mixing ratios in parts by weight:

Gold bronze paste/powder	to	J/B or J/E50	=	1 : 3 - 4
Silver bronze paste	to	J/B or J/E50	=	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 J/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

J 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. 10 - 15 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 - 60 seconds at a temperature of 50°C.

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

SCREEN FABRIC / STENCILS

J 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 J are delivered in 1 litre containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, J 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	J/Y30	red	J/R50	green	J/G50
golden yellow	J/Y50	magenta	J/M50	black	J/N50
orange	J/O50	violet	J/V50	white	J/W50
scarlet	J/R20	blue	J/B50	varnish	J/E50
STANDARD Colour Range (medium opacity)					
According to colour card STANDARD 1 for screen printing inks Availability of further standard shades upon request					
citric yellow	J 10/NT-NEU	carmine red	J 22/NT-NEU	dark brown	J 51/NT-NEU
medium yellow	J 11/NT-NEU	light blue	J 30/NT-NEU	white	J 60/NT-NEU
dark yellow	J 12/NT-NEU	medium blue	J 31/NT-NEU	black	J 65/NT-NEU
light orange	J 14/NT-NEU	ultra marine	J 32/NT-NEU		
light red	J 20/NT-NEU	violet	J 36/NT-NEU		
bright red	J 21/NT-NEU	light green	J 40/NT-NEU		
STANDARD Colour Range HD (high opacity)					
According to colour card STANDARD HD for screen printing inks Availability of further standard HD shades upon request					
citric yellow, highly opaque	J 10/HD-NT-NEU	white, highly opaque	J 60/HD-NT-NEU		
medium yellow, highly opaque	J 11/HD-NT-NEU	black, highly opaque	J 65/HD-NT-NEU		
bright red, highly opaque	J 12/HD-NT-NEU				
SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes					
Information about availability upon request					
black, HF weldable	J 66/NT	bronze binder	J/B		
black, IR-permeable	J 66/IR	overprint varnish matt	J 70/MT		
blackboard black	J 67	varnish, free of silicone	J 70/82		
transparent paste	J/TP	offset base, matt	J 72		
obliterating grey	J 74	offset base, satin matt	J 72/04		
silver, HF-weldable	J 79/HF				
AB – BRONZE INKS and MG – METAL GLOSS INKS					
According to Bronze Colour Card					
AB Bronze Inks			MG Metal Gloss Inks		
Upon request.			Not available.		

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

All above information refers to the colour shades listed in this product data sheet and other standard shades of this screen ink range. Information about availability of further standard shades upon request.

In some individual cases the product characteristics of special colour shades and modifications of this ink type manufactured upon customer request may differ from the above properties.

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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Coates Screen Inks GmbH
Wiederholdplatz 1 90451 Nürnberg
Tel.: 0911 6422 0 Fax: 0911 6422 200
<http://www.coates.de>