Product Data Sheet
Screen Printing Ink

SunChemical®
Coates Screen Inks

CP

Solvent Based Screen Ink Range, 1-Component

APPLICATION
Screen printing inks for printing on paper, cardboard, carton and thermoplastics such as polystyrene, rigid PVC, PVC adhesive foils, polycarbonate and PMMA (acrylic glass).

PROPERTIES
- Screen inks CP are solvent based 1-component screen printing inks with good printability. They dry quickly by evaporation of solvents and result in a satin gloss finish.
- CP inks show good weather resistance.
- CP prints on thermoplastics exhibit good thermal forming properties (deep drawing applications).
- CP screen inks from a rigid and non-elastic ink film with a good mechanical resistance.
- Note: On thin plastic foils, this rigid ink film may cause cut or die edges to roll up. This is especially the case with multi-layer prints or die-cut applications. This effect can largely be avoided adding 3 - 5% plasticizer W 1.
- 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.
  Standard HD — Highly opaque colour shades.
- 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 CP 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 CP are suitable for outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING
- Screen printing inks CP are not supplied in a ready-to-print adjustment.
- Depending on local conditions the ink has to be adjusted for printing by addition of 15 to 25 % 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 CP, the following products are available:

Thinner:	○	VD 20	Very quick thinner, good solving power
	■	**CXV**	For printing on polystyrene (PS)
	■	**CPV**	**Standard thinner**
	■	**VD 60**	**Standard thinner (mild odour)**
	○	XVH	Very mild thinner, low solving power
Retarder:	■	**VZ 10**	**Quick retarder**
	○	VZ 20	Medium retarder
	■	**VZ 25**	**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
Increase viscosity	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!
Plasticizer	W 1	3 – 5 %	Longer drying time
Anti floating agent	LAB-N 561248	1 - 1.5%	Stir with mixer

OVERPRINTING

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

- CP/E50: 1-component, Standard varnish of C-MIX colour range
- CP 70/33: 1-component, Increase of alcohol and petrol resistance
- CP 70/31: 1-component, Pre-print varnish for rub off inks
- Note: Pre-tests to determine suitability are essential!

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 CP/B or varnish CP/E50 prior to processing.

Mixing ratios in parts by weight:

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

CP 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

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

SHELF LIFE

In closed original containers, CP 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. Screen printing inks range CP C-MIX 2000 colour shades, standard shades, highly opaque standard colours (HD), process colours, silver, fluorescent colours and transparent colours comply with the requirements of toy standard „EN 71-3:2019 Safety of toys – Migration of certain elements (category III: scraped off material).
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	CP/Y30	red	CP/R50	green	CP/G50
golden yellow	CP/Y50	magenta	CP/M50	black	CP/N50
orange	CP/O50	violet	CP/V50	white	CP/W50
scarlet	CP/R20	blue	CP/B50	varnish	CP/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	CP 10/NT-NEU	light brown	CP 50/NT-NEU
medium yellow	CP 11/NT-NEU	dark brown	CP 51/NT-NEU
bright red	CP 21/NT-NEU	white	CP 60/NT-NEU
light blue	CP 30/NT-NEU	black	CP 65/NT-NEU
fir green	CP 41/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	CP 10/HD-NT-NEU	bright red, highly opaque	CP 21/HD-NT-NEU
medium yellow, highly opaque	CP 11/HD-NT-NEU	carmine red, highly opaque	CP 22/HD-NT-NEU
dark yellow, highly opaque	CP 12/HD-NT-NEU	white, highly opaque	CP 60/HD-NT-NEU
orange, highly opaque	CP 15/HD-NT-NEU	black, highly opaque	CP 65/HD-NT-NEU

SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes

Information about availability upon request

blackboard black	CP 67	matt paste	CP/MP
black, low PAH content	CP 68	bronze binder	CP/B
transparent paste	CP/TP	overprint varnish	CP/E50
pre-print varnish for rub off inks	CP 70/31	overprint varnish matt	CP 70/MT

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.

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