

Product Data Sheet

Screen Printing Ink

CX

Solvent Based Screen Ink Range, 1-Component

APPLICATION

Screen printing inks for printing on thermoplastics, especially polystyrene (PS), polycarbonate (PC) and PMMA (acrylic glass), also rigid PVC, PVC adhesive foils as well as paper and cardboard.

PROPERTIES

- Screen inks CX are solvent based 1-component screen printing inks. They dry quickly by evaporation of solvents and result in a satin gloss finish.
- CX inks have been especially formulated for printing onto rigid substrates such as polystyrene boards.
- This ink range shows excellent printability and quick drying. CX prints, even double-sided prints are highly stack-proof.
- CX inks show good weather resistance.
- CX prints on thermoplastics show good thermal forming properties (deep drawing applications).
- CX screen inks form a rigid and non-elastic ink film
- 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.
- 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 CX 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 appropriate substrates screen printing inks CX are suitable for outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING

- Screen printing inks CX are not supplied in a ready-to-print adjustment.
- Depending on local conditions the ink is 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 CX, the following products are available:

| | | |
|------------------|--|---|
| Thinner: | <input type="radio"/> VD 20 | Very quick thinner, good solving power |
| | <input checked="" type="checkbox"/> CXV | Especially for printing on polystyrene (PS) |
| | <input checked="" type="checkbox"/> CPV | Standard thinner |
| | <input checked="" type="checkbox"/> VD 60 | Standard thinner (mild odour) |
| | <input type="radio"/> XVH | Very mild thinner, low solving power |
| Retarder: | <input checked="" type="checkbox"/> VZ 10 | Quick retarder |
| | <input type="radio"/> VZ 20 | Medium retarder |
| | <input checked="" type="checkbox"/> VZ 25 | Medium retarder |
| | <input type="radio"/> VZ 30 | Very slow 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.

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! |
| 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 CX inks with varnish. Basically, overprinting is possible with CX/E50.

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

Mixing ratios in parts by weight:

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

Silver bronze paste to CX/B or CX/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 CX/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

CX screen printing inks dry physically, i.e. by evaporation of solvents.

Drying times below are only approximate as drying times 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

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

SHELF LIFE

In closed original containers, CX 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 | CX/Y30 | red | CX/R50 | green | CX/G50 |
| golden yellow | CX/Y50 | magenta | CX/M50 | black | CX/N50 |
| orange | CX/O50 | violet | CX/V50 | white | CX/W50 |
| scarlet | CX/R20 | blue | CX/B50 | varnish | CX/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 | CX 10/NT-NEU | bright red | CX 21/NT-NEU | dark brown | CX 51/NT-NEU |
| medium yellow | CX 11/NT-NEU | light blue | CX 30/NT-NEU | white | CX 60/NT-NEU |
| light orange | CX 14/NT-NEU | ultra marine | CX 32/NT-NEU | black | CX 65/NT-NEU |
| light red | CX 20/NT-NEU | violet | CX 36/NT-NEU | | |
| carmin red | CX 22/NT-NEU | light green | CX 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 | | | | | |
| white, highly opaque | CX 60/HD-NT-NEU | black, highly opaque | CX 65/HD-NT-NEU | | |
| SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes | | | | | |
| Information about availability upon request | | | | | |
| blackboard black | CX 67/NT-NEU | matt paste | CX/MP | | |
| black, low PAH content | CX 68 | bronze binder | CX/B | | |
| transparent paste | CX/TP | overprint varnish matt | CX 70/MT | | |
| Fluorescent colours "90" range | Upon request | | | | |
| 4 COLOUR PROCESS INKS (CMYK) | | | | | |
| According to colour card STANDARD 1 for screen printing inks | | | | | |
| Upon request. | | | | | |
| AB – BRONZE INKS and MG – METAL GLOSS INKS | | | | | |
| According to Bronze Colour Card | | | | | |
| AB Bronze Inks | | | MG Metal Gloss Inks | | |
| Upon request. | | | Upon request | | |

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>