

Product Data Sheet

Screen Printing Ink

XL

Solvent Based Screen Ink Range, 1-Component

APPLICATION

Screen printing inks for printing of thermoplastic items, which are sensitive to tension cracks, especially injection moulds made of polystyrene (PS), ABS and other co-polymers, such as housings, cans, other containers, and various promotional items.

In addition, XL inks can be used for printing of polystyrene boards, PET-G, PVC self-adhesive foils, PMMA boards and injection moulds (acrylic glass).

PROPERTIES

- Screen inks XL are solvent based 1-component screen printing inks. They dry by evaporation of solvents.
- **XL inks have been formulated with especially mild solvents to obtain lowest possible strain of plastics sensitive to tension cracks.**
- XL inks result in a glossy finish.
- XL inks exhibit good resistances against cosmetics (skin cream etc.). However, as this is a 1-component system the extremely high resistances of 2-component systems, such as our range Z cannot be achieved.
- XL inks show good weather resistance.
- Note: Because of the special issue of "tension cracks" pre-tests are essential. In that respect, please note that depending on the type of plastic material, the injection moulding production process and the printing conditions, tension cracks may even appear several days after printing.

COLOUR SHADES - OVERVIEW

- 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 XL 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 XL are suitable for outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING

- Screen printing inks XL 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 XL, the following products are available:

Thinner:	<input type="radio"/> VD 10	Very quick thinner, very mild
	<input checked="" type="radio"/> XVH	Standard thinner, very mild, slow
	<input checked="" type="checkbox"/> = Preferred	<input type="checkbox"/> = 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	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 1	3 - 5%	Do not overdose!
Anti floating agent	LAB-N 561248	1 - 1.5%	Stir with mixer

OVERPRINTING

Generally, it is not necessary to overprint XL inks with varnish. Basically, overprinting is possible with the following product:

- XL 70: 1-component, standard varnish

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 XL/B or varnish XL 70 prior to processing.

Mixing ratios in parts by weight:

Gold bronze paste/powder	to	XL/B or XL 70	=	1 : 3 - 4
Silver bronze paste	to	XL/B or XL 70	=	1 : 5 - 6

Bronzes B 75 to B 79 are prone to oxidation (exception B 78-POWDER). Therefore, they should be overprinted, e.g. with XL 70. 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

XL 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. 8-10 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 60-120 seconds at a temperature of 50°C.

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

SCREEN FABRIC / STENCILS

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

SHELF LIFE

In closed original containers, XL 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

STANDARD Colour Range (medium opacity) According to colour card STANDARD 1 for screen printing inks Availability of further standard shades upon request					
medium yellow	XL 11/NT-NEU	light blue	XL 30/NT-NEU	light brown	XL 50/NT-NEU
light orange	XL 14/NT-NEU	ultra marine	XL 32/NT-NEU	white	XL 60/NT-NEU
bright red	XL 21/NT-NEU	violet	XL 36/NT-NEU	black	XL 65/NT-NEU
carmine red	XL 22/NT-NEU	light green	XL 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	XL 60/HD-NT-NEU	black, highly opaque	XL 65/HD-NT-NEU		
SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes Information about availability upon request					
transparent paste	XL/TP	overprint varnish	XL 70		
black, low PAH content	XL 68/NT	overprint varnish matt	XL 70/MT		
bronze binder	XL/B				
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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