

# Product Data Sheet

## Screen Printing Ink

# PF

## Solvent Based Screen Ink Range, 1-Component

### APPLICATION

Special screen printing inks for printing on demanding substrates, such as polyester foils, diacetate and triacetate foils as well as polyamide and pre-treated polyolefins (polyethylene, polypropylene). Not suitable for rigid and plasticized PVC.

### PROPERTIES

- Screen inks PF are solvent based, physically drying 1-component screen printing inks. They do not contain silicone.
- PF inks result in a glossy finish.
- PF colour ranges C-MIX 2000 and standard are formulated for indoor and short to medium term outdoor applications.

### COLOUR SHADES - OVERVIEW

- Mixing System: C-MIX 2000 12 colour shades for mixing of RAL, PMS and HKS colours.
- 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 C-MIX 2000 and standard of the PF 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.

Due to the binders used the colour shades C-MIX 2000 and standard of PF ink range are only suitable for indoor and short to medium term outdoor applications.

### ADJUSTMENT FOR SCREEN PRINTING

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

<b>Thinner:</b>	<input type="radio"/> VD 10	Very quick thinner, mild
	<input checked="" type="radio"/> <b>XVH</b>	<b>Standard thinner, mild</b>
<b>Retarder:</b>	<input type="radio"/> VZ 10	Quick retarder
	<input type="radio"/> VZ 20	Medium retarder
	<input type="radio"/> VZ 30	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
Viscosity increase	Thickening powder	Max. 3%	Stir with mixer
Matting	Matting powder	Max. 5%	Stir with mixer
Flow agent	VM 3	3 – 5%	Do not overdose!

**OVERPRINTING**

Generally, it is not necessary to overprint PF inks with varnish. Basically, however, overprinting is possible with varnish PF/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 PF/B or varnish PF/E50 prior to processing.

Mixing ratios in parts by weight:

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

Silver bronze paste to PF/B or PF/E50 = 1 : 5 - 6

**Notes:**

- For technical reasons gold bronze mixtures thicken when stored. Therefore, they have to be processed within 6 – 8 hours after mixing.
- B bronzes tend to oxidation (Exception B 79-POWDER). Overprinting with PF/E50 is possible.
- 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".
- 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**

PF 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. 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 30 - 45 seconds at a temperature of 50°C.

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

**SCREEN FABRIC / STENCILS**

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

**SHELF LIFE**

In closed original containers, PF inks generally have a shelf life of 3 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 PF C-MIX 2000 colour shades, standard, 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](http://www.coates.de), section "SN-Online"

**FOR COLOUR RANGES, PLEASE REFER TO NEXT PAGE.**

## COLOUR SHADES

<b>C-MIX 2000 BASE COLOUR SHADES</b>					
<b>Mixing system for matching of PMS, HKS, RAL colours (on white substrates)</b> Start formulations available in data base „Formula Management C-MIX 2000“ <b>According to colour card C-MIX 2000</b>					
primrose	PF/Y30	red	PF/R50	green	PF/G50
golden yellow	PF/Y50	magenta	PF/M50	black	PF/N50
orange	PF/O50	violet	PF/V50	white	PF/W50
scarlet	PF/R20	blue	PF/B50	varnish	PF/E50
<b>STANDARD Colour Range (medium opacity)</b>					
<b>According to colour card STANDARD 1 for screen printing inks</b> Availability of further standard shades upon request					
white	PF 60/NT-NEU	black	PF 65/NT-NEU		
<b>STANDARD Colour Range HD (high opacity)</b>					
<b>According to colour card STANDARD HD for screen printing inks</b> Availability of further standard HD shades upon request					
white, highly opaque	PF 60/HD-NT-NEU				
<b>SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes</b>					
Information about availability upon request					
transparent paste	PF/TP	bronze binder	PF/B		
matt varnish	PF 70/MT				
<b>AB – BRONZE INKS and MG – METAL GLOSS INKS</b>					
According to Bronze Colour Card					
<b>AB Bronze Inks</b>			<b>MG Metal Gloss Inks</b>		
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>