

# Product Data Sheet

# Screen Printing Ink

**SunChemical**<sup>®</sup>  
Coates Screen Inks

## RF-K

### Solvent Based Process Printing Screen Ink Range, 1-Component

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#### APPLICATION

Screen printing inks for 4-colour process printing. Suitable for thermoplastics, e.g. rigid PVC and PVC self-adhesive foil, polystyrene (PS), polycarbonate (PC), PMMA ("acrylic glass") and acetobutyrate.

#### PROPERTIES

- Screen inks RF-K are solvent based 1-component screen printing inks. They dry by evaporation of solvents and result in a satin gloss finish.
- RF-K process colours are delivered in a thixotropic adjustment (paste-like). They have been formulated for printing of detailed halftone motives, show good printability and are quick drying.
- RF-K process inks exhibit a good weather fastness.
- If necessary, optical density can be reduced adding transparent paste or increased by addition of RK-K process colour concentrates.
- Note: On thin plastic foils, RF-K inks may cause cut or die edges to roll up. This is especially the case with multi-layer prints combined with die-cut applications. This effect can largely be avoided/reduced with reprographic measures (under cover reduction – UCR).

#### COLOUR SHADES - OVERVIEW

- Process Inks: 4 transparent colour shades

#### CHOICE OF PIGMENTS AND LIGHT FASTNESS

Colour shades of RF-K ink range contain pigments with a high light fastness. Light fastness and weather resistance will reduce if thinner layers are applied or if the process colours are mixed with a high ratio of transparent paste of retarder paste.

Applied on suitable substrates screen printing inks RF-K are suitable for outdoor applications.

#### ADJUSTMENT FOR SCREEN PRINTING

- Screen printing inks RF-K are not supplied in a ready-to-print adjustment.
- Brightness of colour shades:  
Process colours are highly transparent. Their optical density (brightness) is mainly dependent on the screen fabric used. For adjustment of the required brightness the process colours can be brightened with transparent paste (TP/K). In some – rare – cases process colour concentrates (RK-K) can be added to make the colour shades darker.
- Thinning:  
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 RF-K, the following products are available:

<b>Thinner:</b>	<input type="radio"/> VD 20	Very quick thinner.
	<input checked="" type="radio"/> <b>VD 60</b>	<b>Standard thinner</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
	<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%	Ink film may become brittle
	VP/K 05-03-NT	Max. 10%	More flexible than VP/K
	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	W 1	3 - 5%	Longer drying times.

**OVERPRINTING**

Generally, it is not necessary to overprint RF-K inks with varnish. However, if required overprinting with CX/E50 or HG/E50 is possible.

**BRONZE COLOURS, MIXING OF BRONZE INKS**

Not applicable.

**DRYING**

RF-K 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. 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**

RF-K inks have been formulated for printing with fabrics ranging from 120 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 RF-K are delivered in 1 litre containers. Other pack sizes are available upon request.

**SHELF LIFE**

In closed original containers, RF-K 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](http://www.coates.de), section "SN-Online"

**COLOUR SHADES**

<b>4 COLOUR PROCESS INKS (CMYK)</b>			
According to colour card STANDARD 1 for screen printing inks			
<b>RF-K Process Ink Range 1</b>			
process yellow	RF-K 180/75-03-NT	process black	RF-K 65/75-03-NT
process magenta	RF-K 181/75-03-NT	transparent paste	TP/K-75-03-NT
process cyan	RF-K 182/75-03-NT	retarder paste	VP/K 05-03-NT
<b>RF-K Process Ink Range 2</b>			
RF-K.../75-06-NT is a modification von RF-K.../75-03 with increased thixotropic properties.			
process yellow	RF-K 180/75-06-NT	process black	RF-K 65/75-06-NT
process magenta	RF-K 181/75-06-NT	transparent paste	TP/K-75-03-NT
process cyan	RF-K 182/75-06-NT	retarder paste	VP/K 05-03-NT
<b>RK-K Process Colour Concentrates</b>			
process yellow concentrate	RK-K 180	process cyan concentrate	RK-K 182
process magenta concentrate	RK-K 181	process black concentrate	RK-K 65

*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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