

Product Data Sheet

Screen Printing Ink

SunChemical[®]
Coates Screen Inks

PK 96 Phosphorescent Inks

Solvent Based Special Screen Ink Colours, 1-Component

APPLICATION

Special phosphorescent screen ink colours for printing on thermoplastics, especially rigid and plasticized PVC, ABS, polystyrene (PS), coated polyester and polyolefin foils as well as PMMA (acrylic glass).

PROPERTIES

- Phosphorescent colours PK 96 are solvent based 1-component screen printing inks based on ink range PK. They dry by evaporation of solvents and result in a semi-gloss to satin gloss finish.
- Phosphorescent colours retain incident UV-radiation and short-wave luminous energy in a range of 350 to 450 nm (maximum excitation), which is then emitted as long-wave luminescence in the dark.
- The duration of the phosphorescent effect mainly depends on pigment type used, pigment content and the printed layer thickness.
- PK 96 colours have a very high pigment content. In addition, thick layers are required to obtain longest possible duration of the phosphorescent effect. They are generally printed with coarse to very coarse fabrics ranging from 27 – 77 threads/cm, if necessary, multiple-layers. Long-term phosphorescence according to DIN 67510 is possible with PK 96/24 and PK 96/32, provided they are processed correctly.
- Due to these high layer thicknesses suitability of thin substrates, such as PVC self-adhesive foils or rigid PVC, thickness < 300µ has to be confirmed by corresponding pre-trials.
- The phosphorescent pigments used for these special colours have a high specific gravity. Therefore, inks should be stirred well prior and during processing (e.g. when re-filling the screen). These pigments are very rigid and abrasive, therefore stirring with a dissolver with a plastic disc is recommended.
- PK 96 prints are lightfast, however due to their pigmentation they are sensitive to humidity and contamination of the surface. For long-term use prints should be overprinted, e.g. with varnish PK 70 (apply with 77 – 100 thread/cm fabric). With this protective coating prints show good weather resistance.
- Note: As this colour range has very specific properties and applications are quite complex, pre-tests to confirm printing properties, compatibility of ink and substrate as well as the required phosphorescent effect are absolutely essential.

COLOUR SHADES - OVERVIEW

- Phosphorescent Colours: 5 different colour shades, see detailed table in section Colour Shades.

CHOICE OF PIGMENTS AND LIGHT FASTNESS

PK 96 colours contain pigments with a high light fastness. Applied on suitable substrates and overprinted with a protective varnish they are suitable for outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING

- Phosphorescent colours of the PK 96 range 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).
- The phosphorescent pigments used have a very high specific gravity. Therefore, the inks should be stirred well prior and during printing (e.g. re-filling the screen) to obtain a homogeneous dispersion of all ingredients. As these pigments are very rigid and abrasive, stirring with a dissolver with a plastic disc is recommended.

THINNERS / RETARDERS

For adjustment of phosphorescent colours PK 96, the following products are available:

Thinner:	■ VD 50	Standard thinner
	■ VD 60	Standard thinner (mild odour)
Retarder:	○ VZ 10	Quick retarder
	○ VZ 20	Medium 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
Flow agent	VM 1	3 - 5%	Do not overdose!
Plasticizer	W 1	3 – 5%	Longer drying times.

OVERPRINTING

Especially for prints intended for medium to long-term use and for humid environments overprinting of PK 96 colours is recommended. Apply thickest possible layer of PK 70.

BRONZE COLOURS, MIXING OF BRONZE INKS

Not applicable.

DRYING

PK96 screen printing inks dry physically, i.e. by evaporation of solvents.

Due to the variety of possible layer thicknesses (medium to very high), the various applications and requirements for phosphorescent prints, information about drying times cannot be given. Drying times have to be determined based on local requirements and conditions.

Generally drying times and 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.

SCREEN FABRIC / STENCILS

PK96 colours of the PK range have been formulated for printing with fabrics ranging from 27 to 77 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 PK96 are delivered in 1 litre containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, inks of the PK 96 colour range 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"

COLOUR SHADES

Phosphorescent Colour Range PK 96	
Phosphorescent ink, relatively low pigmentation, yellow-greenish. For short-term phosphorescent effects, e.g. for advertising.	PK 96
Phosphorescent ink, very high pigmentation. For short to medium-term phosphorescent effects	PK 96/03
Phosphorescent ink, high pigmentation, yellowish; fluorescent yellow pigment added to improve visual effect. Short to medium-term phosphorescent effect.	PK 96/04
Phosphorescent ink, high pigmentation, yellow-greenish, very long phosphorescent effect. Prints with long-term phosphorescence according to DIN 67510 are possible.	PK 96/24
Phosphorescent ink, very high pigmentation, yellow-greenish, very long phosphorescent effect. Prints with long-term phosphorescence according to DIN 67510 are possible.	PK 96/32

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>