

Product Data Sheet

Screen Printing Ink

SunChemical[®]
Coates Screen Inks

81UV

UV-curing Screen Ink Range, 1-Component

APPLICATION

Screen printing inks 81UV are used for decorating plastic containers made of pre-treated polyethylene (LD-PE, HD-PE) and polypropylene (PP) such as cartridges, cans, bottles, tubes, etc.

PROPERTIES

- Solvent-free UV-curing screen printing inks 81UV have a very high reactivity.
- 81UV inks are delivered in a ready-to-print adjustment and show high viscosity and thixotropy. They cure quickly resulting in a high-gloss finish. Prints show good adhesion and high chemical resistance.
- 81UV is formulated for fast running screen printing equipment for container printing.
- To obtain proper ink adhesion on PE and PP plastics, pre-treatment, preferably with flame, is imperative. Efficiency of pre-treatment also must be adjusted to the high printing cycles.
- 81UV inks are suitable for indoor and short-term outdoor applications.
- **Conformity according to “EuPIA Suitability List of Photo-Initiators for Low Migration UV Printing Inks and Varnishes – June 2010”:**
With the exception of colour 81UV/N50 black the 81UV colours listed in this product data sheet are considered to be low-migration colours according to that list. If necessary, use low-migration black 81UV/N50-LM as an alternative.
For further detailed information about this topic please refer to section “Conformity”.
- More UV ink ranges of the 80UV group for printing on PE/PP plastic containers:
80UV: Lower viscosity than 81UV.
832UV-SF: Optimized for printing on tubes, UV-LED curable, silicone-free.

COLOUR SHADES - OVERVIEW

- Mixing System: C-MIX 2000 12 colour shades for mixing of PMS, HKS and RAL colours.
- Process Inks: "180" colours 4 transparent colour shades according to ISO 2846-4.
- 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 81UV ink range contain pigments with medium 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.

81UV inks are not weather resistant. They are suitable for indoor and short-term outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING

- Screen printing inks 81UV are supplied in a ready-to-print adjustment. Generally, addition of auxiliary agents is not necessary.
- For some rare and special applications and depending on local conditions, addition of certain agents/additives is possible.
- Prior to printing, the inks should be stirred well to obtain a homogeneous dispersion of all ingredients.

HARDENER (as adhesion promoter):

Alternatively, screen inks range 81UV can be processed as 2-component ink with **Adhesion Promoter 551903** to achieve better adhesion on difficult substrates. Adhesion Promoter 551903 acts as adhesion promoter, however, will only increase chemical resistance of 81UV to a limited extent.

81UV and Adhesion Promoter 551903 are mixed at a ratio of **ink : hardener = 20 : 1** (parts by weight).

Hardeners are sensitive to humidity. Therefore, containers always have to be tightly closed.

Pot life:

- Ink mixed with hardener may only be processed within a limited period of time (=pot life)
- **Pot life of 81UV + hardener is approx. 4 - 8 h (at 20°C).**
Higher temperatures will reduce pot life.
- We do not recommend processing the inks for longer than the pot life as adhesion and resistance properties will then continually deteriorate, even if the ink still seems to be liquid and processable.

Hardener Reaction

Basically, the increased adhesion properties influenced by the hardener are only achieved by a further chemical cross linkage reaction between ink and hardener. This cross linkage reaction depends on time and temperature (reaction time). After UV curing, prints should be stored for at least 72 hours at a temperature > 15°C.

Resistance Tests

Resistances should not be checked before the ink has fully cured/cross-linked, 24 hours after UV curing at the earliest.

SCREEN FABRIC / STENCILS

81UV inks are formulated for printing with fabrics of 140 – 190 threads/cm. Printability and especially UV-curing properties with coarser fabrics should be evaluated by corresponding trials.

All copy emulsions and capillary films suitable for solvent based and UV-curing screen inks can be used, such as our program of SunCoat or Murakami products.

CLEANING

Uncured UV inks can be removed from stencils and tools using our solvent based universal cleaning agents of the URS range.

Cleaning of cured UV inks is very time-consuming and hardly ever possible.

Note: As the acrylates contained in these UV inks may cause skin irritation, clean contaminated skin with water and soap immediately. Remove and clean contaminated clothing straightaway.

PACK SIZE

Screen printing inks 81UV are delivered in 1 kilo containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, 81UV inks generally have a shelf life of 2 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.

Conformity according to EUPIA list “EuPIA Suitability List of Photo-Initiators for Low Migration UV Printing Inks and Varnishes – June 2010”:

With the exception of colour 81UV/N50 black the 81UV colours listed in this product data sheet are considered to be low-migration colours according to that list. If necessary, use low-migration black 81UV/N50-LM as an alternative.

We only use photoinitiators for the production of these screen inks complying with the requirements of the following groups of the EuPIA list:

- Group 1A:
Low migration potential, toxicologically tested, approved specific migration limit values, mentioned in appendix 6 of Swiss Directive 817.023.21 (Lists of allowed substances for the production of packaging inks, and demands imposed on these substances)

- Group 1B
Low migration potential and/or high molecular weight (> 1000 Dalton). Migration of these substances into food above the threshold of 10ppb is not expected. Some photo initiators from this group may contain traces of monomer photo initiators of group 1C (evaluated substances, approved specific migration limit values, partly non-use of those is required).

These screen printing inks can comply with the limit threshold values for photoinitiators when processed following good manufacturing practice. The printer is responsible for the properties of the finished ink film. We recommend to carry out a migration analysis of the printed parts.

ADDITIONAL INFORMATION ABOUT OUR PRODUCTS

Product data sheets: Auxiliary Agents for UV-Curing Screen Printing Inks
Brochures: UV-Curing Screen Printing Inks
Internet: Various technical articles are available for download on www.coates.de, section “SN-Online”, e.g.
80UV range – screen printing inks for container printing
Low migration and UV inks

FOR COLOUR RANGES, PLEASE REFER TO NEXT PAGE.

COLOUR SHADES

C-MIX 2000 BASE COLOUR SHADES					
LL pigmentation with medium light fastness					
Mixing system for matching of PMS, HKS, RAL colours (on white substrates)					
Start formulations available in data base „UV packaging printing C-MIX 2000“					
According to colour card C-MIX 2000-LL					
primrose	81UV/Y34	red	81UV/R54	green	81UV/G50
golden yellow	81UV/Y54	magenta	81UV/M50	black	81UV/N50 + 81UV/N50-LM*
orange	81UV/O54	violet	81UV/V50	white	81UV/W50
scarlet	81UV/R24	blue	81UV/B50	varnish	81UV/E50
*N50-LM: low migration black according to EuPIA list					
4 COLOUR PROCESS INKS (CMYK)					
According to colour card STANDARD 1 for screen printing inks					
process yellow	81UV 180	process black	81UV/N50 + N50-LM*		
process magenta	81UV 181	transparent paste	81UV/E50		
process cyan	81UV 182				
*N50-LM: low migration black according to EuPIA list					
SPECIAL PRODUCTS: Special Colour Shades, Vanishes, Pastes					
Information about availability upon request.					
white, highly opaque	81UV 60/883	black, highly opaque	81UV 65/HD-LM*		
*65/HD-LM: low migration black according to EuPIA list					

Matching of PMS, HKS, RAL, NCS colours and special 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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