

Product Data Sheet

Screen Printing Varnish

UV 70/511

UV 70/597

UV-Curing Relief Varnishes, Glossy, 1-Component

APPLICATION

UV-curing screen printing varnishes for printing of tactile effects (relief etc.) and thick layer spot coatings. Suitable for paper, cardboard, rigid PVC, PVC self-adhesive foils and polycarbonate (PC).

PROPERTIES

- Solvent-free UV-curing screen varnishes UV 70/511 and UV 70/597 have a medium reactivity.
- Both varnishes are delivered in a ready-to-print adjustment. These high-gloss varnishes are highly transparent.
- UV 70/511 has a high viscosity and is suitable for processing on flat screen equipment.
- UV 70/597 has a medium viscosity and is suitable for printing with rotary screens (e.g. Stork or Gallus system) and also for quick running cylinder presses.
- If necessary, UV 70/511 and UV 70/597 can be mixed at any ratio.
- Using corresponding thick layer stencils, relief prints (structures of a max of 1.5 mm in width) up to a height of 200µ are possible.
- It is possible to add up to 4% of C-MIX colour shades of ink range UVX2 to achieve a slight coloration for decorative purposes.
- The cured ink film shows good flexibility with low surface hardness.
- UV 70/511 and UV 70/597 exhibit good weather resistance.
- Note: Because of the variety substrates and the potential of high layer thicknesses, pre-tests to determine suitability of UV 70/511 and UV 70/597 are essential, especially concerning further processing of prints (cutting, folding, die-cutting, grooving, slotting etc.).

PRODUCT - OVERVIEW

- Clear varnish: UV 70/511 High viscosity, high gloss
- Clear varnish: UV 70/597 Medium viscosity, high gloss

LIGHT FASTNESS

Applied on suitable substrates UV 70/511 and UV 70/597 are suitable for outdoor applications.

ADJUSTMENT FOR SCREEN PRINTING

- Screen printing varnishes UV 70/511 and UV 70/597 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, both varnishes should be stirred well to obtain a homogeneous dispersion of all ingredients.

AUXILIARY AGENTS

Application	Product	Addition in % by weight	Additional Information
Thinning	Additive UV/V*	Max. 10%	Standard thinner
Viscosity increase	Thickening powder	1 - 2%	Stir with mixer
Reactivity increase	LAB-N 560700	1 - 3%	Photoinitiator
Flow agent	Additive UV/VM	1 - 2%	Do not overdose!
	Additive UV/N	1 - 2%	Wetting agent, improves flow properties

* Thinner Additive UV/V is a reactive UV monomer, not a commercial solvent!

DRYING / UV-CURING

- UV 70/511 and UV 70/597 only dry/cure under UV-radiation.
- Suitable UV-driers with Hg medium-pressure lamps (250 – 400 nm) and an efficiency between 80 and 200 W/cm have to be used.
- Preferably, use reflectors with a focussed radiation.
- Ensure an even radiation (intensity/distance to the lamps) of the whole printed image.
- The UV-energy required depends on construction/performance of the UV drier, the thickness of the printed varnish layer and type of substrate. Hence, printers should determine the exact required energy with their own UV-drier.
- **UV-curing energy guide values:**
(printed with 120-34 fabric, white substrate)
UV-energy: 250-400 mJ/cm²
(measured with Kühnast UV-integrator, 250 – 410 nm, max. 365 nm)
Belt speed: UV-radiator: 1 x 120 W/cm: 8 - 12 m/min.
2 x 120 W/cm: 16 - 24 m/min.
- Adhesion should only be checked several minutes after curing. Due to the post-curing process of the varnish and depending on the substrate, sufficient adhesion may sometimes only be achieved after up to 24 hours.

SCREEN FABRIC / STENCILS

UV 70/511 and UV 70/597 have been formulated for printing with fabrics ranging from 32 to 120 threads/cm.

- **Tactile Effects** (relief prints)
Use fabrics ranging from 32 – 77 threads/cm in combination with very thick stencil layers (EOM). To achieve very high relief structures, use 32-70 fabric combined with a stencil layer (EOM) of up to 300µ. For very high EOM on coarse fabrics use appropriate copy emulsions:
 - Emulsions, e.g. Murakami SP9600 or MSP-2 – multiple layers with intermediate drying or pouring method with photo mount (passe-partout).
 - Capillary films, e.g. Murakami products such as MS-Film, preferably thicknesses ranging from 100 – 300µ. Transfer with One Pot Sol emulsion.
- **Spot coating with a high layer thickness:**
Generally, fabrics ranging from 77 – 120 threads/cm are sufficient. 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.

Printability and UV-curing properties of UV 70/511 and UV 70/597 with coarser or finer fabrics should be determined by corresponding pre-trials.

CLEANING

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

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

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

PACK SIZE

Screen printing varnishes UV 70/511 and UV 70/597 are delivered in 1 and 5 litre containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, UV 70/511 and UV 70/597 screen varnishes 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.

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"

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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