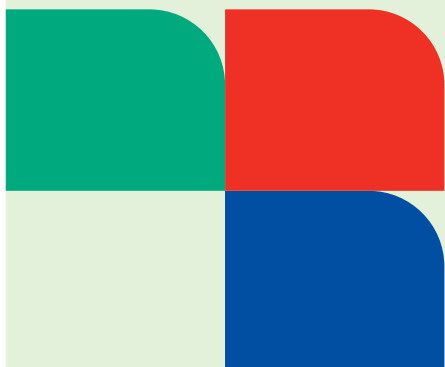


SunChemical®

Coates Screen Inks



UV-CURING SCREEN PRINTING INKS



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Coates Screen Inks GmbH, Nuremberg, Germany is part of the Sun Chemical Group, one of the world's largest producers of printing inks, varnishes and pigments.

We are one of the world's leading manufacturers of screen and pad printing inks, focussing on the development and manufacture of high quality solvent based and UV-curing products for graphic, technical and industrial applications.

This brochure "**UV-Curing Screen Printing Inks**" exclusively contains information about our UV-curing screen printing inks, range of colour shades and relevant additives for UV ink systems.

One of our strengths is the development of specific customer solutions. If you cannot find the appropriate product for your special application in this brochure, please contact us. We have much more to offer. Contact details are listed on the reverse side.

For information about our choice of solvent based screen inks and pad printing inks, please refer to our brochures "**Solvent Based Screen Printing Inks**" or "**Pad Printing Inks**".

Visit our website

www.coates.de, SN-Online.

Here you will find a variety of interesting technical articles and further detailed information about printing technology and our printing inks.



UV-CURING INKS ARE DIFFERENT!

Complementary Information

03

UV-curing screen printing inks have been on the market for more than 40 years. The original offer of only very few UV inks and UV varnishes for a quite limited field of applications has now developed into a very broad range of products with a huge variety of different applications.

Meantime UV inks can be used for quite the same variety of substrates as solvent based inks. UV inks show many specific characteristics like weather resistance, resistance in thermo-forming applications, high flexibility. They are resistant and tough, show high mechanical and chemical resistances. And all these properties can usually be obtained by processing these inks as one-component system (without hardener).

But there are two significant differences between solvent based and UV-curing inks. UV inks are usually delivered in ready-to-print adjustment and can be processed right away. The second difference is their drying, called curing. Solvent based inks dry physically by evaporation of their evaporative ingredients (solvents). This is an automatic process starting right after printing by air contact. Quicker drying of solvent based inks can be achieved with hot air blowers.

UV inks don't "air-dry". They cure at lightning speed by a photochemical polymerisation reaction initiated by high-energy UV-radiation in the UV-curing unit. The liquid ink film quickly turns into a stable plastic layer. In that process the specific energy required for curing the UV ink, the energy power of the UV-curing unit itself as well as the belt speed used to pass the prints underneath the UV lamp interact. It's part of the printer's job to carry out the correct adjustments.



General quality control also comprises regular controls of the efficiency of UV-curing units. Such control is carried out using corresponding measurement instruments ("integrators", "power-pucks", "UV-disk" etc.) or measuring strips (foils such as "Powerstrip"). Please note that these measuring devices are not standardized and thus the measured value mJ/cm^2 (milli joule per cm^2) is not comparable.

Similar to solvent inks, which - depending on ink type - have different drying times, UV-curing screen inks show different reactivity values; that is to say they require different degrees of UV-energy

for curing. Inks for plastics are highly reactive and only require low curing energy. On the other hand inks for glass, coated substrates and metals need a high curing energy. As a guide information we have listed the energy values of all UV inks described in this brochure (see reactivity), all measured with Kühnast UV-integrator.

You want to learn more about UV-curing inks and their processing?

Visit our website www.coates.de/SN-Online or contact us directly. Your personal contacts are listed on the back cover page of this brochure.



MAIN INK RANGES

for Graphic
Screen Printing Applications

UVU The Versatile System

Reactivity: very high,
approx. 150 mJ/cm²/*

Broad Range of Applications



Ink Range UVU has been especially developed for graphic screen printers and their broad range of different substrates.

UVU inks are especially suitable for printing on thermoplastics such as ABS, polystyrene (PS), PVC (mainly rigid PVC). UVU inks are also suitable for paper and cardboard, polycarbonate (PC), PET-G and PP double wall sheets.

UVU inks are highly reactive and quickly cure to form a hard, slightly brittle ink film. They can be easily processed on multi-colour printing presses and quick running fully automatic cylinder presses. Even double-sided prints are stack proof. Prints also exhibit high light fastness and weather resistance.

UVX2 The Elastic System

Reactivity: very high,
approx. 150 mJ/cm²/*

Especially for PVC

When printed with standard UV inks PVC self-adhesive foils often become very brittle, especially if thick ink layers are applied. In addition thinner rigid PVC foils often lose their toughness and elasticity.

UVX2 inks were especially developed to overcome such problems and to achieve best possible elasticity and flexibility on PVC materials. PVC adhesive foils printed with UVX2 inks can easily be applied on uneven substrates with edges, slots and creases.

UVX2 inks are highly reactive and can therefore be processed on quick running

screen presses and large format multi-colour printing presses.

UVX2 prints are elastic and flexible and will not become brittle later on. This ink type has been successfully used for the production of double-sided stickers, sometimes even with up to 10 ink layers!

As obliterating grey we offer the highly opaque ink adjustment UVX2 60/688-HD, which is mixed with 3-4% of special silver B 79/13 and then printed with medium fabrics - up to 100 threads / cm.

In addition UVX2 inks exhibit excellent light fastness and weather resistance and are therefore suitable for automotive decorations as well as other outdoor applications.

UVN The Classic System

Reactivity: high,
approx. 250 mJ/cm²/*

For PVC

For many years this UV system has been successfully used for printing of PVC-materials. Originally this system was developed and used for graphic applications and later on increasingly also for roll label printing. Although UVX has become first choice for special applications - mainly for PVC self adhesive foils - UVN is still commonly used for the originally intended applications as the prints show good chemical resistances. Such applications focus on rigid PVC and PVC fabric foils for banners.

UVN inks show a good outdoor resistance and a high reactivity, which is slightly lower than that of UVX, however, still suitable for quick running printing presses.

In addition to the C-MIX-2000 and process colour shades UVN inks are also available in ready-to-print fluorescent and phosphorescent colour shades.



UVPO For Polypropylene & More

Reactivity: medium to high,
approx. 300 mJ/cm²/*

For Pre-treated Polypropylene (PP)



In graphic screen applications the often quite problematic substrate polypropylene is mainly processed for double wall sheets or rigid foils. After Corona treatment this material can easily be printed with suitable ink types.

UVPO has been especially developed for the decoration of these PP substrates and can also be processed on multi-colour equipment.

Meantime these products are also often printed with our ink type UVU. If, however, maximum adhesion combined with exceptional water resistance is required UVPO will still be your first choice.

The ink type exhibits medium outdoor resistance. Range of suitable substrates also comprises polystyrene (PS) - mainly high gloss PS types - and ABS, polycarbonate (PC) and various types of acrylic glass (indoor applications).

**Energy values measured with Kühnast UV-integrator. Values are only guide values.*



INK RANGES

For Special Applications

UVE

The Resistant System

Reactivity: high, approx. 250 mJ/cm²/*

Alternatively: Hardener UV/H, addition 5%

For Polystyrene, Rigid PVC & More

Originally UVE inks were developed as a quick curing, tough and stack proof ink for graphic screen printing onto polystyrene (PS) and rigid PVC, mainly for processing on automatic one and multi-colour printing presses. Meanwhile such applications are mainly carried out with our UVU inks which are suited for a broader field of applications.

UVE inks are now commonly used for the decoration of injection moulds (toys, front panels, housings), mainly for applications requiring good adhesion, high scratch resistance or high chemical resistances against cleaning agents, acids and alkaline solutions.

This ink range is suitable for medium-term outdoor use. As an alternative UVE inks can be processed with hardener UV/H to obtain adhesion on difficult substrates (plastic compositions, pre-treated PP, aluminium) in individual cases.

UV-650018

For Plastic Elements

Reactivity: high, approx. 200 mJ/cm²/*

Tough and Resistant



Screen prints applied to plastic parts such as writing utensils, front panels, polycarbonate or ABS housings often have to meet very high demands regarding mechanical and chemical resistances. UV-650018 inks meet these requirements. Thus this ink system is especially suitable for technical screen applications. UV-650018 is highly reactive and shows a high degree of cross-linkage and is therefore the appropriate ink system for inline printing or processing on multi-colour equipment used for printing of pens. Although UV-650018 prints are mostly used indoors the ink is also suited for short to medium-term outdoor applications.

UVP

For Particular Applications

Reactivity: medium,
approx. 300 mJ/cm²/*

Resistant and Versatile

UVP inks have been successfully used for many years. Owing to technical progress of recent developments of UV inks such as increased reactivity and specialization UVP is now mainly used for difficult substrates, mostly form parts and housings made of polyolefin, copolymers or coated housings.

UVP inks show a very good chemical resistance and medium to good outdoor resistance.

MTR

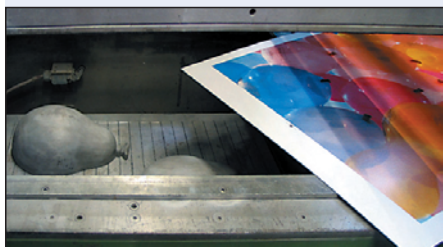
For Deep Drawing Applications

Reactivity: medium to high,
approx. 300 mJ/cm²/*

Broad Field of Applications

Musketeer MTR is a special ink system suitable for screen printing onto various plastics. The printed parts are suitable for subsequent thermo-forming (deep drawing). Range of suitable substrates comprises thermoplastics such as rigid PVC, polystyrene, acrylic glass and PET-G.

MTR prints exhibit medium outdoor resistance.



SPECIAL VARNISHES

Full and Partial Surface Finishing

UV 70/LC: High Gloss Varnish

Very low viscosity, highly reactive.

Suitable for one-sided finishing of prints preferably on quick cylinder presses.

Substrates: paper, cardboard.

UV 70/LC-HV

UV 70/LC-HV is an adjustment of UV 70/LC with medium viscosity, best for one sided finishing of prints on flat-bed equipment.

UV 70/LC-MT: semi-gloss

UV 70/LC-MT has a semi-gloss finish, a medium viscosity and is suitable for double-sided finishing of prints.

Substrates: paper, cardboard, polystyrene (PS), PVC.

UV 70/L: Glossy Varnish

Low viscosity, highly reactive.

Overprint varnish for double-sided finishing of offset prints.

Substrates: paper, cardboard.

UV 70/L-HV

Highly viscous adjustment of UV 70/L.

Especially for glossy prints on difficult, absorbent substrates (paper, cardboard).

UV 70/KS:

Gloss Varnish for Demanding Applications

Gloss varnish, medium viscosity.

Especially suitable for one-sided overprinting of difficult offset prints.

UV 70/KS is also suitable for some thermoplastics.

Substrates: paper, cardboard, polystyrene (PS), PVC.

UV 70/XT:

Gloss Varnish for Demanding Applications

Gloss and protection varnish, medium viscosity.

Suitable for double-sided overprinting of difficult offset prints.

UV 70/XT is also suitable for some thermoplastics.

Substrates: paper, cardboard, polystyrene (PS), PVC.

Good chemical resistances.

UV 70/XT-MT

Matt varnish, medium viscosity.

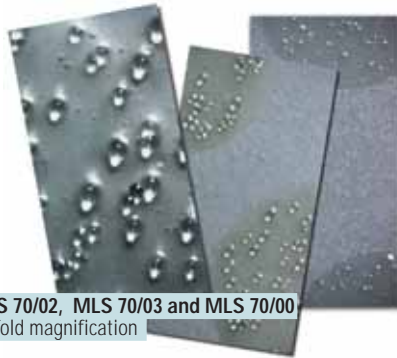
Application like UV 70/XT, prints show a semi-gloss finish.

UVN 70/122:

Glossy Texture Varnish

Highly viscous and thixotropic, very transparent varnish resulting in a medium texture.

Mainly used for decorative applications.



MLS 70/02, MLS 70/03 and MLS 70/00
50-fold magnification

UV 70/122 is suitable for overprinting of screen and offset motives, however, pretests are always necessary.

This varnish is printed with fabrics of 120-150 threads/cm.

Substrates: paper, cardboard, PVC.

Relief Varnishes

UV 70/511 · UV 70/597

High gloss relief varnishes for processing on flat screen (UV 70/511) and rotation screens (UV 70/597).

UV 70/511:

High gloss varnish, medium viscosity, high flexibility, for relief prints and partial coatings.

UV 70/511 can be processed with fabrics ranging from 32 to 150 threads/cm.

Substrates: paper, cardboard, PVC and polycarbonate (PC).

UV 70/597:

UV 70/597 is processed like UV 70/511 and is based on the same raw materials. UV 70/597 has a lower viscosity and is processed in printing presses with round stencils (Stork, Gallus etc.), usually roll label applications.

UVX2 70/841-BL

UVX2 70/841-BL is a high quality, highly viscous, thixotropic varnish resulting in best possible tactile relief effects.

We recommend to process this varnish with fabrics between 32 und 77 threads/cm, also with thick film stencils up to 400µ.

Substrates: paper, cardboard, PVC.

Anti-Slip and Soft-Touch Varnishes

UV 70/516: Anti-Slip Varnish

Medium viscosity, thixotropic, matt transparent, rubber-like surface.

For the production of non-slide surfaces, such as bottom of mouse pads or other items requiring reduction of slipping properties.

This varnish is processed with fabrics between 54 to 77 threads/cm.

Substrates: paper, cardboard, PVC, polystyrene (PS) and polycarbonate (PC)

UV 70/738 · UV 70/739: Soft Touch

These varnishes have a medium viscosity, are matt and transparent and result in a soft touch surface. They are used for decorative applications.

Substrates: paper, cardboard, PVC, polystyrene (PS) and polycarbonate (PC).

UV 70/738: Very smooth surface with a low sliding resistance. UV 70/738 is processed with fabrics between 150-165 threads/cm.

UV 70/739: Results in a slightly rougher surface with an increased sliding resistance. UV 70/739 is processed with 120-34 fabrics.

Floor Graphics and Texture Effects

MLS 70/00, MLS 70/02 and MLS 70/03:

Product group for the production of printed anti-slip walk-on floor adhesives for floor graphics or used for decorative texture effects of various printed matters such as advertising folders etc.

MLS varnishes are of medium viscosity and transparent. Depending on the version they contain grain structures in particle sizes between 40 and 200µ.

Substrates: paper, cardboard, PVC, polystyrene (PS).

Tested and certified according to BGR 181 and DIN 51130:2009-5 (anti-slip properties)

MLS 70/00: Fine Texture

We recommend printing with 100-40 fabric.

MLS 70/02: Coarse Texture

We recommend printing with 24-140 fabric.

MLS 70/03: Medium Texture

We recommend printing with 43-80 fabric.

Technical Applications

Window Clear: UV 70/488-Neu

UV 70/488-Neu is a high gloss, clear varnish with medium viscosity and medium flexibility.

This product is suitable as window clear on texture foils (e.g. touch buttons, front panels).

Substrates: PVC, polycarbonate (PC), polyester foils (pre-treated with primer).

UV 70/488-Neu exhibits good mechanical and chemical properties.

Texture Varnishes:

UV 70/623 · UV 70/635-MT

Texture varnishes UV 70/623 and UV 70/635-MT are matt, highly viscous, thixotropic and tough varnishes. Their texture is coarse similar to sandpaper.

Main applications are matt texture overprinting of glossy, transparent plastic surfaces, e.g. of membrane switches and front panels.

Substrates: PVC, polycarbonate (PC) or primed polyester.

These varnishes are processed using fabrics ranging from 100 - 120 threads/cm.

The resulting layer is tough and shows a very high mechanical and chemical resistance.

UV 70/623

results in a surface with a medium-coarse texture.

UV 70/635-MT

results in a very fine grain texture.

INK RANGES

For Technical and Industrial Applications

80UV

For Cartridges & More

Reactivity: very high, approx. 100 mJ/cm²/*

Alternatively: Hardener UV/H, addition 5%

For Printing of PE and PP Containers



Ink system 80UV is used for direct printing of various hollow articles made of polyethylene (PE) and polypropylene (PP) such as cartridges, bottles, cans, tubes etc. Pre-treatment of PE and PP is essential for such applications. This system is mainly suited for rigid and semi-rigid types of aforementioned materials. For plasticized/non-rigid materials we offer ink type UV-650061.

80UV is primarily processed as 1-component ink on quick running multi-colour presses for container printing. Intermediate drying (pinning) with UV-LED systems (395 nm) is also possible. For applications requiring outstanding resistances 80UV can also be processed as 2-component ink, addition of hardener UV/H 5%.

Base colours of this high gloss ink range are the C-MIX 2000 colours in LL-version, exhibiting a medium light fastness. Our data base "Formula Management for Packaging Printing" contains guide-formulations for Pantone PMS, HKS and RAL colours. Ink range 80UV is classified as low migration according to EUPIA Directive (exception N50). For details please refer to our product data sheet.

SVC

For Glass Containers

Reactivity: medium to high, approx. 300 mJ/cm²/*

Adhesion Promoter: SVC/H, addition 5%
For Glasses, Cups, Bottles

SVC is an organic UV screen printing ink for glass which has especially been developed to meet present requirements for direct printing of glass containers such as glasses and bottles as well as various ceramic articles. SVC inks have been designed especially for quick running multi-colour equipment.

SVC inks are processed with a 5% addition of adhesion promoter SVC/H (pot-life 4-8 h). To achieve best possible resistance we recommend post-drying of the prints after UV-curing for a period of approx. 10 minutes at 120 °C. SVC prints are dish-washer resistant according to DIN 12875-1 and show a good resistance against acetone and ethanol (alcohol).

Base colours of this glossy ink range are the C-MIX 2000 colours in LL-version, exhibiting a medium light fastness. Our data base "Formula Management for Packaging Printing" contains guide-formulations for Pantone, PMS, HKS and RAL colours.

UV/K

For Metals & More

Reactivity: low, from approx. 1000 mJ/cm²/*

Alternatively: Hardener UV/H, addition 5%
Tough and Highly Resistant

UV/K inks have also been successfully used for many years. Originally the system was developed and effectively used as marking ink for circuit boards, an application requiring exceptional resistances against various chemicals.

Meanwhile possible applications of this system also comprise decoration of aluminium, stainless steel and lacquer-coated materials such as decoration of front panels of white goods, back covers of electronic items (DVD players etc.) and various type-plates.

For especially difficult and demanding applications and mostly to enhance adhesion properties UV/K



UVGS

For Sheet Glassware

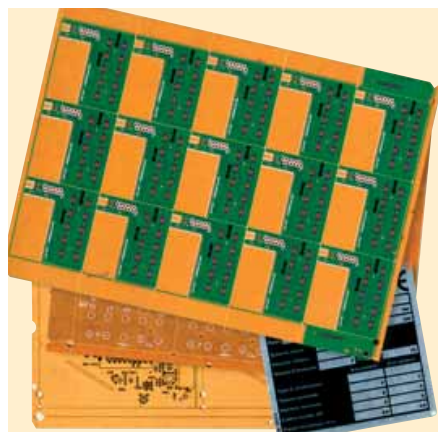
Reactivity: medium, approx. 500 mJ/cm²/*

Adhesion Promoter: UVGS/HS, addition 5%

UVGS is an organic UV screen printing ink for direct printing on glass sheets. Depending on requirements this ink system can be processed in three different ways. If prints are to be used in a dry environment UVGS can be processed without adhesion promoter. The resulting prints will show good adhesion and scratch resistance but no water resistance. When processed with 5% adhesion promoter UVGS/HS and possibly also with subsequent post-curing at 140 °C for a period of 20 minutes prints will exhibit good water resistance.

Base colours of UVGS ink range are the C-MIX 2000 colours. In addition we also offer special adjustments such as milk glass effects, etch imitations, matt textures. On account of the resins used for the formulation of UVGS this system is not recommended for medium or long-term outdoor use.

inks can also be processed as 2-component ink with a 5% addition of hardener UV/H. On account of the resins used for the formulation of UV/K this system is not recommended for medium or long-term outdoor use.



COLOUR RANGES

C-MIX 2000

For technical reasons the colour shades printed in this brochure do not show exact colour strength and shade. For exact colour shades please refer to our colour cards, which are available upon request!



All our UV ink types are available in the colour shades of the C-MIX 2000 system. These 12 semi-opaque or transparent shades are suitable for mixing shades of various colour systems such as Pantone PMS, HKS or RAL as well as specific corporate colour shades. On account of their mono-pigmentation (every base colour only contains one

pigment) easy and fast matching of any colour sample is possible. Our databases "Formula Management" (general) and "Formula Management for Packaging Printing" (for 80UV, SVC) contain guide-formulations of Pantone PMS, HKS and RAL colours.



Opaque Colour Shades

To achieve good to medium opacity the C-MIX 2000 colour shades of UV inks can be adjusted with an addition of up to 30% white W50. For higher opacity requirements contact our colour matching department, such highly opaque special shades

can be matched upon request as special colour adjustments. Depending on colour shade and opacity UV inks have to be adjusted individually with appropriate photoinitiators.

4 Colour Process Shades

Colour range for reproduction by 4 colour process technology (CMYK). Available in all UV inks.

Our process colours are:



process yellow 180 (= Y),
process red 181 (= M),
process blue 182 (= C)
process black 65 (= K).

Also transparent paste "TP" is offered in case adjustment (=brightening) of colour brightness is necessary.

90 and 96 Colours

90 range: 6 colours with a high colour strength and fluorescent effect based on colour card TL or Pantone PMS (fluorescence). Available in ink range UVN. Upon request 90 shades can also be offered in some other ink ranges.

96 range: Phosphorescent white-yellow colour adjustments. We offer various adjustments with different phosphorescence for security applications and decoration of advertising articles. Available in ink range UVN. Upon request partially also available in other ink ranges.

Bronze Colours

Ready-to-print adjustments of gold (greenish or reddish version), silver, bronze (copper) colours are available in various UV ink types. Contrary to solvent

based screen inks there are technical limitations regarding bronze mixtures of UV inks, please contact us.



AUXILIARY AGENTS / ADDITIVES

UV-curing inks offered by Coates Screen Inks GmbH are delivered in a ready-to-print adjustment. Generally addition of auxiliary agents/additives prior to processing is not necessary.

Depending on specific requirements, special printing conditions etc. addition of certain auxiliary agents can be beneficial in some individual cases.

Coates Screen offers a range of auxiliary agents and additives for UV-curing inks. These additives are used to adjust viscosity or increase reactivity if necessary. We also offer flow agents as well as hardeners for further enhancement of certain resistance properties.

Adjustment of Viscosity

Contrary to solvent based inks viscosity of UV-inks can only be changed to a very limited extent.

Additive UV/V (Universal Reactive Thinner):

Addition: 3 - max. 10%

Reduces viscosity of UV inks (ink will become thinner).

Can be used in nearly all UV-inks (but not for MTR, and PDO).

Additive UV/V is a clear, colour-less liquid with low viscosity, non-yellowing.

Reacts with the ink, does not evaporate.

Thickening Powder:

Addition: 1 - max. 3%

Increases viscosity and thixotropy of UV-inks (ink will become thicker).

Thickening Powder can be used in all UV inks. White, fine powder

Use of an agitator to mix thickening powder into the ink is recommended.

Increase of Reactivity

Addition of photoinitiator solution may increase speed of curing reaction (polymerisation) of UV-inks.

LAB-N 560700 (photoinitiator solution):

Addition: 1 - 3 % (recommended), max. 5 %

LAB-N 560700 increases reactivity, especially reactivity of coloured inks.

LAB-N 560700 can be used in all UV curing ink types.

LAB-N 560700 is a clear, slightly yellowish liquid of low viscosity, non-yellowing.

LAB-N 551564 (photoinitiator solution):

Addition: 1 - max. 3 %. Highly effective!

LAB-N 551564 increases reactivity, especially that of coloured inks and opaque ink adjustments.

LAB-N 551564 can be used in all UV inks.

LAB-N 551564 is a clear, slightly yellowish liquid with a medium viscosity.

Flow Additives

Formulations of our UV-curing screen inks already contain flow agents to achieve good substrate wetting properties and surface flow. In some individual cases, however, flow problems may occur. To solve these the following additives are available:

Additive UV/VM (flow agent):

Addition: 1 - 2%

Improves flow and slipping properties

UV/VM can be used in all UV inks.

UV/VM is a cloudy, whitish liquid with a low viscosity, contains silicone.

Additive UV/N (wetting agent):

Addition: 1 - 2%

Improves wetting of substrate on difficult materials.

UV/N can be used in all UV inks.

UV/N is a clear, colourless liquid with a low viscosity.

Hardeners

Usually UV-curing inks are 1-component inks, which, depending on ink type result in high resistances. With solvent based screen inks you would require 2-component inks to achieve similar resistance values.

Alternative addition of hardener to some of our UV ink types, however, will further increase these high resistances or enable printers to print on a broader range of substrates.

Additive UV/H (Hardener):

Addition: 5% (= 20:1), pot life at room temperature approx. 6-8 h.

Increases adhesion and resistances on various coated substrates and pre-treated polyolefines (PP/PE), sheet metal and stainless steel of ink types suited for these applications.

Reaction of hardener UV/H is completed within 72 hours. Wait at least 24 hours before carrying out adhesion and resistance tests.

Can be used in UVE, UV/K, 80UV.

Additive UV/H is a clear, colourless liquid with a high viscosity.

Additive UVGS/HS

(Adhesion Promoter for Glass)

Addition: 5% (= 20:1), pot life at room temperature approx. 5 days.

Increases water resistance on glass materials.

UVGS/HS can only be used in UVGS.

Additive UVGS/HS is a clear, colourless liquid with a low viscosity.

Additive SVC/H

(Adhesion Promoter for Glass)

Addition: 5% (= 20:1), pot life at room temperature approx. 6 - 8 h.

SVC/H is necessary for processing SVC inks.

Additive SVC/H is a clear, colourless liquid with a low viscosity.



PROPERTIES OF UV INKS

10

| INK TYPE | UVU | UVX2 | UVN | UVPO | UVE | MTR | UVP | UV-650018 | 80UV | UV/K | UVGS | SVC |
|--|------------------|------------------|-------------|---------------|-------------|---------------|---------------|-------------|------------------|--------------------------|--------------------|--------------------|
| Reactivity mJ/cm ² ¹⁾ | very high 150 | very high 150 | high 250 | medium 300 | high 250 | medium 300 | medium 300 | high 200 | very high 100 | low from approx. 1000 | medium 500 | medium 300 |
| Effects on substrate properties* tear resistance impact strength | low | low | medium | medium | high | low | high | high | medium | n.a. | n.a. | n.a. |
| Further processing of prints punching / cutting | good | very good | limited | limited | problematic | good | problematic | problematic | limited | limited | n.a. | n.a. |
| forming | no | no | no | no | no | yes | no | no | no | no | n.a. | n.a. |
| Outdoor resistance | high | high | high | medium | medium | medium | high | high | medium | low | low | low |
| Chemical and solvent resistance | high | low | medium | medium | high | low | high | high | high | very high | high ²⁾ | high ³⁾ |



- 1) measured with Kühnast UV integrator
- 2) after addition of 5% hardener UVGS/HS
- 3) after addition of 5% hardener SVC/H

We do offer a comprehensive program of UV screen inks for various applications. Depending on application, and required base components, curing reactivity, degree of polymerization and certain interactions with various substrates and their further processing these different inks exhibit different characteristic properties.

* The above chart is a summary of the most essential properties of our UV ink types.

SUITABILITY CHART UV-CURING SCREEN PRINTING INKS / SUBSTRATES



11

| | UVU | UVX2 | UVN | UVPO | UVE | MTR | UVP | UV-650018 80UV | UVIK | UVGS | SVC | |
|---|-----|------|-----|------|---------|-----|-----|-------------------|---------|---------|---------|---------|
| | 1 | 1 | 1 | 1 | 2 5% | 1 | 1 | 1 | 2 5% | 2 5% | 2 5% | 3 5% |
| Paper, Cardboard, Carton | ● | ● | ● | ● | ● | | | | | | | |
| Plasticized PVC | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| PVC Coated Fabrics | | | ● | | | | | | | | | |
| Rigid PVC | ● | ● | ● | ● | ● | ○ | ○ | | | | | |
| Polystyrene (PS) | ● | | | ● | ● | ● | ● | ● | | | | |
| ABS, SAN | ● | | | ● | ● | ○ | | ● | | | | |
| Polycarbonate (PC) | ● | | | ● | ● | ○ | | ● | | | | |
| PMMA (Acrylic Glass) | ○ | | | ○ | ● | | | | | | | |
| Polyester foil (with adhesion promoter) for membrane switch overlays | | | | | | | | | | | | |
| PET-G* | ● | | | ● | ● | | | | | | | |
| Polyolefin | | | | | | | | | | | | |
| Roll-Label | | | | | | | | | | | | |
| PE coated | | ○ | ● | | | | ● | ● | | | | |
| PP coated | | ○ | ● | | | | ● | ● | | | | |
| Sheets/Boards | | | | | | | | | | | | |
| PP corona-treated | | | | ● | | | | | | | | |
| Containers/Packaging | | | | | | | | | | | | |
| PE flame treated (Corona) | | | | | | | | ● | | | | |
| PP flame treated (Corona) | | | | | | | | ● | | | | |
| Duroplastics | | | | | | | | | ● | | | |
| Metals | | | | | | | | | ● | | | |
| Coated Surfaces** | | | | ● | | | | | ● | | | |
| Glass | | | | | | | | | | | | |
| Glass Sheets | | | | | | | | | ● | ● | | |
| Glass Containers | | | | | | | | | ● | ● | | |

* material may be very sensitive to tension cracks

** various types

● preferred for the application

● suitable

○ may be suitable

1 One component

2 Alternatively with hardener

3 Two component

This information is no guarantee for the suitability of screen printing inks for certain substrates but is intended to help the user to choose suitable ink types. Pre-tests are always necessary. This information is based on our present experiences (August 2015).

