



Coates Screen

# Product Data Sheet

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## UV-CURING SCREEN PRINTING INKS UVGS

### APPLICATION

UVGS is suitable for printing on glass and is based on the UVG technology. Compared to UVG and due to its kit system the range of applications has been considerably increased. Depending on the requirements, the ink is adjusted ready for printing with 5% of additive. Thus, the properties can be adapted tailor-made to the respective application.

### PROPERTIES

UVGS inks are UV-curing screen printing inks. After UV curing they are immediately dust-dry, show adhesion and are ready for further processing. Prior to processing the ink is adjusted with reactive thinner or an additive. This way, the properties of the printed film can be adapted perfectly to the respective requirements on the final printed products. The range of possible applications includes printing of large-format glass fronts for the furniture industry as well as printing of dish-washer resistant glasses.

### ADJUSTMENT

Prior to processing screen printing inks UVGS are adjusted for printing. Depending on the requirements there are different options.

#### Option A – without additives

Hard and mechanically resistant film directly after UV curing, no special requirements concerning resistance to water and condensed humidity. If necessary, screen inks UVGS are adjusted for printing with up to approx. 5% thinner UV/V. The ink-thinner mixture can be used without reservation until the end of the shelf life shown on the can.

Applications: e.g. furniture industry (except bath room furniture), gaming machines, glass decoration.

#### Option B – addition of 5% UVGS/HS adhesion promoter

Increased water resistance. The final curing takes place over a certain period of time. Only then the prints reach their final hardness and resistance. At first, the ink film is quite flexible. Therefore glass plates can be cut and ground immediately after printing without any risk of splintering of the ink film. After final curing the prints show excellent mechanical abrasion resistance and also sufficient water resistance for most requirements. After addition of adhesion promoter UVGS/HS the ink can be used for approx. one week without reservation. If a further thinning is necessary, universal thinner UV/V, addition max. 5%, can be used.

Applications: furniture industry including bath room furniture, gaming machines, glass decoration.

#### Option C – addition of 5% UVGS/HS with subsequent oven post-curing

A post-drying at higher temperatures e.g. 140°C for 20 minutes considerably improves resistance properties. The ink film then shows good resistance against condensed humidity as well as against direct contact with water for a longer period of time. However, in wet condition the mechanical abrasion resistance is somewhat reduced but is re-built completely within a short time after drying.

Applications: dish-washer resistant glasses, glass bottles for cosmetics

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Alternative for oven post-curing

If drying in the oven is not feasible, it is possible to add 3% hardener UVGS/HF additionally to adhesion promoter UVGS/HS. This ink-hardener mixture has a pot life of approx. 8 hours. Remaining ink can be used within 24 hours if it is added at a percentage of 25% to freshly mixed ink. The printed ink film post-cures at room temperature. The cured ink film already shows good resistance after 24 hours, however, final resistance is reached after 72 hours.

## **PROCESSING**

It is recommended to print screen printing inks UVGS using a 150-31 or 120-34 fabric. For frosted effect inks a coarser fabric may be used. Curing is made at an energy between 500 and 1000mJ/cm<sup>2</sup> depending on layer thickness and colour shade. The substrate must be absolutely clean and free of grease. It is recommended to clean the glass surface with a suitable agent prior to printing.

Process Colours UVGS HD-P have a very high colour density. They should be printed using a 150-34 fabric or finer. If necessary adjust colour density with transparent paste UVGS/TP as otherwise – especially with black – the ink would not completely cure under the UV drier.

After UV curing the ink is dust-dry and shows good adhesion. Further processing of prints can take place immediately after printing. Should the occasion arise, the prints have to be protected from mechanical damages such as scratching of the surface.

For further questions regarding this topic please contact our applications department.

## **PRE-TESTS**

A water resistant adhesion on glass is obtained with the complex interplay of the components and thus is also dependent from the glass type. It has to be checked carefully in pre-tests whether and how the desired properties are achieved. Each change of processing parameters can influence the result – especially with regard to water resistance.

## **STORAGE AND SHELF LIFE**

Shelf life of originally sealed containers is at least 12 months, stored at a temperature of 25°C. Opened containers must immediately be re-sealed tightly. a

## **CLASSIFICATION**

Read material safety data sheets prior to processing.

The material safety data sheets according to Regulation (EC) No. 1907/2006 contain classification according to preparations directive (1999/45/EC) as well as instructions for precautions when processing, handling and storing as well as first aid.

The information given in the material safety data sheet refers to processing as described in this product data sheet.

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**PROCESS COLOURS ACCORDING TO  
EUROPE SCALE**

yellow	UVGS 180/HD-P
magenta	UVGS 181/HD-P
cyan	UVGS 182/HD-P
black	UVGS 65/HD-P

**C-MIX 2000  
BASE COLOURS**

primerose	UVGS/Y30	violet	UVGS/V50
golden yellow	UVGS/Y50	blue	UVGS/B50
orange	UVGS/O50	green	UVGS/G50
scarlet	UVGS/R20	black	UVGS/N50
red	UVGS/R50	white	UVGS/W50
magenta	UVGS/M50	varnish	UVGS/E50

**SPECIAL INKS**

transparent paste	UVGS-TP
Frosted effect	UVGS 63/177

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*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. They serve to advise our business associates, but it is absolutely necessary to make your own printing tests under local conditions, with regard to the intended purpose prior to starting the job. - All former product data sheets are no longer valid. APRIL 2008 – VERSION No. 4*

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