

SERIES 580

UV-flash curing screen printing ink

Special ink system for multi-color equipment with flash curing units based on raw materials with low energy demands for complete cross-linking processes.

The created properties of this series are without problems on cardboard and different papers. Belong to this group of substrates good adhesion results are known on Tyvek and PVC-foils for indoor use.

This wide variety of printable materials and also the multifarious surface properties makes it absolutely necessary for own printing tests under local conditions with regard to the intended purpose prior to starting the production.

Due to the constant further development and optimizing of Series 580 the number of practical substrates may still increase.

Application

Operational areas are a lot of decorative applications on papers for posters and displays. Also cardboard and the more modern plastic Tyvek are printable without problems. A good cured poster is useable for dry and wet (alkaline based adhesives) applications.

The high gloss and smooth surface gives the extreme high abrasion resistance and mechanical stability of crosslinked ink.

Series 580 is a low to medium viscosity ink line for printing on high speed equipment like cylinder press or multi-color flat bed printers.

Characteristics

This UV-series is free of amines and critical physiological substances like NVP, TPGDA, TMPTA and also solvents. But: Series 580 is a high reactive UV-curable system and must be supposed with the UV-typical handling in printing process. Belong to the Material Safety Data Sheet (MSDS) additional informations are available.

The necessary photo initiators are specific developed for the low energy exposure of flash lamps, a end curing with standard UV-bulbs (mercury doted lamps) is senseful.

The very low shrinking inclination of used monomer and oligomer materials minimize the risk of overcuring so a multi-layer application is realistic under normal conditions without any problems of intercoat adhesion.

In daily practice 150-31 polyester (390 mesh) or coarser fabrics are used to get the properties like opacity, resistance and overprintability.

In all cases of UV-application, the substrate must be free of pollution's like oxidizing substances, fat, migrated additives of protection foils, lubricants of injection moulded processes and dust. Only under this conditions it's possible to get good adhesion and in correlation to this most important characteristic all other ink specifics.

Auxiliary Agents

Series 580 can be used directly from the can and combined rheologic properties for the full area print with very smooth surface and for the fine detail print with exact definition.

For special, individual modifications the printer can fall back on different auxiliary agents like UV-thinner, UV-initiator or wetting additives. For application and addition please refer to our UV-leaflet "Series 500: Auxiliary agents

for UV-curable products". If possible, addition of additives should be avoided as incorrect use, above all overdosage, may cause constant and unfavorable effects to the original product properties.

Pigments and Light Fastness

Series 580 is free of heavy metals and in the moment available in the process colors

Series 580-0950/12	Cyan
Series 580-0960/12	Yellow
Series 580-0970/39	Magenta
Series 580-0980/12	Black

Series 580-04/10	Transparent-paste
Series 580-04/15	Paste, mat

All inks of this series are non toxic and follow the europe regulation EN 71, part 3. All pigments used in Series 560 shows a light fastness of 6-8 according to wool scale (DIN 16525). If the color shades are reduced with high amounts of white or transparent systems, light fastness might be reduced.

Drying

Series 580 only polymerize to a stable and durable ink film under UV-light of suitable wave length (flash curing units, senseful in combination with high or middle pressure mercury lamps with at least 80 W/cm or 200 W/inch). Curing parameter depend on layer thickness, ink shade, substrate color and gloss, temperature. Printed directly on white or transparent materials with a 150-31 polyester fabric at room conditions an energy value of approx. 100-250 mJ/cm², measured at a range of 250-410 nm, max. 365 nm is realistic and necessary.

Stencils

As these inks are free of solvents and water, the most common emulsions and films can be used. However, because often fine fabrics are used and thin layers are required (f.e. 4-color process) high polymer emulsions or capillar films (12-15 µm) should be used.

Cleaning

Unpolymerized UV inks can be removed with all commercial solvent based cleaning agents of little polarity. UV-specific universal cleaning agents like Serie 500-URS and Serie 500-BRS are the most suitable. Removal of completely cured UV inks is time consuming and only possible using very aggressive media (decoaters).

Polluted skin must be cleaned immediately (with warm water and soap), dirty clothes must be changed.

Storage

Under normal conditions (limited change of temperature, medium temperature 20-35°C, humidity 20-70%) we guarantee a shelf life of 12 month. For metallics be valid a storage time of 6 month.

Used containers must be stored under dark conditions without any UV-light influence. It's possible that inks from production are animate and will polymerizing in the container, because the UV-crosslinking process is a chain reaction.

Packing

Series 560 are available in 5 kg polyethylene containers. Also metal cans from 25-200 kg are available.

Removed residues of ink can be supplied to the Polyolefine-recycling. Packaging containing unhardened residues of ink are subject to the special waste disposal regulations (waste disposal key 080302 for EC, (waste disposal key (Abfallschlüssel) 55903 for Germany, waste disposal key (Sonderabfall) X(1641) for Switzerland).

Precautionary measures

Read material safety data sheet prior to processing.

The material safety data sheets according to OSHA form contain indication of hazardous ingredients, TLV-level and instructions for precautions when processing, handling and storing as well as first aid. The information given in the MSDS refers to processing as described in this technical leaflet. The statements in our leaflets have been made to the best of our knowledge and are given without any obligation. 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 printing job. In case of any doubts please contact our technical advisors. The application, use and processing of the products delivered by us are beyond our control. This is subject to your responsibility and there is no liability or guarantee on our part. In case of justified complaints the manufacturer can only be made liable for the countervalue of the used ink system.

Addition of not mentioned products or competitors products are on your own risk and releases Printcolor Screen Ltd. of any later demands, especially in cases of damage and loss caused by alien products.

All former leaflets are no longer valid.

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