

Technical leaflet

2-component pad printing ink

SERIES 750

High resistant pad printing ink for technical applications on plastics, metals and glass

**High opaque, semi-glossy pad printing ink for industrial and graphic applications on different plastics, metals, glass and coated surfaces.
Based on high chemical resistant resins, this ink is for industrial in-door applications.**

Substrates

The created properties of this ink line are without problems on a wide range of rigid substrates such as rigid PVC, PET, PET-G, PET-A, PET-E and acrylics like PMMA (take care: Risk of brittleness on injection moulded materials), polycarbonate, pre-treated polyolefines (PE/PP), many lacquered and coated surfaces, also polyamide (Nylon), polyetherimide, Tyvek, CAB and papers and cardboard's. Special on polystyrene and its modifications (ABS, SAN; etc.) the use of special thinner Series 10-0330 is recommended. In addition to this plastics it's possible to print on metals, aluminum (raw, anodized, brushed) compound materials such as Alucobond, Dibond and Vekaplan AL, wood and polyacetale (POM, only in post-flaming process).

For glass and ceramic applications we recommend a backing process with 140-160°C at 20-30 min.

Cross hatch tests plus tape tests including fingernail test processed at 2-component (4:1 with hardener Series 700-HDI) were made upon 100 h rest phase under normal conditions.

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 750 the number of practical substrates may still increase.

Applications

Operational areas are the most of decorative and functional applications on rigid substrates for advertisement articles (hand out market), industrial applications like automotive industry, electronic and pharmaceutical market, packaging's, etc. The high quality raw materials used make Series 750 suitable where extremely mechanical and chemical resistance is needed. The recommended hardener systems are Series 700-HDI, mixture 4:1 for all plastics and metals and Series 700-GL, mixture rate 20:1 for all silica materials like glass, ceramics, etc.

Series 750 is based on epoxy-resins, so in case of out-door use (longer 1 to 2 years) a decreasing of gloss and color shade (yellowing) is also possible like the well known chalking effect.

Characteristics

This modern pad printing ink is suitable for open inkwell equipment and also for the conception of closed cup (pot) systems. The Series 750 is free of iron containing materials, so the printing problems, produced through magnetizing of metal plates, filling knife, metal squeegee or metal caps are eliminated. The ink line is developed to combine rheologic properties for the full area print with very smooth surface and for the fine detail print with exact definition. The offered solvents (Series 700-017, thinner; Series 700-018 and Series 10-02637, retarders; Series 700-019, accelerator) guarantee a optimized transportation of ink from plate through pad to the substrate and a fast tack-free drying on the printed material. Chemical resistances are developed in a

range of 72 to 96 hours in relation to the regional conditions (humidity, temperature, etc.). A forced curing with 140-160°C for a period of 20-30 minutes is always helpful.

Auxiliary agents

The pad printing inks Series 750 are developed for user-friendly handling. This means, that a normal reduction of viscosity with the offered thinner Series 700-017, addition amounts app. 15% by weight results a constant long-term consistency for open and closed machinery equipment's. The rotative technology requires a higher dilution with thinner; we recommend accelerator Series 700-019, addition around 20 weight-%.

The optimized mixing rate with hardeners is always 4 parts to 1part. We recommend the systems Series 700-HDI and Series 700-HDR (for backing process) for all metals and plastics and Series 700-GL for glass and ceramics. The pot life is in relation to the regional conditions always > 8 hours. The experience shows that the 2-component metallics has a restriction in pot life; it's possible that the practical rheologic properties are reduced to 4 hours.

Other additives offering useful possibilities of modification are specified in the Technical leaflet Series 700: Auxiliary agents for pad printing inks.

The addition of additives changes the actual product properties so that the spectrum of printing stock as well as the resistances may be modified, in some cases to a negative result.

Pigments and Light Fastness

Points to the future, the high opaque ink line Series 750 is heavy metal free and mono-pigmented. So in the most cases a pre-print with white to achieve the color shade is not necessary or superfluous. A useful choice of high density color shades is at the disposal of the user to cover practically the whole color chromatic spectrum:

Series 750-1005	MS-Lemon yellow
Series 750-1200	MS-Corn yellow
Series 750-2005	MS-Orange
Series 750-3005	MS-Carnation red
Series 750-4005	MS-Violet
Series 750-4505	MS-Cobalt blue
Series 750-8005	MS-Black
Series 750-9005	MS-White

In addition to these opaque base colors the customer find five transparent, high pigmented color shades for special mixtures and to increase sometimes the brilliance. In combination with metal particles results attractive effects:

Series 750-1105	MS-Transparent yellow
Series 750-3105	MS-Transparent red
Series 750-3305	MS-Transparent magenta
Series 750-5005	MS-Transparent blue
Series 750-6005	MS-Transparent green

All color shades, the opaque base colors and also the transparent basic colors are high pigmented and documents in the moment the maximal optical properties and possibilities on the market.

As standard inks we offer also the mat versions

Series 750-8005/MT Black, mat

Series 750-9005/MT White, mat

As special adjustment the user can get all base colors and individual color shades in semi-mat or mat.

The process colors for 4-color halftone prints are ready to print and follows the Europe scale:

Series 750-0950 Cyan

Series 750-0960 Yellow

Series 750-0970 Magenta

Series 750-0980 Black

and in addition the transparent bases

Series 750-04 Transparent paste

Series 750-06 Thixotropic paste

In this line we offer a concentrate-range to get higher density values under the names

Series 750-0955 Cyan, concentrated

Series 750-0965 Yellow, concentrated

Series 750-0975 Magenta, concentrated

Series 750-0985 Black, concentrated

As standard varnishes are the systems

Series 750-05 Varnish, glossy

Series 750-05-MT Varnish, mat

Series 750-07 Varnish, textured

available and this in complement with nearly all individual specialties.

As metallic effect colors we have the standard range

Series 750-100 Silver, resistant

Series 750-101 Silver, brilliant

Series 750-102 Gold, light

Series 750-103 Gold, standard

Series 750-105 Gold, ducat

Series 750-106 Copper

All inks of this series are non toxic and follow the europe regulation EN 71, part 3 (Safety of toys, migration of certain elements). All pigments used in Series 750 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

The composition of the solvents ensures both long-lasting stability of the viscosity in the ink troughs and ink containers and quick release of solvents in the dabbing process. The pad printing system Series 750 doesn't show any corona formation, ensures an unproblematic transfer as well as fast drying on the printed material. There's normally no need for any special drying aggregates. Universal thinner Series 700-017 usefully combines the above mentioned properties and mostly makes the use of special retarders unnecessary. For faster crosslinking between resins and hardener a Leister-hot air curing is helpful. The experience shows that the accelerator works also well in closed cup systems.

Printing blocks / Cliché

Pad printing ink Series 750 doesn't contain any ingredients which attack polymer clichés or cause oxidation's on steel printing blocks. Both printing equipment's are suitable, whereby a screening (positive contact screen) is special in case of polymer clichés advantageous for the production and printing process. Etching depths of app. 30µm for steel blocks and around 20µm for polymer clichés, depending on the motif are practicable and do not require any special preliminary test's.

Pads

The choice of the correct type of pad, shape and Shore-hardness depends on the printing article (form, structure, surface tension, etc.). It's independent of pad printing ink Series 750 which accepts all types of pads. The handling of pads is generally binding, i.e. delubrication of new printing pads, careful handling, no solvents, cleaning with adhesive tape, etc. Silicone-activation of old pads may be achieved with additive Series 10-03775.

Cleaning

Wet pad printing ink or not completely cured inks can be removed with all commercial solvent based cleaning agents of little polarity. Pad printing-specific universal cleaning agents like Series 700-URT and Series 700-BRT are the most suitable. Removal of completely cured pad printing ink Series 750 is time consuming and only possible using very aggressive media (decoaters). If cleaning of the pads by adhesive tape doesn't work, low aggressive cleaning agent Series 10-009 may be applied by a cotton towel.

Storage

Under normal conditions (limited change of temperature, medium temperature 20-35°C, humidity 20-70%) we guarantee a shelf life of 24 month. For metallics be valid a storage time of 12 month.

Packing

Series 750 are available in 0,5, 1 and 5 kg polyethylene containers. White is also offered in 2kg PE-containers.

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 (Abfallschlüssel) 55509 for Germany, waste disposal key (Sonderabfall) X(1640) 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 doubt please contact our technical advisors. The application, use and processing of the products delivered by us are beyond our control. This is subject to our responsibility and there is no liability or guarantee on our part.

All former leaflets are no longer valid.

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