

Series 650

1- and 2- component screen printing ink

Universal screen printing ink for plastics and metals.

Overview

A highly opaque, silky glossy screen printing ink based on extremely resistant basic raw materials for printing of various plastics, coatings, metals as well as Duroplasts. An easy to use system in the technical / industrial field for indoor as well as long term outdoor applications. The basic raw materials used to formulate 650 have specifically been chosen for high performance requirements, including UV resistance, as well as additional bonding with Printcolor hardeners to increase mechanical and chemical resistance and weather resistance. Printcolor 650 is a versatile screen ink that performs well on a variety of substrates. It is a great work-horse for trade screen printers because it has such a wide adhesion range on common plastics, and it does a great job on aluminium surfaces too. Series 650 is a very stable ink in the press that rarely gives trouble, having a good pot-life of between 6-8 hours (depending on colour and conditions).

Substrates

This series has been formulated for use on a wide range of substrates such as soft and rigid PVC, coated polyester PET-G, cellulose acetate, CAB polyolefin, coated or pre-treated polycarbonate PMMA (pre-production ink testing recommended), metals, aluminium (raw, anodized, brossed), composites (alucobond, dibond, Vekaplan VL).

Due to the wide variety of materials and their many modifications we recommend print tests under local conditions with regard to the intended application prior to production.

Applications

Plastics in the field of advertising and acquisition signage, technical applications on manufactured items such as auto fittings, watch dials, pharmaceuticals, sports bottles etc.

Characteristics

Series 650 is suitable for flatbed equipment and hand printing, as well as pad printing application. The recommended solvents (Series 600-017 thinner, 600-018 retarder) guarantee optimal use in recommended printing conditions. Chemical resistance (curing) is realised approximately 72 hours after printing depending on regional conditions (humidity, temperature etc.). Hardener bonding can in some rare cases cause embrittlement of the ink layer and could thus result in reduced adhesion properties. Further production/manufacturing processing with high mechanical or chemical stress should not be undertaken within 72 hours of printing.

Additives

The 650 Series was developed for user friendly handling. This means a normal reduction of viscosity with the recommended thinner (Series 600-017 added at approximately 15% by weight) results in a constant long-term consistency for hand print and automated screen printing equipment. Cylinder presses may require a higher dilution with thinner and post drying equipment.

Series 650 can be used as a single component ink on many substrates, or mixed with 10% and up to 20% with hardener to increase the adhesion range, chemical, abrasion and weather resistances. Series HDa and HDi are both suitable hardeners.

Ink pot life is approximately > 8 hours depending on local environmental conditions. Experience shows that 2- component metallics may have a reduced pot life of < 4 hours depending on local conditions (special formulations are available for metallics where longer pot life is necessary).

Other auxiliary agents compatible with Series 650 are describe in the Technical Data Sheet 'Series 600; Auxiliary Agents' including special thinner and retarder, hardener, adhesion promoter for PP, wetting agents, antistatic and anti-stringing agents.

Pigments

With the future tightening of environmental and health standards in mind, Series 650 is heavy metal free and mono-pigmented. This also means that in many cases pre-printing with white to achieve the desired colour shade is mostly not always necessary. A wide range of high-density (opaque) colour shades are available to cover practically the full colour chromatic spectrum;

Series 650-1000	MS - light yellow
Series 650-1200	MS - dark yellow

Series 650-2000	MS - orange
Series 650-3000	MS - red
Series 650-7000	MS - red/brown
Series 650-8000	MS - black
Series 650-9000	MS - white

In addition to these opaque shades there are also 8 highly pigmented transparent shades included in the PMS mixing system, and can be used for attractive results mixed with metallic shades:

Series 650-1100	MS - medium yellow
Series 650-3100	MS - transparent red
Series 650-3200	MS - transparent dark red
Series 650-3300	MS - magenta
Series 650-4000	MS - violet
Series 650-5000	MS - blue
Series 650-6000	MS - green
Series 650-0900	MS - Ultramarine (NB: not light-fast)

All colour shades, including the opaque base colours and the transparent basic colours are highly pigmented and are currently the most opaque inks on the market. We also offer a special extra-high density;

Series 650-33	MS-High Density Black, Opaque
Series 650-00	MS-High Density White, Opaque

The process colours for 4-colour halftone prints are ready to print and follow the European scale;

Series 650-0950	MS-Cyan
Series 650-0960	MS-Yellow
Series 650-0970	MS-Magenta
Series 650-0980	MS-Black

For transparent bases and varnishes, we offer the following;

Series 650-04	Transparent Paste
Series 650-06	Thixotropic Past
Series 650-05	Varnish, Glossy
Series 650-07	Binder

A range of standard metallic colours are also available;

Series 650-100	Silver
Series 650-101	Silver, Brilliant
Series 650-102	Gold, Light
Series 650-103	Gold, Standard

All Series 650 inks are non toxic and follow the European Regulation EN71, Part 3 (Safety of toys, migration of certain elements). With the exception of MS0900 Ultramarine and the fluorescent inks (Series 660-40 to 660-49) all pigments used in Series 660 show a light fastness of 6-8 according to the wool scale (DIN 16525). If the colour shades are reduced with high amounts of white or transparent systems, light fastness may be reduced.

Drying

The composition of the solvents ensures both the long-lasting stability of viscosity in the screen and quick release of solvents in the application process. Jet/air drying , optional oven drying.

Screen/Cliche

Most common emulsions and films can be used for stencil making, preliminary tests are necessary if using indirect stencil materials. Recommended mesh 77-55 Y PW PET 1000 up to 120-34 Y PW PET 1000

Cleaning

Wet screen printing ink, or not completely cured inks, can be removed with all commercial solvent based

cleaning agents of little polarity. Screen printing specific universal cleaning agents including Solva-Wash 700-URT are the most suitable. Removal of completely cured 2-component screen printing ink is time consuming and only possible by using very aggressive media (decoaters).

Storage

Under normal conditions (limited change of temperature, medium temperature 20-35°C, humidity 20-70%) we guarantee a shelf life of 24 months from manufacture date and 12 months for metallics. Metallic colours are mixed to order to ensure you get the maximum shelf life from your inks.

Packaging

Series 650 is available in 1kg polyethylene containers and 5kg metal cans.

Precautionary Measures

Read the Material Safety Data Sheet (MSDS) prior to processing. The MSDS contain indications 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 these leaflets have been made to the best of our knowledge and are given without any obligation. These Technical Sheets serve to advise, but it is absolutely

necessary to undertake your own printing tests under local conditions with regard to intended purpose prior to starting the printing job. The application, use and processing of the products delivered by Colour Components are beyond our control and imply no liability or guarantee on our part. Issue 1; 04/06

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Printcolor screen printing ink lines Series 650

fulfils following regulation (1) / is free of - apart from ubiquitous traces (2) / see also MSDS

- (2) Heavy metals according to DIN EN 71, part 3 (excl. Ba as Bariumsulfat)
- (2) Heavy metals according to ASTM Standard F 963-03 (excl. Ba as Bariumsulfat)
- (2) Chlorinated organic compounds (f.e. PCB, PCN, Short Chain Chlor. Paraffins; blue and green contain phthalocyanine pigments)
- (2) Listed Azo compounds
- (2) Cadmium (Cd) but also Tin (Sn) and silver (Ag) and such alloy's
- (2) Formaldehyd (exception: fluorescent colors)
- (2) Monomeric Vinyl chlorid
- (2) Toluene
- (1) EU-Richtlinie 2011/65/EU (Restriction of Hazardous Substances / RoHS)
- (1) EU-Richtlinie 2002/96/EG (Waste Electrical and Electronic Equipment amending / WEEE)
- (1) EU-Richtlinie 2005/84/EG (Phthalates in toys and baby articles)
- (1) EU-Richtlinie 2003/11/EG (Brominated organic compounds, f. e. PBB, TBBP-A-bis, Pbdiphenylethers)
- (1) Verordnung (EG) Nr.1907/2006 (Reach - including Substances of Very High Concern (SVHC: CMR, PBT, vPvB – August 2011))
- (1) DIN 53160 (Saliva and sweat resistance test of coloured toys)
- (1) 5th Alteration of "Bedarfsgegenständeverordnung" (engl. Consumer goods regulation)
- (1) EU-Richtlinie 2000/53/EG („Altfahrzeuggesetz“)
- (1) SS-002259 (free of listed materials)

Member of IMDS / IMDS-ID 9448512

SONY Green Partner since 2003

December 14, 2011
Printcolor Screen Ltd.

CERTIFICATE



Richard Gähwiler
HSE Manager



Dieter Hermann
CEO

CH-8965 Berikon, 14th February 2012

REACH - SVHC

We herewith confirm that all raw materials used by Printcolor Screen Ltd. for production are

- pre-registered with respect to REACH-conformity
- not chemically modified during the manufacturing process
- conform to the threshold values of the ECHA SVHC Candidate List (December 2011) – excluding the waterbased Series 420 – they still contain small amounts (<3%) of 1-Methyl-2-pyrrolidone, CAS-No. 872-50-4.

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