

Series 533

UV printing ink for product packaging

Low migration ink compliant with Nestlé Guidance Standard and Swiss Ordinance on Materials and Articles Legislation SR 817.023.21

Background Ink formulation has come a long way since the 2005 Europe-wide product recall of Nestlé and Milupa baby milk formula, when it was discovered to be contaminated with photoinitiator chemicals originating from the ink used to decorate the product packaging. The incident led Nestlé to impose a blanket ban on UV ink and varnishes for labelling and packaging of their products, and triggered a movement away from UV inks across the food packaging industry.

Chemical Migration Guidelines

As there was no legislation or standards governing migration of elements from ink layers through product packaging, brand owners began to develop their own chemical migration guidelines to ensure the safety of their packaged foods. Nestlé went so far as to publish toxicological reports and the Nestlé Guidance Note for its packaging suppliers became the food industry benchmark for ink migration limits and requirements. In 2011 Switzerland passed into law the Ordinance on Materials and Articles in contact with food (SR817.023.21). It's the first comprehensive law associated with UV packaging ink migration limits, including a toxicological list of safe chemicals and ink substances that can be used for food packaging. While the legislation legally only covers food manufactured in Switzerland, it's set to become the default world standard.

Printcolor UV Ink Compliance

As the leading Swiss manufacture of printing ink, Printcolor has developed Series 533 UV screen printing ink to be compliant with both the Nestlé company Guidance Note, as well as the more stringent Swiss Ordinance Legislation for chemical migration standards.

Ink Overview Manufacturers printing packaging, bottles, cans, tubes and closures made of polyolefin materials can be confident that Series 533 is fully compliant with the Nestlé Low Migration Guidelines as well as the Swiss Ordinance Legislation (food packaging). In addition, Series 533 UV does not contain volatile solvents or toxic heavy metals according to the EN71/3 Standards (toys).



Series 533 UV screen printing inks are formulated for printing packaging plastics such as HD-PE and PP on fast running screen printing equipment. The ink resins and materials are carefully selected for ultra-fast curing, allowing for immediate further processing on your the production line. The 533 Series is comprised of quick curing, bright colours for PMS matching and process colour printing as well as metallics and finishing varnishes. The cured ink layer has a high gloss finish with excellent mechanical and chemical resistant on pretreated polyolefin materials.

The technical and toxicological advantages of Series 533 UV can give you the competitive edge in the market as the packaging industry moves back to the bright colours and quick curing convenience of UV printing inks.

Series 533 UV

Low migration UV curing screen printing ink for pretreated HD-PE and PP plastics.

- Overview** Developed for printing product packaging and labelling on high speed screen printing equipment. Formulated to meet chemical low migration regulations for food and cosmetic packaging, toy and pharmaceutical manufacturing while retaining the high gloss and bright colours associated with UV ink systems.
- Substrates** Pretreated Polyolefin plastics, other substrates subject to adhesion testing.
- Applications** Decorative and functional applications, on directly printed packaging materials; cosmetic containers, food/beverage bottles and closures, cans, bins, cartridges etc.
- Use** Mesh: 150-31 Y PW PET 1000
Drying/Curing: 150 - 250 mJ/cm² (Technigraf Integrator), 250-410 nm.
- Additives** Thinner: press-ready
Retarder: press-ready
Hardener: 500-GL (increased durability on hard to print substrates); 5% by weight
Thixotropic paste: 500-039; maximum of 15% by weight
- Storage** Keep away from direct sunlight.
Shelf life is 12 months.
- Pigments** Available in basic mixing colours (equivalent shades to RUCO 985 UV) for PMS mixing and process colour printing. Colour matched pre-mixed ink and metallic colours are also available.



Precautionary Measures

Read 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 ink products and chemical delivered by Colour Components are beyond our control and imply no liability or guarantee on our part. Issue 1; 04/12 © Colour Components 2012.

Declaration of Conformity for Screen Printing Inks, low migration Series 533

Detailed specifications for processing and application of Series 533 can be found in the Technical Data Sheet. Screen printing inks of Series 533 are primarily intended for printing of "printing treated" PE- and PP materials (i.e. corona treatment, flaming, lacquering), namely on the side which does not have a direct food contact.

Based on the available analytical data, the inks of Series 533 can be used for printing of packagings for milk and milk products (i.e. cream, sour cream, soft- and cottage cheese), alcoholic beverages as well as for printing of PE-tubes for cosmetic products (toothpaste, creams); industry-standard storage at temperatures of 5-25°C.

- manufacturing of the printing inks is made in the manufacturing process and quality management of "good manufacturing practice" of the EU GMP-Regulation 2023/2006,
- Substances which are listed in the EuPIA exclusion list (edition of October 6, 2009), respectively I the REACH-ECHA Candidate list (August 2011), are not used as a formulation component
- traceability of each approach and batches is guaranteed by our quality assurance provisions (EN-ISO 9001:2008)
- these inks meet at proper processing and properly applied, the EC-Regulation No. 1935/2004
- the determined overall migration values as well as the specific migration limits for acrylates and photo initiators are below the limit of the Swiss Commodities Ordinance SR 817.023.21 and the Regulation (EU) No. 10/2011 (replaces regulation 2002/72/EG)

Analysis results are shown in the "supporting documents". Those will be handed out upon request. We would like to point out, that our formulations are subject to secrecy. Disclosure to third parties (i.e. for simplification of analysis with other specific simulants in testing laboratories) of the recipes can however be made upon request

Berikon, 22. Dezember 2011



Dieter Hermann
CEO

Richard Gähwiler
HSE

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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