SCREEN

CREATING A FUTURE IN PRINT

Truepress *ink* for L350UV Series

UV Curing Inks for POD Label Systems

SCREEN Graphic Solutions Co., Ltd.

HEAD OFFICE
• Tenjinkita-machi 1-1, Teranouchi-agaru 4-chome, Horikawa-dori, Kamigyo-ku, Kyoto 602-8585, Japan / Tel: +81-75-414-7610

SCREEN GP Americas, LLC
• 150 Innovation Drive - Ste A, Elk Grove Village, IL 60007, U.S.A. / Tel: +1-847-870-7400 / Fax: +1-847-870-0149 www.screenamericas.com

SCREEN GP Europe B.V.
• Thailandlaan 9, 1432DJ Aalsmeer, The Netherlands / Tel: +31-20-456-78-00 www.screeneurope.com
U.K. office / Tel: +44-1582-72-5400

SCREEN GA Shanghai Co., Ltd.
• Room A06, 1/F, Building No.1, No.40 Wen Shui Road, Shanghai, China, 200072 / Tel: +86-21-3126-5122 www.screenchina.com
Beijing office / Tel: +86-10-6708-9271
Guangzhou office / Tel: +86-20-8928-9363
Hongkong office / Tel: +852-2953-0038

SCREEN HD Korea Co., Ltd.
• K-TOWER 11F, 88, Iljik-ro, Manan-gu, Anyang-si, Gyeonggi-do, 13901, Korea / Tel: +82-2-727-0800 / Fax: +82-2-727-0876 www.screen-korea.com

SCREEN GP Australia PTY., Ltd.
• Suite 16A, 2 Eden Park Drive, Macquarie Park, NSW 2113, Australia / Tel: +61-2-9016-3400 / Fax: +61-2-9016-3425 www.screenaust.com.au

SCREEN GP Taiwan Co., Ltd.
• 4th Floor, No. 126-1, Min-tsu West Road, Taipei, Taiwan R.O.C. / Tel: +886-2-2586-2711 / Fax: +886-2-2591-4367 www.screen-gptw.com.tw

Internet web site : www.screen.co.jp/ga/en
www.screenamericas.com
www.screeneurope.com

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Printed by the Truepress JET 520HD+ / Truepress ink SC

Truepress *ink* **for L350UV Series**

Highly versatile, low migration Truepress inks. Two types create major new value for the label industry.

These innovative inks are specially designed
for the Truepress Jet L350UV series of UV inkjet label systems.
They maximize the series' already outstanding quality,
stability and compatibility with a wide range of substrates.

LV standard inks
All purpose inks with a wider color gamut and outstanding media compatibility expand business opportunities
Truepress Jet L350UV SAI S

LS standard inks
All purpose inks upgraded to deliver superior cost performance with the same leading quality
Truepress Jet L350UV SAI E

Low migration inks
Low migration inks that meet all criteria for use with food packages
Truepress Jet L350UV SAI LM

Truepress inks eliminate the inherent issues of UV inks and provide a wider color gamut

Low odor
UV inks have a characteristic odor due to their raw materials. Truepress inks use specially selected materials that effectively reduce this odor.

Wider color gamut
Truepress inks are produced with a proprietary formula, enabling a wider CMYK color gamut than with ordinary inks. Combining them with orange and blue inks (options) can further widen the color gamut.

Minimal buildup
With their combination of small droplet heads and Truepress inks with reduced thickness, Truepress Jet L350UV systems deliver a more natural appearance with less unevenness of the cured ink surface. They also achieve a smoother finish with decreased ink buildup, an issue with conventional UV inkjet systems.

Comparison of ink thickness (image)

1 Sharp and reliable printing of even fine characters

A combination of independently developed RIP and inkjet printhead technologies enable ultra-precise printing. The choke function also prevents ink bleeding of outline text, providing excellent legibility even for the large amounts of information usually found on pharmaceutical and supplement labels.

These features enable one pass processing of individual lot numbers and other variable printing jobs as well.

Variable printing of serial numbers

2 High-definition, high-impact printing boosts product appeal

A combination of proprietary UV curing inks and high-resolution screening technologies enable superb graphic expression with smooth gradations and a wide color gamut. Beautiful, natural quality is possible in any range from solid color to photographic printing.

SCREEN's unique technologies for the Truepress Jet L350UV series also allow droplet size to be controlled in four steps, supporting the creation of extremely natural-looking gradations.

3 Orange/blue ink enables richer reproduction of colors

Orange and blue inks are now supported as options, along with standard C, M, Y, K and white inks. Corporate colors that usually require spot colors can be reproduced with complete accuracy. The visual appeal of fruits and other foods can also be captured more vividly.

Only the Truepress Jet L350UV SAI S supports blue ink.

CMYK sample

CMYK + orange sample

CMYK sample

CMYK + blue sample

4 High productivity and high white opacity in one-pass printing

Truepress white ink contains the maximum possible ratio of pigment, providing high opacity and throughput of max 50 meters per minute. It demonstrates ideal characteristics for film printing applications. And High opacity white option improves the opacity to get a better quality in case the label attached on colored object like a replacement for silk-screen printing. The opacity is improved to 76% and make it higher quality on clear film label.

Measurement of opacity ratio

- Transparent film and white ink samples were layered on opacity test charts in accordance with ISO standards.
- Spectrodensitometers equipped with an opacity function were used to measure black and white areas to calculate opacity ratios.

Spectrodensitometer	X-Rite eXact Advance
Opacity ratio (Clear PP film) : Normal white	70.2 %
Opacity ratio (Clear PP film) : High opacity white	76.6 %

*Opacity depends on substrates.

LV standard inks

Name
Truepress ink for L350UV LV

Colors
Cyan, magenta, yellow, black, white, orange, blue

Systems
Truepress Jet L350UV SAI S
Truepress Jet L350UV+
Truepress Jet L350UV

LV standard inks provide unmatched functionality in every field, helping the applicable systems to deliver better throughput, media handling and color gamuts.

These inks enhance performance by providing vibrant expressive capabilities and improved productivity. Their advantages open up a wealth of new business areas.

1 Compliance with main ink regulations

These inks comply with the following regulations related to food packaging.
- EuPIA Exclusion Policy for Printing Inks and Related Products (March 2021)
- EuPIA Good Manufacturing Practice (GMP) Printing Inks for Food Contact Materials (March 2016)
- Positive list of Swiss Ordinance (SR 817.023.021 Annex 10)

VOC
We hereby certify that these inks are compliant with Directive 1999/13/EC.

GMP
We hereby certify that the manufacturing processes and materials meet the requirements of EuPIA Good Manufacturing Practice (GMP) Printing Inks for Food Contact Materials (March 2016).
Please refer to the "Selection scheme for packaging ink raw materials" defined by EuPIA as a guideline for food packaging materials.

EuPIA Guideline
The information given above is based on and represents our current compositional knowledge (based on our knowledge of the production process, supplier information for raw materials and analytical data where applicable).

REACH (SVHC)
We hereby certify that the 219 Substances of Very High Concern (SVHC) listed under REACH, including the 25th batch of substances, are not present in amounts of 0.1% or more.

RoHS
We hereby certify that these inks are compliant with Commission delegated Directive (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2001/65/EU of the European Parliament and of the Council as regards the list of restricted substances.

Mineral Oils and Allergens
We hereby certify that we do include the above materials in these inks.

Latex*
We hereby certify that we do not intentionally introduce natural latex during the manufacturing of these inks.

BPA and benzophenone*
We hereby certify that we do not intentionally introduce BPA and benzophenone during the manufacturing of these inks.

** The information given above is based on and represents our current compositional knowledge (based on our knowledge of the production process, supplier information for raw materials and analytical data where applicable). Please note that SCREEN does not analyse whether the mentioned substances are contained, because the content of such substances is not part of our product specification or formulation.*

(Please contact one of our sales representatives regarding compliance with the latest ink regulations)

2 Light-fastness

Standard inks display the following minimum light-fastness levels. (Measured using a Blue Wool light exposure test.)

C	BWS	8
M	BWS	8
Y	BWS	8 NEW
Bk	BWS	8
Or	BWS	8
Bl	BWS	8

LS standard inks

Name
Truepress ink for L350UV LS

Colors
Cyan, Magenta, Yellow, Black, White, Orange

Systems
Truepress Jet L350UV SAI E

LS standard inks have been specially reformulated to deliver even greater cost performance while maintaining their original unmatched functionality and color gamut.

These inks enable an entry level digital press like the Truepress Jet L350UV to open up a wealth of new business opportunities.

1 Compliance with main ink regulations

These inks comply with the following regulations related to food packaging.
- Positive list of Swiss Ordinance (SR 817.023.021 Annex 10)

VOC
We hereby certify that these inks are compliant with Directive 1999/13/EC.

REACH (SVHC)
We hereby certify that the 219 Substances of Very High Concern (SVHC) listed under REACH, including the 25th batch of substances, are not present in amounts of 0.1% or more.

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Mineral Oils and Allergens
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We hereby certify that we do not intentionally introduce natural latex during the manufacturing of these inks.

BPA and benzophenone*
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(Please contact one of our sales representatives regarding compliance with the latest ink regulations)

2 Light-fastness

Standard inks display the following minimum light-fastness levels. (Measured using a Blue Wool light exposure test.)

C	BWS	8
M	BWS	8
Y	BWS	8
Bk	BWS	8
Or	BWS	8

Blue Wool Scale (BWS)

The Blue Wool Scale measures the permanence of coloring dyes. The test was originally developed for textile manufacturing but is now commonly used by the printing industry as a measure of the light-fastness of ink colorants in response to ultraviolet radiation.

Light-fastness differs from durability, which refers to the stability of a pigment in relation to chemical or environmental factors. A Blue Wool rating of zero represents extremely poor light-fastness while eight indicates a color is completely stable during testing.

Low migration inks

Ultra-low odor and migration inks that conform to the guidelines for food packaging labels

Name
Truepress ink for L350UV+LM

Colors
Cyan, magenta, yellow, black, white, orange

Systems
Truepress Jet L350UV SAI LM
Truepress Jet L350UV+LM

Low migration inks are specially developed for food packaging applications. These inks lower the migration of their components compared to standard inks.

The nitrogen purge mechanism installed in the above systems' UV lamp section lowers oxygen concentrations that can inhibit UV ink curing. This accelerates curing and dramatically reduces odor compared to conventional UV inks.

Low migration (LM) inks are fully compliant with the EuPIA Exclusion Policy for Printing Inks and Related Products, the positive list of the Swiss Ordinance and Nestle Guidance for packaging inks.

Labels for food packaging must satisfy strict external public safety standards. The Truepress Jet L350UV+LM features newly developed low migration inks* and a nitrogen purge mechanism that dramatically reduces extractable ink components after printing.

As well as decreasing migration risks, these innovations significantly lower typical UV ink odors. Together they help to extend the considerable merits offered by digital technologies for variable and short-run printing to food packaging applications.

* Low migration inks cannot be used with, or substituted for, standard inks. Migration levels are subject to individual migration tests. They may vary depending on the conditions of usage.

1 Usage of low migration inks for food packaging

We have conducted an evaluation of migration amounts with Truepress Jet L350UV SAI LM printed samples at a third-party testing laboratory. The test was implemented based on the regulations below.

- Regulations (EU) No 10/2011 on plastic materials and articles intended to come into contact with food
- Regulations 1935/2004 and the Dutch Commodities Act Regulation, chapter XI
- CEN method EN 1186-1:2002 (17 April 2002) and CEN method EN 13130-1:2004 (26 May 2004)

Contents: All Food

Printed substrates (Label substrates): Semi-gloss paper
Contacted materials: PET 25 µm

The migration level in the test above was under the limits that are regulated by the regulations above. However, migration levels differ in relation to printing conditions like substrate types and thicknesses, usage conditions and also food contents. We, therefore, recommend that printers consult with their clients and conduct migration tests at third-party testing laboratories.

Usage for food packaging

Food packaging application safety is determined by not only inks but also printing conditions such as substrate types and thicknesses, usage conditions and also food contents. The responsibility for ensuring the safety and food sensory integrity of the printed package lies with the printer and the printer's clients. SCREEN will assist customers with development of safe food package printing production.

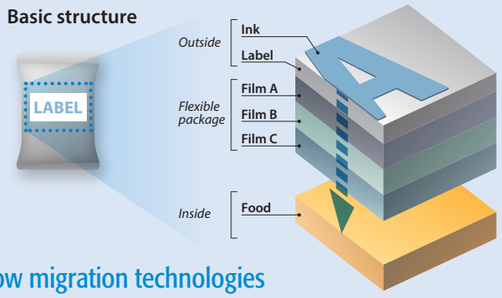
These inks have been specifically developed for secondary packaging.

2 Ink migration

UV ink migration

Migration occurs when residual photoinitiators and monomers in UV inks pass through packaging and enter the product inside.

Basic structure



Low migration technologies

The initiators and monomers included in UV inks are extremely small on a molecular level and have the possibility of penetrating general food packaging and entering the food inside. Our proprietary low migration inks are specially developed to work with a nitrogen purge mechanism that accelerates UV curing. Together, they are highly successful in reducing the migration of ink components.

The odors inherited in UV inks also reduce with maximizing the ink curing ratio. This ensures the printing process has no impact on the flavor of packaged foods.

3 Compliance with main ink regulations

These inks comply with the following regulations related to food packaging.
- EuPIA Exclusion Policy for Printing Inks and Related Products (March 2021)
- EuPIA Suitability List of Photoinitiators and Photosynergists for Food Contact Materials (October 2020)
  EuPIA Guideline on Printing Inks applied to Food Contact materials (April 2020)
- EuPIA Good Manufacturing Practice(GMP) Printing Inks for Food Contact Materials (March 2016)
- Positive list of Swiss Ordinance (SR 817.023.021 Annex 10)
- Nestle Guidance (October 2018)

VOC
We hereby certify that these inks are compliant with Directive 1999/13/EC.

GMP
We hereby certify that the manufacturing processes and materials meet the requirements of EuPIA Good Manufacturing Practice (GMP) Printing Inks for Food Contact Materials (March 2016).
Please refer to the "Selection scheme for packaging ink raw materials" defined by EuPIA as a guideline for food packaging materials.

EuPIA Guideline
The information given above is based on and represents our current compositional knowledge (based on our knowledge of the production process, supplier information for raw materials and analytical data where applicable).

REACH (SVHC)
We hereby certify that the 219 Substances of Very High Concern (SVHC) listed under REACH, including the 25th batch of substances, are not present in amounts of 0.1% or more. (Last update 27/06/2018)

RoHS
We hereby certify that these inks are compliant with Commission delegated Directive (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2001/65/EU of the European Parliament.

Mineral Oils and Allergens
We hereby certify that we do not include the above materials in these inks.

Latex*
We hereby certify that we do not intentionally introduce natural latex during the manufacturing of these inks.

BPA and benzophenone*
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(Please contact one of our sales representatives regarding compliance with the latest ink regulations)

4 Light-fastness

Low migration inks display the following minimum light-fastness levels. (Measured using a Blue Wool light exposure test.)

C	BWS	8
M	BWS	8
Y	BWS	8
Bk	BWS	8
Or	BWS	7