

Truepress*ink* for L350UV Series

UV Curing Inks for POD Label Systems

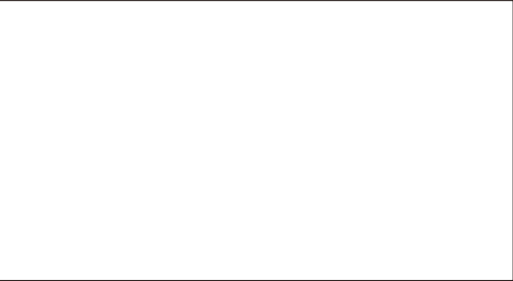


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Truepress^{ink} for L350UV Series

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

Truepress ink for L350UV series are specially designed for the Truepress Jet L350 series of UV inkjet label systems.

These innovative inks maximize the series' already outstanding quality, stability and compatibility with a wide range of substrates.

Standard ink

All purpose inks with a wider color gamut and outstanding media compatibility expand business opportunities

Low migration ink

Low migration inks that meet all criteria for use with food packages



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

Low odor

UV curing has a characteristic odor due to the 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 ink (option) can further widen the color gamut.

Minimal buildup

With their combination of small droplet heads and Truepress inks with reduced thickness, Truepress Jet L350UV+ models 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

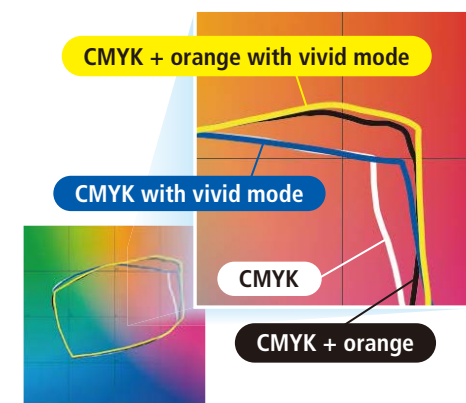
A combination of proprietary UV curing inks and high-resolution screening technologies enable superb graphic expression with smooth gradations and a wide color gamut. Beautiful, natural quality is possible in any range from solid color to photographic printing.

SCREEN unique technologies for TruepressJet L350 series also allow droplet size to be controlled in four steps, supporting the creation of extremely natural-looking gradations.



3 Orange ink enables richer reproduction of colors

Orange ink is now supported as an option, 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.



Comparison of color gamut in orange area

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

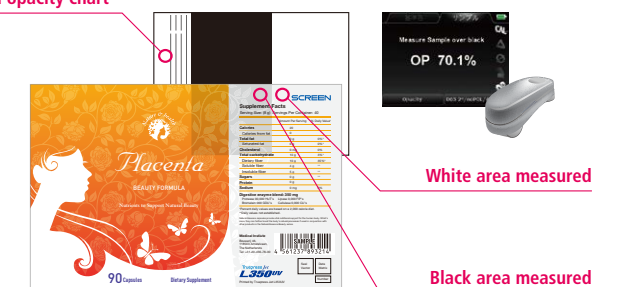
Truepress white ink contains the maximum possible ratio of pigment, providing high opacity and throughput of 30 meters per minute. It demonstrates ideal characteristics for film printing applications.

Measurement of opacity ratio

- Transparent film and white ink samples were layered on opacity test charts produced by Leneta.
- Spectrodensitometers equipped with an opacity function were used to measure black and white areas to calculate opacity ratios.

Spectrodensitometer	X-Rite eXact Advance	Techkon SpectroDens Premium
Opacity ratio	73.2 %	71.7 %

Leneta opacity chart



Standard ink

Superior stability and expressive capabilities support the outstanding media compatibility of the Truepress Jet L350 series

Name:
Truepress ink for L350UV

Colors:
cyan, magenta, yellow, black, white, orange

Systems:
Truepress Jet L350UV, Truepress Jet L350UV+



Standard inks provide unmatched functionality in every field, helping the Truepress Jet L350 series 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 Pantone coverage

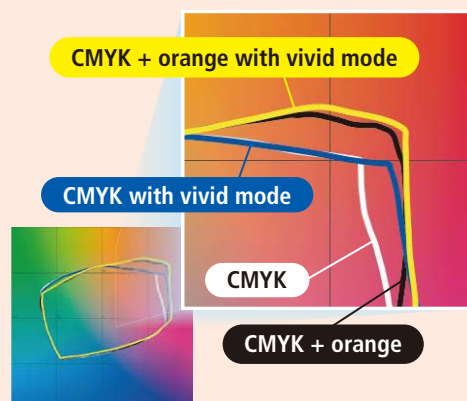
Tests were conducted based on the following conditions.

- Substrate: semigloss paper
- Print speed: 50 mpm

Pantone Coverage rate with CMYK + Orange = 84.7%*

Pantone coverage and color reproduction is affected by the substrate and accuracy of the ICC profile.

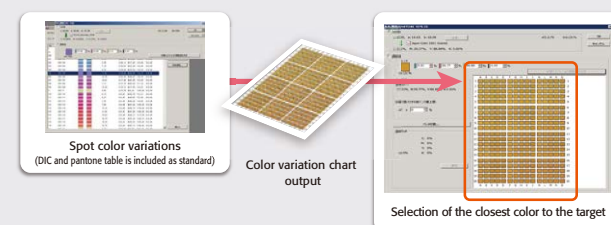
* When used together in vivid mode



Comparison of color gamut in orange area

Spot Color Editor

ICC profiles enable automatic spot color printing as well as color matching to meet client requirements. Pantone's color library is available as a standard feature, allowing smooth handling even if data includes a large number of spot color specifications.



This function allows spot colors to be selected from a list and automatically generates a color variation chart of the selected color. After checking the chart, you can select the color closest to the target and reflect it in the data. This enables simplified matching of spot colors.

2 Light-fastness

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

C	BWS	7
M	BWS	7
Y	BWS	6
Bk	BWS	7
Or	BWS	7
White		7

Blue Wool Scale

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.

3 Compliance with main ink regulations

Standard inks

- European Printing Ink Association (EuPIA) Guidelines
- EuPIA Exclusion List for Printing Inks and Related Products

VOC

We hereby certify that the products above are compliant with Directive 1999/13/EC.

Latex

We hereby certify that we do not introduce intentionally during the manufacturing of the ink above natural latex.

* The information given above is based on and represents our current compositional knowledge (based on the 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.

GMP

We hereby certify that the manufacturing processes and materials meet the requirements of the EuPIA Good Manufacturing Practice (GMP) Printing Inks for Food Contact Materials, March 2016. Food packaging materials shall follow Selection Scheme for packaging ink raw materials in 2011

* EUPIA Guideline

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

REACH(SVHC)

We hereby certify the 191 substances which had been listed in the SVHC candidate lists up to REACH 19th are not present in amounts of 0.1% or more. (Last update 27/06/2018).

RoHS

We, hereby, certify that the inks above 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.

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

Low migration ink

Name:
Truepress ink for L350UV+LM

Colors:
cyan, magenta, yellow, black, white, orange

Systems:
Truepress Jet L350UV+LM



Truepress ink for L350UV+LM 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 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 inks are fully compliant with the EuPIA Exclusion Policy for Printing Inks and Related Products, Swiss ordinances and Nestle Guidance for packaging inks.



Labels for food packaging must satisfy Outside strict safety standards. The Truepress Jet L350UV+LM features newly developed low migration (LM) 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 LM inks for food packaging

SCREEN GA has conducted the evaluation of migration amount with TruepressJetL350UV+LM printed samples at the 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 legislations 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 : PET25µm

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

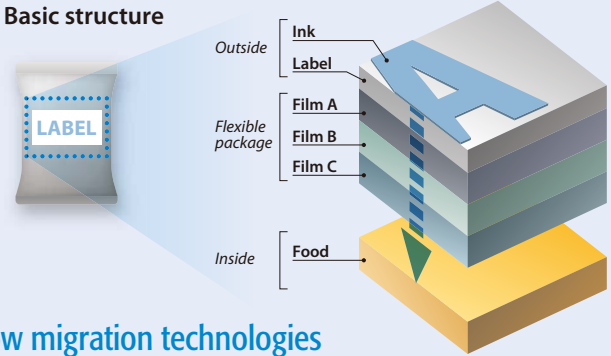
Usage for food packaging

Food packaging application safety is determined by not only ink but also printing conditions such as substrate types and thickness, 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.

2 Ink migration

UV ink migration

Migration occurs when residual photo initiator and monomer in UV inks pass through packaging and enter the product inside.



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 enter 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 Pantone coverage

Tests were conducted based on the following conditions.

- Substrate: semigloss paper
- Print speed: 50 mpm

Pantone Coverage rate with CMYK + Orange = 84.7%*

Pantone coverage and color reproduction is affected by the substrate and accuracy of the ICC profile.

* When used together in vivid mode

4 Light-fastness

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

C	BWS	7
M	BWS	7
Y	BWS	7
Bk	BWS	7
Or	BWS	7
White		7

5 Compliance with main ink regulations

Low migration inks

Low migration inks for Truepress Jet L350UV+LM systems comply with the following regulations related to food packaging.

- EuPIA Exclusion Policy for Printing Inks & Related Products (Nov. 2016)
- EuPIA Suitability List of Photo-Initiators for Low Migration UV Printing Inks and Varnishes, February 2013
- EuPIA Good Manufacturing Practice (GMP) Printing Inks for Food Contact Materials, March 2016
- Positive list on Swiss Ordinance (SR 817.023.021 Annex 6, 10)
- Nestle Guidance (August 2016).

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