

Product: SUPACURE LED Varnish

Category: Inks & Varnishes

Technical Information

Description	LED Series offers several significant advantages, most specific one of those advantages is better printability as well as the ink curing performance by power saving UV lamp.
Storage & Handling	Do not mix with other types of ink. Recommended to use LED reducer for adjusting ink body. Be sure to conduct pre-test for adhesion to substrate. LED Process Color and Spot Colors ; 6 months after the date manufactured under 25°C in a dark room. . LED Metallics; 3 months after the date manufactured under 10°C.
Precautions	<ul style="list-style-type: none">• Please make sure to conduct test to check the adhesion and the scratch off before printing operation, especially on the substrates of cardboards. Postpress like lamination requires special attention to these properties in advance.• Since UV SUPACURE LED series has been formulated with proprietary photo initiator which is more reactive than of conventional UV inks, there is a possibility that inks on ink ducts cure under fluorescent light. We recommend to take necessary measures to avoid light exposure.• As LED UV inks are highly curable to the wavelength emitted by LED-UV irradiation device, inks on the ink-fountain, when left unattended for a long time, may cure by reacting to the ultraviolet rays of fluorescent lamps. In case skinning on the ink-fountain is detected, take necessary deterrent measures by changing fluorescent lamps to the ones which cut ultraviolet rays, and/or putting a shade on the ink-fountain.• Ink adhesion to substrates varies depending on the type of substrates applied and the surface treatment. Conduct pre-testing to check the adhesion to substrates.• Note that excessive application of inks will cause defects in curing and adhesion.• Refer to Material Safety Data Sheets for details for protecting your body in handling procedures.

Properties

- Recommended plates: photo polymer PS plate or negative PS plate (burning treatment is required for positive PS plate).
- Blanket, roller: UV blanket and UV roller (urethane rubber is recommended).
Cleaner: UV ink cleaner for washing roller and machine, but not for plates. Use UV plate cleaning solution exclusively for plate cleaning.
- Additives, cleaning agents, and plates which are originally designed for LED-UV printing application should only be used.

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Resistance Properties

Product Name	Light Fastness		Acid	Alkali	Soap	Solvent	Heat
	Full*	Tint					
UV SUPACURE LED Process Yellow	4	3	4	4	5	4	4
UV SUPACURE LED Process Magenta #	4	3	2	2	1	4	4
UV SUPACURE LED Process Cyan Blue	8	7	5	5	5	5	5
UV SUPACURE LED Process Black	7	4	4	3	2	2	5
UV SUPACURE LED Yellow	4	3	2	3	4	4	5
UV SUPACURE LED Rubine #	3	2	4	3	1	3	3
UV SUPACURE LED Warm Red	4	3	2	3	2	4	5
UV SUPACURE LED Rhodamine #	3	2	4	3	1	3	3
UV SUPACURE LED Reflex Blue	7	6	5	5	5	5	5
UV SUPACURE LED Violet	7	6	5	5	5	5	5
UV SUPACURE LED Green	8	7	5	5	5	5	5
UV SUPACURE LED Medium	8		5	5	5	5	5
UV SUPACURE LED Gloss OP Varnish	8		5	5	5	5	5
UV SUPACURE LED Satin OP Varnish	8		5	5	5	5	5
UV SUPACURE LED Matte OP Varnish	8		5	5	5	5	5
UV SUPACURE LED SLF Yellow	8	7	5	5	5	5	5
UV SUPACURE LED SLF Magenta	7	6	5	5	5	5	5
UV SUPACURE LED SLF Warm Red	6	5	5	5	5	3	5

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Testing Method of Chemical Resistance and Light Fastness Resistance

Based on the result of light exposure test for printed specimen with Atlas Fade-O-Meter (Carbon Ark Light), the fastness resistance is ranked with eight grades for simulating actual sun light exposure. (Larger number indicates stronger light fastness resistance)

Ink marked with # shows the grade under normal condition, but the fadeness resistance gets worse under moisturized condition with high humidity.

Full / Tint = No mixture / Mixture of Ink and Medium (1:10)

**Printed Specimen was made by RI Tester, Roller was divided into 2 parts.

0.20cc for testing.

Acid Resistance:

After dipping a printed specimen into 2% H₂SO₄ solution at 20°C to 25 °C for 2 hours, the resistance is ranked at five different grades by the degree of color change.

Alkali Resistance:

After dipping a printed specimen into 1% NaOH solution at 20°C to 25 °C for 30 minutes, the resistance is ranked with five different grades by the degree of color change.

Soap Resistance:

After leaving 10% soap gel drops on printed specimen at 40°C for 1 hour, the resistance is ranked with five different grades by the degree of color change.

Solvent Resistance:

A printed specimen is left in a mixed solution of acetone, ethylenegrycolemonoethylether, ethyl acetate, alcohol, toluene for five minutes at 20°C to 25 °C. The evaluation should be done 48 hours after the specimen gets dried and set. The resistance is ranked with five different grades by the degree of color change.

Heat Resistance:

After heating a printed specimen in a dryer at 150 °C for 30 minutes, the resistance is ranked with five different grades by the degree of color change.

-Degree of Color Change-

- 1: Extreme color change
- 2: Considerable color change
- 3: Moderate color change
- 4: Slight color change
- 5: No color change

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Specification of UV SUPACURE LED Series

Colour Ink

TACK	FLOW	GRIND	SHADE
4.0-7.0	36.0-40.0	Under 10µm	Visual judgment

OP Varnish

TACK	FLOW	GRIND	SHADE
3.5-4.0	28.0-46.0	Under 10µm	Visual judgment

UV lamp appropriate wavelength

This LED UV ink's sensitivity latitude to LED UV Lamp shall be 365 nm up to 395 nm.

How to check "TACK" (according to JIS K 5701 4.3.2)

Checking tack with a finished ink sample is performed as follows:

**Ink-O-Meter :400rpm for one minute, water temperature 32.0°C, room temperature 25.0°C

How to check "FLOW" (according to JIS K 5701 4.3.2)

Machine: Spread-O-Meter One minute, diameter, Room temperature 25.0°C

How to check "GRIND" (according to JIS K 5701 4.3.2)

Using a standard NPIRI grind gauge, scrape the finished ink from top down using the standard scraper. Check the gauge where three lines or more appear on the surface of the scraped path.

A line should be a consecutive line and the length must be 10mm or more

One scale of a Grind-O-Meter: 2.5µm

How to check "SHADE"

Place a master standard ink on the left side of the paper and the sample you wish to check on the right side. Scrape both inks simultaneously from top to bottom like 'grind' checking. Shades are checked by eyesight.

**We use the following paper when we check shade:

When we check colored ink, we use coated paper.

When we check white ink, we use uncoated paper that has a black belt in the middle to check transparency.**