

Technical Datasheet

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Product Name

SICURA Nutri Waterless

1. Description / Application

SICURA Nutri Waterless is a UV system for waterless offset printing process, curing by radical mechanism. It is especially developed to achieve very low residual odour and migration risk after curing and outstanding adhesion properties on a wide range of substrates.

The inks of this series are BPA free.

2. Product Safety

Intended Use

Food packaging, pharma, or hygiene: **YES**

Only for food packaging inks

These inks are only suitable for use on the non-food-contact side of food packaging, provided that they are applied using the relevant Good Manufacturing Practices (a system for ensuring that products are consistently produced and controlled according to quality standards) and according to the guidelines in this Technical Data Sheet.

The printer, converter and the packer/filler each have a responsibility to ensure that the finished - printed - article is fit for the intended purpose(s) and that the ink and coating components do not migrate into the food at levels that exceed legal, regulatory and industry defined requirements.

Please refer to Siegwerk's "Statement of Composition" for further regulatory information.

In case of specific applications, please contact your technical application service.

For further information, please refer to Siegwerk's Customer Guidance: Printing Inks for Food Packaging ("Know How") on <https://www.siegwerk.com/en/our-responsibility/product-responsibility/customer-communications/food-packaging-safety.html> in particular chapter 5. "The printer's selection of ink" has to be observed.

3. Properties / Substrates

Properties

Adhesion, scratch- and scuff resistance, water resistance (wet scratch and wet scuff resistance), heat-sealing resistance and far-reaching resistances to cosmetics, lotions, shampoos, alcohol, cleaning agents and solvents are normally achieved on standard label substrates. Adhesion tests have to be carried out before printing.

The inks of this series are only **suitable under limited conditions** for thermal transfer and hot foil stamping. The inks of this series are only **suitable under limited conditions** for printing on thermal-paper.

Substrates

The inks of this series are not suitable for:

- not in-line Corona treated polyethylene
- not in-line Corona treated polypropylene as well as in-line Corona treated polypropylene
- polystyrol and strongly absorbing paper qualities

In case of doubt, please contact in time our technical department.

Guidelines for use

Before the print job is started, new materials must be checked for compatibility with the inks of this series or with the planned ink-/overprinting varnish combination, even if their suitability on a comparable type of the same substrate group is proved.

The test prints, especially on self-adhesive labels, have to be examined after die-punching (in particular at the edges), for adhesion, resistance to scratching and water (resistance to wet scratching and scuffing), adhesion and scratch resistance after heat-sealing, resistance of the printed ink to the packaging contents and other application-specific requirements.

Due to the post-curing process, these properties may change during the first 24 hours after printing. Therefore please make a re-check after one day.

Consequently, for every new job in which printing is done on a known material, but with untested ink and printing combinations, the aforementioned tests have to be carried out as well.

4. Printing and processing instructions

Checklist for start-up

In order to avoid any printing quality issues by starting with the Nutri-Waterless, we recommend to apply the following procedure:

- All ink chambers have to be completely cleaned.
- Use doctor blade "Longlife" from Daetwiler (also recommended by Codimag).
- New blankets have to be put in (form roller and blanket cylinder). Blankets Conti-Air UV Black are strongly recommended.
- To prevent early toning, new plates have to be used.
- In case of building up on the rollers at start, please follow the cleaning procedure below. If the problem persists, please check the contact points, especially between anilox and form roller, and let them adjust according to standard of the press manufacturer.
- Setting parameter as starting point: Anilox 35°C; Printing plate 18°C.

Printing plates

Toray plates for waterless inks or Presstek CPT plates are suitable. We recommend using negative plates. We strongly recommend to avoid any contact of the plate with solvents, they can harm the surface of the plate and this can lead to toning.

Curing

Suitable for curing the inks of this series are medium pressure mercury vapour UV emitters with a power of at least 120-200 W/linear cm. Optimum results can be achieved using high performance quartz coated aluminium reflectors, which reflect almost the total UV radiation across the whole spectrum, but eliminating the infrared portion (e.g. by means of the "cold mirror" technology). Such reflectors yield maximum radiation density at minimum web heat load. For more power, two or more units can be connected in series.

The printing speed depends not only on the curing unit but also on the shade, colour strength and opacity. Generally, black, white and bronze inks will dry slower than yellow, red or varnishes.

Overprinting

If higher gloss, better mechanical resistance and/or improved fastness to packaging contents or moisture are required, over-printing with one of our varnishes (see separate Technical Datasheets) is recommended. Other varnishes than the ones recommended by Siegwirk can be incompatible (bubbles on the surface).

Stir up well each ink or varnish before use. Mainly whites, colors containing white, varnishes as well as gold and silver inks show sedimentation of essential components.

Do not handle products without having consulted the corresponding safety data sheets. We supply them together with the first shipment.

Cleaning

The inks can be removed from tools by using methoxypropanol.
Do not use solvents to clean the plates, this can harm the surface of the plate and lead to toning.

For the cleaning, inappropriate cleaners can destroy the surface of the blanket. We only guarantee a good printing behaviour while a dry solvent e.g. acetone, ethyl acetate or cleaning solution Nutri WL10-650303-0 is used to clean the blankets. Oily cleaning agents will cause toning.

The most efficient way to clean the rollers is to run the press for 10 minutes in idle mode with transparent white and then clean the rollers again. If the blankets are still dirty or soaked with ink, they need to be exchanged. (residual toning).

UV reactive thinners are not suitable for cleaning purpose.

In case of doubts please contact your Siegwirk contact

5. Shelf life

The inks and varnishes of this series have under normal conditions a shelf life of **at least 12 months**. Within this period the products are usable in conformity with the indications of this data sheet.

Normal conditions mean:

- Storage in firmly closed, not yet tapped containers.
- Temperatures not exceeding 20°C for weeks or 25°C for days.
- Do not expose open containers to direct sunlight or strong light sources.

6. Product list

Product name	Product code	Light Resistance WS DIN ISO 12040	Alkali-Resistance DIN ISO 2836	Ethanol-Resistance DIN ISO 2836	Solvent-Resistance DN ISO 2836
Nutri WL Process Yellow E01	70-300602-3	4	Yes	Yes	Yes
Nutri WL Process Magenta E01	70-801222-4	4	No	Yes	Yes
Nutri WL Process Cyan E01	70-111073-2	7 - 8	Yes	Yes	Yes
Nutri WL Intensive Black E01	71-900528-2	7	Yes	No	Yes
Nutri WL Orange 021 C E01	71-700398-2	6	Yes	Yes	Yes
Nutri WL Warm Red C E01	71-801526-6	4	Yes	No	No
Nutri WL Red 032 C E01	71-801492-1	6 - 7	Yes	No	No
Nutri WL Rhodamine Red C E01	71-801539-9	6 - 7	Yes	Yes	Yes
Nutri WL Purple C E01	71-100386-3	6 - 7	Yes	Yes	Yes
Nutri WL Violet C E01	71-100361-6	8	Yes	Yes	Yes
Nutri WL Reflex Blue C E01	71-120089-9	7 - 8	Yes	Yes	Yes
Nutri WL Green C E01	71-500634-2	8	Yes	Yes	Yes
Nutri WL Neutral Black	71-900588-6	7-8	Yes	Yes	Yes
Nutri WL Greenish Yellow	71-300752-4	6	Yes	Yes	Limited
Nutri WL Fast Process Magenta	70-801578-9	6	Yes	Yes	Yes
Nutri WL Yellow light resist.	71-300751-6	7	Limited	No	No
Nutri WL Opaque White E01	71-010361-5	8	Yes	Yes	Yes
Nutri WL Transparent White E01	71-000285-8	-	Yes	Yes	Yes

Additives:	Antiton-Additive LM	71-470345-1 ADD UV Levelling agent LM	0.5 - 2 %
	Antitack-Additive LM	71-470085-3 ADD LM Antitack Paste	1 - 3 %
	Photoinitiator	81-470075-3 ADD Photoinitiator	1 - 2 %

Add the antiton-additive only just before starting the print job because it reduces the viscosity and tack value.

The addition of additives to an existing ink influences curing and migration behaviour. Be aware of possible negative effects on migration level.

Because of the differences in materials for printing, processing conditions and test criteria this Technical Data Sheet can only be of an advisory nature. Our data reflect the latest state of our knowledge and are based on the characteristics established in the laboratory and on practical experience. Your own tests with the original materials under the respective conditions are indispensable. We disclaim any liability for applications for which this ink series is not foreseen.