

TECHNICAL DATA SHEET

Date: 09.04.2018, Version: 6

Range name :

TEMPO NUTRIPACK 2

Description :

Litho sheet-fed inks for food packaging applications.

This series allows to guarantee excellent runnability with low odour level and optimized migration.

This series includes three primary sets and concentrated bases for mixing and specific thermofast shade.

Except the pigments, **TEMPO NUTRIPACK 2** inks are composed of vegetable based components. This concerns the resin and the vegetable oils.

Series **TEMPO NUTRIPACK 2** inks are formulated without raw materials containing petroleum distillates like mineral oils or any other hydrocarbon solvents.

The series is also free of any dryer.

Application Fields / Market :

Primary and secondary food packaging jobs needing low residual odour and/or controlled migration.

For the realization of certified PSO printings, the use of the ISO 2846-1 range is recommended.

Product safety:

Intended Use

Food packaging (incl. pharma and hygiene) : **YES**

Compliance Management

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 Siegwirk'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, **TEMPO NUTRIPACK 2** products represent a new generation of inks exclusively formulated with selected components, so as to both minimize potential migration of concern through the substrate and the set-off from the printed outer side to the food contact surface in the stack or the reel.
- **TEMPO NUTRIPACK 2** formula does not contain the following:
 - Basic dye complex ("fanal") pigments and barium-organic pigments with high bleeding tendency,
 - Mineral oils
 - Alkylbenzenes
 - Hydroquinone and ketoxime antidriers
 - Cobalt driers

With this advanced design, a high degree of ink-side safety is provided, enabling the converter to produce packaging, which is minimized in sensory impact and migration of concern according to today's standards.

Note that set-off and migration are dependent on the processing conditions such as thickness of the ink layer, colour and sufficient barrier properties of the substrate. Particular consideration for these parameters, and for the selection of non-bleeding ink references with resistant pigment, is required in case of demanding areas such as packaging for :

- organoleptically sensitive foodstuffs in general
- liquid or pasty, fatty and/or aqueous or acid food
- pasty or solid fatty food



In case where an overprint varnish is not applied, it is recommended to add a specific additive in order to increase the rub resistance (see this chapter at the end of the data sheet).

For specific applications needing to place the print in a thermal oven or in a microwave oven, please refer to the below fastness table and use only colours marked with a “Yes” for this applications.

For toy applications, please contact our technical department.

You will produce a safe packaging material if you observe good printing practices and restrictions as outlined in the Customer Guidance and the Good Practice Guide mentioned above. In particular, these inks are not approved for direct contact with food, separated from it or not by a varnish layer.

Please contact us if you plan to produce place mats.

Substrates:

All types of board recommended for folding boxes for food packaging applications.
Coated or uncoated papers for wrapping applications, place mats or inserts

Features - Performances:

- ⇒ **ON THE PRESS SIDE**
 - Very easy to use: able to run as well as a conventional ink
 - Suitable for all dampening systems with or without alcohol
 - High speed runnability
 - Inks remain stable on the rollers
 - Duct fresh overnight
- ⇒ **ON THE PRINTING SIDE**
 - Very low residual odour, Robinson level ~1
 - Optimized migration
 - Very high colour intensity
 - Fast setting
 - Excellent level of chemical and physical resistance
 - Over printability (see fastness on the next pages)
 - For a good rub resistance, it is recommended to apply an overprinting varnish, see VARNISHING

Warning:

- The use of an IR drier or warm air will improve the setting and the gloss but it is recommended to respect 30°C maximum in the stack.
- These inks have a shelf life of 2 years from the date of production. This has to be interpreted as a warranty of "the best use" concerning the printing properties of the inks, providing the cans are not opened and stored at room temperature. After this date the inks are still usable on the press but their printing properties could eventually be altered in terms of transfer, trapping, optical density and to a certain extend in term of shade by consequence of the transfer.
- In any case, neither the food packaging compliance of the inks nor the risks of cross-contamination become an issue after the end of the expiry date. The compliance of the inks with the food safety requirements remains unaltered.



The range :

• **PROCESS INKS**

Colours	Reference numbers	Water based varnishing	IWS (1)	Alcohol	Solvent	Alkali	Lactic acid	Butter	For Microwave(2)	For Baking oven (3)
Standard set										
Yellow	60-300699-0	Yes	5	5	4	5	5	5	Yes	No
Magenta	60-801463-5	Yes	5	4	4	3	2	5	Yes	No
Cyan	60-111293-1	Yes	7	5	5	5	5	5	Yes	Yes
Black	60-900543-4	Yes	7	4	4	3	2	5	Yes	No
ISO 2846-1 set										
Yellow *	60-302439-9	Yes	5	5	4	5	5	5	Yes	No
Magenta *	60-802584-7	Yes	5	4	4	3	2	5	Yes	No
Cyan *	60-116435-3	Yes	7	5	5	5	5	5	Yes	Yes
Black *	60-902800-6	Yes	7	4	4	3	2	5	Yes	No
Intensive set										
Intense Yellow	60-304191-4	Yes	5	5	4	5	5	5	Yes	No
Intense Magenta	60-811412-0	Yes	5	4	4	3	5	5	Yes	No
Intense Cyan	60-111302-0	Yes	7	5	5	5	5	5	Yes	Yes
Intense Black	60-912425-0	Yes	7	4	4	3	2	4	Yes	No
Deep Black	60-904568-7	Yes	7	5	5	5	5	5	Yes	Yes

We do not recommend to use above process inks for mixing system

Process colours * of the **TEMPO NUTRIPACK 2** series are meeting the specifications of the ISO 2846-1:2006(E); « Graphic technology – colour and transparency of inks sets for four-colour printing ».

Process colours * of the **TEMPO NUTRIPACK 2** series have successfully passed all the tests related to PSO certification. A copy of the PSO certificate can be obtained on demand.

Process colours of the ISO 2846-1 **TEMPO NUTRIPACK 2** are ISO 2846-1 and ISO 12647-2 certified.



• **MIXING SYSTEM**

Colours	Reference numbers	Water based varnishing	IWS (1)			Alcohol	Solvent	Alkali	Lactic acid	Butter	For Microwave(2)	For Baking oven (3)
			100% concentration	50% concentration	10% concentration							
Lemon Yellow	61-302999-0	Yes	7	6	4	2	4	5	5	3	No	No
Yellow	61-303000-6	Yes	5	4	2	5	5	5	5	5	Yes	No
Fast Yellow	61-303001-4	Yes	6	6	4	4	3	5	5	4	No	No
Orange	61-700269-6	Yes	5	4	2	5	4	5	5	5	Yes	No
Fast Orange	61-700270-4	Yes	7	5	4	5	3	5	5	4	No	No
Warm red	61-802936-7	Yes	5	4	3	5	3	5	5	5	No	No
Fast warm red	61-802801-3	Yes	7	6	4	5	5	5	5	4	No	No
Rubine red	61-802938-3	Yes	5	4	3	4	4	3	2	5	Yes	No
Fast Rubine	61-802807-0	Yes	6	5	4	5	5	5	5	5	Yes	No
Rhodamine	61-802808-8	Yes	7	7	6	5	5	5	5	5	Yes	Yes
Violet	61-100437-5	Yes	7	6	6	4	4	5	5	5	Yes	Yes
Reflex Blue	61-113649-0	Yes	7	7	7	4	4	5	5	5	Yes	Yes
Process Blue	61-116830-3	Yes	7	7	7	5	5	5	5	5	Yes	Yes
Green	61-500361-3	Yes	8	7	7	5	5	5	5	5	Yes	Yes
Neutral Black	61-903178-4	Yes	7	7	7	5	5	5	5	5	Yes	Yes
Opaque white	61-010522-3	Yes	8	/	/	5	5	5	5	5	Yes	Yes
Transp. white	61-000122-4	Yes	/	/	/	5	5	5	5	5	Yes	Yes

• **SPECIFIC THERMOFAST SHADES**

Colours	Reference numbers	Water based varnishing	IWS (1)	Alcohol	Solvent	Alkali	Lactic acid	Butter	For Microwave(2)	For Baking oven (3)
Yellow	61-303100-4	Yes	7	5	5	5	5	5	Yes	Yes
Warm red	61-802946-6	Yes	7	5	5	5	5	5	Yes	Yes
Carmin	61-802958-1	Yes	7	5	5	5	5	5	Yes	Yes

(1) These light fastness values refer to a solid tone printing. Light fastness decreases when colour strength is reduced or if colours are intermixed.

(2) Ink references which are not suitable bring about the risk of pigment migration caused by its solubilisation at foreseeable thermal exposure such as up to 140°C during 30 min.



If however the intended and foreseeable use involves higher thermal exposure (such as packaging for food explicitly intended for intensive grilling in dual microwave/grill ovens), the printer shall select reference numbers suitable for baking oven. Where susceptor board or film is used in the package, areas adjacent to the susceptor can have temperatures over 200°C. In these cases, as well, only reference numbers suitable for baking oven must be used.

(3) Ink references which are not suitable bring about the risk of pigment migration and/or decomposition to undesirable substances at baking oven temperatures. For ink references which are suitable, representative tests demonstrate, up to 220°C/80 min, no perceivable risk for transfer of recognized harmful substances.

For Metallic inks please refer to the TDS **TEMPO NUTRIPACK METALLICS**

Varnishing :

In order to avoid set-off and rub resistance issues, we recommend to apply a low residual odour and low migration varnish:

- **WATER BASED VARNISH :**
 Gloss varnish : 10-602160-3 / 15SI041795
 Matt varnish : 15-600466-5 / 15SI041796
 The mixing of these varnishes is possible to obtain a semi matt effect.
- **VEGETABLE BASED OFFSET OVERPRINT VARNISH NUTRIPACK 2 :**
 Gloss varnish : 65-600585-7
 Matt varnish : 65-600586-5

Auxiliary printing additives:

When certain substrates or machine conditions imply adjustments of the ink properties, the additives should be chosen in function of this substrate and of the further processing of the printed matter

Role	Designation	Reference numbers	Proportions
Thinner	Vegetable Diluent	61-470079-7	1 to 3 %
Tack reducer	Tack reducer	61-470080-5	2 to 4%
Anti-friction paste	Hardener	61-470296-7	2 to 5%
Fountain additive	AQUA FOOD	65-060012-5	4 to 6%
Cleaning product	Food Packaging cleaner	65-650141-8	pure

Packing size :

- ✓ Vacuum Metallic Tins 2.5 kg Packaging code 1200
- ✓ Bigger packing on demand (25 kg – 200 kg)



INK, HEART & SOUL



Declaration of compliance of

Siegwerk products

to Nestlé Guidance Note on Packaging Inks (version 08-2016)

SIEGWERK declares that the Ink Series Tempo Nutripack 2, intended for food packaging application, is formulated according to the Nestlé Guidance Note on Packaging Inks requirements (version 08-2016).



INK, HEART & SOUL



Declaration of non use of

**Substances as listed in the document
NESTLE STANDARDS ABSTRACT ON MATERIALS
IN CONTACT WITH FOOD
(Version 4.0.1, September 2016)**

In the manufacture of the Ink Series Tempo Nutripack 2, intended for food packaging application, individual substances as listed in # 5, 6, 7, 9, 10, 12, 16, 17, 19, 20, 21, 26 of the document NESTLE STANDARDS ABSTRACT ON MATERIALS IN CONTACT WITH FOOD (Version 4.0.1, September 2016) or raw materials containing the substances as listed in the document are not used as intentionally added ingredients.

The presence, however, of traces of these substances in the product coming from raw material impurities, from the process or as adventitious contaminant cannot be excluded¹.

¹ However, we proactively monitor and/or retrieve supplier data on impurities of the above mentioned substances in all raw materials likely to contain such traces. We can assure you that potential traces in our products, if any, are, as a rule, well below 0,1%.

Siegwerk Druckfarben AG & Co. KGaA
Global HSE + Sustainability
Please refer to your Siegwerk technical contact for updates

V.1.0
1/1

This information is based on our experience and on results obtained in the laboratory, using specific processes and types of application. In view of the diversity of substrates and printing conditions, this data is communicated for information purposes only and is provided without any warranty on our part and must be authenticated by industrial tests before the products are used. Improvements are being made to our products on an ongoing basis and we therefore reserve the right to modify their composition as well as the contents of our technical data sheets. We disclaim any liability for applications for which this ink series is not foreseen. These products are only suitable for use on the non-food contact side of food packaging, provided they are applied under the relevant Good Manufacturing Practices (GMP) and according to the information in this Technical Data Sheet. The printer, converter and packer/filler have the legal responsibility to ensure that the finished article is fit for the intended purpose and that the ink and coating components do not migrate into the food at levels that exceed legal and industry requirements.

Siegwerk Druckfarben AG & Co. KGaA

Siegwerk France - 13 Route de Taninges – BP506 74105 Annemasse cedex, www.siegwerk.com