



Nestlé Guidance Note on Packaging Inks

General regulatory statement concerning Flexores food packaging inks and associated coating products

Further to your enquiry Flexores provides the following information in relation to the Nestlé 'Guidance Note on Packaging Inks' of September 2016.

This statement specifically relates to Flexores liquid ink technology products, pigment bases, varnishes, lacquers and coatings.

These products are typically applied by printers using gravure and flexographic application methods. The statement does not cover other ink technologies or isocyanate-based lamination adhesives.

Flexores products for the food packaging market are formulated with that specific end use in mind. Flexores products are also formulated in line with current EuPIA guidelines including the EuPIA/CEPE exclusion list (available at: www.eupia.org).

Nestlé General Requirements

- **Local Regulations**

Flexores adheres to local legislation and formulates its products accordingly

- **Swiss Ordinance on Printing Inks**

Confirmation regarding the Swiss Ordinance is provided to printers and converters via Flexores' statements of composition or other customer or product-specific documentation.

As the full range of Flexores products may be supplied to customers for use on non-Nestlé packaging, it is not possible to give a blanket assurance in a general regulatory statement. Flexores will not however knowingly supply products for use on Nestlé designs containing intentionally added substances excluded by virtue of the Nestlé Guidance Note on Packaging Inks.

- **Titanium acetyl acetonate (TAA)**

Flexores does not intentionally use TAA and other acetyl acetonate adhesion promoters in its food packaging products.

- **ortho-Phthalate plasticisers**

Flexores does not intentionally use phthalate plasticisers in its food packaging products.

- **Bisphenol A (BPA)**

Flexores does not intentionally use BPA in its liquid ink food packaging product formulations.

- **Substances of very high concern (SVHC)**

Regarding REACH and ECHA-defined substances of very high concern, as with other parts of the supply chain, Flexores is dependent upon the compositional information provided by its suppliers but based on this, and current formulatory knowledge, Flexores works within this ongoing review process and will act appropriately concerning new substances placed within the SVHC category. The latest version of Flexores's REACH statement will be available upon request.

- **NC and heated packaging**

NC is used exclusively in solvent based liquid ink products. Flexores will not knowingly supply nitrocellulose-based products for use in those end uses where the packaging is heated in association with the foodstuff prior to its consumption. It should be noted that Flexores relies upon notification from the printer/converter as to the specific end use and of any risk assessments undertaken involving foodstuff, packaging, subsequent consumer processing etc for microwave, ovenable and dual use scenarios. This downstream

information is used by Flexores to make the appropriate ink recommendations covering potential use at elevated temperatures. NC is not used in other ink or coating technologies.

- **Heavy/toxic metal requirements**

Flexores adheres to local Ukrainian and EU legislation. Heavy metal levels are key Flexores criteria in the selection and testing of specific raw material classes such as pigments.

Pigments

- **Exclusion list for pigments**

Pigment	Colour index	CAS number
Pigment Red 81	45160:1	12224-98-5
Pigment Red 81:1	45160:3	80083-40-5
Pigment Red 81:2	45161:1	75627-12-2
Pigment Red 81:3	45161:2	68310-07-6
Pigment Red 81:5	45160:4	63022-06-0
Pigment Red 169	45160:2	12224-98-5
Pigment Green 1	42040:1	1325-75-3
Pigment Blue 1	42595.2	1325-87-7
Pigment Blue 62	44084	57485-98-0
Pigment Violet 1	45170:2	1326-03-0
Pigment Violet 2	45175:1	1326-04-1
Pigment Violet 3	42535:2	1325-82-2 / 67989-22-4
Pigment Violet 27	42535:3	12237-62-6
Pigment Violet 39	42555:2	64070-98-0

- Flexores will not knowingly supply products containing the above identified Rhodaminebased 'Fanal' pigments for use on Nestlé packaging. Other brand owners may specify these and similar colourants but Flexores discloses the presence of potentially migratory colourants to customers via its technical data sheets and statements of composition.

- Concerning the guidance note observation that certain pigments generate small amounts of polychlorobiphenyls (PCBs) or are manufactured from 3,3'-dichlorobenzidine with different couplers and that the requirement that these must be minimized or phased-out where suitable alternatives exist, the levels of such residual PCBs are minimised in line with the requirements of AP(89)1 and ETAD guidance. Printers wishing to discuss alternative pigments should raise this topic with their local technical or commercial contacts.

Photoinitiators

Photoinitiators are not used in liquid ink of Flexores.

Acrylates

Fully reacted acrylic polymer and copolymers resins may be used in the liquid ink and coating.

- **Exclusion list for acrylates**

Flexores food packaging compliant liquid inks and varnishes do not intentionally contain any of the acrylates listed in the exclusion list.

Exclusion list for acrylates (must not be intentionally used)

<u>Chemical name</u>	<u>CAS number</u>	<u>Swiss Ordinance</u>
Butanediol Diacrylate (BDDA)	1070-70-8	B
Diethylene glycol diacrylate (DEGDA)	4074-88-8	B
Isodecyl acrylate (IDA)	1330-61-6	B
Octyl acrylate (ODA)	2499-59-4	A
Phenoxy ethyl acrylate	48145-04-6	B

Minimisation list for acrylates

Where it is necessary to use raw materials which contain acrylates identified on the minimisation list, the amounts used are the minimum amount required to meet the technical needs for the formulation. The migration performance of these materials is assessed to ensure that they will comply with the migration limits defined by the Swiss Food Packaging Ordinance, if they are correctly processed and used in an appropriate packaging scenario.

Minimize list for Acrylates:

<u>Chemical name</u>	<u>CAS number</u>	<u>Swiss Ordinance</u>
Trimethylol propane triacrylate (TMPTA)	15625-89-5	B
Dipropylene glycol diacrylate (DPGDA)	57472-68-1	B
1,6- Hexanediol diacrylate (HDDA)	13048-33-4	B
2-Ethyl hexyl crylate (2EHA)	103-11-7	A
Mixtures of pentaerythritol tri-and tetra-acrylates (PETA)	3524-68-3	B
Tetraethylene glycol diacrylate (TEGDA)	17831-71-9	B

Solvents

- **List of solvents that must not be intentionally used**

<u>Chemical name</u>	<u>CAS number</u>	<u>Swiss Ordinance</u>
2-Methoxyethanol (Methyl glycol)	109-86-4	A
2-Ethoxyethanol (Ethyl glycol)	110-80-5	A
Monochlorobenzene	108-90-7	A
Toluene	108-88-3	A
1-methyl-2-pyrrolidone	872-50-4	A

Flexores does not use the above solvents in products known to be for use on Nestlé packaging.

- **List of solvents to be strictly minimised**

<u>Chemical name</u>	<u>CAS number</u>	<u>Swiss Ordinance</u>
Methanol	67-56-1	A
Cyclohexane	110-82-7	A
Methyl Ethyl Ketone (MEK)	78-93-3	A
Methyl Isobutyl Ketone (MIBK)	108-10-1	A
Hexanol	111-27-3	A
2-Ethyl-1-hexanol	104-76-7	A
n-octanol	111-87-5	A
Butyl glycol	111-76-2	A
Ethyl diglycol	111-90-0	A
Butyl diglycol	112-34-5	A
Hexylene glycol	107-41-5	A
Butoxypropanol	5131-66-8	A
Butoxypropoxy propanol	29911-28-2	A
Ethenediol	107-21-1	A
Diethylene glycol	111-46-6	A
Triethylene glycol	112-27-6	A
Butylglycol acetate	112-07-2	A
1-methoxy-2-propyl acetate	108-65-6	A
Ethylbenzene	100-41-4	A
1-Pentanol	71-41-0	A

- Flexores points out that both methanol and MEK may be used as approved tradespecific denaturants in commercial ethanol solvents used in the liquid ink sector.
- It should also be noted that a number of the above solvents, for example cyclohexane, MEK and certain glycol ethers, may be used in specific liquid ink and coating products or types. Their use is minimised consistent with good technical and practical performance including factors such as tone printability and resin solubility. Please check product safety and technical datasheets or with your local Flexores product applications, technical or sales contact should you have specific questions in this area.

Relevant Flexores formulators and customer contacts have access to copies of the latest Nestlé Guidance Note on Packaging Inks along with this statement to assist in the supporting of Nestlé requirements.

Flexores products are physical mixtures of purchased raw materials. Disclosure of all

constituent substances used in the upstream supply chain may not always be available to Flexores (as customers) since certain manufacturers, and their own raw material suppliers, may regard their compositional and formulatory information as being proprietary.

Disclaimer:

Flexores products are intended for sale to professional users. The information herein is general information designed to assist customers in determining the suitability of our products for their applications. All recommendations are made without guarantee, since the application and conditions of use are beyond our control. We recommend that customers satisfy themselves that each product meets their requirements in all respects before commencing a print run. There is no implied warranty of merchantability or fitness for purpose of the product or products described herein. In no event shall Flexores be liable for damages of any nature arising out of the use or reliance upon this information. Modifications of the product for reasons of improvements might be made without further notice.

Director
Flexores Ltd.
Printing ink production
81144 Ukraine, Lviv region
Pustomyivsky district, Chyshky village

Salyak M.

