



MGA[®] NATURA 5250

The special process series for organoleptically neutral print products - low migration

Sheet-fed offset inks for printing food packaging shall not have any adverse effect on either the odour or the taste of the package contents. The development of a new, special vehicle and the use of specially selected solvents, raw materials and production methods has enabled us to create low migration, low-odour¹ sheet-fed offset inks.

Legislators – and, as a consequence, many manufacturers for branded goods – are increasingly turning their attention to printing inks and coatings for manufacturing food packaging, in particular with respect to their safe usage and application and the chemical substances employed in them. The **hubergroup** has stood up this challenge and clearly demonstrated how aware it is of its responsibilities from the very beginning, and is making every effort to ensure its products comply with the legal requirements by utilising the latest technological advances.

The **MGA NATURA** ink series is formulated mineral oil-free.

Basic requirements for food packaging

Food packages shall not transfer any substances to the packed foodstuff that

- endanger human health,
- influence the odour or taste of the packed food,
- influence the composition or appearance of the packed food.

Sheet-fed offset printing inks that are used in the manufacture of food packaging in which the packaged food is in direct contact with the unprinted inside of the packaging must therefore be low-migration inks and have no adverse effect on either the odour or the taste of the packaged foodstuffs.

MGA NATURA is a low migration and low-odour offset ink series for printing of food contact materials. The inks are formulated mineral oil free and do not contain any drier to support drying by oxidation.

The inks are designed, formulated and manufactured, and the raw materials selected according to the EuPIA-GMP "Printing Inks for Food Contact Materials". All ingredients are listed in annex 2 or 10 of the Swiss Ordinance on materials and articles in contact with food (SR 817.023.21). The binder system of MGA NATURA is based on special fatty acid esters which are approved for food contact. The ink series is recommended to produce food packaging which is compliant to Regulation (EC) 1935/2004.

The manufacturer of the packaging has to do a risk assessment and appropriate quality control to ensure that any migration to the packed foodstuff will not exceed legal limits. Information on substances used or known to be present with the potential to migrate, including possible restrictions, is provided in the respective "Statement of Composition", to allow members of the packaging chain to assess compliance of the printed packaging with the Framework Regulation (EC) No. 1935/2004 and/or Swiss Ordinance 817.023.21.

¹ The term „low-odour“ refers to prints that have been made with these inks

Colours available

Process inks

MGA NATURA		Fastness properties per ISO 2836/12040				
		Light WS	Alcohol	Solvent mixture	Alkali	Drying/Setting
MGA NATURA Yellow	41MGA5250	5	+	+	+	by setting only
MGA NATURA Magenta	42MGA5250	5	+	+	-	by setting only
MGA NATURA Cyan	43MGA5250	8	+	+	+	by setting only
MGA NATURA Black	49MGA5250	8	+	+	+	by setting only

Spot Colours

In addition to the process colours, we can also formulate any shade you would like on the basis of **MGA NATURA 5250**.

Properties

- Sheet-fed offset printing ink series for printing the non-food contact surface of food packaging made of paper and board
- Printing ink for food contact materials (FCM ink) according to the EuPIA definition
- Overall migration < 10 mg/dm²
- For applications at higher temperatures we recommend to test the migration with the actual conditions.
- Organoleptic assessment of printed products produces excellent results („Robinson test“ EN 1230 Part 1 and Part 2)
- Allows printed food packaging to meet the requirements of Regulation (EC) No 1935/2004 as well as of US FDA provisions for food contact materials
- For articles intended to be filled, treated or stored for a longer period of time at temperatures higher than 200 °C, special inks of our MGA CORONA series (MGA5220) must be used. Microwave heated applications with susceptors, local temperatures of well over 200 °C are possible. Domestic oven thermostats show significant variations. For these applications we recommend the use of special heat-resistant inks.
- Stable ink/water balance on the press
- Fast setting speed
- The fact that the inks do not dry by oxidation means that no substances are generated which are organoleptically objectionable, such as short-chain aldehydes. Printed products made using MGA NATURA inks therefore also have low hexanal content
- Formulated mineral oil-free
- Colour shades in compliance with ISO 2846-1
- Perfectly fit for production according to ISO 12647-2

Technical application

MGA NATURA inks have very good, trouble-free printing characteristics. Since they do not dry by oxidation, finishing with water-based coating is essential. Without coating, an adequate degree of rub resistance will not be obtained.

ACRYLAC MGA water-based overprint varnishes have been developed to meet the requirements of the production of food packaging printed with MGA NATURA inks. The same is true for MGA fount concentrates and printing auxiliaries.

MGA NATURA inks can be used in a similar way to conventional inks and are suitable for use in all sheet-fed offset presses and on all absorbent stocks. The applied single film thickness should not exceed 2 g/m²

Application instructions

Fount solution delivery and composition

Delivery of the fount solution on the press must be kept to an absolute minimum – particularly when the level of ink application is low – in order to prevent excessive emulsification and poor coating quality associated with this. The isopropanol concentration in the fount solution, when using MGA COMBIFIX 8060, should not exceed 10 % at a pH value of 5.0 - 5.4.

The **huber**group has developed fount concentrates for use specifically with these products:

- MGA COMBIFIX 8060 (for printing with IPA)
- MGA SUBSTIFIX 8360 (for printing without IPA)

ACRYLAC MGA water-based overprint varnishes

The following water-based overprint varnishes have been developed specifically for finishing MGA NATURA inks:

- Glossy and rub-resistant coating for single-sided coating: **ACRYLAC MGA Gloss S 58MGA1300**
- Wet-blocking-resistant and rub-resistant coating: **ACRYLAC MGA Gloss 58MGA1000**

If required, other ACRYLAC MGA types with additional special properties can be supplied.

Printing auxiliaries / Ink mixtures

To reduce ink tack, use only **MGA NATURA Print Oil 10MGA1405P** or **MGA Thixoprint 10MGA9998**. In general, oils are more difficult to admix than pastes. Standard printing oils, paste reducers or the like shall not be used, under no circumstances.

- MGA NATURA Print oil - 10MGA1405P

The recommended concentration of additive to use is max. 3%.

With an additional quantity of 3%, the tack of the ink is reduced by approximately 2 points.

- MGA Thixoprint - 10MGA9998

The recommended concentration of additive to use is max. 5%.

With an additional quantity of 5%, the tack of the ink is reduced by approximately 2 points.

MGA NATURA inks shall only be mixed with other MGA inks. Driers or drying accelerators shall not be added, under no circumstances, because this would lead to the generation of strong-smelling decomposition products.

Post-print finishing

The waiting time before the print sheets can be further processed is similar to that for conventional inks. It depends on the quality of the substrate. Tests should be carried out in specific cases prior to beginning a production run.

Roller treatment / Wash-up

Due to the negative effect on printed packages with respect to odour and taste, the press rollers shall not be sprayed with ANTISKIN 10T1200 or INKFIT 10T3303. After washing the rollers, leave them to dry well.

Classification

According to the CLP Regulation: none

According to the Regulation of Flammable Liquids: none

Material Safety Data Sheet available on request. Please refer to the contact of your local supplier.