



MGA CORONA 5100

Low-migration sheet-fed offset printing inks for food packaging

Consumer protection demands that packed foodstuffs not be contaminated by packaging components.

Consequently, no substances are allowed to transfer from substrates, printing ink and coating films to the packaged food in quantities that exceed the legal limits.

As a responsible partner of the printing industry, the **huber**group has developed sheet-fed offset food packaging inks, known as MGA CORONA 5100, that are organoleptically neutral and offer low-migration properties.

Migration means any undesirable transfer of substances from packaging to foodstuffs, which can occur in the following ways:

- Invisible setoff in the stack or on the reel, that is, the transfer of invisible substances from the print to the unprinted reverse side above it (the food contact side) and in the end from there to the packed foodstuff
- Permeation (through-migration), that is, the transfer of substances from the printed image through the substrate to the packed foodstuff,
- The transfer of volatile substances in the enclosed air space of packaging.

For cost reasons, the share of primary packaging, in which the packaged food has direct contact with the unprinted inside of the packaging, has risen greatly over the years.

With MGA CORONA 5100 sheet-fed offset printing inks, carton and paper packaging for foodstuffs, confectionery and consumables (e.g. tobacco and tobacco products) can be made that comply with current European and national legislation as well as with brand owners' requirements.

The legal basis are European Regulations (EC) No 1935/2004 and No 2023/2006, the Swiss Ordinance on articles and materials (RS 817.023.21) and the German Foods, Consumer Goods and Feedstuffs Code (LFGB). Regulation (EC) No 1935/2004 governs the marketing of food contact materials and articles and lays down the fundamental guidelines:

Article 3 of Regulation (EC) No. 1935/2004 defines the General requirements for food packaging:

Materials and articles [...] shall be manufactured in compliance with good manufacturing practice so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could:

- a) endanger human health, or
- b) bring about an unacceptable change in the composition of the food, or
- c) bring about a deterioration in the organoleptic characteristics thereof

Information on Good Manufacturing Practice (GMP)

MGA CORONA products are formulated and manufactured in compliance with the *"EuPIA Guideline on Printing Inks applied to the Non-Food Contact Surface of Food Packaging Materials and Articles"* and *"Good Manufacturing Practices for the Production of Packaging Inks formulated for use on the non-food-contact surfaces of food packaging and articles intended to come into contact with food"* published by the European Printing Ink Association (EuPIA).

MGA CORONA printing inks are formulated using only components that do either not migrate or which have been evaluated for contact with foodstuffs. Any traces of migrants from real life prints are far below the specific migration limits (SMLs). Possible impurities in raw materials as well as cross contamination ("non-intentionally added substances", NIAS) are also considered. This is a significant difference to standard sheet-fed offset printing inks. MGA CORONA 5100 inks have been formulated such that any migration even of evaluated constituents from the print is reduced to a minimum.

Confusion of approved raw materials with non-approved ones is excluded by a special SAP based system.

MGA CORONA printing inks are produced in special production facilities to prevent contamination with non MGA products/raw materials.

All inks will be checked by a specific analytical quality control system.

Full traceability in the production of the inks is guaranteed back to the raw material batch.

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.

MGA CORONA printing inks are organoleptically neutral and low-migration. They facilitate the manufacture of packaging that meets legal requirements as well as the requirements of big-name and reputable brand owners. With the innovative MGA CORONA printing ink formulation, the hubergroup succeeded in satisfying the two main requirements for food packaging with one offset ink system, namely:

- Avoiding changes in odour and taste of the package contents
- Keeping migration within accepted limits

Properties

- Sheet-fed offset printing ink series for printing the non-food contact surface of food packaging made of paper and board
- Low migration ink series
- Very low migration with average setting speed
- These inks dry solely through setting. The hexanal content of products printed with MGA CORONA 5100 inks is low.
- Results of taint and odour testing of printed products are excellent ("Robinson tests" EN 1230 Part 1 and Part 2)
- Mineral oil-free

Colours available

Process inks

MGA CORONA 5100		Fastness properties per ISO 2836/12040			
		Light WS	Alcohol	Solvent mixture	Alkali
Yellow	41MGA5100	5	+	+	+
Magenta	42MGA5100	5	+	+	-
Cyan	43MGA5100	8	+	+	+
Black	49MGA5100	8	+	+	+

For applications where temperatures above 120°C are applied for extended periods of time, specific ink types are available on request.

Spot Colours

In addition to the process colours, we can also formulate any shade you would like on the basis of MGA CORONA 5100.

Technical application

MGA CORONA inks have very good, trouble-free printing characteristics. Since they do not dry by oxidation, finishing with water-based coating is essential. Without a 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 CORONA inks. The same is true for fount concentrates and printing auxiliaries.

The instructions that follow in the next section must be strictly obeyed to ensure that MGA inks and coatings are successfully used in the manufacture of food packaging that complies with the relevant legislation.

Application instructions

Fount solution delivery and composition

The **huber**group has developed specific MGA fount concentrates for use with MGA CORONA inks:

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

The isopropanol concentration in the fount solution must not exceed 10 % at a pH of 5.0 - 5.4 when using COMBIFIX MGA.

ACRYLAC MGA water-based overprint varnishes

The following water-based overprint varnishes have been developed specifically for finishing MGA CORONA 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 **Print oil 10MGA1405C** or **Paste reducer 10MGA9998C**. Standard printing oils, paste reducers or the like shall not be used, under no circumstances.

MGA CORONA inks may 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 Ordinance on Hazardous Substances: none

According to the Ordinance on Flammable Liquids: none

MSDS is available upon request. Please refer to the contact of your local supplier.

How supplied

Standard 2.5-kg cans

Water-based coatings

25-kg plastic canister
600-kg returnable IBC
1000-kg returnable IBC

Fount concentrate

10-kg plastic canister
220-kg drum