

CORONA-MGA[®] 5046

Low migration sheet-fed offset 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 new sheet-fed offset inks, now known as CORONA-MGA[®], that are not only organoleptically neutral, but also offer low migration.

An undesirable transfer of substances from packaging to foodstuffs can occur in the following ways:

- Invisible setoff in the stack or on the reel, that is, the transfer of invisible substances from the film of printing ink to the unprinted reverse side above it (food contact side) and in the end from there to the packaged foodstuff
- Migration (permeation), that is, the transfer of substances from the printed image through the substrate to the packaged 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 past years.

With CORONA-MGA[®] 5046 sheet-fed offset inks, carton and paper packaging for foodstuffs, confectionery and consumables (e.g. tobacco and tobacco products) can be made that comply with the current European and national legal requirements.

The legal basis are European Regulations (EC) No. 1935/2004 and (EC) 2023/2006 and the German Foods, Consumer Goods and Feedstuffs Code (LFGB). The LFGB governs the marketing of food and consumer goods and lays down the fundamental guidelines for the design of food packaging.

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.

CORONA-MGA® printing inks are formulated using only components that do either not migrate or which have been evaluated for contact with foodstuffs. This distinguishes them significantly from standard sheet-fed offset inks. The migration even of constituents that have been evaluated has been reduced to a minimum with the CORONA-MGA® 5046 ink series.

CORONA-MGA® inks are organoleptically neutral and low-migration inks. They facilitate the manufacture of packaging that meets the requirements of the legal regulations cited above and the demands of big-name and reputable proprietary article manufacturers. With our new innovative CORONA-MGA® printing ink formulation, we have succeeded in satisfying the two main requirements for food packaging with just the one offset ink system, namely:

- **The avoidance of changes in the odour and taste of the package contents**
- **Migration must remain within the set limits.**

Properties

- Ink series for printing the non-food contact surface of food packaging made of paper and board
- Very low-migration with average setting speed
- These inks dry solely through setting and not by oxidation. Printed products made using CORONA-MGA® 5046 inks have a low hexanal content.
- Organoleptic assessment of printed products shows excellent results ("Robinson tests" EN 1230 Part 1 and Part 2)

Colours available

Process inks

CORONA-MGA® 5046		Fastness properties per ISO 2836/12 040			
		Light WS	Alcohol	Solvent mixture	Alkali
Yellow	41MGA5046	5	+	+	+
Magenta	42MGA5046	5	+	+	-
Cyan	43MGA5046	8	+	+	+
Black	49MGA5046	8	+	+	+

Special inks

In addition to the process colours, we can also formulate any shade you would like on the basis of CORONA-MGA® 5046.

Technical application

CORONA-MGA® inks have very good, trouble-free printing characteristics. Since they do not dry by oxidation, finishing with water-based coating is essential. Substrates with a low level of absorption necessitate the use of special water-based coatings. Without a coating, the necessary degree of rub resistance will not be obtained.

Suitable dispersion varnishes have been developed specifically to meet the requirements of the production of food packages printed with CORONA-MGA® inks. The same is true for fountain concentrates and printing auxiliaries.

The instructions that follow in the next section must be strictly obeyed if you want to use MGA® inks and coatings to successfully manufacture food packaging that complies with the relevant legislation.

Application instructions

Ink consistency

Due to the raw materials used, the inks of the CORONA-MGA® 5046 series have a marginally higher viscosity and are slight less free-flowing than organoleptically neutral, standard offset inks.

Fount solution delivery and composition

It is best to keep the fount solution delivery setting low, particularly when ink coverage is low. The isopropanol concentration in the fount solution when using COMBIFIX-MGA® must not exceed 10 % with a pH of 5.0 - 5.4.

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

COMBIFIX-MGA® 8060 (for printing with IPA)

SUBSTIFIX-MGA® 8360 (for printing without IPA)

ACRYLAC-MGA® water-based coatings

The following coatings have been developed specifically for finishing CORONA-MGA®-inks:

Glossy and rub-resistant coating for single-sided coating: **ACRYLAC-MGA® 580 130/40**

Wet-blocking-resistant and rub-resistant coating: **ACRYLAC-MGA® 580 162/40**

If required, other coatings with additional special properties can be supplied.

Printing auxiliaries/Ink mixtures

To reduce ink tack, use only **Print oil 540860/52**. Under no circumstances may standard printing oils, paste reducers or the like be used.

CORONA-MGA® inks may only be mixed with other MGA® inks. Never add driers or drying accelerators, because this would lead to the development of strong-smelling decomposition products.

Postprint 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 and tests should be carried out in specific cases prior to beginning a production run.

Roller treatment/Washup

Due to the negative effect on printed packages with respect to odour and taste, the press rollers must not be sprayed with Anti-drier 10 T 1200 or Farbfit 10 T 3303. After washing the rollers, leave them to dry well.

Classification

Safety data sheet available on request.

How supplied

Standard 2,5-kg cans

Special containers on request

Water-based coating

25-kg plastic canister

500-kg returnable plastic containers

Fount concentrate

10-kg plastic containers

200-kg plastic drums

Contact addresses for advice and further information can be found under www.hubergroup.de

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