



# Food packaging inks

## The unique MGA philosophy



Josef Sutter  
hubergroup

## hubergroup

- 40 manufacturing companies
  - 10 Motherplants
  - 30 Spot Ink Mixing Stations
- has a sales network of more than **150 distributors worldwide**
- **990 MUSD** Turnover/p.a.
- more than **3400 employees** worldwide
- **one of the biggest manufacturers** in the world
- **the most innovative supplier** of the printing industry (Flush, MGA, Cofree, Cradle-to-Cradle, Drying-Kinetic)

- ◆ Registered Company
- ◆ Branch
- ◆ Contractor/Dealer



**Safe  
products**

**Professional  
application  
(GMP)**

**How can you produce  
safe  
food packaging?**

**Communication  
along Supply  
chain**

## Regulations for food packaging in EU



### Framework regulation (EG) Nr. 1935/2004

- Article 3: The basic principle (incl. GMP)
- Article 17 (traceability), 16 (declaration of compliance)



### GMP- regulation (EG) Nr. 2023/2006

on good manufacturing practice for materials and articles intended to come into contact with food

- Annex 1: “Detailed rules on good manufacturing practice”  
Processes involving the application of printing inks to the non-food contact side of a material or article”

### For food packaging made of plastic:



### Regulation (EG) Nr. 10/2011

on plastic materials and articles intended to come into contact with food

## Regulations for printing inks for food packaging



### Swiss Ordinance

- Suitable printing inks are available



### German „Ink Ordinance“

- On hold

### EuPIA GMP

- In place since 2005
- Suitable printing inks are available

### Positive/negative list from brand owners

(Nestlé, Danone, Perfetti van Melle, ...)

## 1. Raw materials

- All components in the formulation are evaluated
  - that means MGA NATURA contain only substances that either do not migrate or that are evaluated for food contact.  
Also impurities or non intentionally added substances (NIAS) will be considered.
- Migrating substances are listed in Europe and FDA
- Mineral oil free
- EuPIA Exclusion list will be observed
- Approval of containers like raw materials

## 2. Production

- Formulation and production according to EUPIA GMP and 2023/2006
- Separate production facilities
- FMEA for production – Failure Mode and Effective Analysis
- HACCP certification
- Full traceability in the whole production chain back to the raw material batch



### 3. Control

- Confusion of raw materials is excluded by a SAP based system
- Analytical quality check of each batch before delivering GC-NOSE



## 4. Experience

- 20 years experience in low migration inks  
Pioneer for low migration inks
- In-house analysis and regular tests of external labs
- Regular trainings for staff
- Consultation and trainings on food packaging for customers and end users



## 5. Guarantee

**We guarantee** that from the printed ink layer of packaging produced according to Good Manufacturing Practices (GMP) with MGA® NA **no transfer** of substances to foodstuffs within applicable limits.

The **substances** will not be **exposed**

The **toxicological** **limit of 0,01 mg/kg** for foodstuffs as well as by Swiss Ord.

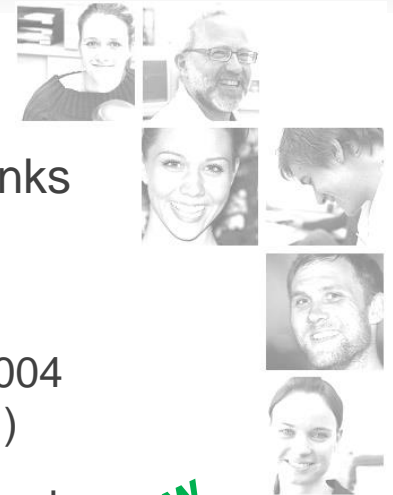
For the sum of all evaluated substances, the overall migration limit of 10 mg/dm<sup>2</sup> foodstuff will be met.



## Properties

MGA<sup>®</sup> NATURA 5250 inks are fast setting, low migration inks designed for manufacturing of safe food packaging

- Manufacturing of food packaging compliant according 1935/2004 and the Swiss ordinance for consumer goods (SR 817.023.21)
- FDA Regulation on food contact materials have been considered
- Overall migration limit (10mg/dm<sup>2</sup>) will be kept
- For packaging with excellent organoleptical properties (low odour, low taint)
- Very fast ink setting for absorbent substrates
- Highest print performance also on critical substrate qualities
- Compliant with ISO 2846-1 (ink standard); allow printing in accordance with ISO 12647-2



New



## MGA® NATURA Products

### MGA NATURA Process inks

41MGA5250, 42MGA5250, 43MGA5250, 49MGA5250

### MGA NATURA CRS<sup>max</sup> base system

Monopigmented high concentrated base system for mixing special shades

41MGA7702P, 41MGA7704P, 42MGA7706P, ...

### MGA NATURA Special shades

123456P

### MGA Metallic inks

46MGA8000, 46MGA8100, 46MGA8200, 46MGA9000





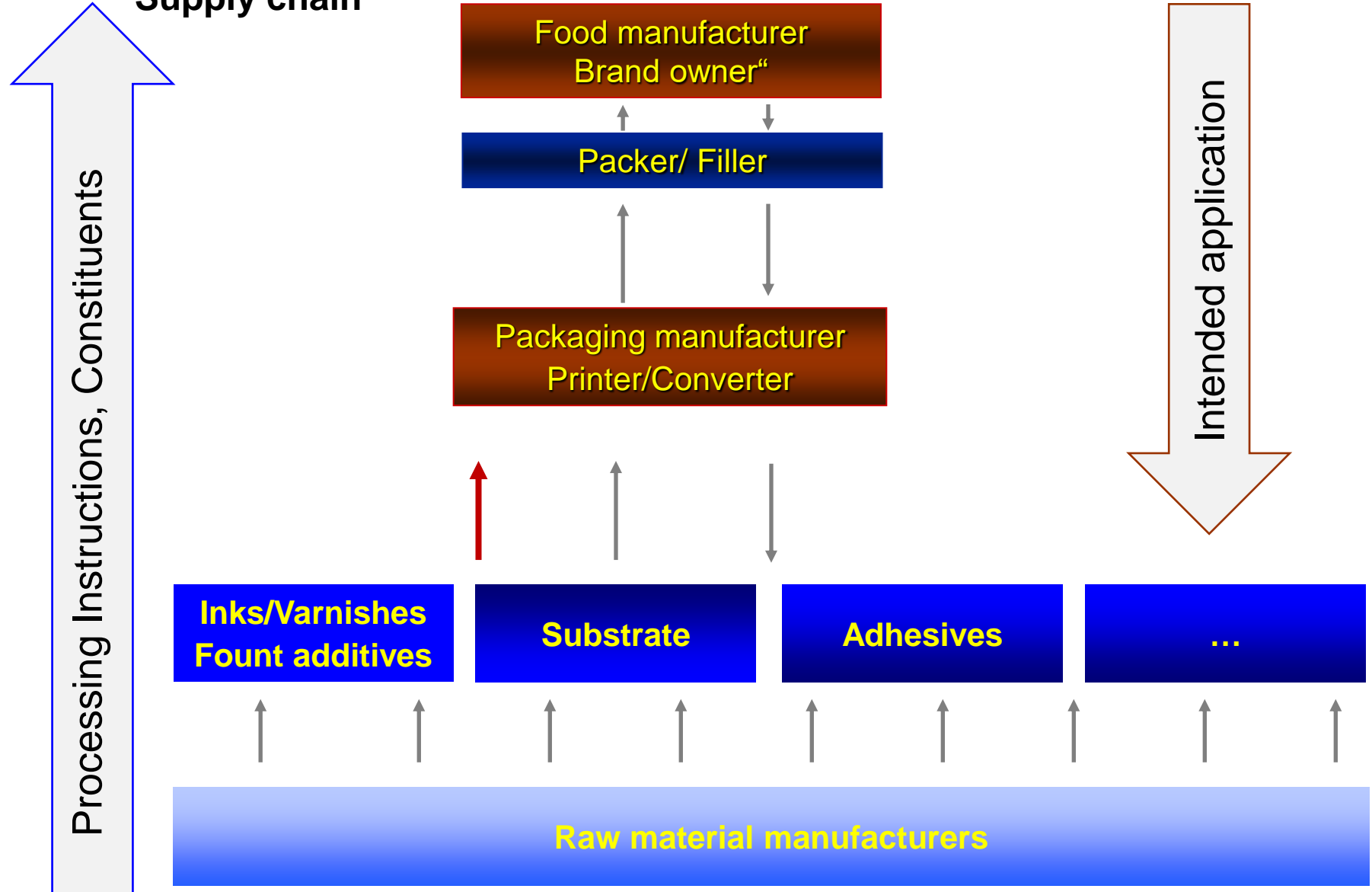
cradleto cradle

**Safe  
products**

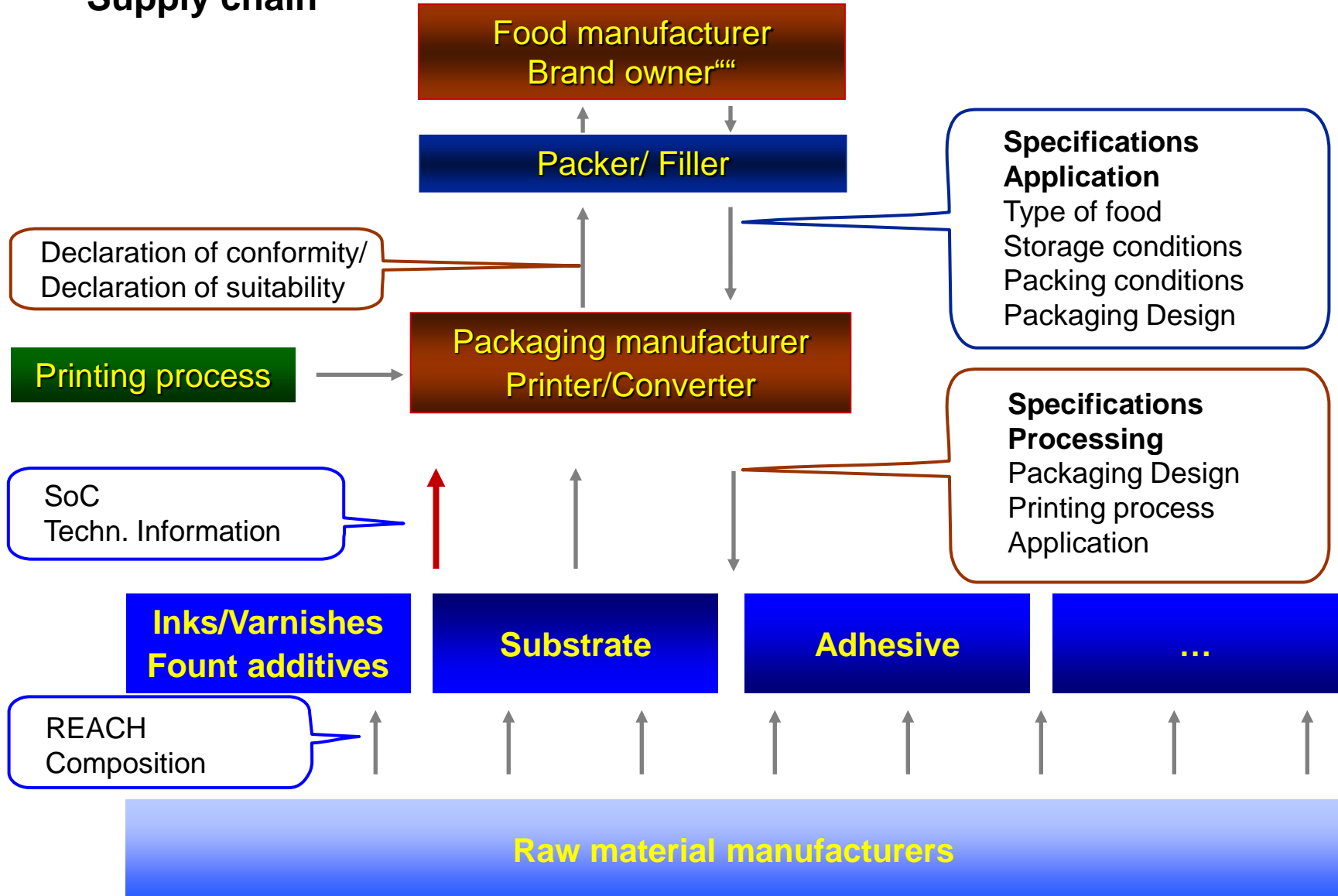
**How can you produce  
safe  
food packaging?**

**Communication  
along Supply  
chain**

### Supply chain



# Supply chain



## Statement of Composition SoC

- Statement on printing inks, the manufacturer of packaging needs to make a declaration of conformity
- Information on migrants
- Listings and restrictions
- Migrants listed as dual use additives

MHM Holding



– CONFIDENTIAL INFORMATION –

Statement of Composition  
of the sheet-fed offset printing inks

### MGA® NATURA

- MGA® NATURA 5250 Process printing inks  
(sales code xxMGA5250)
- MGA® NATURA CRSmax Basic printing inks  
(sales code xxMGAyyyyP)
- MGA® NATURA Special colour printing inks  
(sales code xxxxxxP)

used in the manufacture of food packaging  
made of paper and board

Regulation (EC) No 1935/2004 requires that materials and articles which, in their finished state, are intended to be brought into contact with foodstuffs or which are brought into contact with foodstuffs, must not transfer any components to the packed foodstuff in quantities which could endanger human health, or bring about an unacceptable change in the composition or deterioration in organoleptic properties.

This means that the manufacturer of the finished article and the filler have the legal responsibility to ensure that the food packaging is fit for its intended purpose.

Provided that our products cited above are used in accordance with the information given in the Technical Data Sheet and correctly processed, and provided that the food packaging is designed in a way that there is no intended direct food contact with the print, we hereby confirm that our products will in principle allow compliance of the final product with Regulation (EC) No 1935/2004.

1. The products cited above are manufactured in accordance with the EuPIA "Good Manufacturing Practices (GMP) – Printing Inks for Food Contact Materials" (March 2016). The manufacturing location is certified in accordance with ISO 9001.

2. The products cited above are compliant with section 12 ("Druckfarben" – printing inks) of the Swiss Ordinance on Materials and Articles In Contact with Food (SR 817.023.21), version applicable from 1 May 2017.

## Statement of Composition SoC

# MHM Holding



– CONFIDENTIAL INFORMATION –

Clear description  
of the ink or of  
the ink system

Statement of Composition  
of the sheet-fed offset printing inks

### MGA<sup>®</sup> NATURA

- MGA<sup>®</sup> NATURA 5250 Process printing inks (sales code xxMGA5250)
- MGA<sup>®</sup> NATURA CRSmax Basic printing inks (sales code xxMGAyyyyP)
- MGA<sup>®</sup> NATURA Special colour printing inks (sales code xxxxxxP)

Application:  
In this case:  
paper and board

used in the manufacture of food packaging  
made of paper and board

## Statement of Composition SoC

Confirmation that product will allow compliance of ready packaging with 1935/2004

Materials and articles which, in their finished state, are intended for use as food packaging or for which are brought into contact with foodstuffs, must not contain substances in quantities which could endanger human health, or bring about a change in taste or deterioration in organoleptic properties.

This means that the manufacturer of the finished article and the filler have the legal responsibility to ensure that the food packaging is fit for its intended purpose.

Compliance with EuPIA GMP

The products cited above are used in accordance with the information given in the Technical Data Sheet, and provided that the food packaging is designed in a way that there is no direct contact with the print, we hereby confirm that our products will in principle allow compliance with Regulation (EC) No 1935/2004.

1. The products cited above are manufactured in accordance with the EuPIA "Good Manufacturing Practices (GMP) – Printing Inks for Food Contact Materials" (March 2016). The manufacturing location is certified in accordance with ISO 9001.
2. The products cited above are compliant with section 12 ("Druckfarben" – printing inks) of the Swiss Ordinance on Materials and Articles In Contact with Food (SR 817.023.21), version applicable from 1 May 2017.
3. Based on information provided by raw material suppliers, printed packaging manufactured using the products cited above contain the following substances:

Compliance with Swiss ordinance

## Statement of Composition – list of migrants

All Substances with potential to migrate used or known to be present

Substances used or known to be present in the dried ink with the potential to migrate, including indication whether the substances are restricted under the scope of the Plastics Regulation (EU) No 10/2011, the Swiss Ordinance 817.023.21 Annex 1 or 6, or listed in the "Provisional List of Additives used in Plastics", or listed as a food additive in Regulation (EC) No 1333/2008 or 1334/2008:

CAS No	PM Ref No	FCM No	Name	Restrictions and specific migration limits (SML) in [mg/kg]		On Provisional List of Additives used in Plastics	Regulation (EC) No 1333/2008 1334/2008	Maximum amount in the dried ink film in [%]	Comments
				Regulation (EU) No 10/2011	Swiss Ordinance 817.023.021				
	12345	123	Substance X	(60)	Annex 1 (60)			20%	
111-11-0	45678	145	Substance Y	3	3		E xxx	1%	
...	...	...	...	...	...				

(60) = substance listed without specific restriction, overall migration limit (OML) applies

The sum of substances under FCM No 9, 524, 878, 879 and 880 is <65%.



# Statement of Composition SoC

... present in the dried ink with the potential to migrate, including indication whether the substances are restricted under the scope of Regulation (EC) No 1831/2003, the Swiss Ordinance 817.023.21 Annex 1 or 6, or listed in the "Provisional List of Additives used in Plastics", or listed as a restricted substance under Regulation (EC) No 1831/2003 or 1334/2008:

CAS Nr.	PM Ref	Restrictions and specific migration limits (SML) in [mg/kg]		On Provisional List of Additives used in Plastics	Regulation (EC) No 1333/2008 1334/2008	Maximum amount in the dried ink film in [%]	Comments
		Regulation (EU) No 10/2011	Swiss Ordinance 817.023.021				
	123	(60)	Annex 1 (60)			20%	
111-11-0	456	3	3		E xxx	1%	
...	...	...	...				

... restriction, overall migration limit (OML) applies

The sum of substances under PM No 9, 524, 878, 879 and 880 is <65%.



## Statement of Composition SoC

...nsmittelzusatzstoff in einer der Verordnungen (EG) /

Substance  
 the Plasti  
 food addi

the substances are restricted under the scope of  
 al List of Additives used in Plastics", or listed as a

CAS	PM Ref Nr.	FCM Nr.	Name	Regulation No 3/2008 4/2008	Maximum amount in the dried ink film in [%]	Comments
111-1	12345	123	Substanz X		20%	
	45678	145	Substanz Y		1%	
(60) = s	...	...	....			
The sum						

PM Ref Nr. Packaging Material Reference Number  
 FCM Nr. Food Contact Material number



# Statement of Composition SoC

817.023.21 Annex 1 of 6, or listed in the Provisional

Substances used or known to be present in the Plastics Regulation (EU) No 10/2011 or as a food additive in Regulation (EC) No

CAS No	PM Ref No	FCM No	Name
	12345	123	Subst
111-11-0	45678	145	Subst
...	...	...	...

(60) = substance listed without specific migration limit (SML)  
 The sum of substances under FCM

Restrictions and specific migration limits (SML) in [mg/kg]		On Provisional List of Additives used in Plastics	Regulation (EC) No 1333/2002	Maximum amount in dried ink [%]	Comments
Regulation (EU) No 10/2011	Swiss Ordinance 817.023.021				
(60)	Annex 1 (60)			20%	
3	3		Ex	1%	
...	...				

specific migration limit (SML) applying



# Statement of Composition SoC

Substances used or known to be present in the dried ink with the potential to migrate, in the Plastics Regulation (EU) No 10/2011, the Swiss Ordinance 817.023.21 Annex 1 or 6 as a food additive in Regulation (EC) No 1333/2008 or 1334/2008:

CAS No	PM Ref No	FCM No	Name	Restrictions and specific migration limits (SML) in [mg/kg]		Regulation (EC) No	Maximum in the dried film in [mg/kg]	Amount in ink	Comments
				Regulation (EU) No 10/2011	Swiss Ordinance 817.023.21				
	12345	123	Substance X	(60)	Annex 1 (6)		20		
111-11-0	45678	145	Substance Y	3	3	E xxx	1		
...	...	...	...	...	...				

(60) = substance listed without specific restriction, overall migration limit (OML) applies

The sum of substances under FCM No 9, 524, 878, 879 and 880 is <65%.

PROVISIONAL LIST OF ADDITIVES

Regulation (EC) No	Maximum in the dried film in [mg/kg]
1333/2008	
1334/2008	

restricted under the scope of "Food in Plastics", or listed as a



## Statement of Composition SoC

Substances used or known to be present in the dried ink with the potential to migrate, including indication whether they are listed in the Plastics Regulation (EU) No 10/2011, the Swiss Ordinance 817.023.21 Annex 1 or 6, or listed in the "Provisional List of Additives used in Plastics" in Regulation (EC) No 1333/2008 or 1334/2008:

CAS No	PM Ref No	FCM No	Name	Restrictions and specific migration limits (SML) in [mg/kg]		On Provisional List of Additives used in Plastics	Migration	Maximum amount in the dried ink film in [%]	Concentration
				Regulation (EU) No 10/2011	Swiss Ordinance 817.023.021				
	12345	123	Substance X	(60)	Annex 1 (60)			20%	
111-11-0	45678	145	Substance Y	3	3			1%	
...	...	...	...	...	...				

(60) = substance listed without specific restriction, overall migration limit (OML) applies

The sum of substances under FCM No 9, 524, 878, 879 and 880 is <65%.

Statement of Additives used in Plastics

Migration	Maximum amount in the dried ink film in [%]	Concentration
08		
08		
	20%	
	1%	



## Statement of Composition SoC

in Plastics, or listed as a

Substances used or known to be present in the dried ink with the potential to migrate, including indication whether the substance is listed in the Plastics Regulation (EU) No 10/2011, the Swiss Ordinance 817.023.21 Annex 1 or 6, or listed in the "Provisional List of food additive in Regulation (EC) No 1333/2008 or 1334/2008:

CAS No	PM Ref No	FCM No	Name	Restrictions and specific migration limits (SML) in [mg/kg]		On Provisional List of Additives used in Plastics	Regulation (EC) No 1333/2008 1334/2008
				Regulation (EU) No 10/2011	Swiss Ordinance 817.023.021		
	12345	123	Substance X	(60)	Annex 1 (60)		
111-11-0	45678	145	Substance Y	3	3		E xxx
...	...	...	...	...	...		

(60) = substance listed without specific restriction, overall migration limit (OML) applies

The sum of substances under FCM No 9, 524, 878, 879 and 880 is <65%.

Amount	Comments

## Statement of Composition SoC

# MHM Holding



### Primary Aromatic Amines (PAA) with Restrictions

Primary Aromatic Amines<sup>3</sup> with restrictions in Annex II (2) of the Plastics Regulation (EU) No 10/2011 are not used as intentionally added ingredients, but may possibly be present as unavoidable trace impurities in pigments used in the manufacture of the inks.

List of PAA that may, according to WCC<sup>4</sup> using information from the suppliers of pigments used in the manufacture of the inks, potentially exceed the detection limit of 0.01 mg/kg food (expressed as aniline):

	CAS-No.
1,2-Phenylenediamine	95-54-5
1,4-Phenylenediamine	106-50-3
2,4-Dimethylaniline	95-68-1
2,4,5-Trichloroaniline	636-30-6
2,5-Dichloroaniline	95-82-9

Substances with restrictions listed in  
Annex II (1) of Plastic Regulation 10/2011  
(Ba, Co, Cu, Fe, Li, Mn, Zn)

**Metals with Restrictions**

The product may contain substances with restrictions listed in Annex II (1) to the Plastics Regulation (EU) No 10/2011. Such substances are shown in the data table only if the migration of these substances from the final article could exceed the limits specified in the Plastics Regulation<sup>5</sup>.

<sup>3</sup> Note for Caution: in applications where higher temperatures are applied (e.g. such as retort) PAA may be formed due to partial decomposition of the pigments. In case the printed packaging to be used in such applications, the printer shall inform his **huber**group contact who may recommend specific inks and supply specific information on request.

<sup>4</sup> Worst Case Calculation has been based on the EU cube model, assuming that the amount of wet offset ink used is 2 g per m<sup>2</sup>.

<sup>5</sup> As stated in the Technical Information sheet, MGA<sup>®</sup> CORONA printing inks are not recommended for the manufacture of articles where the printed surface is intended to be in direct contact with food, or can be reasonably expected to come in direct contact with food, such as napkins, placemats, and bakery bags, or other articles where the ink is printed on paper or board and where analyses are performed which are significantly deviating from the methods described in the Plastics Regulation (EU) No 10/2011 (e.g. extraction method with cold water).



## Statement of Composition SoC

Kirchheim, 16 November 2018

*MHM HOLDING GmbH*

Contact: Dr Sebastian Gierisch  
Product Safety **huber**group Europe  
Tel. +49 (0)89 9003-444  
E-mail: [sebastian.gierisch@hubergroup.com](mailto:sebastian.gierisch@hubergroup.com)

Date  
Signature  
Contact

- Appropriate processing
  - Substrate
  - Drying
  - Application instructions
- Recommended additives
- Intended application
- Recommended use

### Technical Information

16.P.007 | Conventional Offset Systems | Ink Series, Process Inks



### MGA<sup>®</sup> 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-odour<sup>1</sup> 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 **huber**group 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.



# ASD Ambalaj Kongresi 2019

## Uluslararası Ambalaj Sanayi Kongresi



Fachgruppe Druckfarben  
im Verband der deutschen  
Lack- und Druckfarbenindustrie e.V.  
Mainzer Landstraße 55, D-60320 Frankfurt  
<http://www.druckfarben-vdi.de>



Fachgruppe Druckfarben  
im Verband der deutschen  
Lack- und Druckfarbenindustrie e.V.  
Mainzer Landstraße 55, D-60320 Frankfurt  
<http://www.druckfarben-vdi.de>



Gute Herstellungspraxis für die Produktion von  
Verpackungsdruckfarben zur Verwendung auf der vom  
Lebensmittel abgewandten Oberfläche von  
Lebensmittelverpackungen und Gegenständen

### Kundeninformation

zur Verwendung von  
Bogenoffsetdruckfarben/Lacken  
(wegschlagend und/oder oxidativ trocknend, oder UV-härtend)  
und Dispersionslacken

zur Herstellung von Lebensmittelverpackungen aus Papier und Karton

#### Zusammenfassung:

- Zur Herstellung von Lebensmittelverpackungen werden spezielle migrations- und geruchsarme Bogenoffsetdruckfarben empfohlen
- Alle anderen Bogenoffsetdruckfarben sind zur Herstellung von Lebensmittelprimärverpackungen nicht geeignet
- Standard-Bogenoffsetdruckfarben können zur Herstellung von Lebensmittel-Sekundärverpackungen eingesetzt werden, wenn ein Übergang von Druckfarbenbestandteilen aufgrund einer entsprechenden Gestaltung der Verpackung und eines geeigneten Herstellungsverfahrens ausgeschlossen werden kann

Die Verordnung (EG) Nr. 1935/2004<sup>1</sup> schreibt vor, dass Bedarfsgegenstände, die als Fertigerzeugnisse dazu bestimmt sind, mit Lebensmitteln in Berührung zu kommen oder die bestimm-

### Commitments related to the manufacture and supply of food packaging inks

hubergroup, being a member of EuPIA, has committed to the following principles in order to safeguard the protection of food consumer safety within the areas under its control.

These commitments, to be applied by each company in the way it decides appropriate, cover all products manufactured or marketed for application to the non-food contact surface of food packaging materials and articles.

We are committed to:

## EuPIA GMP



EuPIA  
European Printing Ink Association  
a sector of CEPE aisbl

INVENTORY LIST – VERSION June 2012

## EuPIA Inventory list packaging inks

## EuPIA customer information sheet-fed inks

## Commitments EuPIA members



Page 1 of 5

### EuPIA Suitability List of Photo-initiators for Low Migration UV Printing Inks and Varnishes – February 2013

Some photo-initiators have both low migration potential and, by virtue of supportive toxicological data, an evaluated status with recognised migration thresholds. They are listed in Part A of Annex 6 of the Swiss Ordinance 817.023.21.

In order to make use of the official photoinitiator evaluations, EuPIA members should preferably only use photoinitiators with a composition and impurity profile equivalent to those for which the toxicity data was generated, submitted and evaluated by the relevant national body.

Other photo-initiators are not fully evaluated and, accordingly, are in the B list of the above Annex. Depending on the application and packaging structure compliance of the final package within the accepted migration limits can be achieved.

It must be remembered that final measurement of migration compliance is the responsibility of the printer in line with recognised converters' good manufacturing practices, and the end user.

Photoinitiators for use in coatings, inks and varnishes for the non-contact side of food packaging can be grouped as follows:

#### Group 1 – For all packaging types

Group 1A These photo-initiators have both low migration potential and are supported by toxicological data. They have recognised migration thresholds and are listed in Annex 6 of the Swiss Ordinance 817.023.21.

Description	CAS N°	SML (mg/kg)
Benzoylbenzoate, esters with branched polyols		0.05
1,4-[4-Benzoylphenyl(phenyl)-2-methyl-2-[4-methylphenylsulfonyl]-1-propan-1-yl]one	027460-97-6	0.05
2-Benzyl-2-dimethylamino-4-morpholinol butanophenone	011913-12-1	0.15
D-ester of carbonomethoxy benzophenone and polyketetramethylenecyclo 250	951512-48-9	0.5
D-ester of carbonomethoxy benzophenone and polyketetramethylenecyclo 200	951513-48-9	0.6
(Dimethylamino)benzoate, esters with branched polyols		0.05

## List of Photo-initiators

**Safe  
products**

**Professional  
application  
(GMP)**

**How can you produce  
safe  
food packaging?**

**Communication  
along Supply  
chain**



## Conclusion

- Suitable inks to meet the legal requirements are possible
- Information on printing inks is done with the SoC
- Communication along the supply chain must be lived



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