epple DRUCKFARBEN

the essential

News from the printing ink world
3rd. Edition 2018

Epple Experts Event 2018
Read more on page 5

We are looking forward to seeing you!

FachPack

25th. to 27th.
of September 2018
Hall 7A. Stand 7A - 138

Rewarded colour BoFood® Organic
Read more on page 6

Dear ink fans,

A lot of packaging printers are viewing the future with optimism: however, success will not come of itself. Competition among the printing houses as well as the packaging materials themselves are just as much a part of the challenge as are the critical observations coming from the public. For these reasons only the printing houses who act with foresight will survive, even in the stable paper and cardboard printing markets. Sustainability and Print 4.0 demand active foresight and rethinking.

In this edition of "the essential" we have put together an attractive information package concerning ink systems.
They impress with high quality mass productions just as much as in sustainable print production. Service is an enormously important factor for us here: The Epple-Experts give you advice on market trends in the packaging print industry including legal framework conditions.

Profit from our pioneering knowledge of the sensitive topic of ink migration, especially in foodstuff packaging.

I wish you a most inspiring read.

Gunther Gerlach
Chairman of the Executive Board

"The packaging printing industry is unbelievably rich in printing technologies, very creative and at the same time it is subject to enormously high legal requirements. At Epple we know all about these challenges and we develop the appropriate answers and products. BoFood Organic the migration harmless ink system for direct contact with foodstuffs is real proof of our innovative strength."

Helmut Fröhlich, Product Manager Packaging

Packaging printing: economically and socially significant

To ensure successful folding box production you need a good design, the application of sustainable raw materials and a printing ink which not only complies with all EU guidelines but also meets every customer requirement. Economic and reproducible print production is the stated goal; Epple's printing inks contribute with their high colour intensity, precision and good printability.

Epple is a strong and innovative player on the European packaging printing market with its trailblazing packaging printing inks. This is proven by its wide range of environmentally friendly packaging printing inks, which protect users and consumers. Epple is preparing itself and its products for current developments such as the amendments in the draft of the 21st consumer goods ordinance ("German printing ink ordinance") and is always targeted towards the needs of the customers.

Unique selling point resulting from pioneering work

The centrepiece of the German printing ink ordinance will be a positive list of proven substances. Epple has achieved a unique selling point thanks to its expertise in migration harmless printing, which is now paying off handsomely. We were pioneers when we became the first producer of a mineral oil-free sheet fed offset ink (eco ink) in1993 based on renewable raw materials. At the moment, interest is increasing tremendously in this sustainable ink system; which can be observed in our events such as the Epple Experts Events. Printing houses as well as end customers ask e.g. about innovative packaging concepts with BoFood Organic, the ink system for direct contact with foodstuffs. The rlc packaging group one of the leading packaging producers has created tea packaging with BoFood Organic using the benefits of the ink system: migration harmless and odourless, which enables trademark branding on printed package insides.

Sustainable ink system spectrum

The necessary ink technology Know-how has been acquired by Epple through its constant further development of reduced low-migration resp. migration harmless ink systems. One of these is BoFood MU Next Generation which is a premium product for printed package outsides. Furthermore, Epple has BoPack Gama in its product portfolio, which is another low-migration ink system for packaging printing.

Quality is the key

To be able to guarantee the optimum in security from an ink point of view, Epple carry out daily quality tests (incoming goods inspection and outgoing goods inspection) and the inks are also tested by renowned external institutes at regular intervals. The Colouring department takes on the responsibility for the quality of Epple's special inks. That is why this edition closes with an introduction to these people who are so important for Epple's customers.

Packaging printing inks convince with sustainability and quality

Inside and outside: the BoFood family leaves nothing to be desired

BoFood MU Next Generation

Suitable for safe printing of the non-food contact side of primary food packaging

- It provides the highest level of safety from an ink point of view both for the printer as well as the end consumer and is superior to all other offset ink series in this regard.
- BoFood MU Next Generation complies with all three technical requirements of primary food packaging, regarding ink:
  - low odour
  - low swelling
  - low-migration / migration harmless.
- BoFood MU Next Generation inks are migration harmless as the absorbing and therefore potentially migratory components are of themselves, foodstuffs.
- The inks from this series comply with all statutory preconditions. The guaranteed safety from the ink point of view extends from the packaging all the way to the consumer.

BoFood Organic

Suitable for safe printing of the inside of primary food packaging.

- The first offset ink for printing on the inside of food packaging (potential direct food contact).
- The BoFood Organic System is a consistent extension of BoFood MU in accordance with the requirements of printing the inside of food packaging.
- All raw materials used in BoFood Organic are approved for use in foodstuffs themselves.
- Based on current information, the ink and varnish do not pose a toxicological threat, even in short-term or long-term direct contact with foodstuffs.

BoPack Plus

Suitable for non-absorbent substrates

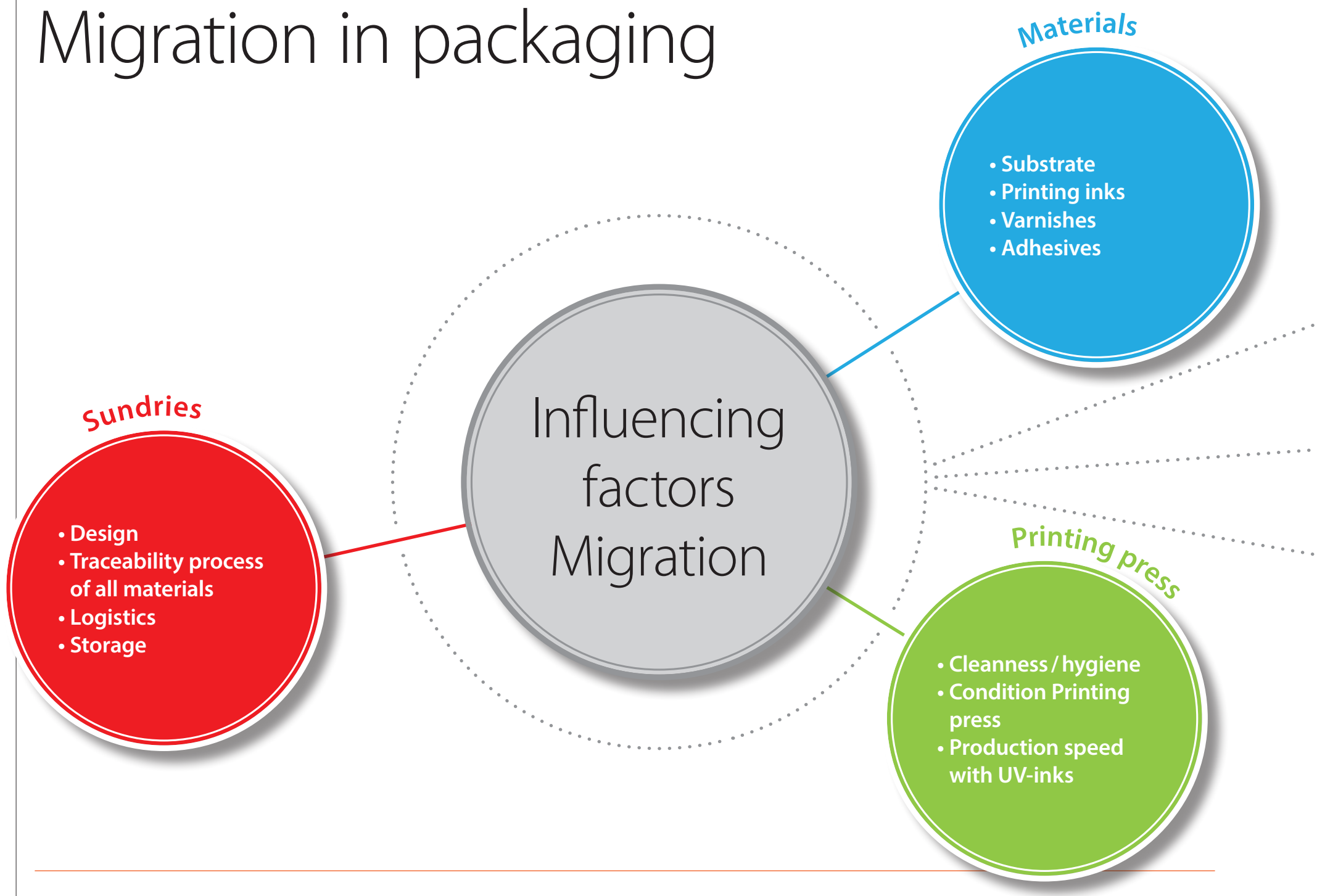
- In order to enable printing of inmould-labels, tags and cups in cases where no technological alternative to non-absorbent substrates exists, the BoPack Plus series was developed.
- This series dries oxidatively and ensures adhesion to the substrate.
- In contrast to "odourless", it can be described as sensorily optimised.
- The BoPack Plus Series provides low migration.
- The following materials, amongst others, can be printed on with BoPack Plus: OPP for IML-applications, plastic film, PE-coated board, metallised film.
- The raw materials for the BoPack Plus series were selected according to the EuPIA selection list. The general suitability for printing on the non-food contact side of food packaging was proven by an independent institute using a print sample.

BoFood Effect Varnish 1299

Suitable for primary food packaging

- This varnish was specifically designed to achieve matt-gloss effects in interaction with aqueous dispersion coatings.
- The varnish can be applied especially well on print products with dark colour components.
- The parts which are supposed to end up matt in the finished product are overprinted with Finishfit Effect varnish 1299, the dispersion coating is applied inline directly after the effect coating and dried.

Complex topic: Migration in packaging



Which role do printing inks play?

Without doubt, consumers love packaging. 95 % of all foodstuffs in western Europe are packaged: for protection, better logistics, to increase sales. At the same time, the proportion of direct packaging (without inner bag) has risen. For environmental reasons, forward-looking safety measures are necessary, since direct packaging does not have a barrier from migration into the foodstuff.

What is migration?
(latin migratio: exodus, change of abode) Substances pass physically from a printed packaging to the packaged foodstuff. The substance transfer can take place in different ways.

Problem of migration:
Substances which are in some cases classified as raising health concerns like mineral oils, UV-photoinitiators and unclassified substances come from the packaging into the foodstuff, and finally into human organs – in small amounts, but uncontrolled.

Safety measures to prevent migration:
- Selection of a suitable substrate.
- The ink composition should not contain heavy metal driers or specific oils and resins which create fission products. Special attention needs to be given to the raw material selection and exclusion policy.
- Print production: Besides thorough machine cleaning with adequate substances, the sheet delivery should be monitored with respect to the pressure and temperature (invisible set-off).

Legal foundations

Even if legal questions about migration remain unresolved, certain EU and country-specific guidelines, which counteract potential contaminant migration in packaging, must be adhered to.

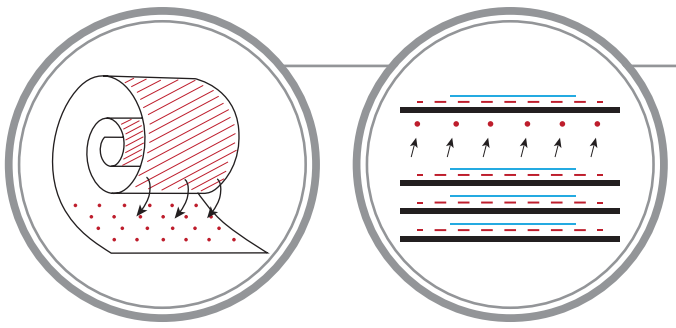
The framework regulation EG 1935/2004 governs:
- materials and objects, which are intended for contact with foodstuffs.
- producers (distributing companies) of the finished packaging are responsible for ensuring that the materials and objects are in conformity with article 3 of the framework regulation.

The Swiss Consumer Goods Ordinance (status as of 01/05/2017) stipulates:
- an overall migration value of 60 ppm [60 mg/(kg foodstuff)]
- 10 ppb [µg/(kg foodstuff)] in case of non-classified substances
- printing inks must be produced in accordance with GMP-guidelines

PIM 10/2011 governs:
- materials and objects made from plastic (based on a positive list), which are intended for contact with the foodstuff.

GMP EG 2023/2006 governs:
- the good manufacturing practice for all materials and objects which are intended for contact with food.
- quality assurance and control systems must be specified and deployed.

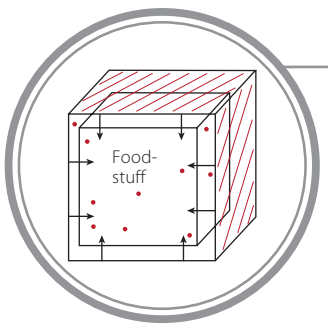
Types of migration overview



Invisible set-off

- In case of contact between printed and unprinted substrates, unwanted exchanges of ink particles can occur. → crossover of migrating substances from the printed side to the opposite side.
- Usually the unprinted side is the food contact side
- Occurrence: reels or stacks in direct or close contact

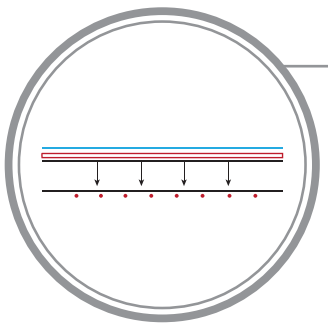
■ Substrate ■ Ink ■ Varnish ● Invisible set-off



Substance transfer via gas phase migration

- Migrants can also migrate from a carton via gas phase into the packaging and pass onto food.
- This can for example happen with migrants like unwanted mineral oils or other substances, which might not be commonly known as volatile.

■ Substrate ■ Ink ● Migration via gas phase

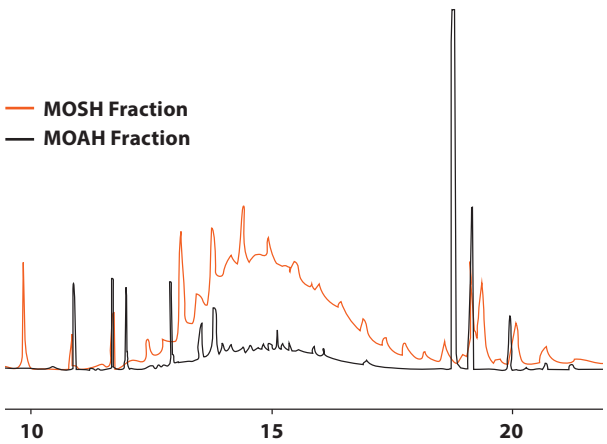


Migration through the substrate

- Ink components wander directly through the substrate.
- Soluble ink components have an especially high migration potential
- Filling products with a high amount of fat and oil pose a challenge

■ Substrate ■ Ink ■ Varnish

MOSH / MOAH – Unloved mineral oils



Year after year, the Christmas season with its advent calendars brings with it the discussion about mineral oils in foodstuffs. They definitely do not belong there and pose health threats. Migration harmless print production is therefore gaining importance.

Almost everyone agrees: Mineral oil saturated hydrocarbons (MOSH) and often alkylated mineral oil aromatic hydrocarbons (MOAH) must be avoided in foodstuffs and their packaging. Especially the latter are suspected to be carcinogenic.

The production of packaging cartons made of recycled waste paper, which contains residues of mineral oil-based newspaper printing ink, is seen as the fundamental problem. But the problem has more facets to it.

By adjusting production chains to migration harmless ink systems, like for instance the BoFood series by Epple, packaging can be further reduced as an influencing factor for mineral oil residues. It remains unabated, however, that the origin and occurrence of mineral oil residues can usually not be exactly defined. Other potential migration sources exist: through packaging materials, lubricants from harvesting machines and production systems, contamination during product transport (e.g. jute bags), emissions or food additives.

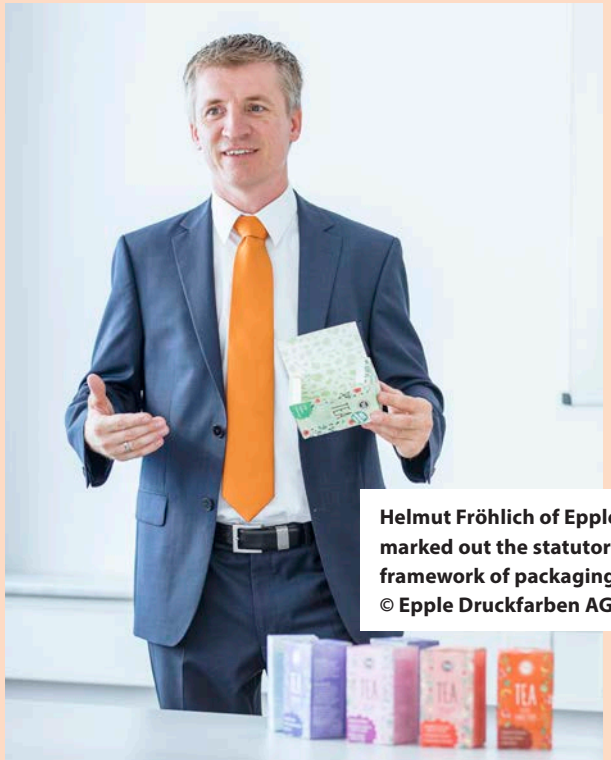
The uncertainty in the processes is certainly also a factor which explains the modest statutory requirements. Currently, there are neither specific regulations nor maximum amounts for mineral oil residues in foodstuffs. The 4th draft of the 22nd ordinance for changing the consumer goods ordinance ("mineral oil ordinance") is still awaiting the notification of the European Commission. One more reason for printing houses to prepare for the future in time and study the countless possibilities of migration harmless ink systems.

Epple Experts Event: Packaging printers praise topic variety

Since the beginning of the year, Epple has established the format "Epple Experts Event". Specialists in different areas communicate with future-oriented print experts in a relaxed environment. In January they came to Hamburg and in June 2018 to Harsewinkel-Marienfeld to visit the events concerning the topic packaging.

Branding, sustainability, process optimisation and food printing: The selection of topics for the exclusive Epple Experts Events was always intentionally wide-ranging.
In the course of this, one thing became evident: The folding box has turned into a "point of sale" in shopping centres and stores. Packaging experts today are all-rounders in terms of knowledge: They are proficient in production layout as well as folding box design and are part of product marketing. The guests value the diversity of experts and the views beyond the horizons of the press room.

How do I use brand positioning as a management tool? How can packaging be seductive from a colour-psychological perspective? Is my printing company ready for print 4.0? How can I achieve an increase in efficiency in packaging production? These topics inspired the strategic point of view of the guests at the expert event to a great extent. Besides the new pure ink system PURe, the focus lay on environmentally friendly packaging print with the BoFood ink series by Epple, for printing on packing in- and outsides of foodstuffs. Product manager for packaging at Epple, Helmut Fröhlich, on this occasion offered analysis and consulting in regard to statutory framework conditions of packing print, which was met with great interest.



Helmut Fröhlich of Epple marked out the statutory framework of packaging print. © Epple Druckfarben AG

Have we aroused your interest?

Register now for the next date early in 2019 in the area of Cologne!

marketing@epple-druckfarben.de

BoFood-packaging – Migration harmless from both sides

EGGER Druck + Medien produces new packaging samples for Epple

Highly attractive and migration armless: Food packaging, produced by EGGER Druck + Medien with BoFood Organic.

Have we aroused your interest?

Request your personal sample now!

marketing@epple-druckfarben.de

Landsberg based EGGER Druck + Medien, is traditionally open for new ideas – and it did not make an exception here, when it employed the migration harmless ink system BoFood Organic for the first time.

From packaging design to production: this BoFood project, the inside printing of food packaging, was entirely the work of professionals. The production of a packaging designed by the renowned design agency Clormann Design, was discussed by EGGER Druck + Medien and Epple in December 2017. A good two months later, the printing data for the packaging was ready in three versions: Chocolate, Seasoning and Tea were meant to shine as intense pictures from the folding box and the inside held production information about BoFood Organic in store.

The eye-catching outer print of the packaging was made with BoFood MU and effect varnish, the inner print with BoFood Organic. The packaging bag can be removed from the carrier paper and inserted. The sample boxes, which can also be handed out as flat packages, provide information, useful during customer talks as a give-away and print sample.
This perfectly exemplifies the main advantage of the migration harmless ink BoFood Organic: The assembled packaging is filled with the respective foodstuff (praline, tea ball, nutmeg, cinnamon, etc.). Migration of ink which poses health risks is not possible, since BoFood Organic is exclusively made up of ingredients which are permitted for use in foodstuffs. The project was coordinated successfully by Epple application engineering, which gave support for the printing customer, for example for setting up the machine and print approval.

GERMAN PACKAGING AWARD

SECURITY

WINNER 2018

BoFood® Organic receives the German Packaging Award 2018

Our passion for the best solutions, our dedication to the best product and our drive for perfection: these are the ingredients that we put together to win the German Packaging Prize 2018 in the category of safety. We are proud to receive this Award!

Food packaging receives more space for product information: Creative inside printing with BoFood Organic by Epple

"Exciting new options for customer communication are opened up for brand producers with inside printing"

Boris Häntze, COLORPACK sales director

Tea packaging with inner values

rlc | packaging group produces with BoFood Organic for the first time

The rlc | packaging group, one of the leading providers of innovative packaging solutions in Europe, produced with BoFood Organic at its Berlin site COLORPACK and printed the insides of food packaging. Boris Häntzle, sales director at COLORPACK, explains what advantages he sees for customers and why the system provider thinks inside printing is relevant.

You are one of the biggest European packaging producers. What makes you so successful?

Boris Häntze: What has characterised the company for more 155 years is the fascination for brands and the conviction that packaging is an important part of making a brand lastingly successful. It communicates the brand values at the POS to the customer and keeps on offering impulses for new, meaning-oriented ways of consumption in an ever more virtual world. Inside printing ultimately forms part of this.

How important is product safety for your customers?

It is crucial, and migration is often a central topic: No brand wants to risk its positive image because of flawed products. Particularly when it comes to ink, we have it in our power to prevent migration of contaminants. We see this as our responsibility. The folding box production at our COLORPACK site in Berlin is completely attuned to migration harmless and mineral oil-free ink and varnish. At this site we produce folding boxes for branded companies of the food industry in accordance with BRC / IoP requirements.

Does this mean that internally the use of BoFood Organic is a logical development step?

Yes, because BoFood Organic represents a further development of the previously established BoFood MU ink system. This migration harmless offset ink series is employed by us for printing primary food packaging.

Which strategic added value does inside printing have for you and your customers?

For the brand producers, inside printing opens up new options for customer communication. Everyday products that are produced by the millions have to address the customer on an emotional level. A message on the inside is surprising and can emphasise brand worlds additionally.

Do you have a specific example from production?

We used BoFood Organic for example for the production of a tea packaging which was supposed to emphasise the natural values of the product. BoFood Organic is the most odourless ink on the market, according to our experience. This is a great advantage for this application. The consumer can experience the smell of the tea variety without interference. That is important for his/her relationship to the brand.

What is your assessment of inside printing for packaging in the long run?

Inside printing has the potential to play a greater role in the future. It is getting more and more challenging for brands to differentiate themselves; both at the POS but also when unboxing. It is therefore even more important for it to also anchor itself in the heads of the consumers through packaging. The market is very interested in this opportunity to shape food products in a more differentiated and at the same time, safe way.

The charm of visual communication

Guest contribution by Carsten Bußhoff, pacproject GmbH

A prism on a black background, which splits a ray of light into the colours of a rainbow. Four men – one of them barefoot – walk in a row over a pedestrian crossing in London and a naked baby dives after a dollar note. These images, of course, describe milestones of music history – album covers, which also made history thanks to their artwork. But this was not just a matter of course. Up until the 40ies of the past century, shopping was quite a bleak endeavour for music aficionados. For instead of icons of popular culture, shelves were filled with grey protective sleeves for vinyl records. In 1938, however, one idea changed everything: The printed album cover!

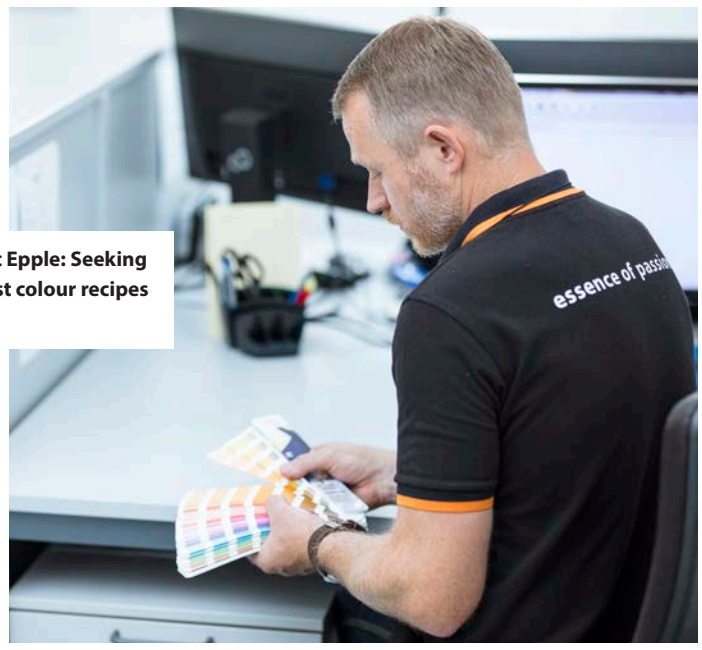
Thus, the first printed version of Beethovens "Eroica" made sales rise by a sensational 895 %. This example impressively demonstrates how much potential a product, its design and its printing can unfold together. Especially today, it is getting ever more important for products and their brands to communicate a message through its packaging. Today's consumer is looking more and more for (brand-)experiences and seduction.

This means that packaging has been promoted to being the mouthpiece of the respective brand. Colours, as the most elementary form of communication, are playing an increasing role in this.

The package design increases the attractiveness of the product, provides orientation in product lines and influences purchase decision-making.

"The most tender temptation since chocolate was invented" would be unimaginable without the smooth purple, which carries us into magical worlds or the deep blue, which has given us trust in our moisturising cream for generations.

And so, today more than ever: we must show our colours! Because only the combination of packaging, its design and print can make it possible to enchant the consumer and make the purchase an emotional experience.



Laboratory work at Epple: Seeking and finding the best colour recipes for the customer.

The colour experts from Neusäß: Epple's Coloristic Team.

Colouring: masters of ink

A greenish blue, which should look fresh, but not too bright? The colouring division makes the colour dreams of customers come true. Especially the CI-requirements of print customers are demanding. The colouring team of Epple Druckfarben AG is accordingly qualified and experienced.

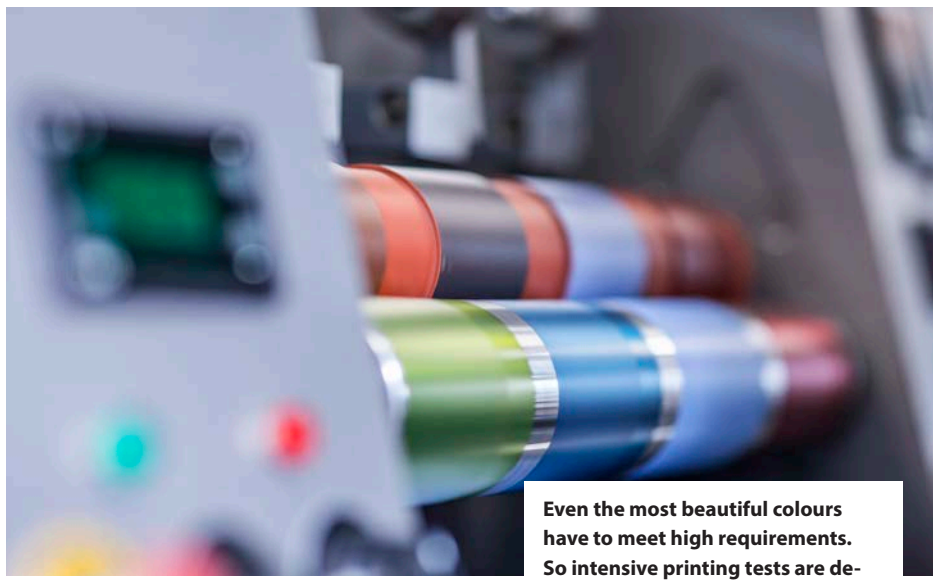
Colourists carry out their work with passion. It is therefore no wonder that the colouring team at Epple has been working together for a long time and has therefore collected indispensable experience, which benefits the customer. The central task of the colour experts is the development of custom colours on the basis of various mixing systems dependent on the area of application, Food, Non-Food or UV inks.

Customer proximity

"The requirements of colour composition are of a technical nature and have to be individually processed according to customer requirements. This can be the adaptation of custom colours for CI on the most varied of substrates or special technical properties for re-usable labels, and the key word is realness" explains Norbert Lenzgeiger, Head of Colouring dept. and implementation technology at Epple. The customers are printing houses, agencies and branded companies. Fast mixing, brilliant optics as well as environmental and consumer friendliness: these detailed customer requirements must be exactly understood and applied to our recipes.

Quality assurance

The recipes for the offset printing inks are put together using the XInkFormulation software from XRite and then the appropriate measuring devices are implemented to ascertain and interpret the colorimetric values. The colouring division at Epple has its own in-house laboratory for mixing and proofing the custom colours. In addition the quality of the colours is also ensured here.



Even the most beautiful colours have to meet high requirements. So intensive printing tests are demanded.

Appointments

FachPack

The specialist trade fair for packaging, processes and technology in Nürnberg

25th. to 27th. of September 2018
Hall 7A . Stand 7A - 138

Forum PackBox

Epple is presenting news on the topic of packaging printing at FachPack within the framework of PrintCity and FFI-Partnership
26th. of September 2018, 10.00 – 12.00
27th. of September 2018, 12.50 – 13.00
Hall 7 Stand 7 - 354

ZLV Verpackungssymposium

Meeting point for all Partners in the value-adding chain of industrial manufacturers and packaged foodstuffs
13th. and 14th. of September 2018
Hochschule Kempten

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