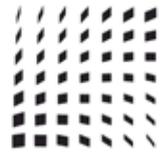


# J+E Newslabel

IDEAS AND SOLUTIONS AROUND PRINTING INK



print media messe  
**drupa**

düsseldorf, germany  
may 3 - 16, 2012

Please visit us at:  
Hall 7, level 1 / D05



**DIE NEUE ESS-KLASSE  
FIRST-CLASS PLEASURE**

## Ladies and Gentlemen,



Christian Jänecke

This year got off to an eventful start. President Wulff resigned and manroland is being split up. For us, too, the major challenges in the field of raw materials continue. The price spiral keeps moving upward and availability is also an issue.

This year, we shall be investing in our offset and UV production. We are going to build additional unit production halls and an administration building next to the "Flexo" production site (in operation since 2004) at our new location in Hoever. This opens up new synergies for us and our clients: delivery times will be even shorter, and the new manufacturing technology allows more efficient production with lower tolerances. Safety in the field of printing inks for food packaging is absolutely ensured by keeping production areas separate.

With regard to the topic of resource availability, we have established a two-supplier strategy. This allows us to substitute raw materials, in case a supplier is unable to deliver. Availability is a key issue for us in terms of customer satisfaction.

In addition, the two-supplier strategy allows us to monitor and compare constantly the quality and the prices in the benchmark with our suppliers. Our customers benefit from our use of the best raw materials on favorable terms. An optimal price-performance ratio is our benchmark for our customers.

We are looking forward to an exciting "Drupa" year with you. We appreciate your visit at our stand in Düsseldorf. We shall remain faithful to you for the next 170 years.

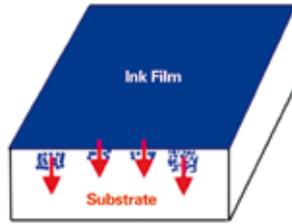
# Migration in packaging printing

"... unwanted ingredients, decreasing circulation, faster processing ..."  
 Most packaging printers are all too familiar with these concepts. Every day, they face these challenges and are glad to have a reliable supplier and partner at their side.

## Food packaging

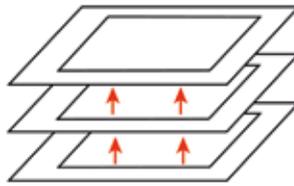
The migration of ink components is more relevant than ever. LMI-series (Low Migration Inks) are now a must-have for every ink manufacturer.

Jänecke + Schneemann do their part to ensure product safety and compliance J + S were able to transfer the knowledge gained from the development of LMI-offset inks into the areas of UV flexo and, quite recently, tin printing. Moreover, corresponding basic color mixing systems have been developed for each application area in addition to the standard color scale. These mixing systems are



considered to have a particularly high migration potential. Greasy fillings are notably challenging.

**Through setoff migration**, an unwanted contact of the printed and unprinted sides of the packaging can lead to the undesirable transfer of ink



components. What is particularly tricky here is the fact that usually the unprinted side is the inside of the packaging and therefore touches the food surface.

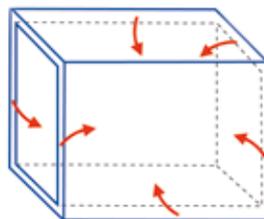
Printing Method	Series	Product code
Conventional offset	Impact LMI	86B80-83
UV-offset	Supra UV LMI	568810-13
UV- flexo	Supraflex LMI	393010-13
Tin printing UV	UV Tinprint LMI	573200-04

based on 15 basic colors from which the entire range of Pantone colors can be assembled. J + S also offer LMI supplies and chemistry for the conventional offset range. The goal is to ensure the highest possible quality and highest process safety along the production line.

## What does "migration" actually mean?

### Migration through the printing substrate

Here, there is a direct migration of ink components through the substrate. The contents would be directly affected. Those ink components which are soluble both in the filling itself and in its components are con-



### Substance transfer through the gas phase

When dealing with separately packaged foods, such as e.g. cereals, gas exchange through the film inner packages can lead to a transfer of undesirable components.

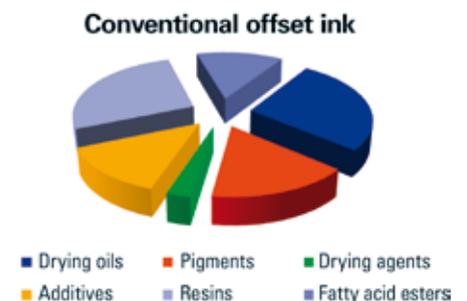
## Can UV inks be used in the printing of food packaging?

The awareness of UV technology in the field of food packaging has changed very much over time. Especially in the field of photo-initiators, further developments have taken place and continue to do so. The possibility of rapid processing, the enormous resistance to physical stress, and the possibility of producing high-quality visual and sensory effects have made the UV technology increasingly attractive. All relevant legislation is, of course, adhered to whenever inks are being developed and enhanced.

## Each new development raises the question: What actually migrates?

To answer this question, the structure of the various ink systems has to be considered.

With regard to UV inks, special attention is paid to the photoinitiators which are decomposed by the action of UV radiation and may possibly not be integrated into the ink film in the case of insufficient cure. The respective printing ink binder base can be a carrier of potential migrants,



either by contamination or by non-integrated monomers. Considering the facts relating to the raw materials, substances of low molecular weight show a stronger migration potential. In the UV range, for example, the photoinitiators are divided into very small fission products. J + S have developed specific approaches to meet these risks of migration.

Carcinogenic and mutagenic substances are excluded from production. In the field of conventional offset printing, heavy metal driers are

be considered with regard to processing. The risk of contamination, for example by an unsuitable cleaning agent, is high. Therefore, only LMI aids and cleaning agents should be applied. J + S, as already mentioned, offer their contribution to safety along the entire production line. Needless to say, thorough cleaning of the machine is a basic requirement.

Maximum attention should always be paid to the printed products in the sheet delivery. Migration happens

	Conventional Offset	UV Offset
<b>Components with Migration Potential</b>	<b>Drier</b> Insufficient ink film adhesion	<b>Photoinitiators</b> Decomposition on exposure to UV rays, Insufficient ink film adhesion
	<b>Oils and fatty acid esters</b> Insufficient drying	<b>Binders</b> Contamination by acrylic acids and solvents, Not fully embedded monomers
	<b>Pigments</b> Contamination by heavy metals, PAH's	<b>Pigments</b> Contamination by heavy metals, PAH's

not used. Through careful research and selection of raw materials, oils and resins have been found and are employed that do not form fission products. With similar stringent care only suitable pigments have been selected. Careful evaluation has revealed fatty acid esters that can be safely used.

In UV technology, high-molecular-weight photoinitiators and, alternatively, self-initiating binders can be used. In UV systems used for food packaging, only extensively cleaned binders are used; furthermore, the proportion of monomers in the binder complex is also reduced to a minimum.

**What CAN, or, what DOES the packaging printers have to do?**

The selection of a suitable substrate and the use of a low migration ink alone are not foolproof. Accordingly, there are other details which have to

mostly via wiping contact. Here, it is especially important to observe the pressure and temperature in the stack. With increasing values, these two factors are highly conducive to migration. Moreover, the time until further processing should be as short as possible.

**"The best solution always is a constant dialogue between customers and supplier. Often, a simple phone call can help answer many questions."**

In order to provide the customer the highest level of security, J + S has invested in an analytics company: Argus Analytical Services Enterprises Ltd. (Argus Analysen Service GmbH). You can read more about this topic in this issue.

The best way to answer any questions on this topic is a personal consultation. The competent partners at J + S will be happy to assist you.

**→ PORTRAIT**

**→ Dr. Christian Schirmacher**



Ever since I began studying chemistry and biochemistry in Bochum I have been fascinated by colors and dyes. Accordingly, my diploma thesis dealt with dyes that could do more than being colorful. Dyes

were also a key topic of my PhD thesis, which took me around the globe. After a short interlude at Siemens AG I was back on track for colors and dyes at Constantia Hueck Folien – a large packaging material printer in the Oberpfalz area of Germany. I developed printing inks, lacquers, foils, packaging materials and machine technology there and supported the production in the field of flexo printing, rotogravure printing, laminating, lacquering and dye-cutting. Since January this year I have been *head of the flexo and rotogravure Lab* at J + S and am eager for new and fascinating challenges in this owner-run company that maintains close customer contact.

**→ Eckhard Berthold**

*Key Account Manager Packaging*



After studying printing technology in Wuppertal I have worked in different areas of the printing industry. I led a repro company to the certification of a QM system. I optimized process and machine technology in a manufactu-

ring plant for CDs and DVDs. My main focus of experience lies in the production of folding boxes in the premium area of offset printing and gravure. Today I have been working for five years in key account management and sales of printing inks, especially in the packaging area.

At Jänecke + Schneemann's, I like the flat hierarchy, the short decision paths, and the open door policy. Customer problems are not over-administered. Instead, there is the will to find a quick and appropriate solution – in the interests of the customer.

Newslabel interview with

**Santiago Gomez Romero**, Head of Analytics at Argus (SGR)  
**Frank Scheiffler**, Development Manager UV inks at J + S (FS)  
**Harfst Henning**, Head of Sales & Marketing at J + S (HH)

→ **Argus - What does that mean?**

(SGR) Argus is the short form of Argus Analysen Service GmbH, a subsidiary of Jänecke + Schneemann, which deals with product safety on an analytical level.

→ **What kinds of analyses are being done?**

(SGR) From global and specific migration analysis to qualitative and quantitative substance analysis, we can answer many of the queries posed by the market with relation to migration.

→ **What analytical techniques are available at Argus?**

(SGR) We have a GC-MS system with an automatic liquid sampler, with which we are able to look for volatile and semi-volatile substances within the assays. Usually, we use this unit when we need a 10 ppb screening of the global migration analysis. In addition, we also have the option of using a headspace autosampler to screen assays for very volatile components.

We have a HPLC-MS system for the analysis of non-volatile compounds, which cannot be detected by the GC-MS. Routinely, the high molecular weight photoinitiators are recorded here.

→ **Why did you install your own analytics department?**

(FS) Our own analytics department allows us to select suitable raw materials during the development of new low migration ink systems. It is not only crucial to know whether a raw material can migrate, but also whether it still contains or forms other substances that can be introduced into a food unintentionally. The analysis helps us to estimate the migration potential and to control resources.

(HH) We also want to grow continuously in the packaging segment – in a broader sense. We see a substantial part of our future wherever a package is upgraded with printing ink, whether through a label, a carton or a bottle cap.

And secondly, we have further strengthened our expertise in research and development, of course.

→ **Does the packaging industry demand separate supplier analyses?**

(HH) No, most packers carry out their analyses externally. However, it has always been one of our strengths to identify market trends early on and to engage these proactively in our business concept.

→ **What kind of development is that?**

(HH) Quality management is becoming more and more important. The branded companies, especially the food manufacturers, invest an enormous effort in ensuring the highest level of product reliability and process safety.

→ **What is already being done for the safety of food packaging?**

(HH) Safety is an issue in all segments. But of course, risk management in the food sector plays an important role. Prompted by findings of ink components in food, the entire supply chain is constantly working on further improvements in the packaging. The government and the authorities participate in this process by working on new laws and regulations.

(FS) Thus, Switzerland created the first specific legal regulation for packaging inks in Europe, after many corporate actors in the supply chain had already set their own guidelines (e.g. the so-called "Nestle Guidance Note For Packaging Inks"). The German authorities are also working on a regulation regarding printing inks for food packaging.

→ **Do your inks meet these requirements?**

(HH) Yes, we can provide our customers with inks that meet these requirements. Another point is important in this context, however. At the end of the day, the finished package has to withstand the migration analysis. The use of our ink alone does not automatically guarantee an appropriate packaging. Therefore, we do not only have

to deliver the inks, but we also need to keep in touch with our customers beyond that in order to be able to ensure that their final product is safe.

We advise our customers with regard to this topic, for example via our application engineering. And we also maintain an intense dialogue not only with our suppliers, but also with our customers in order to be able to anticipate trends and present high-end solutions.

→ **Does it not have a "strange aftertaste" when an ink manufacturer keeps its own analytical company to perform analyses of migration?**

(SGR) At first glance, it may look like that, but we ourselves do not issue any certificates of conformity with our analyses. To obtain these, the packaging must be examined by an independent analytical institute.

Through our entire exploratory migration analysis, we can deliver a prompt initial assessment of the packaging and can thus respond at an early stage.

Very often, Argus becomes involved in the analytical process at the outset to ensure a positive test result, and an established institute then completes the analysis.

(HH) By working closely with the packaging manufacturers, we have clearly changed our perspective on food safety. We need to work together throughout the entire supply chain, so that our partners can rely on us and we can trust them in return.

Given this background, it goes without saying that we take our responsibility very seriously by working with our own analytics.

**Thank you for your time.**

Published by

**Masthead**

Jänecke+Schneemann Druckfarben GmbH · Podbielskistraße 295 · D-30655 Hannover  
 Tel.: 05 11 / 54 71-0 · Fax: 05 11 / 54 71-212 · E-Mail: info@js-druckfarben.de · www.js-druckfarben.de

**Concept and Design**

Fassmer Marketing GmbH · Ellernstraße 25 · 30175 Hannover · www.fassmer-marketing.de