

# FLEXIBLE PACKAGING

News for Flexible Packaging · EMEA Edition



## WELCOME, HANNS MARTIN KAISER

As Chief Technology Officer, Dr. Hanns Martin Kaiser has been responsible for the Applications Engineering division and for technical design/development at the Flexible Packaging EMEA business unit since the beginning of the year.

Hanns Martin Kaiser is a Chemistry PhD and an acknowledged expert on this subject, who has mentored a series of chemical industry projects in the past. He joined Siegwerk in September 2012. Since then he has played a key role in addressing issues of strategic relevance to the Flexible Packaging division.

The new CTO will be supported by a strong and experienced team. His predecessor, Dr. Ralph Detsch, will now head up the new Flexible Packaging global technology function at Siegwerk and will make a major contribution to the company's track record of success.



Dr. Hanns Martin Kaiser,  
Chief Technology Officer  
at Flexible Packaging EMEA



If you have any further questions, please contact:  
[info@siegwerk.com](mailto:info@siegwerk.com)

## IT'S A MATTER OF TECHNOLOGY

*The trend towards environmentally compatible inks is paving the way for water-based inks to be used in packaging printing too.*

Water-based inks are in demand. Their major benefits include the fact that they are subject to relatively few emissions- and fire-safety-related legal requirements. That makes them an appealing option for many users.

However one technical challenge has always been the drying properties of these inks on non-absorbent substrates, which has a negative impact on printing process speed and print quality. Adhesion on and laminatability of these substrates is also not as good as that of solvent-based inks. In order to achieve a level of performance similar to that of solvent-based systems, ink technology needed to be enhanced accordingly.

Siegwerk has created a range of flexo-printing inks that meet high market standards in terms of non-absorbent surfaces and

reverse printing. This new ink technology enables packaging and films made of PET, OPA or OPP to be printed to premium quality standards.

These highly pigmented, water-based inks have the following characteristics:

- Excellent rheological properties
- Very high degree of color intensity
- Suitable for speeds of up to 300m/min in conjunction with white ink
- Good adhesion properties > 2 N/15 mm

This makes our water-based ink systems ideal for HD flexo-printing use. Siegwerk has set up a new production line to manufacture water-based inks, to meet high quality standards and the demand for customized printing ink solutions.

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## ON-DEMAND ASSISTANCE

*Printing inks for flexible food packaging are subject to very stringent requirements, to guarantee product safety and legal compliance. That's why Siegwerk provides its customers with a comprehensive range of online product safety tools.*

One of these is a customer documentation database containing product safety, legal compliance and consumer specifications information. Dr. Nikole Peters, Product Safety Specialist, emphasizes: "What are the possible risks associated with product safety? We don't abandon our customers, but provide assistance that goes beyond normal customer documentation."

A potential risk is migration of printing inks into packaged foods. Companies manufacturing flexible packaging must know

exactly what the relevant migration factors of the various materials used are, e.g. film and ink, and must incorporate this information into their risk analysis. Siegwerk provides a **Worst-Case-Calculator**<sup>®</sup> to enable printing ink risks to be assessed. "This calculates the maximum expected migration of a migration-capable material from the printing ink onto the packaged food", Dr. Nikole Peters explains. "Here the user can vary packaging unit size, surface coating weight and surface coverage to match their own packaging designs."

The **Worst-Case-Calculator**<sup>®</sup> **Non-Finished Inks** is available to customers that use semi-finished inks or varnishes. Furthermore up-to-date **GHS compliant safety data-sheets** are available online for all Siegwerk products featuring a 13-digit material number. These tools cover information requirements to a large extent. This adds transparency to what Siegwerk does and improves on-demand customer communication.




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## FIRST AID FOR PRINT COMPANIES

Should printing press problems arise, Siegwerk provides an immediate-assistance service. Experienced engineers deliver a short-notice, long-term corrective action service. We have a global network of applications and analysis experts at our disposal to assist with fault detection. We develop appropriate ink solutions to

prevent customer complaints and quality problems. If our customers roll out new technologies, we also provide on-site support. We don't abandon customers' staff either: Siegwerk trains print company employees how to handle printing inks and presses.

### THE BENEFITS ARE OBVIOUS:

-  Reduced downtimes and lower materials usage
-  Shorter roll-out periods for new technologies
-  Fewer ink-related problems causing substrates to stick together and printing press blockages

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## SOLVING PROBLEMS: SURFACE PRINTING IMPERFECTIONS

Sometimes a printed surface looks unevenly mottled, although it should actually be fully unicolored. This imperfection

occurs both in flexo and gravure printing – however it has different causes and remedies.



### FLEXO-PRINTING

CAUSE	REMEDY
Printing plate surface is flawed, uneven or damaged.	Replace printing plate
Ink viscosity too low.	Check viscosity and increase
Foreign particles or impurities contaminate cylinders or anilox rollers.	Carefully clean anilox rollers
Substrate surface uneven.	Use more supple printing plates
Ink contaminated.	Filter it or use new ink
Ink viscosity too high.	Add solvent
Doctor blade pressure too high or too low.	Adjust pressure

### GRAVURE PRINTING

CAUSE	REMEDY
Ink viscosity very low.	Check viscosity or optimize dryer airflow
Solids content too low (poor ink flow behavior).	Increase binding agent content, e.g. by adding more extender or solvent with more powerful action
Ink film dries up.	Use retarder or solvent with more powerful action
Cylinder is too deeply engraved and applies too thick an ink/varnish coating.	Use flatter cylinders with finer screen (requires stronger inks)
Cylinder worn out.	Replace or re-chrome cylinder
Too much pressure between cylinder and impression roller	Reduce contact pressure and use softer/harder impression rollers and electrostatic printing aids as appropriate, depending on substrate used