

"..customers are important to us, and our workforce is our strength.."



**ISO re-certification**  
Success without compromises.

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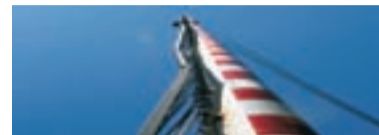
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## KOLB GROUP

### A new dawn

The demise of the European chemicals industry has again been trailed: a large firm of corporate consultants have been painting a broad-brush picture of a market seemingly devoid of European producers. Saudi Arabia's raw materials price advantages are too clear, West Europe's growth is too small, the trend towards relocation of manufacturing and demand to Asia too irreversible.

#### Are the lights really about to go out in Europe?

I cannot subscribe to this doom-laden scenario, nor do I want to. For sure, the chemicals industry is going through a turbulent time. Business models and circumstances are changing as fast as the demands of the marketplace. Europe's manufacturers, Kolb among them, are facing unparalleled, highly complex demands. But does that mean we should give up?

viction that Kolb is well placed to weather the changes. We begin by treating our customers as unique and aiming to satisfy their specific needs. We change things when they need changing and continually seek to balance customer expectations against what is actually feasible. I believe Kolb has largely managed to achieve this. The result is customer loyalty and trust, which explains our high customer satisfaction ratings.

Instead of debating the end of the European chemicals industry, far better to focus on the fundamentals: on you, our customer and business partner. You can take us at our word.

On that note, I wish you happy reading!

Peter Wilkes, CEO Kolb Group  
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Gentlemanly self-effacement would be an inappropriate, even fatal, response – as would turning a blind eye to the underlying trends. That is definitely not the answer. My personal response blends sporting ambition with the con-

cluding ambition with the con-

## Editorial

Dear Reader

Spring and summer mean show time! You might be reading these lines at In-Cosmetics, having picked up this "Kolb Times" at our stand F25. Perhaps your preparations are in full swing for Zellcheming, a key fixture in the paper industry's calendar – or maybe your thoughts are turning to Sepawa. Kolb will have stand at all these exhibitions. By attending various trade fairs, we keep our finger on the marketplace's pulse. This is a unique opportunity. Market proximity equals customer orientation.

Our show preview on the last page will help you to plan your visit. We look forward to meeting you. We will be there. You could say – we are at your fingertips...

We hope you like this latest "Kolb Times" and look forward to seeing you at a forthcoming show.

The Editorial Team

## ISO re-certification – success without compromises.

They did it! The two Kolb sites in Switzerland and the Netherlands and Kolb Distribution Ltd. were all successful in their DIN EN ISO 9001:2008 and 14001:2004 recertification bid at the end of 2009. The result underscores yet again the key role systematic quality and environmental management plays in the company's corporate philosophy.

The recertification success also demonstrates that its quality and environmental management is fully up to date and that the organisation lives and breathes quality and environmental awareness at every level. The management is conscious that keeping customer satisfaction high calls for uncompromising quality standards throughout the firm's

processes. This, in turn, requires the support of motivated staff, prepared to deliver exceptional levels of performance. This superior quality is reflected in the ISO 9001 and 14001 certifications – and, most importantly, in each and every product that Kolb manufactures.

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# When things get stuck.

## Viscosities in Kolb's alkoxylation.

Viscosity is a measure of the fluidity of a liquid. The higher the viscosity, the thicker / less fluid the medium; the lower the viscosity, the thinner / more fluid it is. The unit of measurement used to measure viscosity is the poise (P), where:

$1 P = 100 \text{ cP (centipoise)} = 0.1 \text{ Pa}\cdot\text{s (pascal seconds)} = 0.1 \text{ N}\cdot\text{s}/\text{m}^2 \text{ (Newton seconds per square metre)}$ .

Poise as a unit of dynamic viscosity is named after the French physicist and man of medicine Jean Louis Marie Poiseuille. [Wikipedia]

### Typical viscosities

As you might imagine, viscosity can play a key role in the chemical process.

ess. The thicker a product, the higher the technical challenges.

"Normal" or typical Kolb alkoxylation products have a viscosity of 10 to around 500 cP. These products are no problem to manufacture and process in our facilities.

The process starts too slow, however, as reaction mixtures and products reach a viscosity higher than 500 cP: charge and transfer times increase rapidly.

From a thermodynamic aspect, the thermal energy of the exothermic batch driven chemical reaction

can be removed only slowly if reaction mixtures exhibit a high viscosity, that means process time increase. From a mechanical aspect, such processes lead to overloading as pumps and pipework are pushed to their performance limits. The result is increased wear and expensive repair and maintenance bills.

That's not all: the processing of high-viscosity substances can impair their quality. Inadequate or insufficient blending can cause in-process controls to deliver false readings, which means interpretations would be wrong, too. This in turn means long drawn-out reprocessing, with

out-of-spec-batches as a worst-case scenario.

To optimise a number of existing processes and to broaden our portfolio of competencies at a technical level, we are planning to modify one of our existing reactors. The modification or redesign of some parts of the system should allow us to process production blends exhibiting viscosities of up to 2000 cP with a reasonable space-time yield and in a quality our customers have come to expect from Kolb.

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## Price/performance ratio is right.

As part of our Bachelor of Science in Business Administration, we carried out research on behalf of Kolb into boosting customer loyalty.

Our aim was to reveal the link between customer loyalty and customer satisfaction. Loyalty is measured in terms of the customer's willingness to buy and to act as brand ambassador.

We wanted to measure the extent to which willingness to buy/recommend was influenced by changes in the price/performance ratio.

We sent Kolb customers a questionnaire that probed the link in general, but also looked more specifically at their satisfaction ratings.

We were able to demonstrate that the chemicals sector is very price sensitive. What this means is that a company like Kolb can rely on the loyalty of its customers only if the latter feel they are getting value for money – which is currently the case. Accordingly, our recommendations were that Kolb should maintain its offers unchanged.

We would like to thank Kolb's customers for taking part in our survey, which has allowed us to deliver a successful project – and to furnish Kolb with a clear set of conclusions and recommendations.

Esther Bachofen und Andreas Troxler, AKAD Hochschule für Berufstätige



Low viscosity: good flowability

Diethyl ether	=	0.24 cP
Water (25 °C)	=	0.89 cP
Water (20 °C)	=	1.00 cP
Water (5 °C)	=	1.52 cP
Coffee-Cream	=	10.0 cP
Fatty alcohol (40 °C)	=	> 10 cP
Short chained alkoxylation products (40 °C)	=	> 10 cP
Olive oil	=	100 cP
Naphthol-[EO] <sub>n</sub> (40 °C)	=	250 cP
Castor oil-[EO] <sub>n</sub> (40 °C)	=	300 cP



High viscosity: viscous medium

Long chained alcohols (40 °C)	=	> 300 cP
Long chained EO/PO-products	=	> 400 cP
Syrup (undiluted)	=	> 1000 cP
Long chained PEG's (100 °C)	=	> 1000 cP
Honey	=	> 5000 cP
Glass while worked at	=	10000 cP
Glass	=	10 <sup>18</sup> cP

# Three of a kind – settlement after one year in operation.

After opening of the new production plant in Moerdijk in September 2008 new installations have been in operation for more than one year and first conclusions can be drawn – not only from a production perspective but also regarding energy re-use.

In his article in the Kolb times from April 2008, Dr. Viktor Helbling wrote about our special attention to ecology and CO<sub>2</sub> reduction during the engineering and execution phase

of our new plant in Moerdijk. The chemical processes used in our plants offer a number of possibilities to bring sustainability into practice. While these processes are exothermic during the reaction with EO (ethylene oxide), a lot of energy is used to heat up raw materials and the pipe systems and to transport the finished products to our customers. The challenge is to develop a system where supply and demand of energy within a single company can be balanced and utilized.

For a number of years we have focused on the reduction of primary energy consumption in all our chemical plants. This item has been a fixture in all our projects for a long time and is related to both sustainability and the economic reality of reducing costs and improving manufacturing efficiency. But our processes offer us additional challenges. Viktor Helbling has mentioned specifically the recovery system for exothermic reaction heat which has been developed for our

new plant in Moerdijk, without any doubt a challenge in a batch-driven, semi-continuous production facility!

After one year of experience with our third reactor line it is time to take stock and of course, in the good tradition of sustainability, to inform our customers and stakeholders about the result. The new reactor has in the last year routinely produced an important part of our ethoxylates. Production output was generated on a high level and nev-

ertheless the results in energy savings are very satisfying and correspond to the calculations made in advance. The quality standards and our objectives for a multifunctional reactor developed in the engineering phase could be fulfilled easily.

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Energy consumption 2007 to 2009



The figure shows the overall energy consumption during the last three years in our plant in Moerdijk: in 2007 without heat recovery and in 2009 with the heat recovery system in operation; heat recovery resulted in a massive decrease of natural gas and for that reason CO<sub>2</sub>-emissions were minimized as well.

## CAREERS

Kolb Group has announced a personal change.



**Dr. H. Lothar Möhle** has been appointed to the new position of head of research & development after serving the company in sales, technical marketing and application roles for fourteen years.

He received his Ph.D. degree in physical chemistry at the University of Leipzig in 1981. His scientific activities centered around general subjects of physical and colloid chemistry of surfactants. The actual research interests are in the development and use of surfactant specialties in H&E cleaning and industrial applications in close cooperation with customers.

## PAPER CHEMICALS

# The microorganism cocktail.

**During the past years Kolb has invested a lot into the development of microbiological methods and some molecular biology techniques. Complex mixtures of microorganisms can be analyzed.**

Microorganisms are ubiquitous in papermaking. Paper defects such as holes or spots or web breaks are often due to slime forming bacteria. In most cases the exact composition of the microorganism cocktail is of minor interest – with a few exceptions!

- Manufacturers of sanitary paper for hospital use are interested in the number of certain pathogenic microorganisms to avoid problems of infections and diseases.
- Manufacturers of paper used for food packaging are particularly interested in the Bacillus species, which can cause severe quality problems.
- In a particular case a certain fungi species was responsible for a heavy contamination of a paper machine. After isolation and cultivation of the fungi the most efficient fungicide was determined by lab tests.

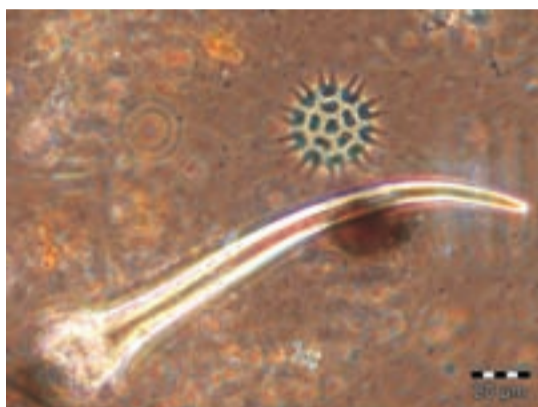
Microscopy and killing tests are standard methods to analyze mixtures of microorganisms. Beyond that Kolb uses microbiological methods and molecular biology techniques such as PCR with subsequent DNA sequence analysis. Interesting results can be obtained even with minute sample amounts – e.g. the contamination of sanitary paper with microorganisms.

Of course the detailed analysis is just the first step in a total solution

approach. Kolb's oxidative and classical biocides (Mucosin), preservatives (Microcid) and deposit dispersants (Natudisp) can be used to avoid problems due to microorganisms in the first place.

The methods described above are an important part of Kolb's tailor-made solutions for the paper industry.

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Example of a microorganism.



## The chemistry's right.

The chemistry has to be right! We hear that quite a bit. But we recognised long ago that the phrase has nothing to do with chemistry per se, but is meant in its figurative sense. In a work context, it means that the team is well organised, that its members get on, complement each other and inspire each other well.

When it comes to Kolb, however, the chemistry has to be right in both senses of the word: between people – and in the tanks.

You could debate which of the two chemistries is the more demanding, the interpersonal or the real one.

But in actual fact you cannot have one without the other. If we failed to come up with anything usable, even the best sales team in the world would be hard pushed to sell it. By the same token, great products would never get anywhere without input from

our laboratories and our customer service, marketing and sales departments.

The fact that we are successful is an obvious indication that we understand the meaning of chemistry – in every sense of the word. Teams members get on well, our manufacturing facilities are working at full stretch, and our customers are happy. Even so – as the saying goes – if you sit on your laurels you're not wearing them in the right place... Chemistry is a dynamic science, one where things can change quickly – even spiral out of control.

Our dedicated workforce is there to ensure this does not happen. It means that while Kolb remains vigilant, it can also face the future with some equanimity. Why? Because – as you have probably already guessed – the chemistry's right.

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## SPECIFICATION CHEMICALS

# Kolb products without limits. The interview.

**Our portfolio of specification chemicals is distributed worldwide. Most of it is available through partners such as Espachem in the Netherlands, who also cover the Benelux region. We spoke to Bas Brobbel from Espachem.**



Martijn and Bas Brobbel from Espachem.

*How long have you been a Kolb partner, and how did the partnership come about?*

We've been distributing Kolb in the Benelux region since 1992. My father, Nico Brobbel, founded Espachem in 1985 and was an active player in the surfactants scene. Kolb back then was looking for representation in the Benelux region. Initial contacts involved Horst Jung and Walter Schneider. That was the start of a productive partnership.

*What are the challenges in working with Kolb?*

We operate in a number of markets, and customer needs are on an upwards curve, not least due to laws such as the EU Directives on plastics, cosmetics, food, animal feed, pharmaceuticals, eco labelling, GMP+, Reach and so forth. Stakeholder communication is key here.

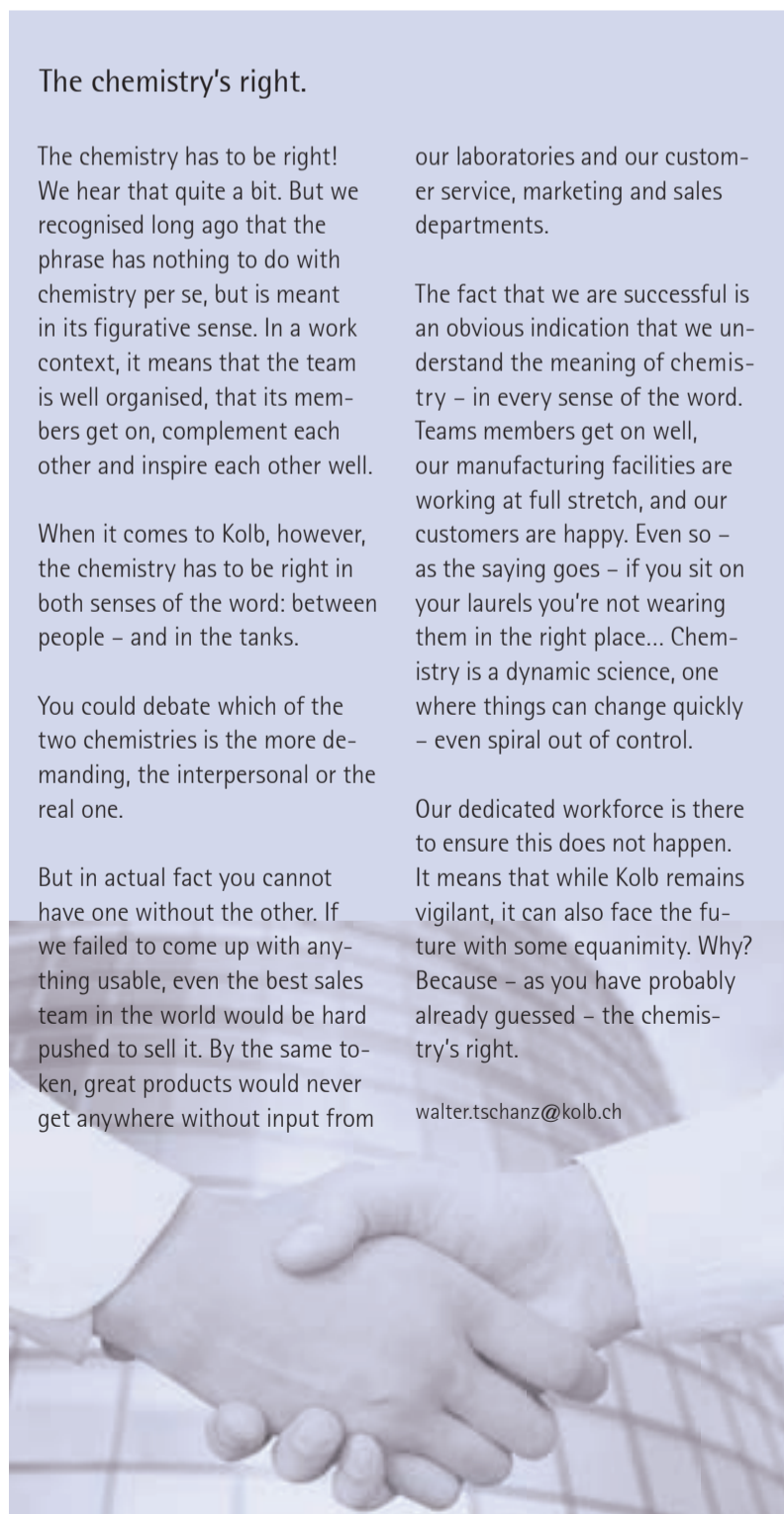
*How is your partnership with Kolb?*

We really enjoy the personal contact with Kolb staff. Kolb was family-run for a long time, and that's something you can still feel. Ours is a close relationship. That's vital if you want to keep pace with dynamic developments in the marketplace.

*How is the future looking?*

We have witnessed substantial growth with Kolb products in recent years. Increasing this will present quite a challenge. Having said that, the Benelux region still has great potentialities..

*Bas Brobbel, thank you for speaking to us.*



Introducing our new flyer **As natural as possible – an application guide**. The Imbentin-AG/124S/... range of surfactants exhibits balanced foaming, wetting and surface activity as well as excellent emulsifying properties with regard to typical oil phases. The flyer lists a selection of formulations for hard surface cleaners.

Please contact us for further information.

#### A closer look at emulsions – theory and multifaceted practice.

We come across emulsions on a daily basis – not just in our work as surfactant chemists, but in our private lives as well. An opportunity for reflecting on the principles of emulsification?

This flyer contains a wealth of interesting information.

## PTS Symposium Applied Interface Chemistry the devil is on the interface.

At Kolb, we say: "the secret is on the surface". An attendee at this symposium mentioned the quote from Wolfgang Pauli who said in turn: the devil invented the surface.

The symposium featured a wide range of topics. On the one hand the complex interface phenomena, based on interactions of fibres, chemical additives and contaminants were discussed. On the other hand possible new process analysis and dosing optimisation methods were covered. Further, new functional additives and paper properties of the future were presented.

Kolb presented two papers at this symposium. The first was on the latest findings and developments in the area of deaeration in the wet end of paper machines. The PhD candidate presenting this paper had looked at this topic as part of their thesis, undertaken at the laboratory of food process engineering. This is part of the Swiss Federal Institute of Technology Zurich (ETHZ). He was able to show that with on-site dispersing of the active components of a traditional dispersion deaerator it is possible to optimise the particle size. Together with a simultaneous omission of a stabilising surfactant, it was then possible to significantly reduce the air content after the fan pump compared to a pre-dispersed deaerator suspension. The presentation also premiered an alternative active substance that exhibits improved deaeration performance compared to conventional fatty alcohols. We will be conducting further machine trials to corroborate these findings.

The second of our papers presented by Alexander Wagner from Kolb, discussed the latest findings regarding

the conditioning of press felts to reduce organic deposits. The main focus of the work involved developing a laboratory method that could facilitate the investigation of potential conditioning agents for their ability to hydrophilize polyamide felt material. Subsequently we wished to identify possible strategies for developing more efficient conditioning agents. It emerged that polymer surfactants with alternating hydrophobic and hydrophilic parts exhibit a highly promising conditioning effect. Following further syntheses and initial laboratory tests, the focus will now shift to the paper machine.

We believe that it will take the combined efforts of the paper and allied industry working alongside univer-

sities and institutes to really understand the above-described complex interactions at the interface. This understanding will lead to the development of new additives, functional papers and measuring meth-

ods. Symposia offer an excellent platform for knowledge interactions and discussing different approaches that may be of interest in the future.

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## Trade fairs: looking back ...

### Paperex 2009, Delhi.

Paperex 2009 took place in Delhi between 4 and 7 December 2009. As the most important trade fair in India's paper industry calendar, it can be compared with Zellcheming in Wiesbaden, Germany. Although it focuses principally on the Indian market, you come across a large number of exhibitors and visitors from other countries in the region.

Kolb's Paper Chemicals BU was represented as usual by local partner Wires & Fabriks. More than 400 exhibitors were present, the vast majority local to the Indian market. Attending were more than 30 000 visitors. Paperex is the ideal place for meeting customers from India and neighbouring countries.

Despite the worldwide economic downturn, India's paper market continues to grow unabated. The coun-

try's population of one-plus billion can be contrasted with its output of less than ten million tonnes of paper per annum. Hardly surprising, then, that its production is very much on the up...

As can be imagined, India is increasingly important to Kolb as a market in Asia.

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## ... and looking ahead



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