Safer process. Safer profit.



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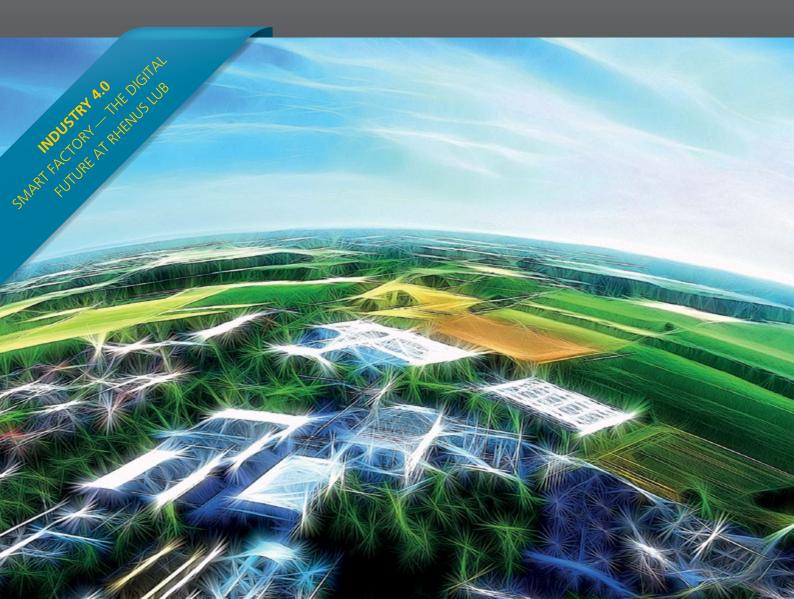
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Editorial



We invest for your benefit!

Dear readers,

We are currently investing two million euro in your future. We are pumping this money into our "Smart Factory", which

will digitalise and automate our production processes for special lubricating greases taking us a crucial step closer to "Industry 4.0" and confirming our leading position in the sector.

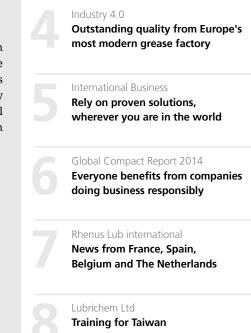
The Rhenus Lub "Smart Factory" offers you, our customers, real added value: We're producing greases to even more exacting standards and our high-quality compositions are being implemented even more reliably in our products. And an additional advantage for you is that digitalisation enables all production stages to be seamlessly documented and tracked to an exceptional level of detail. Find out more in this edition of impuls.

With our very best wishes,

Dr Max Reiners

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Progress

Innovation partnership with the Niederrhein University of Applied Sciences Searching for the specialists of tomorrow

The future starts now — which is why we are already looking for the specialists and managers of tomorrow. Our customers come from a highly diverse range of industries, and they expect us to be a one-stop supplier for professional solutions to problems and optimisation suggestions tailored to their needs. Our junior employees not only bring fresh ideas into our company, but they are also very familiar with the latest insights and processes in research and science. Rhenus Lub has been working closely with leading educational institutions for a number of years. We also recently became a sponsor of the "Germany Scholarship" provided by the Niederrhein University of Applied Sciences. As part of this scholarship, chemistry students not only receive financial support, but also have the opportunity to contribute their knowledge to the "Process analytics in grease production" project.



Petra Meyer (left), Head of Human Resources, and Dr Carsten Puke (right), Head of Laboratory for Greases, present a scholarship certificate to a chemistry student on behalf of Rhenus Lub.

As a sponsor, we can draw on positive experiences from previous collaborations with the Niederrhein University of Applied Sciences: Only a few weeks ago, a student from the university successfully completed her Master's thesis on the topic of "Coolants for fibre-reinforcement processes" and subsequently signed an employment contract with Rhenus Lub.

Info: udo.quotschalla@rhenusweb.de

Reliable throughout the holidays

In Europe, it has long been common practice for production to be interrupted for long stretches over the holidays. But what can you do to prevent your coolants becoming unstable over this period? One option is to switch on the automatic circulation system so that the fluids are regularly circulated. If this is not possible, you should set all the parameters to the recommended maximum values before switching off the machines. By doing this, you will create a reserve to ensure that the fluids are preserved while production is interrupted. You should also add a dose of a weak preservative agent to the system and ensure that the emulsion is free of any foreign materials or substances.

Info: kiehl@rhenusweb.de



Protecting coolants from frost

Our key recommendation to our customers for the colder seasons of the year: Protect your fluids against frost! Our highly specialised fluids contain up to 25 additives to achieve specific properties during use. Together with the base oil, the ingredients create a homogenous mixture. This homogeneity can suffer from the effects of the cold, so at this time of year it is best to store coolants in your production hall, preferably at temperatures above 5°C. By following this advice, you can ensure that the concentrate will remain stable for a long time.

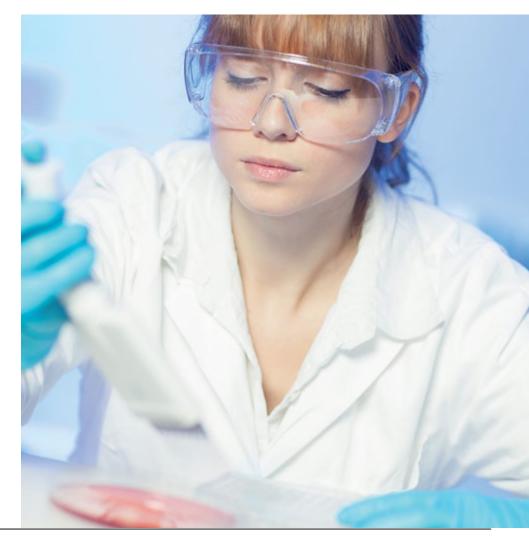
Info: kiehl@rhenusweb.de

Detecting bacteria

In coolant-related processes, it is imperative that any changes are recognised immediately and dealt with accordingly. We are setting new benchmarks with our ATP measurement process: Changes in bacteria formation can be assessed and acted upon directly just one minute after testing. This is a great improvement on conventional methods (such as dip slides), which only show actual bacteria infestation after at least 24 hours.

Using our ATP measurement process, our customers are able to fine-tune their fluids and achieve maximum efficiency and reliability during use. If you want to determine bacteria levels reliably and quickly, then ask about our effective measuring method!

Info: kiehl@rhenusweb.de



New benchmarks with Industry 4.0 Outstanding quality from Europe's most modern grease factory

The innovative Rhenus Lub automation concept connects lubricating grease production with the digital world. This concept is a key step towards Industry 4.0. It also means that you, our customer, can benefit from high delivery reliability and consistent product quality—because the often extremely complex processes for producing lubricating greases in Mönchengladbach will be planned, controlled and monitored using the latest process control technology.

State-of-the-art technology since 2005

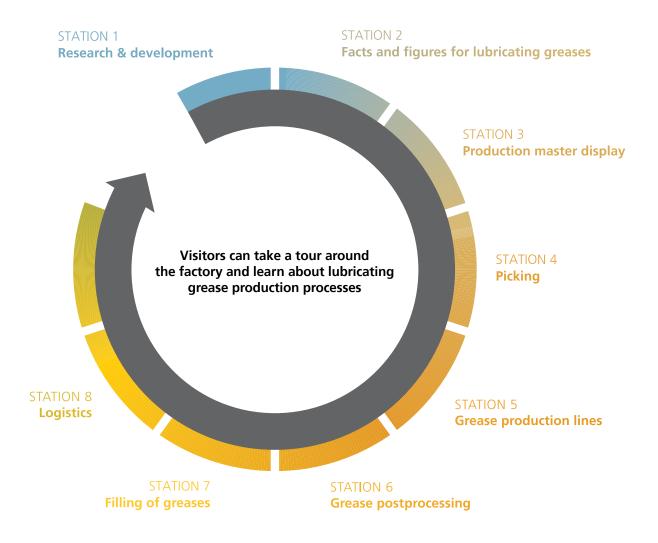
"When we opened our state-of-the-art lubricating grease factory in the autumn of 2005, we were already thinking ahead to digitalisation, and we've now extended our plans with the innovative automation concept. Our digitalised process sequences enable us to react with efficiency and flexibility to the ever-increasing complexities and changing demands", explains Martin Römer, Head of Grease Production.

Our customers reap the rewards

Thanks to digital process controlling and monitoring, complex products are now primarily being produced in an automated process according to pre-defined formulae. Previously, production was generally manual, as many different process stages are required to produce innovative lubricating greases. "The digitally controlled and monitored production process means that we can further increase precision in production", says Martin Römer. At the same time, production, quality control and batch tracking can be documented quickly and comprehensively. "Our digitalised process sequences enable us to react with efficiency and flexibility to the ever-increasing complexities and changing demands".

> Martin Römer Head of Grease Production

Info: hentrich@rhenusweb.de



Rely on proven solutions, wherever you are in the world

Multinational companies are now producing their products all over the world—Volkswagen alone produces in around 50 locations. Automobile suppliers and contractors follow the producers, as it is vital for them to be based close to the production sites of the companies they supply. And we are taking these requirements into account: As a system provider for coolants, special greases and application support, we are ensuring that our fluids are perfectly adapted to processes and environmental parameters for any location. Our new partner, Mapa Distributors, is a good example: In the countries of the North American Free Trade Agreement (NAFTA), Mapa distributes rhenus-branded products and advises customers on applications and processing.

Outstanding application support

"We supply lubricants to our customers around the world, but we also supplement that with comprehensive application support", says Hans van Gerwen, Head of International Business at Rhenus Lub. "This is our real strong point".

Transferring reliable processes

This is exactly what is required by global producers of automobiles and machine tools, as well as their distributors in the metal processing industry: reliable processes that they can transfer seamlessly from one location to another. We are supporting them in achieving this seamless transfer in a number of ways: With reliable logistics, we supply our products to customers all over the world. You can count on reliable delivery, and we have experienced engineers to support you wherever you are. Put us to the test!

Info: gerwen@rhenusweb.de



Global Compact

Everyone benefits from companies doing business responsibly

Human rights, sustainable protection of the environment, labour standards and the fight against corruption — these are key focus areas of the UN initiative Global Compact, but also very important concerns for business partners and customers of Rhenus Lub. They trust in our responsible conduct as a company, our integrity and our commitment to sustainability, quality and environmental protection — helping to ensure that they, in turn, do business positively. The latest Global Compact Report 2014 provides an overview of the significant progress that Rhenus Lub has achieved over the past year in the individual sectors. Take a look for yourself! The latest progress report is available at: http://www.rhenuslub.de/en/companysustainability.html

Find out more about Global Compact at: www.unglobalcompact.org

⁵ United Nations Global Compact

rhenus TU 65-2 Snecma grants approval for the aerospace industry

Processes in the aerospace industry are subject to the most stringent requirements in terms of performance and process reliability. Only selected coolants receive approval to satisfy the strict demands of manufacturers in this sector.

With its outstanding performance even in the most challenging machining operations, the formaldehyde-free, boron-free and mineral oil-free EP coolant rhenus TU 65-2

Innovation partnership with DLR Joint research for the raw material of the future

Fibre-reinforced plastics and their combination with metal multilayer composites will have a significant role to play in the future but the machining of these materials is still a highly specialised discipline in the production process. Rhenus Lub is co-operating with the German Aerospace Centre (DLR) in a threeyear research project on the development of coolants that provide customers with access to these innovative raw materials and also enable higher processing speeds. recently impressed the French aircraft engine manufacturing company Snecma (Safran Group). The product passed the hot corrosion test at 1000°C for nickel and now joins the two-component coolant rhenus R-FLEX on the officially approved list for the processing of nickel, titanium and aluminium (see document 455-201-0-00-B).

Info: kleinmann@rhenusweb.de

"At DLR, the Technology Marketing department is a contact partner and cooperation partner for leading innovationoriented companies such as Rhenus Lub", explains Dr Ute Gerhards, who is responsible for Strategic Innovation Partnerships SAFRAN Snecma

at DLR Technology Marketing in Cologne. "Together with Rhenus Lub, we are building important bridges between research and industry, as well as between product ideas, innovation and the market".

Info: udo.quotschalla@rhenusweb.de



Deutsches Zentrum für Luft- und Raumfahrt

Dr Udo Quotschalla, Head of Laboratories for Research and Development at Rhenus Lub: "As part of our co-operation with DLR, we are researching and developing modern coolants that provide our customers with access to innovative raw materials and production processes".

Core sectors in focus Rhenus Lub France gets closer to customers with its new structure

Rhenus Lub is rolling out new structures in France. A state-of-the-art logistics centre near Lyon and the restructuring of the IT and back office departments are accelerating the flow of information and goods and simplifying the traceability of lubricants as well as the documentation of all goods deliveries.

"We have also invested heavily in the support we offer locally", says Fabrice Himpan, Managing Director of Rhenus Lub France. With several application specialists and our own mobile machine park, we offer an efficient fluid service right on the doorsteps of our customers". This support is now also available to companies in the Frenchspeaking region of Belgium and in Morocco. Info: durandeau@rhenus-lub.fr

Full service in Flemish = II Three levels for the perfect process

"How can I reduce production costs but also increase delivery reliability and quality?" This is a question that is constantly challenging the metal processing and aviation industries as well as the automotive and engineering sectors. In the Netherlands and the Flemish-speaking region of Belgium, Rhenus Lub B.V. provides a clear answer: With a comprehensive range of coolantrelated services, we support our customers in their efforts to continuously optimise processes.

With three service levels—"Bronze" for the quarterly monitoring of coolants, "Silver" for a detailed check of consumption and pH values, or "Gold" for the additional analysis report r.check—customers benefit from greater reliability and efficiency in all fluid processes.

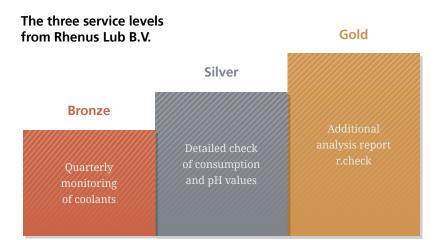
Info: info@rhenuslub.nl

Mecanizados Escribano Top quality for 14 years

As a partner of well-known producers such as Airbus Military, Indra or Finnmecannica, Mecanizados Escribano sets high standards — both for itself and its suppliers. Javier Ruiz Escribano, Director of Production at the Spanish manufacturer of components for aircraft engines, can only emphasise this: "Quality is the basis of our growth, so we expect all our suppliers to meet the high standards we set for ourselves, supplying firstclass products with reliable delivery times". Why has Mecanizados Escribano entrusted its production processes to coolants from Rhenus Lub over the past 14 years? "Rhenus Lub provides products of excellent quality combined with good service in meeting all of our requirements. And the most important thing for us is that nothing has changed during the 14-year partnership", explains Javier Ruiz Escribano, summarising why the relationship between the companies has been such a lasting success.

Info: caroline.bommers@rhenusweb.de





Your advantages at a glance!

- High production reliability
- Lowest possible process costs
- Lower consumption
- Long service life
- Lower tool wear
- High workpiece quality
- Better protection for people and the environment



Strong partner in Hungary Ecool now offers more

Ecool, our partner in Hungary, has modernised its logo and freshened up its visual identity, providing more information and products to its customers. The individual product ranges and service fields are now clearly identified and easy for users to recognise. A new addition is the product range of "Industrial Cleaners", which are suitable for all surfaces.

Info: gerwen@rhenusweb.de

Lubrichem Ltd 🐫 Training for Taiwan

15 employees at our Taiwanese partner firm Lubrichem Ltd recently participated in a comprehensive training course in application technology and fluid management. "It is extremely important to our partner that it can provide customers in Taiwan and China with the best possible support in terms of the selection and application of our coolants", says Hans van Gerwen, Manager of International Business.

Info: gerwen@rhenusweb.de

"It is extremely important to our partner that it can provide customers in Taiwan and China with the best possible support in terms of the selection and application of our coolants".

> Hans van Gerwen, Manager of International Business



To be able to provide customers in China and Taiwan with the best possible support, 15 employees at Taiwanese partner firm Lubrichem Ltd recently learnt about the latest developments in application technology and fluid management during a comprehensive training course.

Legal note

Publisher:

Rhenus Lub GmbH & Co KG Erkelenzer Straße 36 41179 Mönchengladbach E-Mail vertrieb@rhenusweb.de www.rhenuslub.com

Contact:

Meinhard Kiehl Tel. +49 2161 5869-84 **Editor:**

Relations & Co Tel. +49 2161 40645-0 www.relations-co.de **Design:**

Design.

Alldesign www.alldesign.de