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the French aviation industry



Succeeding in a spirit of research and development



Dear business partners,

Industry 4.0 resp. Cyber Physical Systems are the hot topics of the day. But while many are simply talking about it, at Rhenus Lub we have already successfully integrated it into our production process with Smart Factory digitisation. This enables us to improve the planning, control and monitoring of manufacturing processes. It's an impressive milestone that proves we are ready to tackle changing demands head-on. In fact, we have always considered research and development to be important components. By making the required investments, we have built the most modern grease factory in Europe. But moreover, we also continuously modernise and extend our plants so that you will always receive tailored products and services from a single source.

Tailoring our products is our credo — after all, the diversity of different industries places very specific demands on our products. In the steel industry, for example—our cover story in this issue—greases need to provide maximum performance and precision under particularly extreme requirements at the production site. With the help of our experts and state-of-the-art production process, you can always be sure that Rhenus Lub is your reliable partner for industry-specific lubricant expertise. Guaranteed.

Dr. Max Reiners

Safer process. Safer profit.

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Interview

Keeping production running

Good lubricants start with good procurement

Customers can rely on Rhenus Lub to supply the right product on time. The eight-person procurement team led by Dr. Michael Bartsch makes a significant contribution in this regard. These employees tackle a variety of tasks that go far beyond conventional procurement, like purchasing and scheduling raw materials, monitoring the market and providing support for the rhenus lubriner service business.

Dr. Bartsch, what exactly do you and your team do?

Dr. Michael Bartsch We work exclusively with certified suppliers to meet our high quality standards. At Rhenus Lub, the procurement team ensures that the necessary raw materials are always available in sufficient quantities for the production of our products. We always have to find the optimum balance between our

inventory levels and our capacity to meet delivery requirements. This means that our stock levels must not get too high, as this will occupy our storage space unnecessarily. Both of these are cost factors that should not be underestimated.



What particular challenges do you face?

Dr. Michael Bartsch First, the large volume of data that we have to handle when purchasing and scheduling. Second, about a quarter of our raw materials are special high-

performance components that, in addition to the composition, make the difference in our products. If the availability of certain components is restricted or even stopped due to legal regulations or changes in the manufacturers' product ranges, we can exploit our market knowledge and specialist expertise. In close dialogue with the research department, we find alternatives that are at least equivalent. Even if this can sometimes take up to a year due to the numerous quality tests required, customers can be sure that we will always give them products that provide the performance we have promised.

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The secure way to determine lubricating effect

Reliable values with the Tauro Tribometer

Achieving maximum process reliability is particularly important in the machining and forming industry. This is why more and more customers want to know the performance values that a coolant offers in the processing of their materials before adding it to their manufacturing equipment.

"To ensure we can provide reliable information, at Rhenus Lub we use the Tauro Tribometer, which has been specifically developed for the coolant industry," says Dr. Udo Quotschalla, Head of Research & Development. "With the tribological test system, we can test the

coolant while it is still in the laboratory and determine the friction and wear values of the emulsion. The advantage is that customers know the performance values of the coolant before conducting a practical test, and reduced performance is virtually ruled out. This is a key factor, particularly for process reliability."



With the test system, customers can rely on Rhenus Lub to select the right coolant for their performance requirements. Contact us on behalf of your company now.

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With the Tauro Tribometer, the performance values of the coolant can be determined even before the practical test

Dispersivity

A key factor in the machining process

In the machining process, lubricating effect, stability and flushing properties are important characteristics that are directly influenced by the dispersivity of a coolant. The size of the oil droplets in the emulsion is what determines dispersivity. While finely dispersed coolants can appear almost transparent to the naked eye, coarse emulsions look milky. Dispersivity is influenced by factors such as the choice of emulsifier, the pH value, the oil and electrolyte content and the temperature.

But what is the right degree of dispersivity for a particular application? Finely dispersed emulsions are advantageous for perfect flushing properties, since less residue forms in the machine. If the lubricating properties are critical, as in the machining of aluminium, then coarser coolants give better results.

However, the coarser the emulsion, the more difficult it is to determine the correct concentration with a refractometer, since



no clear reading line is visible. As a consequence, the reader usually estimates the value and therefore obtains incorrect results. In this case, the chances of success can be improved by adding a supporting emulsifier. The concentration may appear to be slightly higher, but it will not deviate as significantly as an estimate.

We will be happy to assist you in choosing a coolant.

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White paper: Tap water



Visit our website and find out why water quality is so important for the function of a coolant:

<http://bit.ly/2b4AgxA>

Steel production demands outstanding lubricants

For decades, architects and builders have been relying on steel as a strong component of stable high-rise buildings and bridges. But this versatile material is also used for underwater pipelines and even everyday goods such as knives and forks. In 2015, around 43 million tons of crude steel were produced in Germany – this is the highest level in the EU and shows how important the steel industry is for the German economy. And it is the links to other industries, such as mechanical engineering and the automotive industry, that are particularly significant for the German economy.

No matter what it is eventually made into, steel always undergoes a demanding manufacturing and machining process. From the production of pig iron in a blast furnace and further processing in the converter plants of a steel works, through to the casting process in the continuous casting plant and hot and cold rolling: each stage demands maximum performance from all the production components involved.

High temperatures and pressures are particular challenges in steel works, with their roller tables, bearings, rollers and sprockets. But abrasive dust, water vapour, corrosive process water and oil residues also make production more difficult and can prevent processes from running smoothly. In the worst case scenario, they can stop

production completely — an absolute disaster with high costs for any steel producer.

In order to create a reliable and effective manufacturing process under these exceptional conditions, Rhenus Lub works closely with leading steel companies to develop high-performance lubricants that combine all the advantages of tailor-made products — for active protection at all times. Consumption levels are reduced due to the high lubricating effect of the grease. This has a positive effect on the service life of components and machines, as friction, wear and corrosion are significantly reduced. Rhenus Lub regularly checks the lubricants using state-of-the-art techniques so that rhenus products provide good performance over the long term.

Rhenus Lub also plays a major role when it comes to developing industry-wide quality standards. As an active member of Germany's VDEh Steel Institute, the Mönchengladbach-based company demonstrates its expertise and develops standards for lubricating greases together with steel manufacturers, machine manufacturers and suppliers. These "SEB approvals" are one of the criteria for many greases used in the industry.

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With its extensive industry knowledge, Rhenus Lub provides the right products for all stages of steel production.

Excerpt from the Rhenus Lub product range:

Crude steel production

rhenus MAK 15

Continuous casting plant

rhenus ACN 15 GR
rhenus LEC 2
rhenus BBD 2

Hot/cold rolling

rhenus LEC 2
rhenus LCA 2

Cold rolling

rhenus CJN 2
rhenus CAZ 2

Product	Application area	Properties
rhenus MAK 15	Screw connections, such as for blast furnaces and steel works	<ul style="list-style-type: none"> — Hot screw separating agent with solid copper lubricant — Use under extreme pressure, high thermal load and with corrosive influences
rhenus ACN 15 GR	Continuous casting plant	<ul style="list-style-type: none"> — High-temperature aluminium complex grease — Protects against corrosive process water — Reduces friction, even at high pressures — Very good pumping characteristics in central lubrication systems — Good thermal resistance
rhenus LEC 2	Hot and cold rolling mill	<ul style="list-style-type: none"> — Lithium EP multi-purpose grease — SEB approval (<i>SEB 181 253</i>) — Increased protection against standstill corrosion
rhenus BBD 2	Connections/screw connectors in hot areas	<ul style="list-style-type: none"> — Metal-free assembly and high-temperature paste — Use with the highest thermal stresses in corrosive environments
rhenus LCA 2	Hot and cold rolling mill	<ul style="list-style-type: none"> — Lithium EP multi-purpose grease — SEB approval (<i>SEB 181 253</i>) — Particularly suitable for lubricating slow-running, highly loaded roller bearings under humid operating conditions
rhenus CJN 2	Cold pilger mill (crankshaft bearings)	<ul style="list-style-type: none"> — Special calcium EP grease — Highly water resistant — Suitable for lubricating slow-running, highly loaded bearings
rhenus CAZ 2	Cold rolling mill (bearing carriers)	<ul style="list-style-type: none"> — White EP lubricating grease (<i>based on special calcium soap</i>) — Highly water resistant — Prevents fretting corrosion and tribocorrosion

Dillinger & Rhenus Lub

High performance under extreme conditions

Production of extremely large and heavy plates at widths of up to 5.2 metres is part of the everyday work at Dillinger Hüttenwerke (Dillinger). It is an extreme challenge for workers and machines. This is a strain that also affects the driver rollers in the new CC6 continuous casting plant — after all, the plant produces slabs weighing up to 90 tonnes. Europe's leading manufacturer of heavy plate invested several millions in the CC6, strengthening its position as the market leader in the field of thick and heavy plates. For the investment to be worthwhile, with reliable production even under these heavy loads, Dillinger relies on high-performance greases from Rhenus Lub.

The lubricant expert based in Mönchengladbach provides rhenus LKY 15 GR, a special high-performance grease that is used in the driver rollers of the new CC6 plant at Dillinger and more than meets the specific requirements. Based on a lithium complex with special additives and the addition of solid lubricant, it is suitable for use at up to 150°C, and even 200°C for short periods of time. With good corrosion protection and a high load-bearing capacity, it actively tackles the extreme conditions of the production plant.

Right from the outset, the composition of the high-performance rhenus LKY 15 GR lubricant was developed in close collaboration

DILLINGER 

between Rhenus Lub and Dillinger on the basis of an existing lubricant. This is profitable and beneficial, as Jörg Staudt, Special Operations Manager for Hydraulics and Tribology at Dillinger, confirms: "Working in very close partnership with Rhenus Lub, we tested lubricants, conducted trial series and optimised the lubricants for use in our CC6. The product proved to be so effective in terms of process reliability that we are now using it in all our continuous casting plants".

If a problem ever occurs, Dillinger can count on Rhenus Lub to provide rapid, expert support. As Staudt says: "We know who the contacts are and we can reach them directly, so it is always possible to find a technical solution, even in a short period of time. It's a service that we very much appreciate".


In addition to the quantities of special product developed for the continuous casting plants, Dillinger purchases a greater volume of rhenus LEC 2, a multi-purpose steel grease that is excellent from an economic perspective. Other types of lubricating grease, speciality products and coolants complete the service that is provided.



» rhenus LKY 15 GR proved to be so effective in terms of process reliability that we are now using it in all our continuous casting plants. «

Jörg Staudt
Specialist Operations Manager at Dillinger

French Rhenus Lub subsidiary wins over the aviation industry

 Rhenus Lub has won market share in the French aviation industry with high-quality, water-miscible coolants and a service that is both rapid and reliable. More and more fitters and suppliers rely on rhenus products for the strictly monitored machining of their parts.

Fabrice Himpan, Managing Director of the French subsidiary of Rhenus Lub, is delighted about the new customers: "After several invitations to tender, two suppliers to the aviation industry—Zodiac Seats France and Aequs Aerospace—recently opted for water-soluble fluids from Rhenus Lub". After several months using the products, the purchasing and production managers are now reporting their experiences.



Visit Rhenus Lub at SIANE—the specialist trade fair for mechanical engineering, metalworking and surface treatment—in Toulouse, France from 18 to 20 October, 2016.

Versatile, high-pressure applications at Aequs Aerospace

Aequs Aerospace manufactures parts for chassis, engines and flight controls for the biggest French and international aircraft fitters.

Brice Gaignard, Head of Production, explains: "The biggest challenge is that we run everything through a central lubrication system". To avoid having to stock up from four different suppliers, the company produced a specification for boron and amine-free water-miscible coolants that meet all the requirements for quality, safety and the environment (QSE). Several of these products have been tested for months.

"We had to assess each of the products according to criteria such as part quality, roughness, tool wear, stability under load and odour development", states Purchasing Manager Eric Vinet. After completing the test phase, rhenus TU 65-2 was selected. "In the six-month test phase, all of our customers became convinced of the versatility of this cooling lubricant, particularly for difficult materials", emphasises the Head of Production.

Zodiac Seats France: Safety and cost-effectiveness

Zodiac Seats France employs 1200 people and is particularly active in the design, manufacture and distribution of passenger seats for the aviation sector.

To safeguard its production process, the company sets the toughest demands on coolants in its invitations to tender. The focus is on particularly stringent requirements for product technology, cost-effectiveness, health and safety and the environment. After testing and approval by the occupational physicians and the Committee for Hygiene, Safety and Working Conditions (CHSCT) at Zodiac Seats France, the French supplier finally opted for rhenus TU 44.

For Purchasing Manager Alpha Ba, the fact that rhenus TU 44 meets the requirements was "critical for the decision. We were also able to develop a partnership with Rhenus Lub for fluid management, which had not yet been introduced at the site. We also greatly appreciate the professional support provided by Mr Tripault, the person responsible for follow-up at Zodiac Seats France site for Rhenus Lub".


"What we can say about the fluid used on the machines is that, compared to the coolant previously used, we have seen no change in the application while costs have been reduced", adds Fabienne Valette, Head of Processing.



ENEX & Rhenus Lub

A powerful team in the Chilean food industry



 Whether in Mönchengladbach or on the other side of the world, our lubricant experts and experienced distributors are always close to our customers. In Chile, Empresa Nacional de Energía Enx S.A. advises companies in all matters relating to the use of coolants and food greases. Since 2012, ENEX has relied on Rhenus Lub lubricants, especially for

customers in the rapidly growing Chilean food industry. These lubricants are certified in accordance with the stringent international regulations of the National Sanitation Foundation (NSF).

For Alejandro Velásquez, Business Development Manager for Greases and Speciality Lubricants at ENEX, there is one

simple reason why working together makes sense: "With their excellent performance in practical use, lubricants from Rhenus Lub have not only won us over, but also well-known customers such as Danone or IANSA".

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News

Rhenus Lub committed to young refugees

Mastering a new start is child's play

Rhenus Lub is always engaged in initiatives that promote social justice and mutual respect near its Mönchengladbach site. The current project is an initiative of Irfan e.V., an educational and cultural association that introduces traumatised refugee children to their new home and language in a playful way. To help with the project

launch, Rhenus Lub donated more than 200 dictionaries and learning posters worth EUR 4000 to the newly established meeting space in January. At this site, refugee children receive teaching from volunteers. But it is also a space created for cultural exchange and promotion of language skills. Learning the German language is a key

part of successful integration—not only for Rhenus Lub—and offers long-term prospects of good education and training.

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Presenting the new learning materials with little Abdullah: Ali Kalayci, Chair of the Board of Directors of educational and cultural association Irfan e.V., and Isabella Kleeschulte from Project Marketing at Rhenus Lub

Legal note

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