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FluidSafe impresses in practice  
Coolant condition is now more transparent than ever before!

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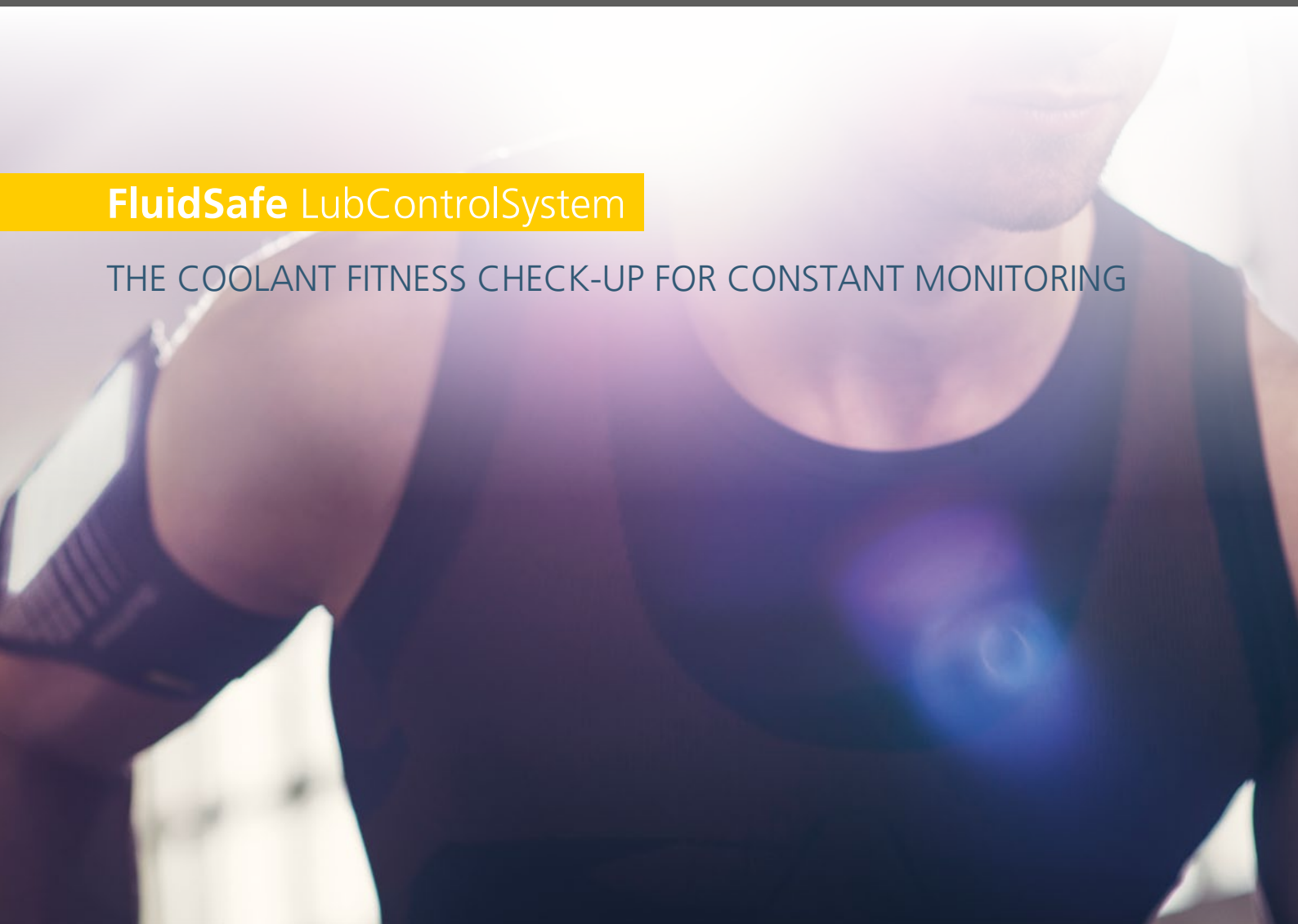
The KSS Trade Fair in Stuttgart  
How you can benefit from our innovative products

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Identify problems before they occur  
Coolant volume — the underestimated factor

## FluidSafe LubControlSystem

THE COOLANT FITNESS CHECK-UP FOR CONSTANT MONITORING





## We invest for your benefit!

Dear Reader,

I would like to express my heartfelt thanks to all the professionals who visited us at the KSS Trade Fair in Stuttgart.

At the event, we were privileged to present two world firsts that will continue to benefit users like you for a long time to come. The first was our innovative new coolant, rhenus FU 800: a high-performance, future-proof product that is free from labelling requirements. You no longer need to worry about your labelling obligations under the CLP Regulation, and you can achieve the highest degree of efficiency and safety for your production process. We also presented FluidSafe, our Industry 4.0-compatible control system for fluids in central systems, which represents a quantum leap that is envied by all our

competitors. Once again, we are one step ahead of everyone else: we offer a perfect online microbiology monitoring system for your coolant emulsions. Even industry journalists agree that FluidSafe marks the beginning of a new era in machining. Replacing laborious processes for the manual control, maintenance and adjustment of fluids, FluidSafe is now widely viewed as an innovative solution that opens up fluid management automation to a wider market.

Curious? Our experts would be happy to tell you more about the latest innovations by Rhenus Lub.

I look forward to seeing you again in the future!

Dr Max Reiners

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### Rhenus Lub internal

#### Working for you

## Ilir Koca monitors the quality of all raw materials

*Mr Koca, what exactly does your role in incoming raw material control involve?*

**Ilir Koca:** Our customers demand first-class products. That's why only first-class raw materials will do. I receive a sample from every batch of products delivered to us. Here in the laboratory, I then put the samples through specific default tests, depending on the type of material. The raw material is approved for use in production only if all the values meet our strict requirements.

*Why go to so much effort?*

**Ilir Koca:** To offer our customers the best possible degree of safety. I thoroughly test every raw material that ends up on my desk and record all the results on the computer. We also keep a sample of every raw material

for at least 18 months. You can't get better quality assurance than that.



*Ilir Koca, age 49, has spent the last three years ensuring that only the very best raw materials find their way into our production systems.*

**NEW!**

## Expertise from the world of lubricants now available at rhenuslub.com

In the **KNOWLEDGE** section of our website, we have compiled industry-specific information all about the specialist subject area of coolants — such as noteworthy facts about the GHS Regulation, the latest health and safety developments and the chemical structure of coolants.

We want to share our expertise with you. Our central focus is on providing current and relevant knowledge that actively

supports you in your everyday work. As a multiple award-winning "Preferred Supplier" and partner with exceptional consulting expertise, we make this promise to you:

**Your process is our top priority!**



<http://www.rhenuslub.de/en/knowledge.html>



### Product price versus process costs

## It's the bottom line that counts

According to a study by the Fraunhofer Institute, the "Total Costs of Procurement" play a significant deciding role in whether a purchase makes economic sense. Process and material costs are particularly important factors in the purchase of coolants.

Meinhard Kiehl, Director of Marketing and Product Management at Rhenus Lub, explains: "It's not the price per coolant unit, but the unit cost of the individual workpiece that makes the difference." This is determined by various factors, such as procurement and storage costs, actual consumption, the cost of coolant maintenance and the effects on the filter

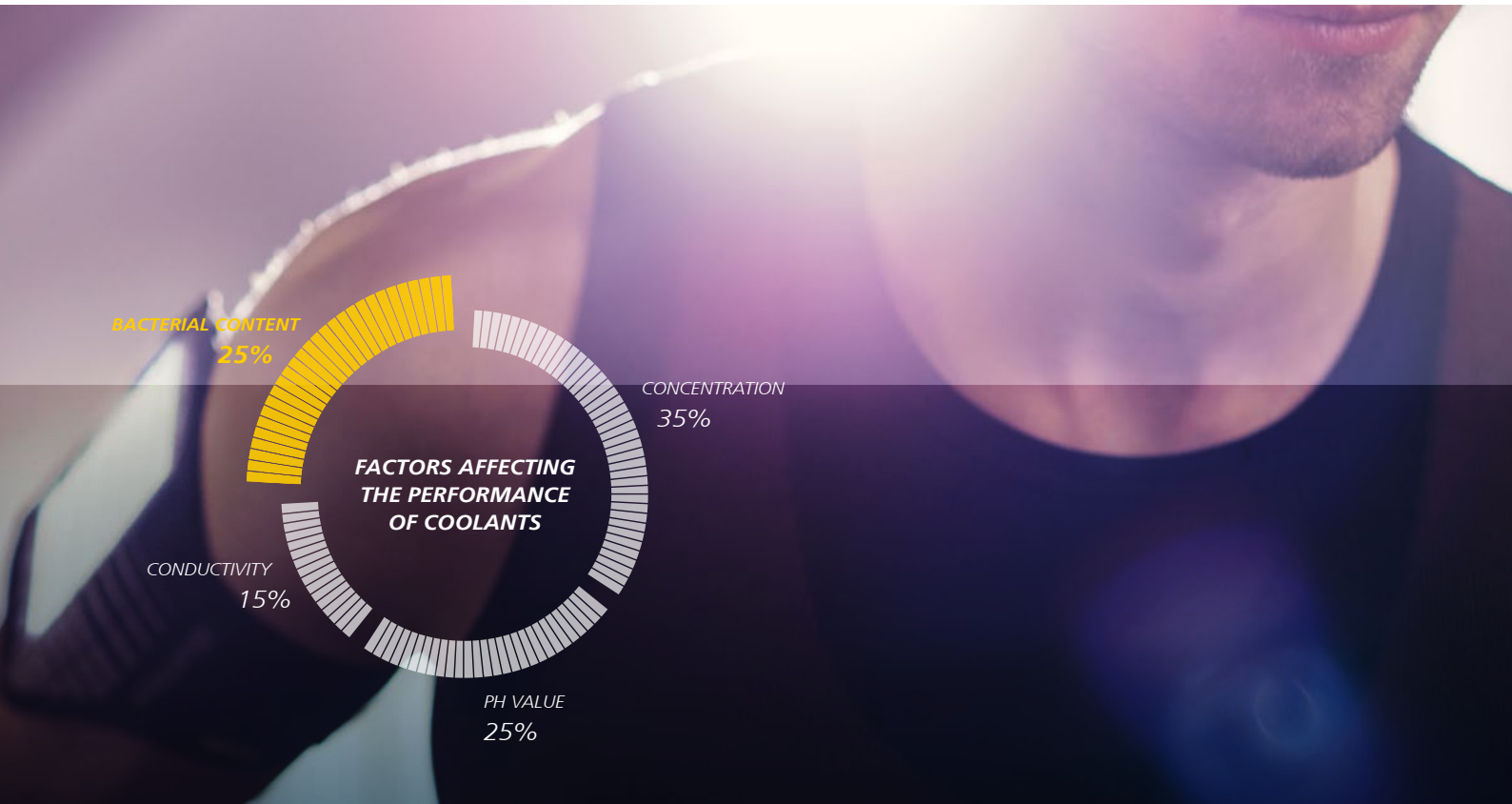
systems. Administration and training costs must also be taken into account. "To look only at purchase price is short-sighted", Meinhard Kiehl remarks. "In practice, it often transpires that reasonable-looking product prices are simply too expensive in terms of unit cost." Without a doubt: It's the bottom line that counts!

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FluidSafe impresses in practice

Coolant condition is now more transparent than ever before!



For the first time ever, businesses can use FluidSafe to gain transparent insights into coolant condition — on-site and in real time. The new system, developed by Rhenus Lub, measures the four key parameters of the coolant.

After using the new monitoring system, operators of central systems in particular report that it allows processes to become truly stable and cost-orientated.

The coolant becomes a constant and reliable factor in your machining process, supporting you in the same way as data that is systematically determined during the use of machines and tools.

The immediate benefits are demonstrated in two practical examples: The transparency gained via FluidSafe encouraged a well-known automotive supplier to push its coolant to new performance levels that had previously been unattainable. In another case, a business was constantly battling against corrosion problems. Using FluidSafe, the potential cause could be rapidly identified.

**These success stories are a direct result of the following exclusive qualities:**

- High measuring sensitivity;
- Continuity of measurements in time series analyses;
- Complete measuring spectrum including the continuous analysis of bacterial population.

With FluidSafe, we offer our customers a reliable and safe solution, which they can use to monitor their coolant process online at any time, reduce consumption and, above all, avoid any more unpleasant surprises.

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CONCENTRATION

CONDUCTIVITY

PH VALUE

**BACTERIAL CONTENT**

## rhenus FU 800 wins over Starrag Group

# "The change intervals were impressive"

*Our new high-performance, future-proof rhenus FU 800 coolant, which is free from labelling requirements, is impressing customers in day-to-day use with its exceptional performance.*

Even before its official market launch, rhenus FU 800 had already won over the Starrag Group, based in Mönchengladbach, with its high cost-efficiency and outstanding technical performance. From its Mönchengladbach site, Starrag manufactures high-precision machine tools and sophisticated, high-quality products for turning, drilling, grinding and milling metal and composite workpieces. Michael Bleckmann, the company's Head of Manufacturing with overall responsibility

for the Starrag Group's machining processes, confirms: "rhenus FU 800 met all our performance requirements without question." We found its flushing properties to be excellent, with good foaming behaviour. The change intervals were impressive."

The company also manufactures parts for the aerospace industry from highly stain-sensitive 6000 series aluminium alloys. Only a short time after switching to rhenus FU 800 in its milling, drilling and thread form machining processes, the results were clear: Skin compatibility has improved significantly compared with conventional coolants and the workpieces exhibit impressively spotless surfaces.

With its high long-term stability and an individually customised topping up concentration between 1.5% and 2.5%, rhenus FU 800 is the ideal coolant for customers who want to achieve high performance, cost-efficiency and active health and safety protection all at once.

Try it and see for yourself!

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Starrag Group



» *rhenus FU 800 met all our performance requirements without question. We found its flushing properties to be excellent, with good foaming behaviour. The change intervals were impressive.* «

Michael Bleckmann,  
Head of Manufacturing, Starrag Group

The KSS Trade Fair in Stuttgart

# How you can benefit from our innovative products

*The two new product innovations presented at our stand at the KSS Trade Fair in Stuttgart attracted a great deal of attention from customers in the metalworking industry.*

## FluidSafe measures microbiology

FluidSafe heralds the dawn of a new era in the monitoring and adjustment of water-miscible coolants. For the first time ever, customers can now access a measuring device that determines the microbiological condition of coolant emulsions directly on site and fully automatically. "The



advantage for our customers is that they now have a full picture of the coolant at all times. The benefits are clear: there are no more surprises about the condition of the coolant, so production conditions can be kept consistent", reports Meinhard Kiehl, engineer and Director of Product Management and Marketing. Continuous monitoring in real time enables users of FluidSafe to identify, at a much earlier stage, when coolant emulsions are at risk of deviating from their optimal working range, allowing them to take countermeasures in good time. As well as reducing coolant consumption by at least ten percent, this also

helps reduce or avoid the use of adjusting chemicals. Emulsions are markedly stabilised, sump life is significantly extended and machining processes are made safer.

## rhenus FU 800 is not subject to labelling requirements

rhenus FU 800 is our innovative, high-performance, future-proof coolant that offers freedom from labelling requirements. Our new fluid is an extremely attractive product for users who do not wish to compromise on either health and safety or performance, valuing both in equal measure. The product achieves first-class results across the board in the universal processing of a range of raw materials. With pH values of 8.5 or less, rhenus FU 800 is odourless and skin compatible.

In terms of health and safety too, rhenus FU 800 satisfies the highest standards. Metalworking companies benefit from the coolant's new composition in multiple ways: The absence of amines, boric acid and formaldehyde depots eliminates even the slightest risk of carcinogenic effects or harmful reproductive effects from the start. Because the product contains nothing that could be hazardous to humans or the environment, there are no labelling requirements for the innovative coolant. The first wave of customer feedback indicates that this particular property represents a significant and highly valued advantage. Using rhenus FU 800 removes any need for time-consuming training and any modifications to systems and machinery.

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*In the spotlight: rhenus FU 800 and FluidSafe*

The third Industry 4.0 trade conference: Practice, practice, practice

Leading pioneers share their first-hand experiences

"Learn how Volkswagen, Bosch Rexroth, Lapp, Rhenus Lub and many others found their individual paths to the 'Smart Factory'. The companies at the spearhead of German manufacturing have come through the learning phase, taken their productivity to new levels using Industry 4.0 methods and are actively helping shape the future of industry", remarks the Süddeutscher Verlag media group, in promotion of the third "Industry 4.0 trade conference: Practice, practice, practice" to be organised by the group.

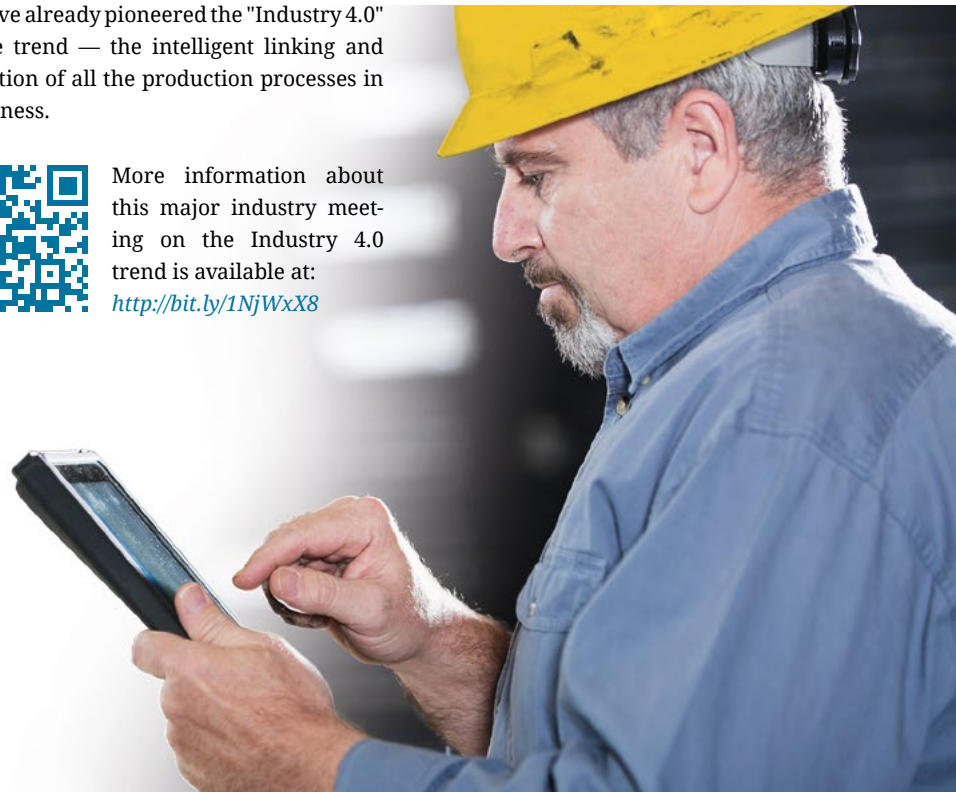
we have already pioneered the "Industry 4.0" future trend — the intelligent linking and execution of all the production processes in a business.



More information about this major industry meeting on the Industry 4.0 trend is available at: <http://bit.ly/1NjWxX8>

At the event, which is to be held in Saarbrücken on 1 and 2 December 2015, Rhenus Lub will show you why the "Smart Factory" must become a reality today — even for medium-sized businesses.

To continue providing our customers with greater safety, reliability and quality in the years to come, we have recently made a quantum leap in automation technology. With the digitalisation of our grease factory,



Identify problems before they occur

Coolant volume — the underestimated factor

Glossary

Excessive foaming, poor heat dissipation or foreign matter in the operating emulsion — when difficulties occur in the fluid process, it is often worth critically evaluating the operating volume of the processing machines. Could it be that the volume is too low?

cost-efficiency and quality throughout your production process. The following table shows how you can determine the

optimum operating volume based on a few key figures.

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As many users will already know, alongside the products used, the volume of coolant emulsion is another important factor within the production process. The lower the volume, the more frequently the emulsion is circulated over the course of an hour — and the less time remains for cooling as well as releasing of air and foreign matter.

Our advice: during the construction or acquisition of new processing machines, make sure that the coolant circuit is adequately sized and that the coolant container is always filled to the maximum level. This will ensure optimum reliability,

VDI 3035 COOLANT VOLUME

VDI 3035 = Design of machine tools, production lines and peripheral devices for the use of metalworking fluids

	Water-mixed coolant	Neat coolant
Residence time X (min)	10 to 6	20 to 10
Circulation index $C_i$ (1/h)	6 to 10	3 to 6

Operating volume  $V_o$  (m<sup>3</sup>)  
 Minimum volume  $V_m$  (m<sup>3</sup>)  
 Travel volume  $V_t$  (m<sup>3</sup>)  
 Volume flow rate  $Q_e$  (m<sup>3</sup>/h)  
 Residence time X (min)

$$V_o = V_m + V_t$$

$$X = 60/C_i$$

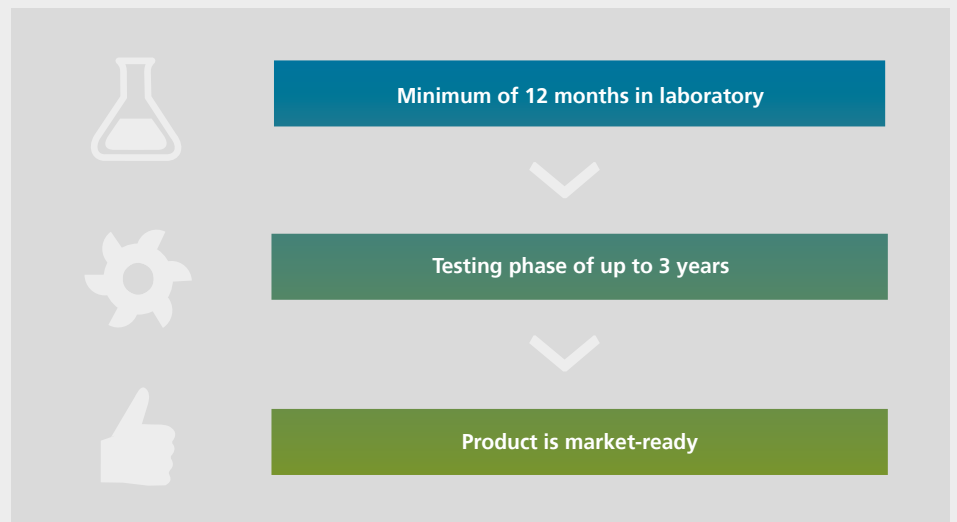
$$V_o = \frac{Q_e}{C_i}$$

$$C_i = \frac{Q_e}{V_o}$$

## Our innovations are safe!

*It goes without saying that as our customer, you want to implement product innovations as soon as possible. Our high-performance lubricating greases for lifetime lubrication, and our coolants, such as rhenus FU 800, which is non-hazardous to humans and the environment, with no labelling requirements or amine and boric acid additives, offer tangible benefits: Our innovations make your production process safer and more cost-effective.*

For this reason, we often get asked whether it is possible for us to make our undoubtedly profit-generating product modifications or new compositions available on the market much faster. However, innovations only yield benefits if they are "market-ready" in the most literal sense of the word. This is where the issues of safety and quality take on particular significance. The name Rhenus Lub has stood for exceptional quality since 1882. With this reputation comes responsibility for the safety of processes on your premises. We want to provide you with only fully developed products that have proven their qualities in comprehensive field tests. For new greases



or coolants, we allow for a period of at least twelve months' research and development in our laboratory. Only then do the extensive practical tests begin. The field trialling of coolants can then take an additional year. In the case of lubricating greases, this process can take up to three years, depending on which tests you, the customer, want to carry out yourself. As you can see, we put safety first. As we rightly promise:

**Safer process. Safer profit.**

#### Legal note

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Safer process.  
Safer profit.