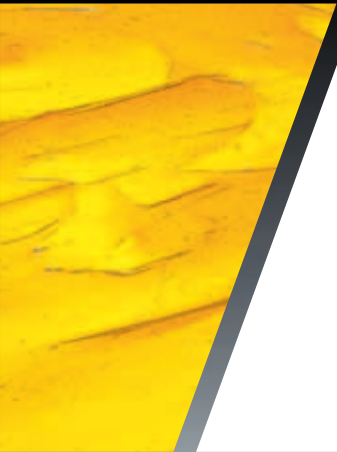


your global specialist

Pushing the limits.



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# Creating added value together.

Dear readers,

In modern industry, high-performance lubricants are more than just supplies or process materials. They rank among the functionally critical components of vehicles, machines and lines, just like mechanical, electrical or hydraulic components, drives, bearings or entire assemblies. They are crucial to their reliability, their design lives, their productivity and their contribution to value creation. For more than 80 years now, Klüber Lubrication has been working on solutions for even the most challenging lubrication problems. We understand our customers' needs, and the sectors they operate in. We are familiar with the increasingly stringent requirements of function and cost-efficiency, and the expected contribution towards maximum value creation. Our corporate strength lies in developing, producing and optimising the application of special lubricants for industrial and commercial use. We see our role as a supportive partner to our customers, irrespective of the industry or sector in which they operate.

Our corporate philosophy is to listen, comprehend and provide personalised support resulting in customised solutions for maximised cost-efficiency and minimised environmental impact. We welcome challenges and look forward to every new application, every new technology and every customer who stretches the capabilities of our staff, corporate expertise, innovative vigour and flexibility. Speciality lubricants provide a vast hidden potential for value creation. We make this potential usable for our customers: this is what we have taken on as our obligation to you.



Claus Langgartner  
Speaker of the Board  
Klüber Lubrication München KG

A photograph of an Arctic landscape. In the foreground, there is a vast, flat expanse of snow. In the background, dark, rocky terrain is partially covered in snow. To the right, a body of water is visible, with a dark, jagged shoreline. A large, bright yellow trapezoidal shape is overlaid on the left side of the image, containing the text.

## Pioneering advances.

Technical advances expand the horizons of applicational versatility. Pioneering advances are needed to translate entirely new, previously inconceivable concepts into fully functional reality. We make a crucial contribution with our special lubricants. Modern special lubricants can be used in extreme operating or environmental conditions in vehicles, machinery or plant manufacture, in industrial engineering or production technology where conventional lubricants fail. Or when stringent technical and ecological requirements coincide, that's where Klüber Lubrication's special lubricants really come into their own; for example speciality oils for ship propulsion systems that are so easily biodegradable that they can be used in one of the world's most sensitive ecosystems, the Arctic.





We redefine boundaries.

Without speciality lubricants, sizeable sections of our highly engineered world would come to a standstill: cars, trains or ships would not move, drives would not function, machines would not produce, there would be no water coming out of the tap and even clocks would stop. It would also be dark and cold, because electrical installations, heating systems and energy suppliers are similarly reliant on these lubricants. Our special lubricants ensure smooth operation here – often without being noticed at all.

There is hardly an industry, business or service sector that can manage without special lubricants. Developing and offering the right lubricant for each application is a challenge that Klüber Lubrication meets and masters repeatedly. This approach demands can-do competence, know-how, experience, applicational expertise and a profound understanding of our customers' problems.



Developing solutions that extend the boundaries of the possible, making entirely new technical concepts materialise, needs unusually high innovative vigour, enormous creativity and readiness to take evaluated risks. We test our innovations with the understanding of the changing requirements found in our world.

How do you make a machine entirely maintenance-free in terms of lubrication? How can you ensure that renewable energy can be generated with maximum efficiency? How can you keep speciality lubricating pastes functioning at temperatures where even some metals melt? How can a bearing run reliably for many years, even if it's rotating many thousand times a minute? How can valves or fittings open and close smoothly in aggressive environments where high grade metals corrode? How can a special grease function at temperatures so low that even plastics and other materials fail? Why can a special lubricant for the food or pharmaceutical industry be purer than a body lotion? How can a special lubricant be rendered so eco-compatible that it is fully biodegraded in a very short time?

When these questions are addressed, the word "speciality" takes on a whole new meaning. This is where the experts at Klüber Lubrication come in, tackling the job profile involved with immense personal commitment and absolute dedication. Together with our customers, we pursue visionary ideas for completely innovative technical applications. Together with our partners, we translate these ideas into fully engineered solutions for every type of industrial use.





Uniquely individual.





The iris of the human eye is a synonym for maximum individuality – there are no two alike anywhere in the world. Our special lubricants are also often highly individualised. We work together with many of our customers on creating solutions for unique technical applications. Developing a specific lubricant for complex and unusual applications demands maximum insight into the technology involved, the environmental conditions met and the personal needs of the user. Our specialists have mastered the art of attentive listening, noting each and every detail, and in contributing their own individual consultancy and service abilities. This is crucial to our corporate goal of offering technologically sophisticated, state-of-the-art special lubricants that meet or exceed customer expectations.



## The realisation of technologies requires people.

We firmly believe that it is our people above all who make the crucial difference. Klüber Lubrication offers its customers several thousand different special lubricants for an enormous range of disparate applications, repeatedly validated in the toughest of environments in industrial or commercial installations. Through their specialised knowledge our R&D people refine raw materials and formulations into new products. No two individualised special lubricants are alike; we don't do off-the-shelf solutions. It's our people: our chemists, physicists, test engineers, testing and application specialists, analysts and production experts who make the crucial contributions.



It's our staff who test the newly developed speciality lubricants to the limits of the materials' strength, with meticulous patience, and frequently using unique testing and trialing procedures they have developed in-house, before the products go to our customers, for instance, to be field-trialed. Our people pronounce themselves satisfied only when it has been verified on site that all the requirements have been fully met. Every one of our new products undergoes this stringent procedure, irrespective of whether for a needle bearing only a few millimeters in diameter or for an open girth gear measuring 50 meters in circumference. Don't worry - we have a specialist for either application.

Every Klüber Lubrication special lubricant, then, also incorporates a chunk of individuality – the individuality of our customers, personal creativity, and the meticulous can-do competence of our staff.

They know which raw materials, additives and processes are required for developing and trialing a special lubricant, and finally producing it efficiently. Their knowledge is the crucial element in converting basic chemical materials into Klüber Lubrication's specialities: specialities that are often unique the whole world over.



The last time you looked up at the sky, you probably didn't realise that our special lubricants are doing their job up there as well. In civil aerospace operation, our products ensure reliable operation even under the extreme conditions found in outer space, so they're quite literally used the world over – as is our customer support operation. Our development engineers, consultants, sales specialists and application engineers are close at hand, responsive and conveniently available to our customers no matter whether a regional company or multinational group is involved.

A photograph of the exterior of a space station, showing various modules and structural elements. A large yellow trapezoidal shape is overlaid on the upper portion of the image, containing the text "Your global partner next door." in a black, sans-serif font. The background is the dark void of space, with a thin, bright white arc of the Earth's atmosphere visible at the bottom.

Your global partner next door.



## Connected worldwide.

We provide lubricant solutions of unsurpassed efficacy, created by approximately 2,000 staff at more than 30 Klüber Lubrication companies worldwide. They are close to our customers, working as a team, interacting internationally for cross-disciplinary synergy - in R&D, product testing, and in production facility utilisation. This ensures that our customers all over the world benefit from a consistently high level of quality. We ensure that they are supplied with what they need, right on time and fully in line with their express requirements in terms of optimised capacity utilisation for their production facilities. This is in the safe hands of our logistics experts, who together with production planning and control personnel make sure that our customers are properly supplied. Leading OEMs and operators in the entire world's auto manufacture, machine building and plant construction sectors put their trust in Klüber Lubrication's ability to compound a global presence, global utilisation of resources, and on-the-spot customer-responsiveness into a synergy of maximised efficiency.



Together with our customers, we learn to factor in regional market conditions and global manufacturing and quality standards. And we share knowledge with our customers. With our service operations KlüberConsult and KlüberCollege, for example: not only do we pass on our specialised tribological knowledge, we also ensure direct improvements in our customers' value creation processes. Intensive training courses themed around Klüber Lubrication's special lubricants help to communicate the benefits of energy efficiency, operation dependability, extended useful lives for components and machines, reduced maintenance costs and many other aspects. For this purpose, too, we utilise the knowledge and the capabilities of our staff all around the globe, creating unique added value in our sector.



Focused approach  
to sustainability.







Technological innovation and eco-compatibility are not mutually exclusive. On the contrary: ecological requirements can inspire technical progress, e.g. in developing biodegradable special lubricants for high-performance applications. We at Klüber Lubrication think about more than just the environmental relevance of our products. How can we extend the useful lifetime for our speciality lubricants? Through lifetime lubrication? How can we utilise resources efficiently? Through minimum-quantity lubrication? How can we reduce environmental impact? Through biodegradability? How do we save energy? Through friction reduction? We aim to contribute to meeting and mastering the challenges of our time through ways that are effective in terms of both eco-compatibility and cost-efficiency. Our speciality lubricants for wind power generators are a good example of this approach. They extend maintenance intervals and reduce disposal outlay, they also contribute towards ensuring a higher energy yield, and by cutting costs they help the investment to pay for itself more quickly.

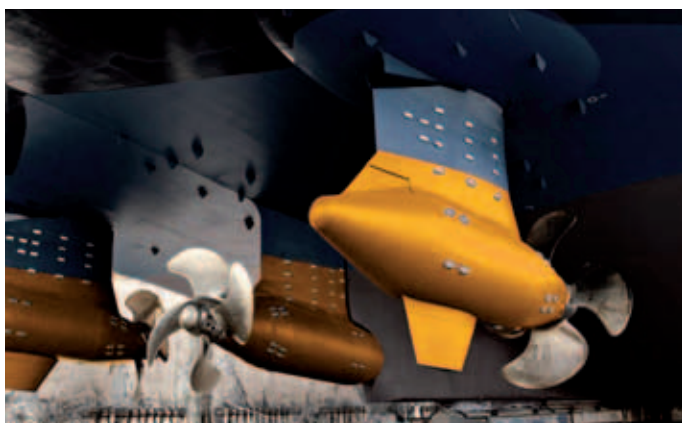


## Holistic thinking.

We are the specialists in our chosen sector, but we always keep an eye on the broader context. We continually scrutinise the entire value creation chain of our products, from the raw materials and production processes, logistics, the useful lifetime, and finally, the disposal procedures as well. Our answer to the challenges born from higher eco-awareness and increasingly tough requirements for complete sustainability include: high performance capabilities, cost-effectiveness and energy efficiency coupled with long useful product lifetimes, operational security and maximised customer benefits.



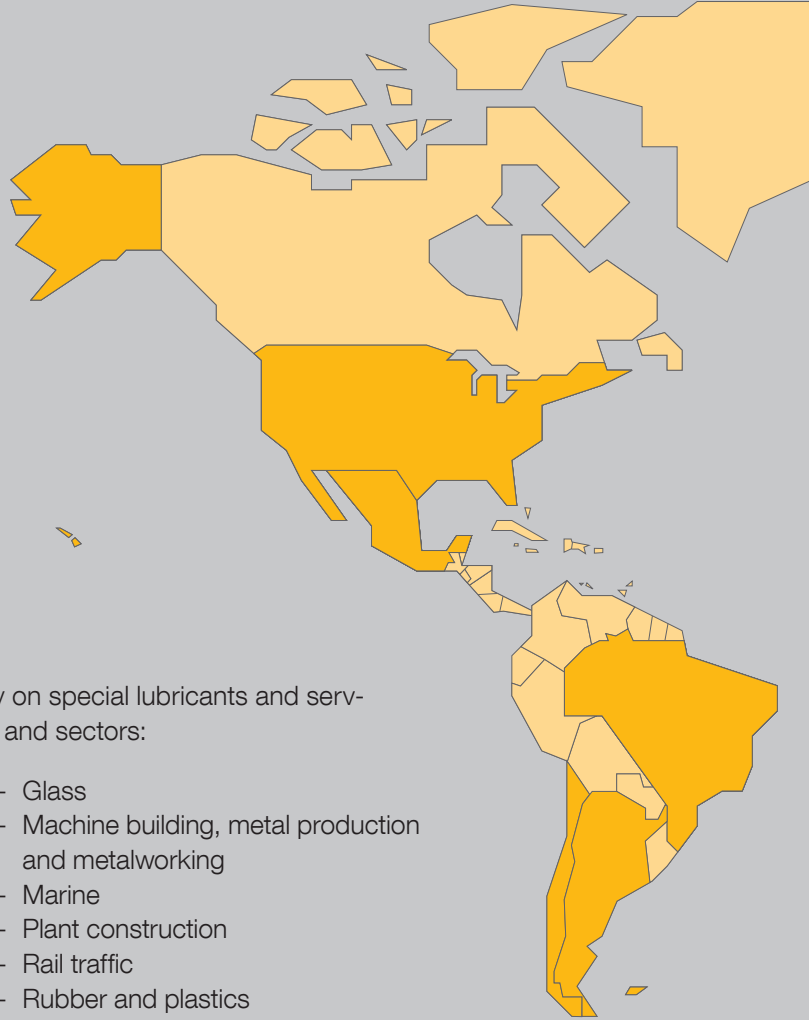
At Klüber Lubrication, expert teams address ecological aspects, occupational safety and sustainability. Our concept includes ultra-stringent safety standards at our production facilities, eco-certification, globalised quality and environmental management, and many other measures.



We continually audit ourselves and our processes, examining where products and processes can be improved. Where can conventional base oils be replaced by regenerative-sourced materials? Where can production and logistics processes be optimised so as to consume less energy and emit less? How can we help our customers achieve their own environmental and sustainability targets. How can we reduce the amount of material used? How can we achieve maximum biodegradability while achieving the required performance? How can our products help to reduce the energy consumption of machines and lines?

More than 80 years of expertise in special lubricants constitute a rock-solid foundation, enabling us to supply fit-for-purpose answers to the questions of both the present and the future.

# Klüber Lubrication at a glance.



## Solutions for all industries

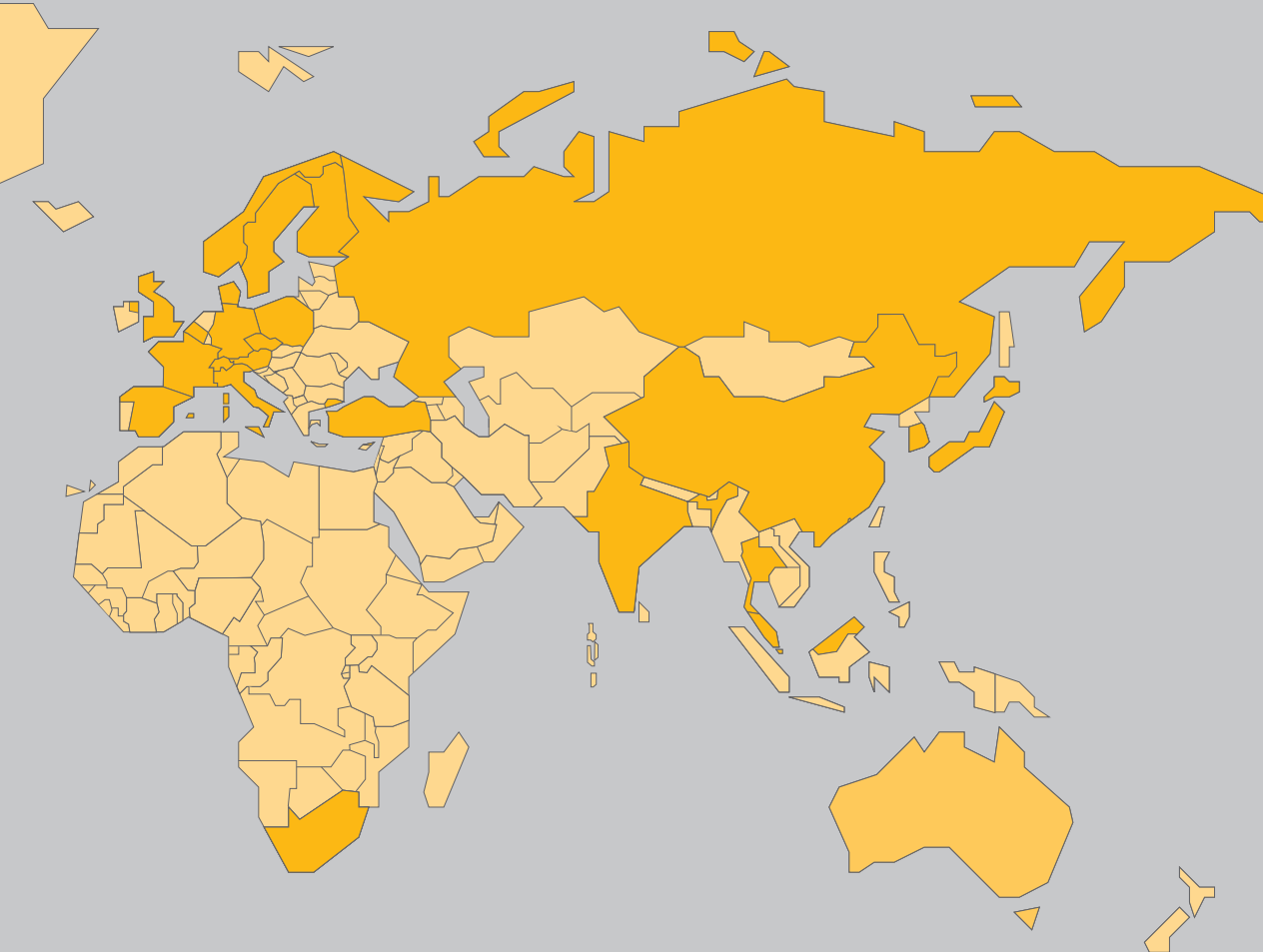
Many thousands of corporate customers all over the world rely on special lubricants and services from Klüber Lubrication, e.g. from the following industries and sectors:

- Automotive
- Base materials industry
- Cement, mining, coal and fertilisers, and many others
- Chemicals
- Conventional energy generation, wind power and other, alternative energies
- Conveyor and materials handling technologies
- Electrical engineering and electronics
- Environmental engineering
- Food, beverages and pharmaceuticals
- Glass
- Machine building, metal production and metalworking
- Marine
- Plant construction
- Rail traffic
- Rubber and plastics
- Textiles
- White goods and consumer goods
- Wood, pulp and paper.

## Our product portfolio includes:

- **Oils:** adhesive lubricating oils, electrical contact oils, gear oils, high-temperature chain oils, low-temperature chain oils, multi-purpose oils, needle and sinker oils, running-in oils for cylinders or needle cams, separating and assembly oils, sliding agents, special chain oils
- **Greases:** assembly greases, electrical contact greases, gear transmission greases, high-speed greases, high-temperature greases, low-temperature greases, plastic lubricating greases, rolling bearing greases, sealing and lubricating greases, valve greases
- **Pastes:** lubricating and assembly pastes for -45 °C up to +150 °C, lubricating and assembly pastes for +150/200 °C up to +1,200 °C
- **Bonded coatings:** bonded coatings for general applications in machine building, bonded coatings for metals and elastomer
- **Waxes:** chain lubricating waxes, lubricating wax emulsions
- **Corrosion protection:** rust inhibitors, rust removers

- Manufacturing and sales subsidiaries
- Distribution



## The company at a glance

- Founded by Theodor Klüber in Munich, Germany in 1929
- Klüber companies in more than 30 different countries
- Sales partners in another 40 different countries
- Approximately 2,000 staff worldwide, more than half of them in sales
- Internationally collaborative research and development, testing and applications engineering with around 200 experts in speciality lubricants
- In-house process engineering
- In-house design and construction of manufacturing lines, metrological and testing equipment
- Unique test bay with more than 130 tribometers for trialing special lubricants
- In-house quality assurance at all production sites
- Comprehensive certification to internationally recognised occupational safety, environmental management and quality standards of the automotive, food and beverage industries
- Worldwide compliance management for legislation relating to eco-management, chemicals, customs clearance, imports and exports
- Worldwide logistics

# Contact and imprint.

## What can we do for you?

One of our major strengths is close cooperation with customers and partners, so as to develop individualised lubricant solutions for the lubrication problems of modern-day technology. Fully trained, experienced experts are available to you on the spot for analysis of your requirements and for developing and supplying speciality lubricants customised to your specific needs. We look forward to hearing from you.

**info@klueber.com**

**www.klueber.com**

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## Klüber Lubrication – your global specialist

Innovative tribological solutions are our passion. Through personal contact and consultation, we help our customers to be successful worldwide, in all industries and markets. With our ambitious technical concepts and experienced, competent staff we have been fulfilling increasingly demanding requirements by manufacturing efficient high-performance lubricants for more than 80 years.



A company of the Freudenberg Group