

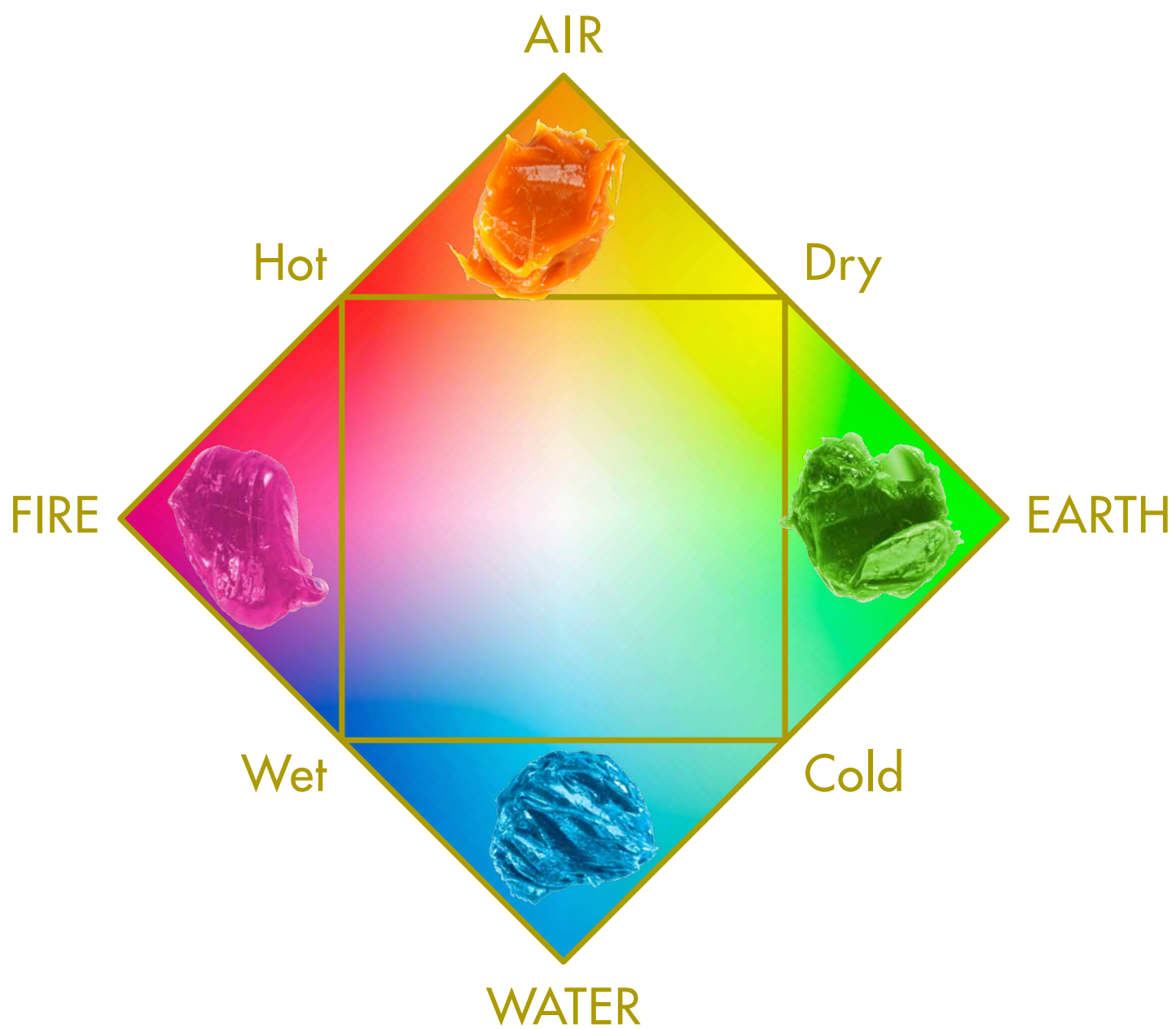
# **Befriending the elements**

Taming the forces of nature with lubricating grease is nothing new. The Romans used rags dipped in animal fat to lubricate wagon wheels, and when the industrial revolution took off, lubrication was critical to keep the machines spinning. Today, lubricating grease is an advanced science and demands are greater than ever.

Axel Christiernsson was founded in 1888, and has faced a myriad of lubrication challenges ever since. You can find some examples in this brochure and we're always open to meet you and tell you more.

We do not promote any brands of our own. What you get from us are the skills to define, develop and produce the right lubricating grease products for your market. Every product you buy is labelled with your brand and sold through your channels. This way we become your partner, not your competitor.

To befriend the elements and turn grease into profitable business, just give us a call or drop us a line. We're ready when you are.





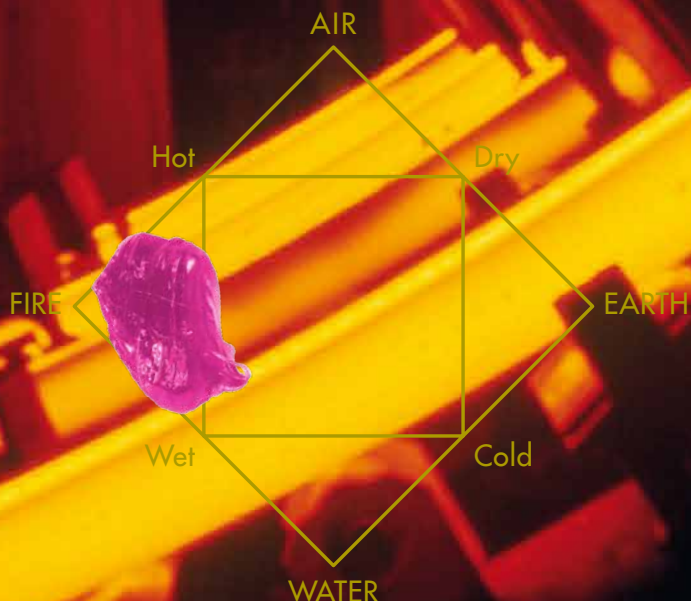


# The ultimate test

Conditions in continuous casting test lubrication to the limit. The working temperature of the bearings is 180°C, sometimes rising to 300°C. Heavy loads, dust everywhere and steam from the cooling water make the challenge even greater. And as if that wasn't enough, the bearings are lubricated via a central system with hundreds of metres of pipes – some just a few millimetres in diameter.

One single plant consumes tonnes of lubricating grease every year. Using the right grease means more running hours and less wear. Not to mention a good night's sleep for the production manager.

We've worked with steelwork staff and manufacturers of continuous casting equipment to develop lubricating grease that meets stringent demands. The result was polymer-based lithium complex grease with exceptional thermal and mechanical stability in combination with extreme adhesion and water resistance.



Axellence products are based on lithium complex, making them excellent for industrial lubrication challenges such as extreme temperatures, heavy loads and centralised systems.

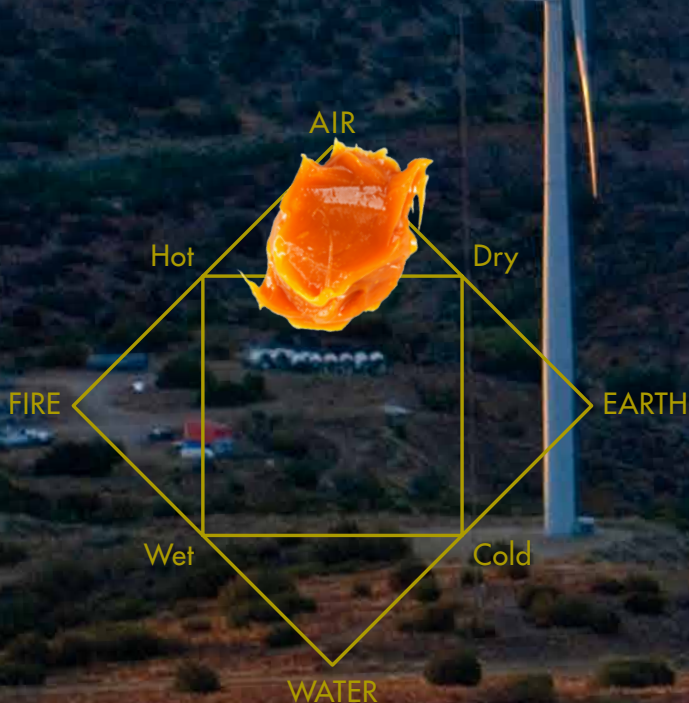


# Powering the future

Providing a renewable source of energy, wind turbines are constantly gaining ground. However, many turbines are located in places where access is difficult making maintenance such as re-lubrication of bearings a tough task.

A normal re-lubrication interval is somewhere around six months. No wonder people raised their eyebrows when we suddenly claimed we had developed a lubricant that extended the re-lubrication interval for the main bearings by a factor of eight. But it was true. Epoch™ technology was born.

By using a non-polar thickener system (polypropylene), almost all additives could easily reach the metal surfaces of the bearing. This, in turn, made it possible to minimise the amount of additives and improve lubricating performance.



Epoch™ technology truly represents a new era in the world of lubricating greases, significantly extending re-lubrication intervals.











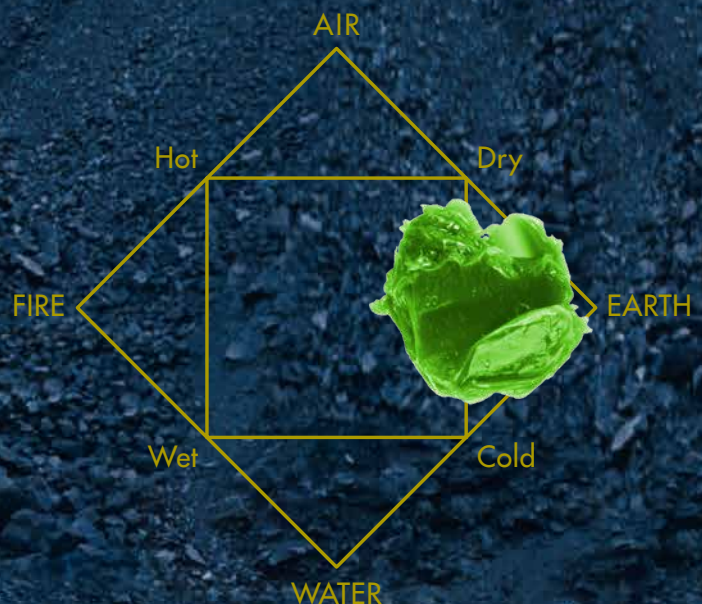
# Breaking new ground

Removing minerals from the earth has played a central role in the development of modern civilisation. Just think about the ages of mankind – Stone, Bronze and Iron – or historical events like the Gold Rush.

Yesterday, mining was a tough job for humans. Today, it is mainly a tough job for machines. A loader transports tens of tonnes of rocks, often in a cold and dusty environment. The heavy loads in combination with slow speeds make lubrication extremely difficult, because there is insufficient momentum to help separate the bearing surfaces and build a lubricating film.

We solved the problem by combining a strong thickener and a base oil with high viscosity. Together, they have the power to keep the bearing surfaces apart and provide sufficient lubrication.

Based on functional soaps and mineral oil, Caliac and Alassca products are designed to withstand the heavy loads you deal with in the mining industry.



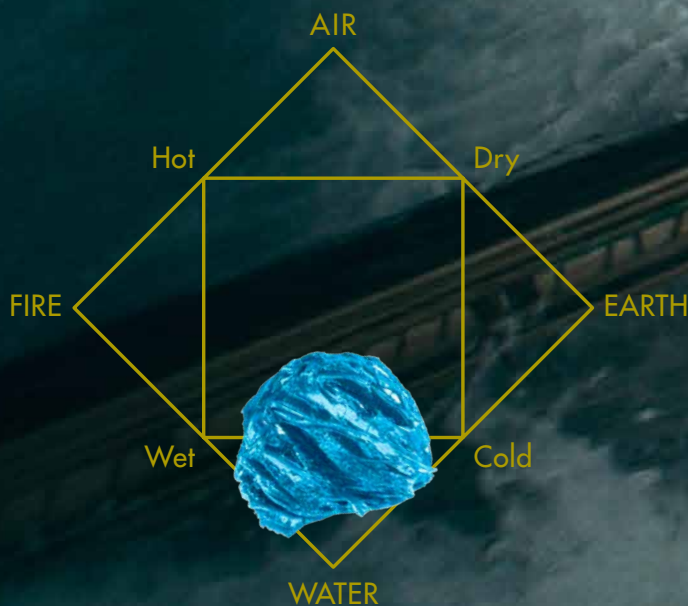


# Surviving the waves

Working on a fishing boat is one of the occupations where danger is part of the job description. You go out to sea in appalling weather conditions and one wrong step can send you overboard. It's a lonely life and to survive you have to be strong.

It's also a tough environment for lubricating greases. In heavy seas when cold, salty waves constantly crash over deck everything takes a beating – hatches, winches, propeller housings. The grease has to stay in place to protect the equipment from wear and maintain its functions. Not an easy task.

Together with an international project group, we developed a lubricating grease that survives the waves. The key components were calcium as the thickener (cold-resilient) and polymer-based oil (very sticky). "Only epoxy glue sticks better – but that's not a very good lubricant," was the verdict from the fishing world.



Hycal is a product with extremely high water resistance. Perfect in marine applications such as fishing boats, oil rigs, boat trailers and dredgers.





# What's the right mix for your business?

We help you find out. Our offering consists of Axel Products (from standard to customer unique) and Axel Premium™ Services (development, production, supply, education). Together, we go through your lubricating grease business – from development to delivery – and see where there's room for improvement.

In 1982, we made the decision to label every product leaving our plant in our customers' names. We call this strategy Customised Label™, and it is fundamental to our way of doing business. Whether you decide to outsource part or all of your production to us, we do not compete with you.

Many former lubricating grease manufacturers have put their trust and good name into our hands. Outsourcing is not a trend anymore. It's the modern way of making money on lubricating greases.



## Customised Label™

We do not promote any brands of our own. Instead, we help you define, develop and produce the products you need in your market. You sell the products in your name, with no competition from us.



## Comprehensive knowledge

The lubricating grease business is no exception – knowledge is key to success. Lubrisense™ is our term for sharing what we know about lubricating grease. It includes, for example, white papers and education within our Grease Genius™ programme.





### **Taking responsibility**

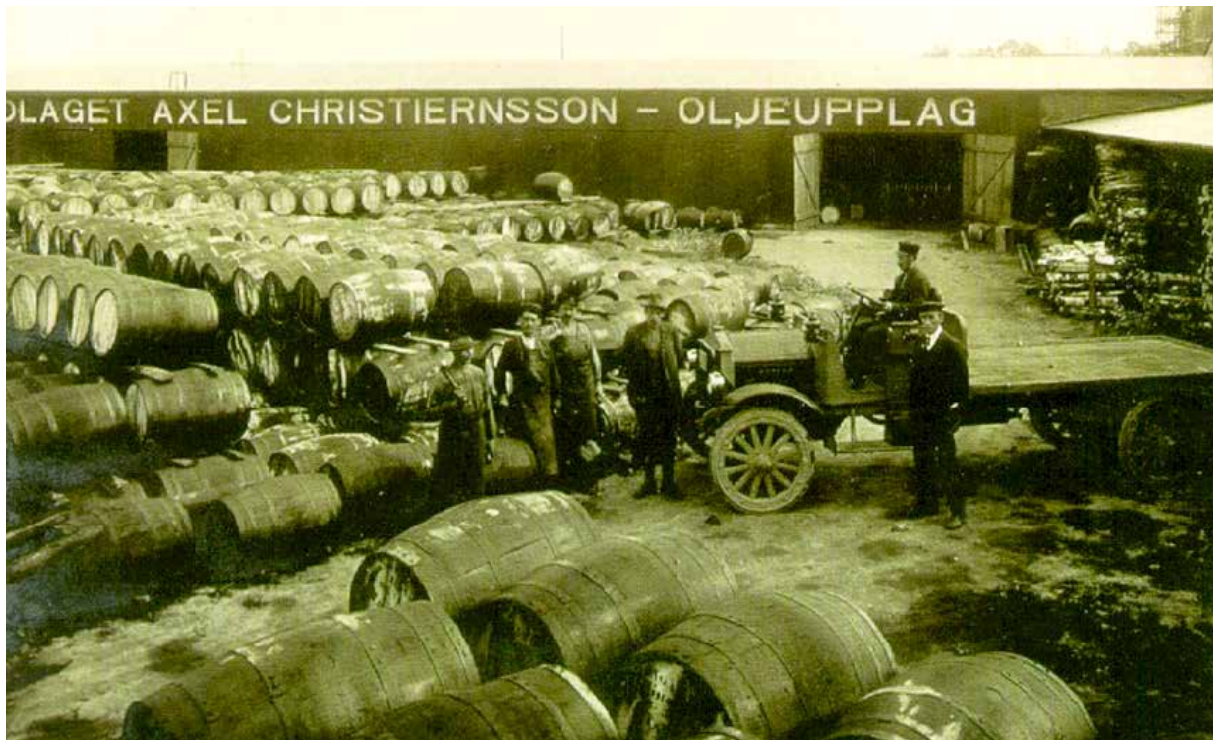
We are serious about quality and environmental issues, and are certified according to ISO 9001 and ISO 14001. We also have a code of conduct document, clearly describing our responsibility towards customers, employees and society, as well as our business ethics.

# Future-oriented since 1888

When Axel Abraham Christiernsson founded our company in 1888 in Stockholm, Sweden, the range included a mixture of lubricants and other chemical/technical products. Today we work exclusively with lubricating greases, and have hundreds of product formulations in our portfolio. By always trying to find new innovations that help our customers do better business, we have stayed competitive all through the years.

We are an independent operator in the lubricating industry with three production sites: Nol (Sweden), Heijningen (the Netherlands) and Niort (France). Our production is well over 25,000 tonnes per year, making us one of the leading producers and suppliers of lubricating greases in Europe.

But even if the facts and figures reflect a big company, we are still a small operation with close customer relationships and a down-to-earth attitude. You and your business may be a continent away, but in our minds you are right next to us.







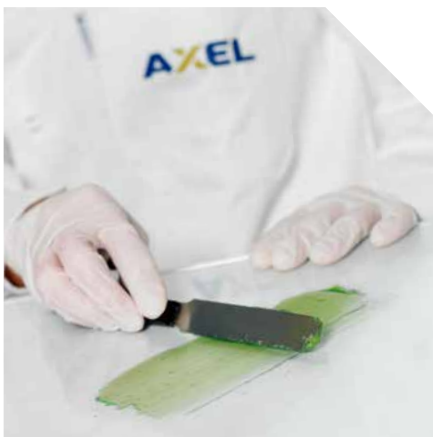
## Business development

Since the early 1920s, lubricating grease has been our core product. In 1982, we shifted to our private label strategy, Customised Label™. We truly believe outsourcing is here to stay, and put all our energy into developing our offering to become even more attractive to marketers and manufacturers of lubricating grease.



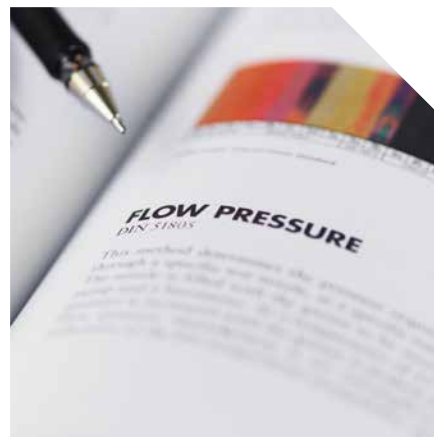
## Process development

Outsourcing lubricating grease production has proven to be an attractive and economical option, but it also means our customers put their trust and good name into our hands. We have a well-proven track record as well as products and services to optimise our customers' business and give them "Ease of Supply".



## Product development

With more than 200 active product formulations, this brochure could have been a book on technical breakthroughs from Axel Christiernsson. However, the four case stories serve to give an idea of our innovative skills. Just to mention some other examples, we have developed biodegradable greases, food machinery greases and a wide variety of multipurpose and universal greases.



## Staff development

The right people with the right skills can take a company anywhere. At Axel Christiernsson, you find lubricating grease experts in everything from technical issues to business support. Some of them work with our Grease Genius™ programme – education and information about lubricating grease.



AXEL CHRISTIERNSSON AB  
P.O. BOX 2100  
SE 449 11 NOL  
SWEDEN

TEL: +46 (0) 303 33 25 00  
FAX: +46 (0) 303 33 25 90

AXEL CHRISTIERNSSON BV  
1 FEBRUARIWEG 13  
4794 SM HEIJNINGEN  
THE NETHERLANDS

TEL. +31 (0) 167 52 29 80  
FAX +31 (0) 167 52 22 71

CHRISTOL GREASE SAS  
46 RUE DE GOISE, BP 8821  
FR-79028 NIORT CEDEX 9  
FRANCE

TEL +33 (0) 49 77 13 71  
FAX +33 (0) 5 49 73 95 30