

Safer process.  
Safer profit.



# LUBRICATING GREASES FOR THE MINING INDUSTRY

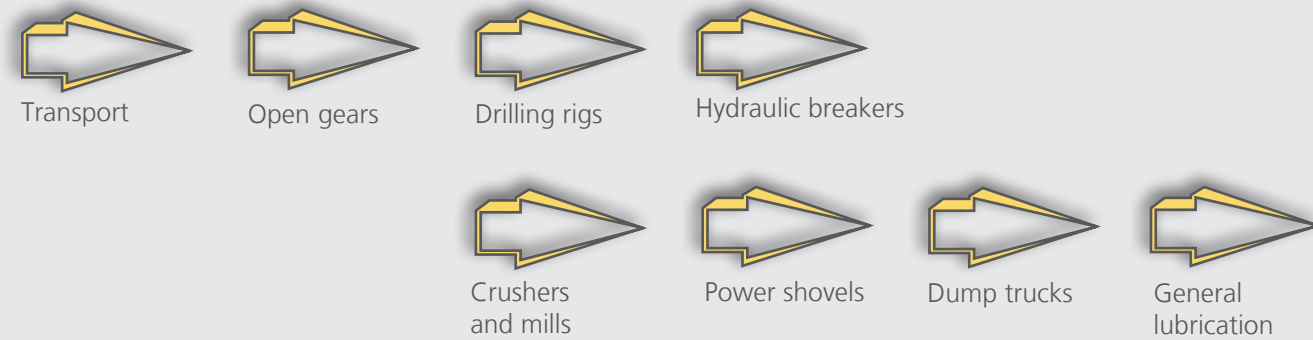
For maximum quality in your processes



## High-performance lubricating greases from Rhenus — your number one choice for mining

The industrial lubricating greases used in mining and open-cast mining in particular must satisfy the highest requirements to ensure that your machines and systems can work reliably throughout the entire process. For this reason, Rhenus Lub has developed special lubricating greases for maximum safety and performance.

### Rhenus products in mines:



Mining and extracting natural resources subject these machines to extreme pressures — from bad weather, dust, shocks and vibrations, to name but a few.

When it comes to reliability and superior performance, mine operators and suppliers around the world rely on the "Made in Germany" range of high-performance lubricating greases from Rhenus. The Rhenus range does an outstanding job under the most adverse circumstances in the largest mines and mining areas in the world — even in your mine.

### Product features of Rhenus lubricating greases:

- High pressure absorption capacity
- Excellent mechanical stability
- Effective protection against corrosion
- Strong adhesive properties
- Biodegradable

Transport				
Application	Product	Colour	Application temperature	Properties
Conveyor belt on carrying rollers — heavy load	rhenus LKX 2	White	-25 to +150°C	Semi-synthetic high-performance EP lubricating grease with a synergistic combination of white solid lubricants. Can be pumped and conveyed by central central lubrication systems down to -20°C, very adherent. Ideal for applications with strong vibrations and impact loads.
Conveyor belt on carrying rollers — normal load	rhenus LZN 2	Beige-brown	-30 to +130°C	EP lubricating grease formulated from mineral oils that are resistant to ageing. For lubricating roller and friction bearings within the specified temperature range, even under high loads. Can be conveyed in central lubrication systems, resistant to ageing and water, very mechanically stable, protects against corrosion, high pressure absorption capacity, good adhesion.
Conveyor belt on carrying rollers (cryogenic application)	rhenus CGN 2	Beige	-50 to +100°C	Particularly soft and supple lubricating grease formulated from mineral oils that are particularly stable in cold conditions and have a very low starting resistance at low temperatures.
Conveyor belt — acid influence	rhenus BCN 2	Natural	-15 to +150°C	Resistant to weak acids and lyes, and therefore suitable as bearing lubrication under aggressive operating conditions.
Rail — wheel flange	rhenus CBG 03	Black	-30 to +80°C	Semi-fluid wheel flange lubricant formulated from readily biodegradable base oils. Tempered with graphite, easy to convey, resistant to water, protects against corrosion, good adhesion and with a high pressure absorption capacity. Approved by Rebs Zentralschmiertechnik for use in wheel flange lubricant systems.
Rail — switch plates	rhenus LSN 04	Natural	-40 to +120°C	Approved by Deutsche Bahn (German railways network).
Rail — buffer parts	rhenus BAC 0	Natural	-50 to +100°C	
Rail — wheel bearings	rhenus LKI 2	Natural	-30 to +150°C	High and low-temperature EP lubricating grease formulated from a semi-synthetic base oil. Ideal for lubricating wheel bearings on trucks, wheelset bearings on rail-mounted vehicles, and universal joints and drive shafts on industrial and commercial vehicles.
Rail engines and electric motors	rhenus LKZ 2	Natural	-40 to +140°C	Specifically designed for use on roller bearings in electric motors and alternators. Can be used at temperatures below -20°C. Resistant to water, mechanically stable.



### Tooth flank lubrication: open gear

Application	Product	Colour	Application temperature	Properties
Sprocket flanks	rhenus ACG 0	Black	-30 to +200°C	A semi-fluid adhesive lubricant that can be sprayed, containing a high proportion of fine graphite. Very good adhesive properties and highly resistant to water. Protects against corrosion. Very high pressure absorption capacity.
	rhenus ABG 0	Black	-30 to +200°C	
	rhenus ABG 02	Black	-30 to +200°C	

### Drilling rigs/hammer drill

Application	Product	Colour	Application temperature	Properties
Central lubrication: bearings and pins	rhenus LKX 2	White	-25 to +150°C	Semi-synthetic high-performance EP lubricating grease with a synergistic combination of white solid lubricants. Can be pumped and conveyed by Central lubrication systems down to -20°C, very adherent. Ideal for applications with strong vibrations and impact loads.
Hammer drill	rhenus ACK 2	Black-brown	-20 to +1100°C	Specially developed to lubricate plug tools and wear bushings only, on hydraulic and pneumatic hammers. Very squeeze-stable with good resistance to water, can withstand high thermal loads, good corrosion protection properties, resistant to oxidation, solid film separation effect up to approx. 1100°C.
Sprocket flanks	rhenus MAK 15	Black-brown	-30 to +700°C	Used for bolted connections that are subjected to extremely high pressures, high thermal load and corrosive influences. Demonstrates good sealing properties and enables the connection to be disassembled in a non-destructive manner. This property is maintained even after the bolted connections are annealed, up to approx. 700°C.

### Mills and crushers

Application	Product	Colour	Application temperature	Properties
Axle bearings	rhenus ABG 0	Black	-30 to +200°C	A semi-fluid adhesive lubricant that can be sprayed, containing a high proportion of fine graphite. Very good adhesive properties and highly resistant to water. Protects against corrosion. Very high pressure absorption capacity.
Bearings (e.g. in ball mills, crushers etc.)	rhenus LKX 2	White	-25 to +150°C	Semi-synthetic high-performance EP lubricating grease with a synergistic combination of white solid lubricants. Can be pumped and conveyed by central lubrication systems down to -20°C, very adherent. Ideal for applications with strong vibrations and impact loads.
Sprocket flanks	rhenus OGT 54	Natural		Exceptionally adhesive high-viscosity gear oil that is extremely resistant to pressure. Specifically designed for lubricating the operations of medium to large sprocket drives, ropes and chains. Provides a high level of protection for tooth flanks and against wear, very good oxidation stability and ageing stability, good corrosion protection properties, neutral behaviour towards conventional sealing materials, can be conveyed in central lubricant systems, highly water-repellent.
Sprocket flanks	rhenus ACG 0	Black	-30 to +200°C	A semi-fluid adhesive lubricant that can be sprayed, containing a high proportion of fine graphite. Very good adhesive properties and highly resistant to water. Protects against corrosion. Very high pressure absorption capacity.

Draglines and rope shovel				
Application	Product	Colour	Application temperature	Properties
Rope	rhenus ADG 0	Black	-30 to +140°C	A semi-fluid adhesive lubricant that can be sprayed, containing a high proportion of fine graphite. Very good adhesive properties and highly resistant to water. Protects against corrosion. Very high pressure absorption capacity.
Sprocket flanks	rhenus ACG 0	Black	-30 to +200°C	
Sprocket flanks	rhenus ABG 0	Black	-30 to +200°C	
Central lubrication — rotating and pivoting movements	rhenus LKX 2	White	-25 to +150°C	Semi-synthetic high-performance EP lubricating grease with a synergistic combination of white solid lubricants. Can be pumped and conveyed by central lubricant systems down to -20°C, very adherent. Ideal for applications with strong vibrations and impact loads.
Central lubrication — arctic	rhenus LKZ 2	Natural	-40 to +140°C	Can be used at temperatures below -20°C. Resistant to water, mechanically stable.
Chain drive	rhenus ADG 0	Black	-30 to +140°C	A semi-fluid adhesive lubricant that can be sprayed, containing a high proportion of fine graphite. Very good adhesive properties and highly resistant to water. Protects against corrosion. Very high pressure absorption capacity.

Dump trucks				
Application	Product	Colour	Application temperature	Properties
Central lubrication — rotating and pivoting movements	rhenus LKX 2	White	-25 to +150°C	Semi-synthetic high-performance EP lubricating grease with a synergistic combination of white solid lubricants. Can be pumped and conveyed by central lubricant systems down to -20°C, very adherent. Ideal for applications with strong vibrations and impact loads.
Wheel bearings	rhenus LKR 25	Natural	-30 to +150°C	High-temperature EP lubricating grease formulated from semi-synthetic base oils. High mechanical stability, good sealing capability against dirt and water. Can be used for lifetime lubrication and for lubricating oscillating bearings. Particularly suitable for lubricating wheel bearings on commercial vehicles. Approved by DaimlerChrysler (Specifications for Operating Fluids 265.1) and MAN (MAN company standard 284 Li-H2).

General lubrication				
Application	Product	Colour	Application temperature	Properties
General lubrication points	rhenus LZN 1	Beige-brown	-30 to +130°C	EP lubricating grease formulated from mineral oils that are resistant to ageing. For lubricating roller and friction bearings within the specified temperature range, even under high loads. Can be conveyed in central lubricant systems, resistant to ageing and water, very mechanically stable, protects against corrosion, high pressure absorption capacity, good adhesion.
	rhenus LZN 2	Beige-brown	-30 to +130°C	
	rhenus LZN 3	Beige-brown	-30 to +130°C	
Bearing, subjected to high thermal loads	rhenus LKI 2	Natural	-30 to +150°C	High and low-temperature EP lubricating grease formulated from a semi-synthetic base oil. Ideal for lubricating wheel bearings on trucks, wheelset bearings on rail-mounted vehicles, and universal joints and drive shafts on industrial and commercial vehicles.
Electric motors	rhenus LKZ 2	Natural	-40 to +140°C	Specifically designed for use on roller bearings in electric motors and alternators. Can be used at temperatures below -20°C. Resistant to water, mechanically stable.
Water pumps	rhenus LCC 2	Beige	-30 to +130°C	For lubricating roller and friction bearings within the specified temperature range, under normal and severe operating conditions, in particular for lubrication points that are subjected to high loads and sometimes to impact loads as well as the effects of water or humidity.
Chains and ropes	rhenus OGT 54	Natural		Exceptionally adhesive high-viscosity gear oil that is extremely resistant to pressure and designed specifically to lubricate the operations of medium to large sprocket drives, ropes and chains. Provides a high level of protection for tooth flanks and against wear, very good oxidation stability and ageing stability, good corrosion protection properties, neutral behaviour towards conventional sealing materials, can be conveyed in central lubricant systems, highly water-repellent.

## Responsibility. Innovation. Quality.

### Responsibility.

We are a medium-sized, family-owned business, in which each individual employee feels responsible for the results of their work. For this reason, we work in a flexible manner, focussing on the success of our customers. We assume direct responsibility for the health of your employees, in particular by means of dermatologically-compatible, non-hazardous lubricants, which are free from amino and boric acids. Lubricating greases that do not contain heavy metals underline our commitment to sustainability and using our environment responsibly.

### Innovation.

Innovation means designing new products and improving existing products, as well as creating customised solutions together with our customers across a wide range of industries. More than 20% of our employees work in research and development, ensuring that we maintain our position as an innovative leader and provide you with the best products for your process. Rhenus Lub was the first company to use environmentally friendly additives and to launch coolants that are free from amino and boric acids onto the market.

### Quality.

"Made in Germany" is R&D and production in accordance with German quality standards. The centralised arrangement of all our divisions within our modern manufacturing facilities in Mönchengladbach, Germany, ensures short distances and safe internal processes. In addition, we only use raw materials of the highest quality. Our 100% inspection of incoming and outgoing raw materials and finished products emphasizes the high quality standards at Rhenus.

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