



**YOUR EFFICIENCY  
IS OUR PASSION**

## **Specialty Lubricants for the Cement Industry**



» We are passionate about what we do. Together we solve your challenges with our experience, dedication and focused teamwork. «

## About FUCHS LUBRITECH

# Your Efficiency is our Passion.

Since more than 60 years, FUCHS LUBRITECH concentrates on the development, production and distribution of high-tech lubricants for the most demanding applications. An experienced team of experts provides broad technical, process-spanning consulting expertise and in-depth application know-how, and as such contributes to your performance and efficiency.

Our **headquarters** in Kaiserslautern and locations in United Kingdom, France, Australia, the USA, Brazil, Japan, China and India as well as distributors and partners in more than 60 countries guarantee the worldwide availability of our products. You can always rely on a uniform quality standard all over the world.

Being part of the group of companies of **FUCHS PETROLUB SE**, the world's largest independent supplier of lubricants, we act flexibly and independently – with our own self-contained product range and world-leading strong brands.

**Brand names** like CEPLATTYN®, LUBRODAL®, gleitmo®, CASSIDA®, STABYL® or GEARMASTER® are synonymous, both with outstanding performance and reliability of our products and with our convincing development strength and technological leadership. They look back on many years of experience in daily use and constant development.

Some of the **key machines in cement production** are crushers, mills, kilns, and coolers. All of these machines are exposed to the rough environmental conditions of a Cement Plant, involving highly abrasive dust, high process temperatures, vibrations, and high loads.

Most of these key machines require specialty lubricants to protect the machine parts like bearings, gear boxes, Open Gears, tyre rings and bolts from seizure, wear and failure. Conventional lubricants are not designed to cope with the tremendous vibrations in the crushing and grinding process or with the heat the parts are exposed to in the kiln section.

**We specialise in high-performance lubricants and develop products in tribological marginal areas. Contact us!**

# Range of Services

FUCHS LUBRITECH offers a large range of services for the Cement Industry including oil and grease analysis, in-house and on-site training via the FLT-ACADEMY. Additionally FUCHS LUBRITECH provides thorough machine inspections and a unique repair service for Open Gears.

## The Inspections

- Checking the spray system
- Assessment of the contact pattern and the condition of the load-carrying surfaces
- Measurement of the temperature profile across the tooth width
- Documentation of the condition of the flanks (photographic, video, and both infra-red pictures and videos)
- Written documentation of the whole inspection, including trending of the measured values

## The Repair Service

- Re-profiling the tooth flanks
- Grinding pittings or larger damages
- Smoothing of scuffings
- Quick running-in
- Assistance with the alignment of the transmission gear-set

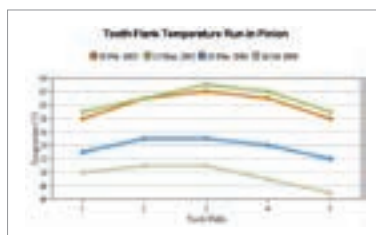


Check of spray pattern.

With the FLT Inspector, FUCHS LUBRITECH makes a unique online documentation available that enables the customers to retrieve all relevant information on their systems and the lubricants used therein at any time. The FLT Inspector is the perfect online reporting tool with integrated graphical trend analysis.

## The FLT-Inspector

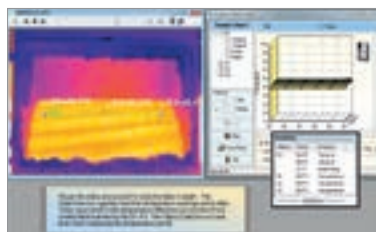
- Availability of all reports at a glance
- Online access at any time
- Instant check via „traffic light system“
- Graphical trend analysis for temperatures and vibrations
- Rapid transmission of data and reports
- Individual access hierarchy
- Optional extra information (such as videos and both infra-red pictures and videos) for each inspection report



Trend analysis of temperatures and vibrations.



Treatment of the working tooth flanks.



Infra-red images and videos as part of inspection reports.

# Raw Material Preparation

## Crusher



The first step in raw material preparation is crushing. This can be done e.g. by impact crusher, cone crusher or hammer crusher. The bearings of these crushers are exposed to extreme vibrations loads, dust and environmental conditions. Therefore greases with extreme working stability, exceptional pressure resistance and good sealing capabilities are to be used.

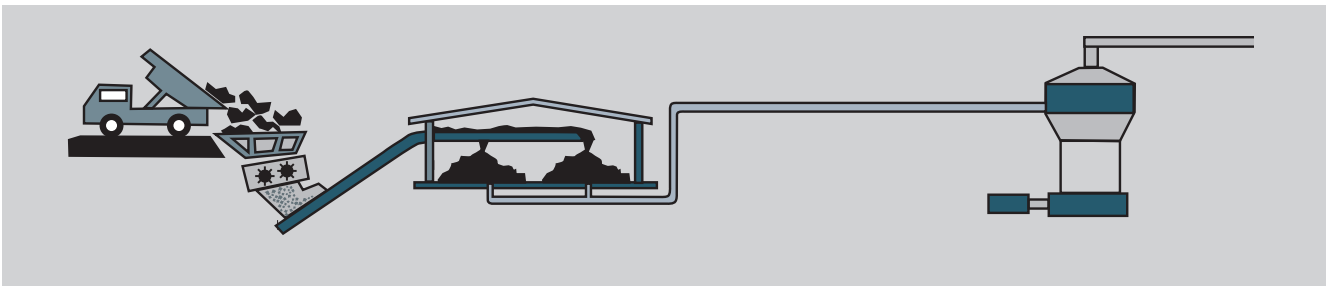
URETHYN MP 2 and LAGERMEISTER XXL fulfil these demands. Even at low temperatures they are pumpable in central lubrication systems. URETHYN MP 2 and LAGERMEISTER XXL warrant safe running conditions at maximum service intervals.

## Blending Beds



No other moving parts in the Cement Industry are exposed to dusty environments and their highly abrasive nature as much as conveyor chains of blending beds. That causes extreme wear on chain links, chain bolts and sprocket wheels. Chain oils with minimum dust attraction but good lubrication properties are necessary to prolong the lifetime and maintenance cycles of this equipment.

STABYLAN G 1000 provides very good creeping properties to reach and lubricate the inner chain. Friction and wear are drastically reduced. Throw-off losses are minimal. The graphite content of STABYLAN G 1000 offers excellent emergency running properties.



## Vertical Mills, Grinding Rollers



Foto: Gebr. Pfeiffer SE

Vertical mills are commonly used for raw material and cement grinding. In terms of lubrication, the most critical parts of vertical mills are the bearings of the grinding rollers, the separator bearings and the gear box. The bearings of the grinding rollers are exposed to extremely high vibrations (short time overloads), elevated temperatures and, depending on their design, the dust loaded environment within the grinding chamber.

GEARMASTER PGP 680 and 1000 were especially developed for the lubrication of such highly loaded bearings. They are based on a fully synthetic oil, thus ensuring thickest lubrication films under extreme temperatures and loads.

## Vertical Mills, Separator Bearings



Foto: Gebr. Pfeiffer SE

Separator bearings of vertical mills face a critical combination of load, revolutions and size. In addition they are positioned in the airstream and thus heavily exposed to elevated temperatures and dust.

URETHYN MP 2 was especially developed to lubricate these bearings. It provides a good pumpability and guarantees good lubricity under elevated temperatures and loads.

GEARMASTER CLP and GEARMASTER SYN oils ensure a reliable operation lubrication with substantially extended service for the gear boxes of vertical mills.

# Hot Processing

## Kiln, Open Gear



Most small kilns and in particular kilns with more than 3 roller stations are equipped with an open running gear drive. The tooth flanks of kiln gears are exposed to radiation heat from the kiln shell and, compared to other Open Gears, are subjected to axial movements. Due to slow sliding movements between the tooth flanks, solid lubricant-containing open gear lubricants are the optimum solution.

In general, graphite-containing CEPLATTYN KG 10 HMF as well as the light-colored CEPLATTYN GT range are the best solutions for open gear lubrication on kilns.

Because of their high solid lubricant content and their elevated base oil viscosity, both CEPLATTYN grades provide an excellent wear protection even under critical running conditions.

## Kiln, Tyre Ring

Tyre rings on kilns have to compensate the heat extension of the kiln shell, keep the kiln shell in its circular shape and prevent the kiln from bending. As a kiln tyre is never entirely fixed to the kiln shell it needs to be lubricated to avoid seizure and wear between the tyre pads and the tyre itself. Any moving parts of semi-fixed tyres have to be lubricated as well.

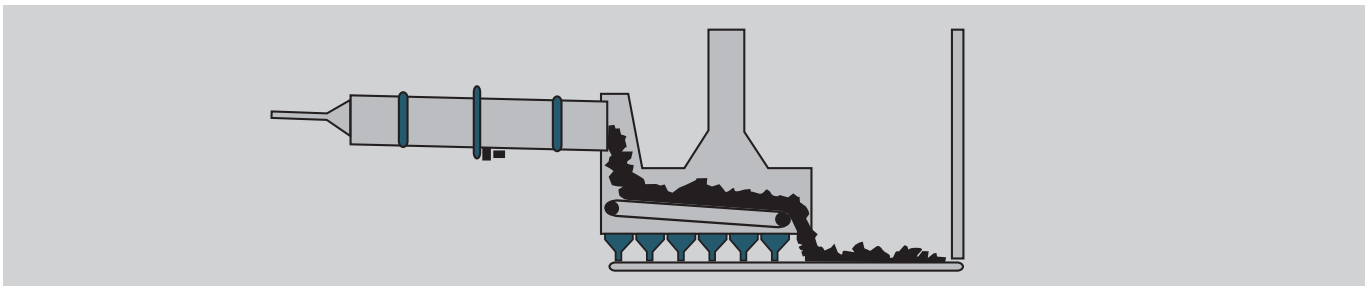


Foto: ThyssenKrupp Polysius AG

CEPLATTYN HT and CEPLATTYN TL are reliable lubricants for this task.

They are easy and safe to apply using conventional spray units. Both products penetrate into the inner tyre ring, their base fluids evaporate slowly, and their high content of solid lubricants stays in the tyre for a safe, long-term dry film lubrication.

The copper pastes gleitmo 160 Neu and PBC are used for additional maintenance lubrication during shutdown and for mounting purposes.



## Gear Box



Foto: ThyssenKrupp Polysius AG

Within a cement plant many high powered gear boxes transmit forces to drive different machines. This can be the back gear or the planetary gear for the friction drive of the kiln, the central drive or back gear of a tube mill, the gear box of a vertical mill or a roller press or drives for crushers, traveler grates and various conveyor belts. All these gears have one thing in common: The challenging environment in a Cement Plant.

The GEARMASTER range provides a solution for every single gear box within a Cement Plant. GEARMASTER CLP is a mineral oil-based gear oil allowing longest service intervals compared to standard mineral oils. GEARMASTER SYN is a synthetic gear oil providing maximum energy efficiency as the optimum solution for gears running at elevated temperatures or in critical climatic regions.

## Traveler Grate / Cooler

Depending on its design, a traveler grate can be equipped with many bearings operating under exposure to the radiation heat from the hot clinker. To keep these bearings running, high volumes of standard greases have to be used. However such greases fail frequently because they harden in the feeding lines.



URETHYN MP 2 was especially developed to meet these requirements. It will not harden under elevated temperatures; its high-temperature thickener system combined with its high base oil viscosity guarantees a reliable lubrication with minimum grease quantities.

In addition, URETHYN MP 2 is used as a high-performance multi-purpose grease for all heavily loaded and considerably thermally loaded bearings in classifiers, crushers, sieves, etc.

# Cement Grinding / Packaging

## Roller Press



Foto: ThyssenKrupp Polysius AG

Roller Presses are used for raw material preparation and finish grinding. The high-pressure grinding bed built between the two rollers leads to a significant reduction of energy consumption compared to common ball mills. Bearings of roller presses are subject to extremely high shock loads and, especially in the finish grinding process, to elevated temperatures. In terms of lubrication, grease-lubricated bearings have to be distinguished from oil-lubricated bearings.

Grease-lubricated bearings: The grease is fed in relatively high volumes using conventional lubrication systems. The high volumes are necessary to provide a sufficient sealing effect on the bearing to prevent a back-flow of dust from the grinding chamber into the bearing.

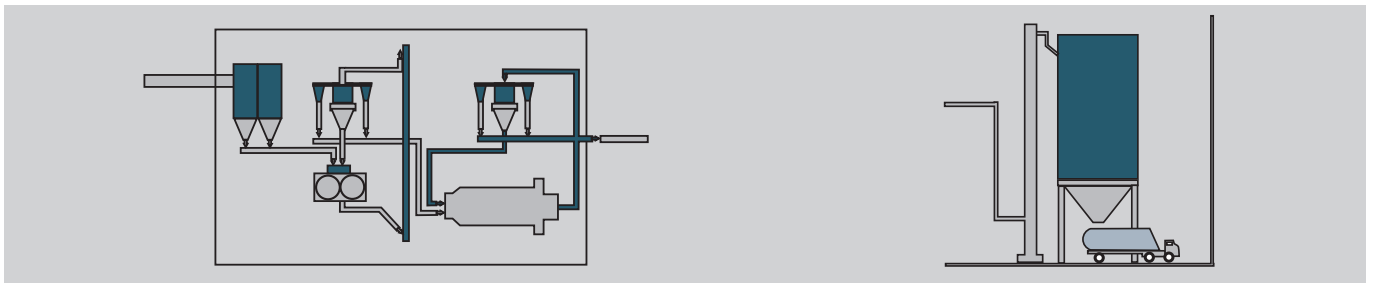
## Roller Press



Foto: ThyssenKrupp Polysius AG

Greases for the grinding bearings have to be extremely stress resistant and must provide a good damping effect to „cushion“ the bearings. In addition to that a good self-sealing effect is required to prevent a dust backflow from the grinding chamber to the inner bearing. STABYL HD is the most suitable and widely approved lubricant for these bearings. Its high base oil viscosity and its content of solid lubricants provide the ideal combination for these extremely challenging conditions.

Oil-lubricated bearings are equipped with a fully sealed circulation system. GEARMASTER SYN and GEARMASTER ECO are the widely approved synthetic oils to be used in these systems.



## Ball Mill



Even though ball mills are gradually being replaced by vertical mills and roller presses, they are still the most common grinding systems in today's Cement Plants. The majority of ball mills is driven by Open Gears. Some have central drives and enclosed gear / bearing arrangements.

CEPLATTYN is the first choice for spray, bath and circulation lubrication of Open Gears. It is available

as black graphite-containing grease, as a light-colored fluid, or as light-colored fluid with white reactive solid lubricants.

The entire CEPLATTYN range is the life insurance for an Open Gear drive. For mills driven by central gear drives or closed gear arrangements, the GEARMASTER CLP range is the widely approved choice.

## Silos / Packaging / Loading

Within the cement storage and packaging section different machine parts need lubrication. Silos are equipped with small open running gear drives for the discharging unit. They have to be lubricated by CEPLATTYN BL if applied via automatic greasers, or by CEPLATTYN 300, if applied manually.



Bearings of conveyors and various parts of sack packaging machines are to be lubricated by a state-of-the-art grease such as LAGERMEISTER XXL. Its stable thickener system and elevated base oil viscosity allow LAGERMEISTER XXL to be widely used as a multi-purpose grease within a Cement Plant where moderate to high temperatures or medium to high loads are to be covered. It is compatible with most other greases.

# The Right Lubricant for each Process Step

Machine Component	Type of Lubricant	Product
Kiln / Open Gear	Sprayable grease, black / light coloured fluids with white solid lubricants	CEPLATTYN KG 10 HMF range CEPLATTYN GT 10
Kiln / Inner Tyre Ring	Sprayable high-temperature fluids with solid lubricants	CEPLATTYN HT CEPLATTYN TL
Kiln / Bearings of Support and Trust Rollers	Extreme pressure oils based on mineral or synthetic oil	GEARMASTER CLP 220/320 GEARMASTER SYN 220/320
Kiln / Back Gear	Gear oils, mineral oil-based or synthetic oil-based	GEARMASTER CLP 220 GEARMASTER SYN 220
Ball Mill / Open Gear	Sprayable grease, black / light coloured fluids with white solid lubricants	CEPLATTYN KG 10 HMF range CEPLATTYN SF range CEPLATTYN GT range
Ball Mill / Pinion Bearings	Extreme pressure oils, based on mineral or synthetic oil	GEARMASTER CLP 220/320 GEARMASTER SYN 220/320
Ball Mill / Trunion Bearings	Extreme pressure oils, based on mineral or synthetic oil	GEARMASTER CLP 220/320 GEARMASTER SYN 220/320
Ball Mill / Back Gear	Extreme pressure oil, based on mineral or synthetic oil	GEARMASTER CLP 220 GEARMASTER SYN 220
Vertical Mill / Grinding Roller	Extreme pressure oils, based on synthetic oil	GEARMASTER PGP 680 / GEARMASTER PGP 1000 GEARMASTER SYN 1000* *(FLSmidth only)
Vertical Mill / Main Gear Box	Extreme pressure oil, based on mineral or synthetic oil	GEARMASTER CLP 220 GEARMASTER SYN 220
Vertical Mill / Separator Bearings	Special grease for high temperature and high loads	URETHYN MP2
Roller Press (grease lubricated) / Main Bearings and Slide Rails	Heavy-duty grease with solid lubricants	STABYL HD
Roller Press (oil lubricated)	Extreme pressure oil, based on synthetic oil / grease for labyrinth sealing	GEARMASTER ECO 460/680 GEARMASTER SYN 460/680 STABYL ECO EP2 LAGERMEISTER TS
Crusher / Bearing	Heavy-duty bearing grease	URETHYN MP2 LAGERMEISTER XXL
Traveler Grate / Bearings	High-temperature grease	URETHYN MP2
Blending Bed / Chains	Graphite-containing chain oil	STABYLAN G 1000
Silo / Gear of Discharger	Adhesive lubricant with graphite	CEPLATTYN BL CEPLATTYN 300
Packaging Machines / Bearings	Multi-purpose grease	LAGERMEISTER XXL
Gear Boxes / Various Applications	Gear oils, based on mineral or synthetic oil	GEARMASTER CLP 220/320 GEARMASTER SYN 220/320
Bearings / Various Applications	Multi-purpose grease	LAGERMEISTER XXL

Disclaimer: The above-mentioned products are our general suggestions. The lubricants recommended by individual machine and component manufacturers may include different products. Our advice is to adhere to the manufacturer's recommendations. For detailed information please refer to our Product Information sheets or contact us at [www.fuchs-lubritech.com](http://www.fuchs-lubritech.com)

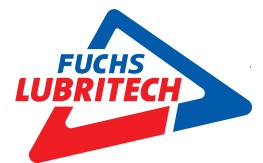
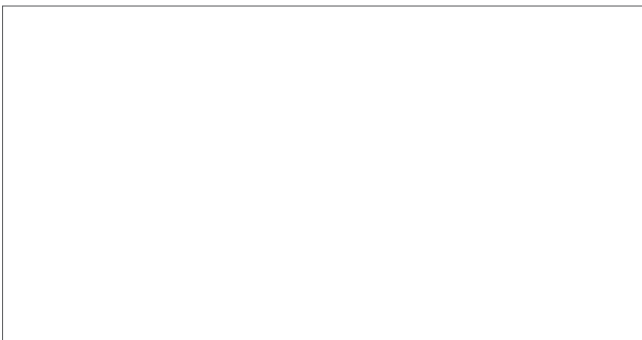
The information contained in this product information is based on the experience and know-how of FUCHS LUBRITECH GmbH in the development and manufacturing of lubricants and represents the current state-of-the-art. The performance of our products can be influenced by a series of factors, especially the specific use, the method of application, the operational environment, component pretreatment, possible external contamination, etc. For this reason, universally valid statements about the function of our products are not possible. The information given in this product information represents general, non-binding guidelines. No warranty expressed or implied is given concerning the properties of the product or its suitability for any given application.

We therefore recommend that you consult a FUCHS LUBRITECH GmbH application engineer to discuss application conditions and the performance

criteria of the products before the product is used. It is the responsibility of the user to test the functional suitability of the product and to use it with the corresponding care.

Our products undergo continuous improvement. We therefore retain the right to change our product range, the products, and their manufacturing processes as well as all details of our product information sheets at any time and without warning. With the publication of this product information, all previous editions cease to be valid.

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