CEPLATTYN

Lubrication, Maintenance, Service for Open Gears



LUBRICANTS. TECHNOLOGY. PEOPLE.

FUCHS LUBRITECH – Special Application Lubricants

We focus consistently on high-quality lubricants and related specialties. We develop innovative and holistic solutions for a wide variety of applications. We value the high level of commitment of our employees and their trusting interaction with one another.



LUBRITECH Special Application Lubricants

Facts and figures

Company: FUCHS LUBRITECH GmbH, part of the FUCHS Group, based in Kaiserslautern, Germany

LUBRITECH: the Special Application Lubricants Division of the FUCHS Group

Product range: LUBRITECH GROUP offers a full range of more than 1,000 special products, including food grade lubricants, adhesive lubricants, lubricating fluids and greases, pastes, solid film lubricants, concrete release agents, aerosols and metal-forming lubricants

Certifications: ISO 9001:2015, ISO 21469, Halal, Kosher

FUCHS has developed, produced, and sold lubricants and related specialties for more than 80 years – for virtually all applications and sectors. With over 100,000 customers and 50 companies worldwide, the FUCHS Group is the world's leading independent lubricant supplier.

Within the FUCHS Group, **FUCHS LUBRITECH** is the expert for Special Application Lubricants. A team of more than 500 specialists around the world work to meet your needs. However demanding the application, we offer a specialised solution. Service is a crucial and fundamental component of our offering. Our experts offer on-site technical consultation to assure performance, efficiency and process reliability.

FUCHS LUBRITECH special lubricants stand for the highest performance and sustainability, safety and reliability as well as efficiency and cost savings. They represent a promise: **technology that pays back.**

HIGH-PERFORMANCE LUBRICANTS FOR THE MOST DEMANDING APPLICATIONS

Expertise in Open Gear lubricants

With increasing size, the demands on the lubrication of Open Gears also increase. Wherever high transmission of forces at low sliding speeds is required, we do everything we can to reduce the wear on your technology to a minimum, thus maximising the reliability and safety of your equipment. Together with gear and machinery manufacturers, we develop innovative adhesive lubricants for Open Gears in kilns and mills. We always strive for the most application-specific solutions – and thus achieve running times of 40 years and more.



FUCHS LUBRITECH in motion – your realiable partner in Open Gear lubrication

Large Open Gear drives constitute a mechanical method of transmitting movement and force. The level of success ultimately achieved does not only depend on the gear design and materials used but also on the lubricant quality, volume of lubricant and the means of application. This is particularly true for large, low-speed Open Gear drives where high torques are transmitted.

Demands grow with size

The tolerances involved in the manufacture and assembly of girth gear drives increase in proportion to the size of the gear train. Distortions developing under the influence of load and temperature also increase with size. It is not uncommon to see large gears with a diameter of 14 metres. Transmission ratios typically range between 1:8 and 1:12. Under these conditions effective lubrication is often only possible with difficulty because of the slow sliding speed of the working tooth flanks. A special, correctly applied adhesive lubricant will reliably prevent metal-to-metal contact of the tooth flanks. Lubricants with a high proportion of solids and with superior additives ensure safe running properties in the area of boundary friction. As a result a service life exceeding 20 years can be expected.

Open Gear drives do the heaviest work in many branches of industry

Open Gear drives are very common in the raw materials industry. The girth gear drives that are used in tube mills, coolers, washing drums, kilns, calciners and other machines have to transmit enormous torques, i.e. often up to 50,000 Nm. It is only natural that this kind of force subjects the gear wheels to very high stresses. Such gears are usually designed as spur or helical gears with modified involute profiles. The materials used for the gearing are usually CrNiMo tempered steel (pinion) and alloyed CrMo steel casting or cast iron (girth gear).

Open Gears – where the mighty forces rule lubricants play a crucial role

Open Gears transmit extreme forces. Their service life is subject to several factors, one of them being the lubricants used. FUCHS LUBRITECH offers the ideal lubricant range for this heavy-duty application. Our Multi-Phase-Lubrication is the key to the efficiency and long life of your Open Gear.

The lubricant plays an important role

The purpose of all design and tribotechnical efforts is to ensure, in spite of the enormous stresses, long-term, trouble-free operation. The primary cause of damaged gear wheels is not exclusively the problem of faulty adjustment of the drives and radial and axial run-out, but also the use of unsuitable lubricants, shortage of lubricant and its incorrect application. Therefore an optimum loadcarrying capacity and smoothed gear teeth are to be achieved. An extremely precise alignment of the gears combined with the correct running-in procedures is essential. For the lubrication of Open Gears adhesive sprayable lubricants are most suitable.

The best solution has a name: CEPLATTYN

Wherever lubrication is required on highly stressed or pre-damaged gear drives, under arctic conditions or in hightemperature environments, FUCHS LUBRITECH offers the right lubricant from the CEPLATTYN product range. CEPLATTYN adhesive lubricants are recommended by all leading manufacturers of gears and machines.

Lubrication with the FUCHS LUBRITECH CEPLATTYN range of products fully meets the tough tribotechnical requirements. The CEPLATTYN range was developed in the early 60s as the first sprayable non-asphaltic adhesive lubricants. The brand name is a synonym for high-quality and reliable adhesive lubricants.

The CEPLATTYN range includes more than 20 different products and is approved by all major gear and machine manufacturers in the raw materials industry.

MULTI-PHASE-LUBRICATION

Three lubrication steps to ensure a long service life for the Open Gear

LUBRITECH MULTI-PHASE-LUBRICATION (M-P-L) is a sophisticated system for optimum lubrication and a long lifetime. Once the drive is precisely aligned, the selection of the correct lubricant is the next step in achieving a long service life.

The most reliable method

LUBRITECH MULTI-PHASE-LUBRICATION (M-P-L) is the most reliable method of averting serious mistakes. The use of M-P-L is essential with new gears but it is also helpful after a repair of damaged gear tooth flanks or at any time when the pinion or girth gear is changed. LUBRITECH M-P-L consists primarily of three components: priming, running-in and operating lubricants. These special M-P-L lubricants are the result of many years of research, and have proved themselves in practical applications all over the world.

The best possible protection against wear

Optimum load transmission implies that the stress is evenly distributed across the full width and height of the teeth. However, for Open Gear drives in particular, even state-ofthe-art manufacturing techniques and the most precise alignment possible hardly permit this optimum state to be achieved. The consequences of inadequate load distribution are excessive heating, scuffings, pitting and, in the worst case, even tooth breakage. The operator can, however, have a significant influence on such damage type, and thus on the lifetime of the drive, by selecting the right lubricant.

Priming

Priming lubricants prevent damage during initial operation and are manually applied to the clean teeth of a new or repaired gear. After the first rotations using an auxiliary drive the gear will display the actual contact pattern. Any corrections needed will be shown and can be implemented.

Running-in

Running-in is effected by our RN range of CEPLATTYN. Working tooth flanks are smoothed in this process, which is considered successful as soon as a load-carrying proportion of at least 80% has been achieved.

Operational lubrication

Operational lubrication starts at the end of the running-in process. It is not only subject to the condition and use of the drive but also to environmental influences.

Reference table: the right lubricant for each lubrication step

M-P-L	Lubricants					
Priming lubricants	CEPLATTYN 300 CEPLATTYN GT P	Initial lubrications Manual applications				
Running-in lubricants	CEPLATTYN RN CEPLATTYN GT RN	Surface smoothing Automatic spray systems				
Operational lubricants	CEPLATTYN KG 10 HMF range CEPLATTYN GT range CEPLATTYN SF range	Regular lubrication Automatic spray systems				

On page 29 of this brochure you will find the complete product selection guide, which shows the available lubricants for the different fields of applications.

LUBRITECH M-P-L can only be applied to a limited extent to drives that are not lubricated by an automatic spray system. FUCHS LUBRITECH Service Engineers will be pleased to advise you on the running-in of gears, the operating lubrication of which is subsequently performed manually by dipping or circulation lubrication.

The best solution has a name: CEPLATTYN

Priming

Priming is the first process step of Multi-Phase-Lubrication. Priming the tooth flanks is necessary to provide initial lubrication during the first revolution of the gears, in the course of assembly.

Priming lubricants prevent damage

Due to the surface finish of the gear teeth, priming is crucial to prevent damage during initial operation. In the context of FUCHS LUBRITECH **M**ulti-**P**hase-Lubrication (M-P-L) priming or initial lubrication is effected with CEPLATTYN 300 / CEPLATTYN GT P immediately after the assembly of the drive.

A layer of lubricant must be applied evenly and without air bubbles.

Priming and checking the contact pattern

It is necessary to fully clean the tooth flanks before applying a lubricant for the first time. The whole tooth flank area should be thoroughly cleaned up to the bare metal. The tooth flanks are then primed with CEPLATTYN 300 / CEPLATTYN GT P using a stiff-bristled brush or a spatula. Its application includes the working flanks, tooth roots, back flanks and tips in order to avoid corrosion and damage due to any movement during assembly. After priming, turning the gears with the auxiliary drive will result in the actual contact pattern being projected onto the working tooth flanks. Any areas devoid of lubricant must be primed again. The projection facilitates any correction of the transmission gear that may be required.

CEPLATTYN 300 / CEPLATTYN GT P cannot be applied with automatic spray systems.

Quantity of CEPLATTYN 300 / CEPLATTYN GT P

Tooth width [mm]

Various contact patterns and their causes

Running-in

Running-in is the second process step of Multi-Phase-Lubrication or after Re-Conditioning. The following case study offers a detailed overview of this process step.

Case study:

Better load-carrying pattern after Re-Conditioning

Even after the drive has been correctly aligned, the initial load-carrying proportion often remains below 50–60 %. The reason for this is the surface roughness arising in the course of manufacture on the one hand and deviations of the flanks due to their shape and due to assembly on the other hand. This means that there is a very high risk that drives can be damaged at this early stage of initial operation as a result of local overload. Such damage can be slight local scuffing or cracks that propagate in the form of pitting caused by fatigue damage during subsequent operation.

Axial run-out deviations caused the contact pattern of a cement mill drive to be only 40% in some areas. Since it was not possible to achieve an improved contact pattern through alignment, the drive had to be submitted to a forced running-in using RE-CONDITIONER. The load peaks that are obvious in the part marked red of the working tooth flanks (left-hand picture) were eliminated by Re-Conditioning (right-hand picture). The pitch line covers the full width of the tooth (visible in the picture as a white line on the working tooth flank).

CEPLATTYN RN/CEPLATTYN GT RN removes the manufacturing roughness and it smoothes the working tooth flanks.

The economical way to a higher gearing quality

Controlled running-in with CEPLATTYN RN/CEPLATTYN GT RN running-in lubricants prevents damage in the course of initial operation. CEPLATTYN RN/CEPLATTYN GT RN eliminates manufacturing roughness and smoothes the load-carrying surfaces of tooth flanks, thus overcoming slight deviations in shape and assembly and significantly increasing the contact area. The result: significantly enhanced gearing quality that provides the basis for a long service life.

The running-in procedure

The time required for running-in can only be assessed individually and is subject to the hardness of materials, manufacturing tolerances and the way in which a gear has been assembled. On average, the time required to efficiently run in drives on ball mills and kilns in single load steps is 350 hours, during which the lubricant should be continuously applied to the extent possible.

Values may vary in practical applications. The process must be adapted to the given operating conditions. The state of the tooth flanks should be checked throughout the running-in process. This particularly applies to the change of grinding charge, which should only be undertaken when the load-carrying proportion given in the table has been reached. If the contact pattern is considerably worse, readjustment of the transmission gear will be required. Running-in can be considered complete as soon as, at maximum charge or throughput, a load-carrying proportion of at least 80% has been achieved, and the manufacturing roughness of the loaded teeth surface has been smoothed.

In cases where normal running-in does not result in a sufficient contact pattern or the drive has to be run in at full load, a forced running-in (the quick running-in method) represents the best solution. This forced running-in procedure is also suitable for achieving an optimum carrying capacity and surface finish if the load-carrying surfaces show scuffings, or under unfavourable circumstances if old and new gears have been combined.

Before running-in Due to assembly and misalignments load peaks often occur when starting a new drive.

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Even load contact After a selective running-in using CEPLATTYN RN/ CEPLATTYN GT RN these load peaks are eliminated and a good contact pattern across the flank width is achieved.

Surface roughness profiles of tooth flanks

Load-carrying pattern before running-in approx. 50%

Before running-in with CEPLATTYN RN CEPLATTYN GT RN

Load-carrying pattern after running-in approx. 85%

After running-in with **CEPLATTYN RN** CEPLATTYN GT RN

■ Mill single-pinion drive: 0.8 g/h • mm ■ Kiln single-pinion drive: 0.6 g/h • mm

Operational lubrication

Operational lubrication is the third process step of Mulit-Phase-Lubrication. The selection of the right lubricant in the process step plays an important role in the overall lifetime of the gear set.

Central lubricant supply with CEPLATTYN

Once priming and running-in have been successfully completed, the next point to be considered is operational lubrication. Making the right selection here is very important in terms of low wear, operation without damage, and lifetime of the Open Gear drive. The selection of the lubricant depends on a large number of factors including stress on the working tooth flanks, rotary speed of the transmission gear, actual flank temperatures and condition of the drive. Environmental influences such as dust contamination, humidity and very low or very high ambient temperatures must also be considered.

On the safe side with CEPLATTYN

The changeover to operating lubrication starts at the end of running-in. When changing to the operating lubricant a cleaning procedure is not required. It is just the drum container attached to the lubrication system that has to be replaced. CEPLATTYN lubricants are adhesive lubricants which are suitable for extremely high pressures. They are resistant to water and approved by all leading gear and machine manufacturers.

Changeover to operational lubrication

In practice the changeover is achieved through a gradual quantity reduction to a targeted minimum (see graph on the right). It is necessary to measure the quantity every time this value is reduced by the spray system. Small volumes frequently applied avoid phases in which the drive is excessively saturated with lubricant, thus preventing fling-off. The short breaks between cycles prevent a lack of lubrication. Quantity guidelines for various drives are included in the diagram on the right.

Note: The attainable minimum quantity is directly subject to the operating conditions. Lubrication rates below the minimum may create an increased risk of wear and damage on the tooth flanks.

Note: For double-pinion drives, please calculate at a factor of 1.5.

TAILOR-MADE SERVICE AND MAINTENANCE

Our local experts contribute through their broad process-spanning expertise and on-site technical consultation to the performance, efficiency and process reliability of your entire application. Whether you want specialist advice with a view to reducing your number of lubricants, longer lubrication intervals or the perfect Open Gear services, we provide you with precisely the support you need to further optimise your use of lubricants.

FUCHS LUBRITECH Open Gear inspection procedure

- Visual check of Open Gear and surrounding conditions
- Pinion and girth gear check
- Vibrations on the pinion bearings
- Temperature conditions on the pinion bearings
- Temperature conditions on the mill/kiln shell
- Check of the spray system
- Inspection of spray and pump equipment
- Temperature conditions across the tooth surfaces of the pinion and girth gears
- Quantity determination of the lubricant
- Documentation of the result in the FUCHS LUBRICANTS INSPECTOR online system

Running-in of new gears

Specially trained service engineers assist with the commissioning and running-in of new gears. They ensure that the drive is run-in optimally according to the principle of the LUBRITECH MULTI-PHASE LUBRICATION (M-P L) with accurately defined application quantities of the appropriate CEPLATTYN lubricant.

Service – inspection and repair

Regular inspection of Open Gears

For drive units that are lubricated with CEPLATTYN, our service engineers carry out regular inspections over the entire service life. They make written notes of the general operational status, ascertain the amount of wear on the load-carrying tooth flanks, check the spray lubrication and, if necessary, reset it. In addition, the service engineer takes extensive measurements (oscillation speed, flank temperature, etc.), which are recorded in the FUCHS LUBRICANTS INSPECTOR, a modern documentation system, and are always available to our customers.

Measuring vibrations of the pinion bearing

Measuring the tooth flank temperature

Dynamic check of the contact pattern with a stroboscope

Dynamic check by infrared video thermography

Repair service

The repair of damaged tooth flanks on Open Gear drives is part of the extended service offered by FUCHS LUBRITECH. Such repair work is primarily a matter of the mechanical treatment of the working tooth flanks by grinding pittings or larger breakages, smoothing scuffings, forced

running-in and assistance with alignment of the transmission gears. On heavily worn-out or damaged tooth flanks FUCHS LUBRITECH can provide complete reprofiling of the entire gear set.

Tooth flanks before grinding

Tooth flanks after grinding

During grinding process

Older pitting and reworked pitting

Tooth flank damage and its causes in Open Gears

Gears in a wide variety of designs provide movement throughout the industry. If a gear wheel suddenly stops, the causes can differ considerably. Statistically speaking, damaged tooth flanks account for about 60 per cent of gear drive defects.

The correct lubricant eliminates many damage causes. It does not matter whether a light oil or an adhesive lubricant is under consideration. Nor does it matter whether it is a high-speed vehicle gearing or a low-speed Open Gear drive: whenever teeth mesh the appropriate lubricant is one of the most important factors for smooth operation. Scuffings and abrasive wear, for example, can be influenced to a large extent by the lubricant. A poorquality lubricant also has a direct adverse effect on the occurrence of fretting corrosion, scoring and scuffings. The consequences of a lack of lubricant usually include increased wear or deformations such as the development of rippling and hot or cold flow. The chart below gives a basic overview of the problems that can be experienced.

Cracks

Pittings/seizure

Deformations

Tooth breakages

The causes of tooth flank damage in Open Gears

		Cracks Pit					ıgs		Deformations Toc bre			Tooth break	n kage	Wear					Corro	sion	Other types of damage				
		Grinding cracks	Hardness cracks	Material cracks	Fatigue cracks	Initial/destructive/ fatique pitting	Flaking	Spalling	Indentations	Rippling	Hot flow	Cold flow	Overload breakage	Fatigue breakage	Normal wear	Abrasive wear	Interference wear	Scratches	Scoring	Scuffings	Chemical corrosion	Fretting corrosion	Cavitation	Erosion	Overheating
		Crac	:ks			Pitti	ngs		Def	ormati	ons		Toot brea age	th 1k-	Wea	ar					Corr sion	·O-	Oth of d	er type amage	s !
	Alignment errors																								
	Fixing of pinion				•	-																			
	Frequent load changes					-																			
S	Overload																		-						•
y fault	Impact/vibration stress	•				-		•		•		•		•								•	•		
ssembl	Incorrect running-in					-														•					
tions/a	Speeds too low/high					•													•	•					
l condi	Dust ingress								•						•	•		•	•	•				•	
ationa	Dynamic changes				•	-																			•
Oper	Shortage of lubricant					•				•	•				•										
ication faults	Wrong consistency					-				•					-				•			•			
	Inadequate quality					•				•									•						
	Soiling with solids/liquids																	•			-		-	-	
Lubr	Incorrect application																			•					

Forced running-in with RE-CONDITIONER

In cases where normal running-in does not result in a sufficient contact pattern or the drive has to be run in at full load, a forced running-in (the quick running-in method) represents the best solution. This forced runningin procedure is also suitable for achieving an optimum load-carrying capacity and surface finish if the loadcarrying surfaces show scuffings. In case a new pinion is installed in combination with an old girth gear Re-Conditioning is used to reprofile the old girth gear with the new profile of the pinion. Forced running-in involves a service lubricant known as RE-CONDITIONER being manually applied to the working surfaces in addition to the regular CEPLATTYN RN lubricant during production. This RE-CONDITIONER effects a smoothing of the working surfaces within in a shorter time, thus tremendously reducing the running-in time.

The use of RE-CONDITIONER Before

red = no contact

After

complete tooth contact

Case study: smoother running after Re-Conditioning

When restarting a helical, double-pinion cement mill small deviations in axial and radial run-out of the girth gear had the effect of high vibration differences between the pinion bearings. At the run-out pinion the vibration levels were well below 2 mm/s, but they were above 8 mm/s at the run-in pinion. The operator could not accept this large difference. Even after several corrections of the transmission gear no improvement was achieved. The manufacturer of the machinery therefore initiated a forced running-in. The application of RE-CONDITIONER for nine hours resulted in a carefully controlled redistribution of the load: the vibrations of both bearings were eventually below 2 mm/s. Result: a smooth operation.

The material removal generated through using the RE-CONDITIONER requires specialised technical knowledge. Forced running-in is only carried out by FUCHS LUBRITECH Service Engineers. For gears under warranty the machine or gear manufacturer must agree to this procedure being conducted prior to the start of the procedure.

Vibration monitoring

Extract from permanent vibration monitoring at the plant. Reduction of vibrations during forced running-in.

FUCHS LUBRICANTS INSPECTOR – online documentation

With the FUCHS LUBRICANTS INSPECTOR, FUCHS LUBRITECH is making a unique online documentation database with an integrated, graphical trend analysis available that enables the customer to retrieve all relevant information on their system and the lubricants used at any time.

The open gear service, combined with the online provision of inspection reports, is a further step towards being able to operate open running drives reliably.

Your benefits with the FUCHS LUBRICANTS INSPECTOR

- Availability of all reports at a glance
- Online access at any time
- Instant check via a traffic light system
- Graphical trend analysis for temperatures and vibrations
- Rapid transmission of data and reports
- Individual access hierarchy
- Optional extra information (attachments) for each inspection report
- App solution for mobile devices

Sample report from our FUCHS LUBRICANTS INSPECTOR

Measurements of values for temperatures and vibrations, including reference values relating to the previous inspection, can be found in this second part.

First part of the inspection report contains customer and system data, as well as images and comments.

Guide values for adjustment and assembly

The commissioning engineer of Open Gear drives is faced with extremely tough requirements when aligning or correcting the drive. Careful alignment of girth and transmission gears is of critical importance for the service life of the drive. This is why it is usual for assembly companies to prepare records of measurements of radial and axial run-outs, backlash and root clearance.

If a gear set must be reversed because of wear, it will no longer be possible to align the gears by means of the backlash. The drive must be set up using the tip clearance. A suitable guide value for the tooth tip clearance is 0.25 to 0.3 times the module.

Adjustment of the tooth flank clearance for mills and rotary kilns

Inspecting the spray system

The following points should be observed before commending operation of the machinery:

- Functional test
- Spray pattern and overlap
- Spray angle
- Nozzle distance
- Lubricant quantity

The increased throughput of a running-in lubricant is necessary in order to flush out any metallic particles due to the removal of the rough surface peaks. The lubricant must then flow freely and drain away to prevent blockages and build-up of any waste.

Complete solutions: the CEPLATTYN® ranges

FUCHS LUBRITECH offers three different CEPLATTYN ranges, thus always providing our customers with the ideal lubricant for mill or kiln gears.

CEPLATTYN KG 10 HMF range

The lubricants of the CEPLATTYN KG 10 HMF range include black, graphite-containing greases suitable for any kind of Open Gear. The CEPLATTYN KG 10 HMF range provides excellent wear and damage protection for mill and kiln gears. Suitable grades for spray, bath and circulation application are available.

CEPLATTYN GT range

The CEPLATTYN GT range includes milk-coloured, white solid lubricant-containing, high viscosity-fluids suitable for all kinds of Open Gears. Like the graphite-containing greases they provide optimum wear and damage protection for mill gears and low-speed kiln gears. They contain flame-retardant additives to prevent fire on kilns, build up a suitable sealing layer to avoid the occurence of oil leakages and are well pumpable. The CEPLATTYN GT range comprises suitable viscosities for spray, bath and circulation applications and can be used on AGMA and DIN/ISO-designed gears.

CEPLATTYN SF range

The CEPLATTYN SF range includes light-coloured, highviscosity fluids without solid lubricants. They are designed for use in any kind of mill gear and are especially suitable for use on AGMA-designed gears for high-powered mills in the mining industry. The lubricants of the CEPLATTYN SF range are mainly intended for spray application.

Open Gear CEPLATTYN® products and application

Product	Description	Field of application	Method of application
CEPLATTYN® 300	Paste with a high graphite content, high-pressure additives	As primer for large Open Gears, gear racks and sliding surfaces	Manually to clean surfaces; do not use in centralised lubrication systems!
CEPLATTYN® RN	Sprayable running-in lubricants for Open Gears	Can be applied to single- and double-pinion drives of any kind of tube mills and kilns	Via automatic spraying systems. Spraying should be effected permanently and highest possible quality
CEPLATTYN® KG 10 HMF	Sprayable running-in lubricants for large Open Gears	Is used on Open Gear drives of tube mills and kilns, dryers and crushers	Applied via standard spray lubrication sys- tems
CEPLATTYN [®] KG 10 HMF-1000	Sprayable, graphite-containing adhesive lubricant for Open Gears	Is used for heavy-load applications because of its high base oil viscosity	Applied via standard spraying system
CEPLATTYN® KG 10 HMF-2500	Highly viscous, sprayable adhesive lubricant for Open Gear drives	Suited for shock loads in heavy- duty applications because of its high base oil viscosity and the resulting good cushioning effect	Sparingly applied by commercially available spraying systems
CEPLATTYN® KG 10 HMF LC	Sprayable, extremely high- viscosity adhesive lubricant for Open Gears	High base oil viscosity and thus good damping characteristics make it espe- cially suitable for shock-loaded gear in heavy-duty applications	Applied economically via conventional spray lubrication systems. At temperatures below +5°C/+40°F additional heating systems may have to be used for spraying
CEPLATTYN [®] GT P	Priming lubricant with white solid lubricants	Used as priming lubricant for Open Gears	By spatula, brush or non-fiber cloth onto previously cleaned surfaces
CEPLATTYN® GT RN	Sprayable running-in lubricant for Open Gears	Used to smoothen the tooth surface of newly installed girth gears or pinions and for optimizing the load-carrying pattern	By automatic spraying systems
CEPLATTYN® GT 3	Increased-viscosity adhesive lubri- cant with white solid lubri- cants for Open Gears	Especially for application on Open Gears in critical operating conditions	Suitable for the application in bath and circulation systems
CEPLATTYN® GT 10	High-viscosity adhesive lubricant with white solid lubri- cants for Open Gears	Especially for Open Gears under critical operating conditions, such as slow-speed kiln drives with increased tooth flank temperatures, mill drives with extreme drive power, and drives frequently operated under start-stop conditions	Suitable for the application in bath and circulation systems
CEPLATTYN® GT 30	Extremely high-viscosity adhesive lubricant with white solid lubricants for Open Gears	Especially for Open Gears under critical operating conditions, such as slow-speed kiln drives with increased tooth flank temperatures, mill drives with extreme drive power, and drives frequently operated under start-stop conditions	Suitable for the application in spraying system
CEPLATTYN® SF 10	Light-coloured, highly viscous adhe- sive lubricant for Open Gears on mills	Especially for heavy-duty, high-speed open mill drives subject to high vibra- tions	Via commercially available spraying systems
CEPLATTYN® SF 30	Sprayable, extremely high-viscosity lubricant for Open Gears	Especially for extremely heavy-duty Open Gear drives exposed to high shock loads	Via spray systems

FUCHS LUBRITECH – Special Application Lubricants

Innovative lubricants need Experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced LUBRITECH engineers will be glad to advise on products for the application in question and also on our full range of lubricants.

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