



Your global lubrication partner

LUBCHEM
KOREA

Special lubricants for metallurgical processes

Applying points, requirements and specification



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Our global partners

Lubchem special lubricants for metallurgical processes

Lubchem lubricants specification



Our global partners



KIA MOTORS



HYUNDAI



CHEVROLET



Through the correct selection of lubricants, save costs and protect environment and machines.

Demand for better performance equipment in modern steel making industry has been dramatically increased and consequentially the involved lubricants as well.

The steel manufacturing process is challenged by tribological barriers, like high temperatures, corrosive cooling agents, abrasive dust and contaminants, destructive shock-loads, and so on. Additionally, the high costs accompanied by machine troubles under still making processing must cautiously be considered. Using the high-performance lubricants that enable trouble-free operating machines during unfavorable working conditions is part of the core competence to users. It has been proven that Lubchem's high-quality lubricants have the capacity to extend the service life of heavy equipment with positive environmental benefits. LUBCHEM 's market leading lubricants are designed to protect entraining the aggressive media, and the surfaces against tribo-corrosion, supply a protective layer with high separation power and maintain lubrication also during high operating temperatures.

In close relationship with equipment manufacturers, since decades we continue to improve the formula of our products in order to excel in challenging applications and at the same time fulfil the strict environmental regulations imposed on us and our customers.

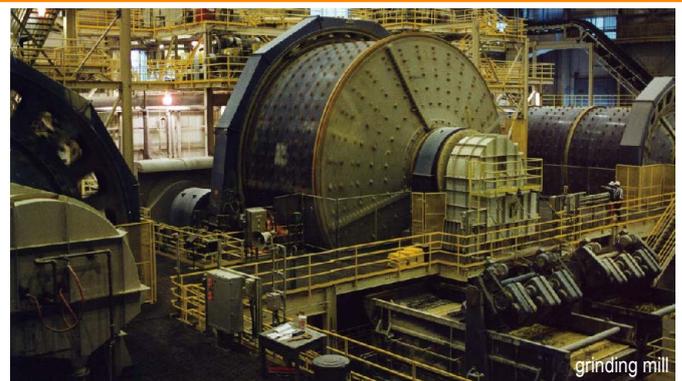
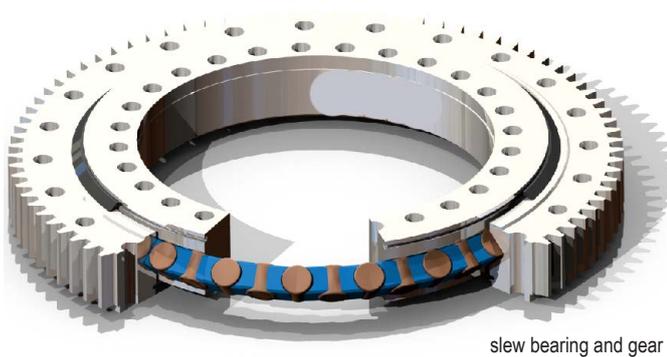
Backed up with additional system comprehension, know-how and products from LUBCHEM; the customer defeats the challenging lubrication problems.

Lubricants referred in this brochure are only a suggestion because of the various demands and different machines and therefore LUBCHEM offers you a free advice, consultation and complete supporting abidingly before, and after your purchase of LUBCHEM lubricants.

Our department of research & development is willing to act by your order, if new products should be required or developed.

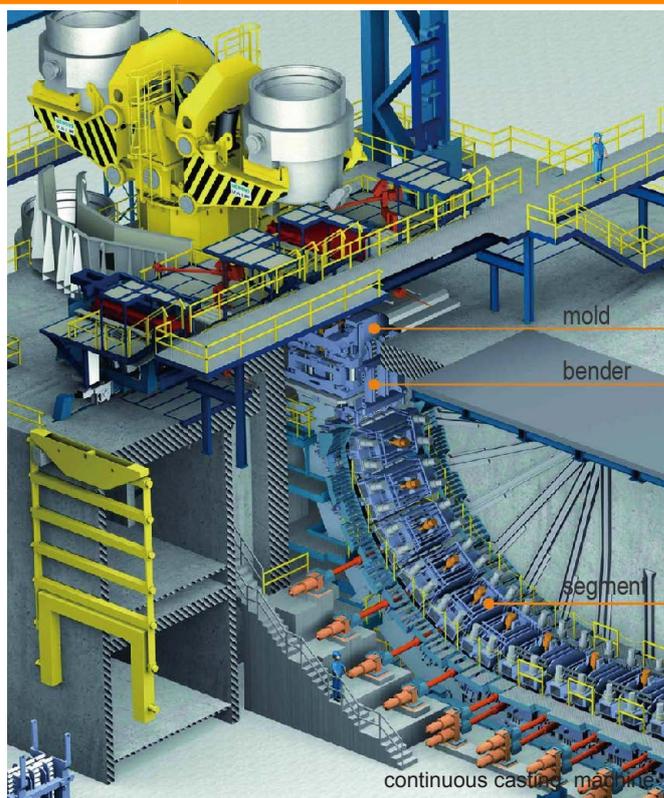
Special lubricants for metallurgical processes

Process	Process plant	Machine	Componetns
Raw material preparation	Storage	Stacker and reclaimer	Slew ring bearing
			Slew ring gear
		Convery belt	Drive/return cylinder rolling bearings
	Vibrating screen	Eccentric shaft rolling bearing	
Mill	Grinding mill	Rolling bearing	
		Open gear drive	
Raw material processing	Coke oven plant	Coke oven battery	Reversible gas valve
		Pusher and guide machines	Rack rail
		Exhaust system	Precipitator hammer rolling bearings
	Lime	Rotary kiln	Rotor bearing
			Open gear
			Internal riding ring
	Sinter	Rotary mixer	Support roller bearing
			Thrust roller
			Open gear
Sinter machine	Sinter machine	Trolley wheels roller bearing	
		Slide tracks	





Special requirements	Lubchem Lubricants
high-load and slow speed	LUBCHEM BE 2102 G LUBCHEM BE 2102 G LUBCHEM HB 3101 EP LUBCHEM HB 3101 P LUBCHEM BE 2181
Solid lubricant graphite-contained	LUBCHEM EO 210 G SERIES LUBCHEM HB 3101 EP LUBCHEM EO 2107 G LUBCHEM BE 210 G Series
high-speed grease	LUBCHEM BH 6042
high-temp. grease	LUBCHEM HB 3101 S
solid lubricants graphite contained	LUBCHEM EO 210 G SERIES LUBCHEM HM 9059 GM
oil-lubricated bearings, service temperature up to 140 °C	LUBCHEM GM S Series
oil-lubricated bearings, service temperature up to 140 °C	LUBCHEM GH series
gease-lubricated bearing	LUBCHEM BE 2181
oil-lubricated bearings, service temperature up to 140 °C	LUBCHEM GM S Series
oil-lubricated bearings, service temperature up to 140 °C	LUBCHEM GH series
grease lubricated bearing	LUBCHEM BE 2181
solid lubricants graphite contained	LUBCHEM EO 2100 G LUBCHEM BE 2181 LUBCHEM HP 3101/2



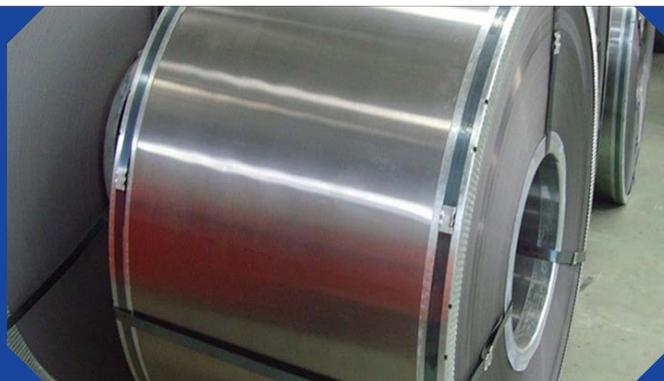
Special lubricants for metallurgical processes

Process	Process plant	Machines	Components
Pig iron production	Blast furnace	Roots blower	Gear box (gears and bearings)
		Charging system	Car
		Ingot mould	Chain pivots and bearings
		Torpedo ladle	Turn system
			Gear box
			Wheels rolling bearings
		Raw material distributor (top of the furnace)	Bearings (centralised lubrication)
		Tapping and drilling machine	Guides, plain bearings, rotary connections
		Wheels of hot metal cars and slag cars	Wheels rolling bearings
		Temperature lance	Chain drives
Direct reduction	Gas and pellet feed	Valve sliding parts	
		Valve seals	
Steel production	Steel making plant	Ladles	Plain bearings and other sliding surfaces
			Roller bearings
	Continuous casting	Arc furnaces	Centralised system lubrication
			Hinges of cover cooling system
		Gate valve	Sliding surface and thread
			Mould
		Ladle Turret	Rolling bearings
		Continuous casting machine	Wet segment rolling bearings
			Extractor rolling bearings
		Cutt-off machine	Bearings
Run-out table	Rollers and moving beams bearings		

Lubrication key points in continuous caster unit

The operational environment in the continuous caster unit is characterised by slow rotation, high temperatures and corrosive process water ingress. Being market leader in the technology of large molecular polyurea products, LUBCHEM has developed special urea grease with this challenging application in mind. This product is a sealing grease with high capability of keeping water and abrasive foreign particles out of the contact, thus maintaining the intended technical life of the bearings. The combination of high surface affinity (inherent to the molecular structure of the thickener-matrix) with well-balanced additivation and thick base oil viscosity offers a lubricant designed for long-time lubrication and high performance in a thermally stressed operating environment. For system-critical applications (as the ladle turret, straightener units or converter bearings) special lubrication solutions with e.g. solid lubricant particles and high base oil viscosity can be offered at various qualities and properties.





Special requirements	Lubchem Lubricants
Service temperature up to 140 °C	LUBCHEM GM S Series
Service temperature up to 140 °C	LUBCHEM GH series
	LUBCHEM HP 3101
	LUBCHEM HP 3102
	LUBCHEM HP 3101
Service temperature up to 140 °C	LUBCHEM GM S Series
Service temperature up to 140 °C	LUBCHEM GH series
	LUBCHEM HP 3101 EP
	LUBCHEM HP 3101
	LUBCHEM HP 3101
	LUBCHEM HP 3101
	LUBCHEM CH 100
	LUBCHEM HP 3101
	LUBCHEM NS 3202
	LUBCHEM HM 9157 GM
	LUBCHEM BE 2181
	LUBCHEM HP 3101/2
	LUBCHEM PF 8092
	LUBCHEM HM 9157 GM
For centralised lubrication	LUBCHEM HP 3101/2
For manual lubrication	LUBCHEM HM 9157 GM
	LUBCHEM HP 3101 P
For centralised lubrication	LUBCHEM HP 3101/2
For manual lubrication	LUBCHEM HP 3101 S
For centralised lubrication	LUBCHEM HP 3101/2
For manual lubrication	LUBCHEM HP 3101 S
For centralised lubrication	LUBCHEM HP 3101/2
For manual lubrication	LUBCHEM HP 3101 S
	LUBCHEM HP 3101/2



Special lubricants for metallurgical processes

Process	Process plant	Machines	Components
Milling	Hot rolling mill	Work / back-up rolls	Rolling bearings
		Rolling mill drive shafts	Toothed coupling Cardan
		Transport table	Rolling bearings Bearings
	Cold rolling mill	Work / back-up rolls	Rolling bearings
		Rolling mill drive shafts	Toothed coupling Cardan
		Rolling mill	Conveyor bearings Calendar roll chains
	Galvanisation	Pre-heating section	Oven rollers rolling bearings

Hot strip mill

Similar to the continuous caster, the operation of a hot strip mill is exposed to high temperatures and process water inflow, however; the hot strip mill is operated generally with higher rotational speeds and occurrence of shock loads. Tailor-made lubricants with enhanced surface separating capability, corrosion protection and sealing ability help customers to optimize machine performance and prolonged maintenance of their plants.

Cold rolling mill

In cold rolling mills, the equipment is running at significantly higher speeds and the cooling liquid is replaced by a chemically more active rolling mill emulsion. Chemical inertness and a high sealing power are all playing active roles in – from the lubricant's side – keeping the operation running. Due to the imminent risk of overheating (increased hydrodynamic losses caused by the higher operational speeds) the oil composition and viscosity must be carefully chosen in order to minimize the temperature increase and premature lubricant degradation.

	Component/Application	
General applications	Assembling paste	Screw and Bolt
	Electric motors /fans	Rolling bearings
	Gear box	Gears
	Crane	Rolling bearings



Special requirement	Lubchem Lubricants
	LUBCHEM BE 2101 G
	LUBCHEM GE 5500 MF
	LUBCHEM HP 3101/2
	LUBCHEM HP 3101/2
	LUBCHEM BE 2101G
	LUBCHEM BE 2181
	LUBCHEM BE 2262M
	LUBCHEM CT 6032 FLUID
	LUBCHEM BH 3092 F



hot strip mill

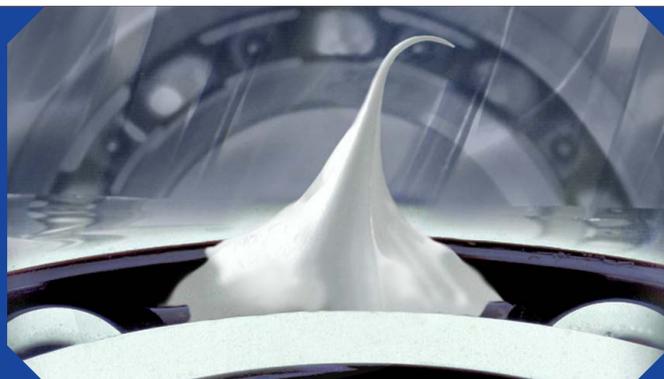


cold rolling mill

Differentiation	Lubchem Lubricants
For components subject to very high temperatures up to 1 000 °C (1 832 °F).	LUBCHEM HM 9152 GM
For bearings subject to high speed.	LUBCHEM BH 6042
For bearings subject to high temperatures.	LUBCHEM HB 3101 S
Synthetic oil compatible with mineral oil. Service temperature up to 140 °C.	LUBCHEM GM S Series
Synthetic oil for service temperatures over 140 °C.	LUBCHEM GH series
	LUBCHEM HB 3101 EP

Lubchem lubricants and Features

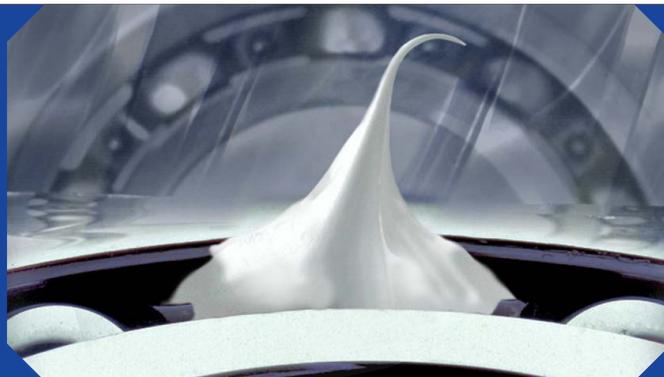
Lubricants	Color	Thickener	Base oil	Service temp.(°C)	Drop point(°C) Flash point*
LUBCHEM BE 210 G Series	Black	Al-complex	Mineral	-20~160	>230
LUBCHEM BE 2101 G	Black	Al-complex	Mineral	-40~130	>180
LUBCHEM BE 2181	Black	Al-complex	Mineral	-20~160	>230
LUBCHEM BE 2262 M	Black	Al-complex	Semi-synthetic	-30~160	>230
LUBCHEM BH 3092 F	White	Urea	Synthetic	-30~180	>260
LUBCHEM BH 6042	Brown	Li	Mineral		>250
LUBCHEM CH 100		-	ester	0~250	>250
LUBCHEM CT 6032 FLUID	Yellowish	Li	Synthetic	-30~120	-
LUBCHEM EO 2100 G	Black	Al-complex	Mineral		>100
LUBCHEM EO 2107 G	Black	Al-complex	Mineral	-20~120	>190
LUBCHEM GE 5500 MF	Black	-	Semi-synthetic	-10~160	>230*
LUBCHEM GH series	Dark Yellow	-	Synthetic	-40~200	>260*
LUBCHEM GM S Series	Light Yellow	-	Synthetic	-30~160	>200



NLGI ISO VG*	Features
0/1/2	Its high wear protection for bearings increases equipment reliability and availability. It is resistant to high pressure and is provided with anti-wear additives, adhesion improvers and corrosion inhibitors and is used to lubricate open rolling drives (spur and bevel gears), slide and guide rails, large chain drives.
1	LUBCHEM BE 2101 G is spreadable adhesive lubricants based on mineral oil and an aluminium complex soap thickener, and contain white solid lubricants. It can withstand high loads with good corrosion protection properties. LUBCHEM BE 2101 G are suitable as priming lubricants for large gear rim and pinion drives and serve as contrast lubricants for checking the drive's load pattern. LUBCHEM BE 2101 G is also suitable for the effective lubrication and protection of offshore and wind-energy applications such as open gears, slow-running rolling bearings, sliding and guide rails and similar components subject to saltwater influence in the marine sector.
1	This heavy-duty grease consists of a highly viscous mineral hydrocarbon oil (ISO VG 1500), Aluminum complex soap and particularly effective EP/AW additives. It also contains solid lubricants (MoS ₂ and graphite) to ensure reliable operation under starved lubrication conditions. It is typically applied to lubricate the bearings of rollers (spherical roller bearings) in roller presses, bowl mill and rotary crushers in the base material industry.
2	This heavy-duty grease consists of a highly viscous semi-synthetic oil (ISO VG 1500), Aluminum complex soap and particularly effective EP/AW additives. It also contains solid lubricants (MoS ₂ and graphite) to ensure reliable operation under starved lubrication conditions.
2	A synthetic high temperature grease based on ester and perfluorinated polyether (PFPE) oils. The outstanding characteristics of this innovative lubricant are good oil retention when subjected to thermal load and excellent thermal stability, enabling the product to withstand short-term temperature peaks well above a service temperature of approx. 150°C, which is typical of this type of application.
2	LUBCHEM BH 6042 is based on synthetic hydrocarbon oil, mineral oil and a special lithium soap. Special additives ensure optimum oxidation resistance as well as protection against wear and corrosion. For rolling bearings with a high degree of sliding friction, e.g. – tapered roller bearings – cylinder roller bearings – spherical roller bearings or for-life lubricated deep groove ball bearings.
100*	LUBCHEM CH 100 is a synthetic high-temperature chain oil ensuring reliable lubrication at high temperatures. Owing to a special additive package this product offers high pressure resistance and wear protection. LUBCHEM CH 100 shows a low evaporation loss at high temperatures.
Fluid	It offers open gear lubricants for running-in, correction and operational lubrication of large open gears. Viscosity should be selected according to your equipment manufacturer's recommendations. Please contact our experts for equipment analysis and optimum lubricant recommendations.
0	Adhesive lubricant based on mineral oil and aluminium complex saponified and contains solid lubricant (fine graphite). It is resistant to high pressure and is provided with anti-wear additives, adhesion improvers and corrosion inhibitors. specially developed for spray lubrication of open pinion gears in rotary kilns, tube mills, and line blenders which are used in the cement, lime, gypsum, mining and chemical industries.
000	A sprayable adhesive lubricant with a mineral base oil. It contains aluminium complex soap and solid lubricant particles of fine graphite. Operational lubricant for open gears.
6000*	For immersion lubrication of open gears. Prevents leakages with high adhesion and very high viscosity. Increases gear life by protecting the tooth flanks against wear.
32~1000*	Gear oils based on a polyglycol. They have a high scuffing load capacity and micro-pitting resistance. These oils have also proved their good wear protection in rolling bearings. Standing out for their excellent ageing and oxidation resistance, good viscosity-temperature behavior and very good thermal stability.
10~1500*	For gears and multipurpose oils based on polyalphaolefin. They have a high resistance to scuffing and micropitting. particularly resistant to ageing and oxidation. having a good viscosity-temperature behaviour and excellent low- and high-temperature characteristics. also offer good corrosion protection and are neutral towards most nonferrous metals, elastomers and interior paints.

Lubchem lubricants and Features

Lubricants	Color	Thickener	Base oil	Service temp.(°C)	Drop point(°C) Flash point*
LUBCHEM HP 3101/2	Brown	Urea	Mineral	-20~160	>230
LUBCHEM HB 3101 EP	Beige	Urea	Mineral	-20~140	>190
LUBCHEM HB 3101 P	Beige	Urea	Mineral	-10~180	>250
LUBCHEM HB 3101 S	Beige	Urea	Mineral	-10~180	>190
LUBCHEM HB 3190 M	Black	Urea	Semi-synthetic	-10~160	>230
LUBCHEM HM 9059 GM	Grey metallic Copper like	Solid lubricants	Semi-synthetic	-30~1200	none
LUBCHEM HM 9152 GM	Grey	Solid lubricants	Semi-synthetic	-30~1,1000	None
LUBCHEM HM 9157 GM	Grey	Solid lubricants	Semi-synthetic	-30~1000	none
LUBCHEM NS 3202	Yellowish Brown	Urea	Synthetic	-30~170	>250
LUBCHEM PF 8092	White	PTFE	PFPE	-20~300	None



NLGI ISO VG*	Features
1/2	High temperature lubricating greases based on mineral oil and polyurea. They have a wide service temperature range and can be applied in rolling bearings up to 180°C. If the lubricant is used in central lubrication systems, operating temperatures up to 200°C are possible. highly effective anti-wear properties and very adhesive and resistant to water both under static and dynamic load. resistant to oxidation and provide reliable protection against corrosion.
1	LUBCHEM HB 3101 EP is a light-coloured lubricating grease which offers good compatibility with nonferrous metals like those used for example as plain bearing material. Due to its special formulation and solid lubricants, wear is low when exposed to rotating and oscillating motion and high impact loads. LUBCEHM HB 3101 EP is resistant to water and has a good sealing effect. The additives contained in this product enhance its ageing resistance.
1	For highly loaded bearings and toothed couplings. High load-carrying capacity extends your equipment's life under vibration and shock. Its good sealing effect prevents dust contamination of your bearings and good lubricant adhesion assures equipment protection at all times.
1	LUBCHEM BH 6042 is a lubricating grease containing a high-quality synthetic base oil and a polyurea thickener. This combination enables long-term lubrication over a wide temperature range. The high base oil viscosity and special additives help to attain good wear protection under high loads
0	Increases bearing lifetime and process reliability with good wear protection even under high loads and in very wet environments. Wide temperature range. Its high load-carrying capacity ensures continuity of production without troubles.
0000	Suspensions containing solid lubricant based on mineral and hydrocarbon oils. Upon evaporation of the base oil at temperatures above 200°C the solid lubricants provide dry lubrication. used for the lubrication of conveyor chains in tube annealing furnaces, continuous furnaces or stress-relieving ovens at temperatures > 250°C.
-	A grey high-temperature paste based on high-quality hydrocarbon oils and temperature-resistant solid lubricants. At "normal temperatures" up to approx. 200 °C this paste is an efficient high-pressure lubricating and assembly paste showing high adhesive strength on metals. At permanently high temperatures the solid lubricants contained in paste remain in the friction contact area and counteract adhesive wear due to seizing or material transfer at temperatures up to approx. 1000 °C.
00	A grey high-temperature paste based on high-quality hydrocarbon oils and temperature-resistant solid lubricants. at normal temperatures up to approx. 200 °C this paste is an efficient high-pressure lubricating and assembly paste showing high adhesive strength on metals. At permanently high temperatures the solid lubricants contained in this paste remain in the friction contact area and counteract adhesive wear due to seizing or material transfer at temperatures up to approx. 1000 °C. Used as a heat-activated dressing for pouring ladles, dies, mould gates and runners. also suitable as a separating and assembly paste for die sets, ejectors, sliding cores and as a separating paste for electric heating cartridges in hot chamber casting machines.
2	A fully synthetic lubricating and sealing grease for valves and fittings, especially gas fittings and bearings. a special lubricating and sealing grease for valves and fittings, coolers, pumping, drilling and dispensing stations and in refineries, chemical and automotive industry.
2	High temperature lubricants up to 260 °C based on perfluorinated polyether oil (PFPE). long-term grease. It offers excellent resistance to high temperature and aggressive media.



BETHLEHEM
STEEL



LUBCHEM KOREA Ltd. is one of the leading lubricants manufacture for industrial sectors in South Korea.

To meet the increasing requirements of the customers and to offer new or optimized products, our engineering team is constantly striving with the research and development of innovative lubricants in our laboratory.

Thanks to the clearly defined selection of the thickener and its portion, type of the base oil and various additives, LUBCHEM lubricants give an extraordinary performance.

The lubricants is regarded as a key element in the machines and parts and the selection of the proper lubricant is a very important factor with regard to long-term working, high operating reliability and efficiency of system.

If you need more technical service and information about lubricants, contact us. Our door is always open for you.

Lubchem Korea – your lubrication solution provider

Over the last 25 years, Lubchem lubricants have helped customers outpace the competition by bringing customized and innovative solutions into an increasingly competitive steel industry.

Whatever your engineering challenge - extended lubricants service life, extreme temperatures, reduced failures, Lubchem high performance lubricants can help.

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