

CRUSHERS | GRINDING MILLS | ROTARY KILN | ROLLER PRESS | COOLERS | PLANT UTILITIES |

LUBCHEM KOREA

Cement Plant Specialty Lubrication Application Guide

Application-led lubricant selection for crushers, grinding mills, rotary kilns, roller presses, coolers and plant utilities in India

COMPILED FOR INDIAN INDUSTRY BY

Project Sales Corp

Industrial Solutions Since 2000 · Visakhapatnam · India

ENGINEERING APPROACH

The Equipment Comes First. The Lubricant Comes Next.

A cement plant contains several fundamentally different lubrication problems. High shock load at a crusher, slow heavy tooth contact at a kiln girth gear, concentrated bearing loads in a roller press, and heat and dust around fans and coolers each require separate lubricant selection. One product family does not cover all of them.

The product families in this guide are drawn from LUBCHEM Korea cement-industry application documentation. As with any specialty lubricant, verify the specific grade, current technical data sheet and equipment OEM requirements before changing a lubricant.

WHY APPLICATION DETAIL MATTERS

WHAT PSC NEEDS	WHY IT MATTERS
Plant and equipment OEM	Identifies equipment-specific lubrication instructions
Component and lubrication method	Distinguishes circulating oil, grease, spray system and manual feed
Existing product and TDS	Shows viscosity, base chemistry, thickener and performance requirements
Operating temperature, speed and load	Screens candidates against service conditions
Oil analysis / failure history	Highlights contamination, wear and interval problems

SOURCE AND SCOPE

Application references are drawn from LUBCHEM Korea cement-industry application documentation. The source uses family designations such as GM..S and GH across viscosity ranges — a family listing is not a recommendation of a specific viscosity. Verify current grade availability and TDS with PSC before quoting.

**Show us
the equipment.
Not just
the product name.**

You do not need to know the LUBCHEM grade. Send PSC the machine, lubrication point and current product. We start there.

PSC APPLICATION REVIEW

Plant / Equipment OEM / Model
Component / Lubrication Point
Lubrication Method
Existing Product + TDS
Temperature / Speed / Load
Oil Analysis or Failure History

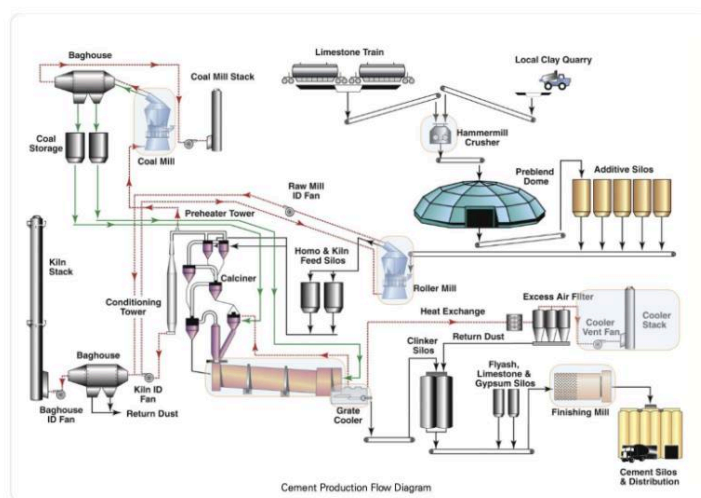
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CEMENT PLANT · PROCESS OVERVIEW

One Plant. Several Lubrication Problems.

Review every component separately — gearbox, bearing and coupling on the same machine.



PROCESS AREA	LUBCHEM FAMILIES
Quarry / Crushing Gyratory gears; hammer/jaw crusher bearings	GM · GM..S · GH · BE 6181 MG
Raw / Finish Grinding Horizontal/vertical mills; seals; hydraulics	GM · GM..S · GH · GA 2072 P · HD
Pyroprocessing Kiln girth gear; drives; couplings	CSG 2100 G · EO 2107/2108 G · EO 2110

PROCESS AREA	LUBCHEM FAMILIES
Roller Press Roller bearings; gear drives; hydraulics	BE 6181 · GM · GM..S · GH · HD
Cooling / Separation Cooler chains; fans; screens; separator drives	HP 3101 · PH 4052 MF · BVH 3091 · BE 6032
Plant Utilities Compressors; fan motors; assembly	ES · SH · GH 7033 · PH 4052 · HM 9041

CEMENT PLANT · CRUSHING

Crusher Drives and Main Bearings

Shock, Vibration, Dust and Misalignment

The crusher bearing is a different application from its gearbox. Shock, vibration, dust and misalignment combine to create demanding conditions. Lubricant retention and protection of bearing surfaces under contaminated conditions are critical — which is why a separate grease with high base-oil viscosity is documented for crusher main bearings rather than the gear oil used on the drive.



LUBRICATION POINTS — SOURCE: LUBCHEM CEMENT BROCHURE, JAN 2014

LUBRICATION POINT	LUBCHEM	NOTE
Gyratory crusher circulation / bevel gear	GM Series mineral, ISO VG 46–680	Verify equipment viscosity requirement
Gyratory crusher — alt. chemistry	GM..S (PAO) GH (PAG)	Chemistry selection requires separate review; PAO/PAG not interchangeable
Hammer / jaw crusher main bearings	BE 6181 MG	Mineral + lithium, graphite + MoS ₂ ; base-oil ISO VG 1500 (stated in source)

PAO / PAG CHANGEOVER REQUIRES SEPARATE REVIEW

Similar ISO viscosity grade does not establish miscibility or interchangeability between GM..S (PAO) and GH (PAG). Verify existing chemistry, seals, coatings and flushing procedure.

BE 6181 MG

CRUSHER MAIN BEARING GREASE

Base oil	Mineral
Thickener	Lithium
Solid lubricants	Graphite + MoS ₂
Base-oil viscosity	ISO VG 1500 (stated in source)

CRUSHER REVIEW — SEND PSC

- Crusher OEM / Model
- Bearing speed + temperature
- Contamination exposure
- Current grease or oil
- Relubrication system
- Existing failures

See also: Roller press bearings → **BE 6181** · Page 8

CEMENT PLANT · GRINDING

Horizontal and Vertical Mills

Circulating Oil, Bearings, Sealing Grease and Hydraulics — Four Separate Decisions

Large grinding equipment may contain circulating gear oil, heavily loaded bearings, sealing grease and a hydraulic system. These points should not be combined into one product recommendation. The gearbox oil, the bearing arrangement and the hydraulic system each require individual review.



LUBRICATION POINTS — SOURCE: LUBCHEM CEMENT BROCHURE, JAN 2014

POINT	LUBCHEM	CHECK BEFORE SELECTION
Horizontal mill main drive / shaft and neck bearings	GM mineral GM..S PAO GH PAG	OEM viscosity; bearing design; circuit arrangement; oil chemistry and analysis
Horizontal mill sealing grease	GA 2072 P	Tacky synthetic-oil aluminium-complex grease — verify seal design
Vertical mill main drive / roller	GM / GM..S / GH	Confirm if point is gearbox, bearing or separate circuit
Vertical mill hydraulic system	HD hydraulic oil	Verify hydraulic OEM specification, viscosity, seal compatibility and cleanliness

GA 2072 P: source describes a tacky synthetic-oil aluminium-complex sealing grease. Confirm that grease sealing is the actual design — do not apply to bearing races without review.

Four points.
Four decisions.
Don't combine them into one product answer.

Gearbox circulating oil, bearing grease, sealing grease and hydraulic oil each have different requirements even on the same mill.

MILL REVIEW — SEND PSC

Mill OEM / Model

Gearbox OEM + ISO VG

Bearing type + arrangement

Current lubricant (each point)

Oil analysis if available

Hydraulic spec

See also: Kiln drive gearbox → **GM/GM..S/GH · Page 6**

CEMENT PLANT · ROTARY KILN

Rotary Kiln Girth Gear and Pinion

Open Gear Lubricant, Drive Gearbox and Pinion Bearing Are Three Separate Points



OPEN GEAR LUBRICATION — DOCUMENTED LIFE STAGES

NORMAL OPERATION CSG 2100 G Graphite-containing, tacky Al-soap grease for pressure and corrosion resistance	RUNNING-IN / SPRAY EO 2107 G Improves tooth contact; reduces surface roughness during running-in	DAMAGED SURFACE EO 2108 G Dedicated repair grease — assess damage extent and OEM repair method first
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INSPECTION BEFORE PRODUCT SELECTION

Record gear contact pattern, spray coverage, lubricant consumption, tooth temperature and photographs. Running-in and repair grades should only be used with an agreed gear-maintenance procedure in place.

OTHER KILN LUBRICATION POINTS

POINT	LUBCHEM
Auxiliary / main drive gearboxes	GM mineral · GM..S PAO · GH PAG — select by OEM viscosity and chemistry
Pinion bearing	BE 6181 MG or GM..S if oil lubricated — confirm bearing construction and delivery method

KILN GEAR REVIEW — SEND PSC

Kiln OEM / gear diameter

Spray or manual application

Existing open-gear lubricant

Consumption per period

Tooth photographs

Contact pattern if available

Source prints "LUBCEHM EO 2108 G" in one table — apparent typographic error. This guide uses EO 2108 G. Confirm current catalogue designation before quoting.

CEMENT PLANT · COUPLINGS

Kiln and Drive Couplings

Coupling Type, Speed, Temperature and Solid-Lubricant Suitability Must All Be Established

LUBCHEM Korea cement documentation separates coupling greases and a high-adhesion oil. The three documented products have different chemistries and do not serve the same coupling types. Solid lubricants may be prohibited by some coupling designs — confirm with the coupling OEM before selecting a grade with graphite or MoS₂.

DOCUMENTED COUPLING PRODUCTS — SOURCE: LUBCHEM CEMENT BROCHURE, JAN 2014

EO 2110

GEAR COUPLING GREASE — HIGH-TEMPERATURE / EP

Solid lubricants	Graphite (contains solid lubricant)
Application	Gear couplings, including automatic lubrication
Source note	High-temperature and EP performance cited

GE 2150

GEAR COUPLING GREASE — NO SOLIDS

Thickener	Aluminium complex
Solid lubricants	None — suitable where solids prohibited
Source note	Adhesion, EP, anti-wear and oxidation protection

GE 5500 MF

ADHESIVE GEAR COUPLING / CHAIN OIL

Form	Adhesive mineral oil with MoS ₂
Application	Gear couplings and chains, especially where moisture is present

Three products.
Three different coupling types.
Check solid-lubricant suitability with the coupling OEM first.

Solid lubricants may filter out in high-speed couplings or be prohibited by the OEM. Do not assume graphite or MoS₂ grades are acceptable without confirmation.

COUPLING REVIEW — SEND PSC

Coupling type and OEM

Speed + temperature

Relubrication method

Grease quantity

Existing product

Seal material

Solid lubricant — permitted?

High-Pressure Grinding Roll / Roller Press

Roller Bearings, Drive Gears and Hydraulics Are Three Separate Decisions

The source recommends different families for roller bearings, drive gears and the hydraulic system. Heavy load alone does not identify the correct lubricant. Confirm the specific lubrication point, feed system pumpability and actual bearing limits before specifying any grade.



LUBRICATION POINTS — SOURCE: LUBCHEM CEMENT BROCHURE, JAN 2014

POINT	LUBCHEM	TECHNICAL REVIEW
Roller bearing grease	BE 6181	Mineral lithium grease, high base-oil viscosity; verify central system pumpability and bearing limits
Gear drive	GM mineral GM..S PAO GH PAG	Confirm ISO VG, load, gearbox seals and existing base oil
Hydraulic system	HD hydraulic oil	Confirm hydraulic pump and component specifications, viscosity and cleanliness

CENTRAL SYSTEM PUMPABILITY IS CRITICAL

BE 6181 for roller press bearings requires confirmation against the installed centralised lubrication system — pump type, line length, metering valves and minimum operating temperature all affect whether the grease reaches the bearing reliably.

Heavy load alone does not identify the grade. Bearing type, feed system and hydraulic spec all matter.

ROLLER PRESS REVIEW — SEND PSC

- OEM / Model
- Bearing type + designation
- Grease feed system
- Current grease + consumption
- Gearbox oil grade
- Hydraulic specification
- Operating temperature

See also: Crusher bearings → **BE 6181 MG** · Page 4

CEMENT PLANT · CLINKER COOLING

Coolers and Vibrating Screens

Heat, Water Exposure and Vibration — Each Demands a Different Response



LUBRICATION POINTS — SOURCE: LUBCHEM CEMENT BROCHURE, JAN 2014

POINT	LUBCHEM	DOCUMENTED DESCRIPTION
Cooler chains / roller bearings	HP 3101	Mineral-oil polyurea grease; wear, corrosion, water and oxidation resistance cited in source
Cooler fan and motor bearings	PH 4052 MF	Mineral-oil lithium-complex with MoS ₂ ; high-temperature / high-speed bearing use
Lepol gate / Recupol cooler	HP 3101	Source lists water-contact bearing applications
Vibrating screen, -20 to 160°C	BVH 3091	Mineral-oil polyurea grease with EP properties
Vibrating screen, -30 to 150°C	BE 6032	Mineral-oil lithium-complex bearing grease

Temperature ranges above reflect LUBCHEM Korea application documentation — not a current approval or guaranteed bearing operating limit. Confirm current TDS, speed factor, bearing design and actual operating temperature before selection.

TEMPERATURE IS ONE INPUT, NOT THE ONLY INPUT

BVH 3091 and BE 6032 have different temperature ranges on the same vibrating-screen application. Speed, load, bearing design and relubrication method must also be confirmed before selection between them.

HP 3101

COOLER CHAIN / WATER-CONTACT BEARING

Base oil	Mineral
Thickener	Polyurea
Application	Cooler chains; water-contact bearings

PH 4052 MF

FAN / MOTOR BEARING — HIGH SPEED / HIGH TEMP

Base oil	Mineral
Thickener	Lithium complex
Additives	MoS ₂

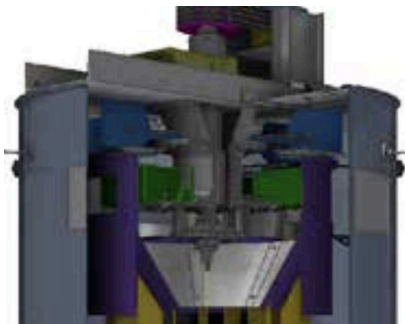
COOLER / SCREEN REVIEW

- Equipment OEM
- Bearing type + temperature
- Speed factor
- Water exposure
- Current lubricant

CEMENT PLANT · SEPARATION / DRYING

Separators, Fans and Thrust Rollers

Angular Gear, Grease-Lubricated Drive and Dryer Thrust Roller Have Distinct Requirements



LUBRICATION POINTS — SOURCE: LUBCHEM CEMENT BROCHURE, JAN 2014

POINT	LUBCHEM	REVIEW
Separator angular gear	GM..S (PAO)	Confirm gearbox OEM grade, oil volume and seal materials
Separator distribution disc / drive / fan	BE 6032	Confirm bearing speed, temperature and grease compatibility
Oven / dryer thrust roller — grease lubricated	BE 6181 MG	Source: heavy-duty solid-lubricant grease — verify actual equipment point
Oven / dryer thrust roller — oil lubricated	GM..S PAO GH PAG	Do not substitute grease or oil across designs

GREASE AND OIL DESIGNS ARE NOT INTERCHANGEABLE

The oven / dryer thrust roller may be either grease or oil lubricated depending on equipment design. Confirm the actual design before selecting between BE 6181 MG (grease) and GM..S / GH (oil). Applying the wrong lubricant form to a thrust roller will cause failure.

Grease or oil?
Confirm the design before selecting between them.

The same thrust-roller machine may be grease-lubricated in one installation and oil-lubricated in another. The equipment OEM manual resolves this — not a product-family match.

SEPARATOR / THRUST ROLLER REVIEW

- Machine OEM / Model
- Oil or grease lubricated?
- Gearbox OEM + ISO VG
- Bearing speed + temperature
- Current lubricant

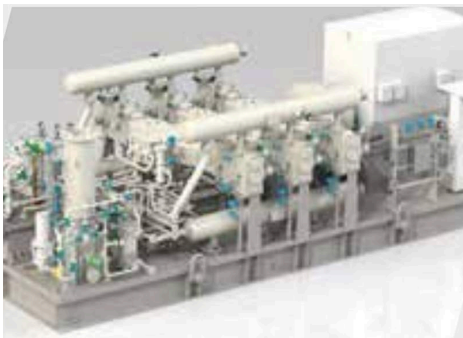
See also: Cooler fan bearings → PH 4052 MF · Page 9

CEMENT PLANT · UTILITIES

Compressors, Motors and Assembly

Utility Equipment Is Often Covered by Separate OEM Manuals

Utility equipment in a cement plant — compressors, fan motors, general drive bearings and assembly points — is often covered by separate OEM manuals with specific lubricant requirements. Confirm both the machine specification and the existing lubricant before proposing any replacement.



LUBRICATION POINTS — SOURCE: LUBCHEM CEMENT BROCHURE, JAN 2014

POINT	LUBCHEM	SOURCE NOTE
Reciprocating air compressor	ES 32-100 Ester-based	Low oxidation residue; longer oil/filter interval cited — confirm compressor OEM requirements
Rotary screw air compressor	SH 32-100 PAO-based	Up to 8,000 h oil-change potential cited in source — establish actual interval by OEM and oil analysis
Combustion exhaust fan bearing	GH 7033	Synthetic PAO / polyurea high-temperature bearing grease (stated in source)
General electric motor bearing	PH 4052 PH 4052 MF	MF contains MoS ₂ — confirm motor OEM acceptance before specifying
Assembly and fasteners	HM 9041 · HEL 6090 HM 9059 GM · NB 50	Assembly compounds — not substitutes for operating bearing grease

ES and SH viscosity ranges are family designations. Confirm the specific ISO VG required by the compressor OEM. Do not convert between ES (ester) and SH (PAO) chemistries without compatibility review.

8,000 h oil-change claim.
Establish the actual interval from OEM requirements and oil analysis.

Compressor oil-change intervals stated in product literature are potential maximums — not operating instructions. The compressor OEM manual and used oil analysis govern the actual interval.

COMPRESSOR / UTILITY REVIEW

- Compressor OEM / Model / Type
- Existing oil brand + grade
- Oil analysis history
- Current change interval
- Motor OEM (for MoS₂ confirmation)

From Existing Grade to Trial

A Product-Family Match Is a Starting Point — Not a Recommendation

A product-family match is the beginning of a technical review — not the end of it. A plant-approved change requires specification, compatibility confirmation and monitored field performance before any commitment to volume supply.

SIX-STEP REVIEW BEFORE ANY LUBRICANT CHANGE

- 1

Capture equipment, lubrication point and OEM-required specification

Do not start with the product — start with what the equipment manufacturer requires.
- 2

Obtain the current product name and TDS — record oil or grease chemistry

Base oil type (mineral, PAO, PAG, ester), thickener, NLGI grade, additives, viscosity.
- 3

Compare viscosity, temperature range, performance tests and delivery method

Not just ISO VG — compare FZG rating, EP properties, temperature limits, pumpability.
- 4

Check mixing, seals, paint, materials and changeover requirements

PAO/PAG changeover requires flush. Solid lubricants may be prohibited. Seal compatibility must be confirmed.
- 5

Confirm current LUBCHEM TDS, availability and OEM approval if required

LUBCHEM application documentation identifies product families. Confirm the specific grade, current TDS and availability with PSC.
- 6

Agree trial scope, baseline measurements and acceptance criteria

Inspection interval, oil analysis programme, wear measurements and approval before volume conversion.

Do not infer a drop-in equivalent from a product name alone.
OEM instruction and current product data take precedence over this guide.

KEY RULE — FROM THE SOURCE DOCUMENT

Do not infer a drop-in equivalent from a similar product name, base-oil family or ISO VG alone. OEM instruction and current product data take precedence over this guide.

PSC COMMITMENT

We start with the equipment — not the cross-reference table

CEMENT PLANT · QUICK REFERENCE

LUBCHEM Cement Plant Application Selector

Documented product families from LUBCHEM Korea cement-industry application documentation. Confirm current product availability, ISO VG and TDS with PSC before selection. A family listing is not a recommendation of a specific viscosity.

PROCESS / EQUIPMENT	LUBCHEM GRADE / FAMILY	FORM
Gyratory crusher gear drive	GM · GM..S · GH	Gear oil
Hammer / jaw crusher main bearings	BE 6181 MG	Grease (graphite + MoS ₂)
Horizontal / vertical mill drive	GM · GM..S · GH	Gear oil
Mill sealing grease	GA 2072 P	Sealing grease
Mill / separator hydraulic system	HD	Hydraulic oil
Kiln girth gear — normal operation	CSG 2100 G	Open-gear grease
Kiln girth gear — running-in / spray	EO 2107 G	Open-gear fluid
Kiln girth gear — damaged surface	EO 2108 G	Repair grease
Gear coupling — with solid lubricants	EO 2110	Grease (graphite)
Gear coupling — no solid lubricants	GE 2150	Grease
Gear coupling / chain — adhesive oil	GE 5500 MF	Adhesive oil (MoS ₂)
Roller press roller bearings	BE 6181	Grease
Cooler chains / water-contact bearings	HP 3101	Grease (polyurea)
Cooler fan / motor bearings	PH 4052 MF	Grease (Li-complex + MoS ₂)
Vibrating screen bearings (–20 to 160°C)	BVH 3091	Grease (polyurea + EP)
Vibrating screen bearings (–30 to 150°C)	BE 6032	Grease (Li-complex)
Separator angular gear	GM..S (PAO)	Gear oil
Reciprocating air compressor	ES 32–100	Compressor oil (ester)
Rotary screw compressor	SH 32–100	Compressor oil (PAO)
Combustion exhaust fan bearing	GH 7033	Grease (PAO/polyurea)
Electric motor bearing	PH 4052 / PH 4052 MF	Grease

DON'T SEE YOUR EQUIPMENT?

Send PSC the machine OEM, model, lubrication point, existing product and operating conditions. We review against the full LUBCHEM cement documentation.

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pscspecialtylubricants.com

Don't start with the product. Start with the equipment.

IF YOU KNOW THE PRODUCT

Product code · Quantity · Pack size
· Delivery location

IF YOU KNOW THE EQUIPMENT

OEM · Model · Lubrication Point ·
Existing Lubricant · Operating
Conditions

IF YOU ONLY KNOW THE PROBLEM

Send a photo of the machine
nameplate and current product
label. We start there.

SHOW US THE EQUIPMENT.

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Application references are drawn from LUBCHEM Korea cement-industry application documentation. Confirm current product availability, technical data and OEM requirements before quoting or changing any lubricant. Product recommendations are subject to application review. Equipment and manufacturer names identify applications only and do not imply OEM approval unless expressly documented.