



# Lubricant solutions for cranes

## BECHEM – Lubrication solutions for industry

As the oldest German manufacturer of industrial lubricants, BECHEM today is one of the leading producers of high-quality special lubricants and metal working fluids.


BECHEM products convince by innovative formulations in the most diverse of industrial applications – in machining and forming metal working processes, in coating technology and as for-life lubricants in various technical components.


A strong network of distributors and several national and international production sites ensure that BECHEM products are readily available worldwide.


**Tomorrow's technologies. Today.**

## PICTOGRAMS


### APPLICATIONS

Roller bearings 


Plain bearings 


Open gears 


Chains 


Wire ropes 


### PROPERTIES


High temperatures 


Low temperatures 


High loads 


Resistant to water 


Noise damping 

Compatible with plastics 

Corrosion protection 

Biodegradable 

Available in cartridges 

Available in aerosols 

# Developed for the most extreme loads

At many construction sites throughout the world, telescopic cranes, with their high mobility offer convincing performance that makes them essential for many applications. To maintain these functions over the long-term and so that the daily telescoping can function with reduced friction and without stick-slip, an efficient lubrication is indispensable. For high construction projects rotating tower cranes with their lifting technology, as well as fast-erecting cranes or top-slewing cranes likewise bring their strengths to bear. Here as well only a perfect lubrication ensures reliable functionality.

Whether in intense heat, freezing temperatures or dusty dryness, in rain, snow or ice – cranes are always exposed to the environmental influences and must be ready for operation at any time under the most varied climatic conditions.

BECHEM has developed a broad assortment of high-performance lubricants for cranes that ensure a prolongation of service life, reduction of maintenance costs through extended lubrication intervals, and efficient operation.

## Anti-friction coating to minimize stick-slip

Berucoat AF 339 is a 2-component PTFE anti-friction coating that was developed as lifetime lubrication of components on cranes, and for tribological optimization of the existing grease lubrication.

Crane boom segments require corrosion protection for transport to the final assembly location, however this corrosion protection cannot be applied as a Vaseline or wax film, because dust particles remain bonded on the media, and in this case the segments would then have to be cleaned. In extensive salt spray tests with a 5% NaCl solution Berucoat AF 339 was able to convincingly outperform a zinc primer as corrosion protection. Even after 192 hours the test segment that had been sprayed was free of corrosion.



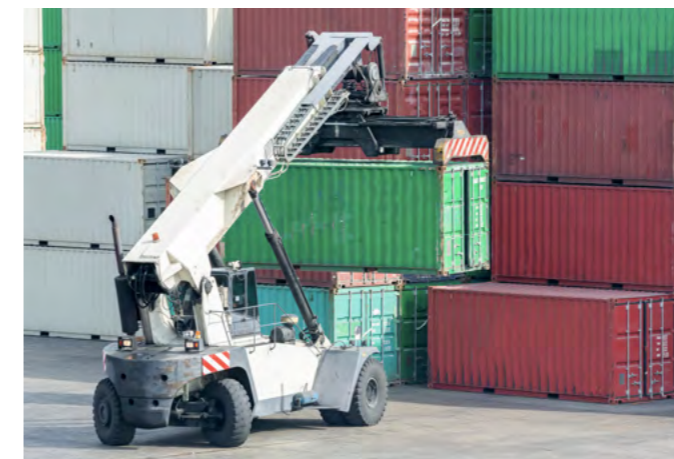
The surface coated with Berucoat AF 339 for telescoping is dry to the touch after one hour, can be subjected to load after 3 days, and after 7 days it has cured.

Berucoat AF 339 with the integrated PTFE is adjusted to the lubricating greases used, such as Berulub PAL 1, Berulub TCG-1 or Berulub TCG-1 V. Through this measure, friction can be reduced, stick-slip avoided and a constant low coefficient of friction can be achieved.

## Lubrication of telescopic crane booms

For lubrication of telescopic crane booms on mobile cranes Berulub PAL 1, a highly adhesive, stick-slip preventing multi-purpose paste was developed that can be used independent of the type of boom or type of crane.

Berulub PAL 1 improves the sliding properties of different material pairings, particularly NF metal/NF metal, metal/elastomer, plastic/plastic, and metal/plastic, and thus avoids stick-slip when telescoping. Thanks to the synthetic base oil the lubricating grease ensures an excellent bond, and thanks to the PTFE, which is used in the lubricant as a thickener, it ensures reduced friction as well. Environmental influences, as well as temperatures in the implementation range between -40°C and +150°C have no influence on its performance. Due to the NLGI Class 1 rating and the base oil viscosity Berulub PAL 1 can also be applied with a spray system.



# High-performance load carriers

To accompany increasing load bearing capacity of the equipment and the desire for prolonged service intervals, the requirements imposed on the lubricants are also becoming more rigorous. BECHEM has developed lubricant solutions for the wide range of applications in crane operation that are high-performance load carriers under maximum conditions.

Many lubricants are the result of an intensive research collaboration with leading crane manufacturers. BECHEM products are equipped with excellent wear and corrosion protection, excellent bonding properties or high load-bearing capacity in order to withstand the most adverse and most difficult conditions.



PRODUCT	PRODUCT		NLGI class	Base oil viscosity [mm²/s]	Service temperature range [°C]		Properties
	Base oil	Thickener					
<b>Berulub PAL 1</b> 	Ester	Polytetrafluoroethylene (PTFE)	1*	2200 180	-40	+150	Multipurpose paste e.g. for telescopic mobile crane booms, suitable for low temperatures, prevents stick-slip, extended re-lubrication intervals, excellent adhesion, substances resistant, contains PTFE
<b>Berulub PAL 3</b> 	Ester	Polytetrafluoroethylene (PTFE)	3*	5000 340	-20	+150	Multipurpose paste, e.g. for telescopic booms of mobile cranes suitable for low temperature implementation, prevents stick-slip, extends re-lubrication intervals, good adhesion, media-resistant, contains PTFE, ideally suited for contact combinations of steel with PTFE/PA
<b>Berulub TCG-1</b> 	Synthetic oil combination	Polytetrafluoroethylene (PTFE)	1*	4100 320	-40	+150	Multipurpose paste, e.g. for telescopic booms of mobile cranes, prevents stick-slip, suitable for low-temperature operation, high load-bearing capacity, excellent adhesion, contains PTFE, ideally suited for contact combinations of steel with PTFE/PA, also available as sprayable multipurpose paste Berulub TCG-1
<b>Berulub Palfluid Spray</b> 	Ester	Polytetrafluoroethylene (PTFE)	3*	5000 340	-20	+150	Multipurpose paste, e.g. for telescopic booms of mobile cranes suitable for low-temperature implementation, prevents stick-slip, extends re-lubrication intervals, good adhesion, media-resistant, contains PTFE, ideally suited for contact combinations of steel with PTFE/PA
<b>BECHEM High-Lub SW2</b> 	Mineral oil	Special calcium soap	1-2	100 9	-25	+80	Multipurpose lubricating grease with outstanding corrosion protection for all types of sliding and rolling contacts, spindles, chains, and cables, specially developed for the protection of steel wire ropes, contains EP additive, maximum saltwater resistance, also available as spray
<b>Beruprotect Rope Spray</b> 	Mineral oil			9	-20	+100	Wire rope lubricant, fluid, good creeping properties, excellent protection against corrosion and wear, excellent adhesion, excellent wetting properties
<b>Beruprotect Spray</b> 	Mineral oil						Anti-corrosion spray, excellent protection against corrosion even in case of contact with salt water, excellent adhesion, waxy film
<b>Berulit GA 400</b> 	Mineral oil	Aluminium complex soap	0-00	490 32	-20	+180	Service lubricant for open gear drives, good wear protection, good adhesion, very high load-carrying capacity, contains graphite, preferably applied by spray units
<b>Berulit GA 2500 Spray</b> 	Mineral oil/ synthetic oil	Aluminium complex soap	00	2500 100	-20	+200	Service lubricant for live rings, gear racks or similar small gears, excellent wear protection, excellent adhesion, high load-carrying capacity, solid lubricant graphite
<b>Berugear UWS FG 34-00</b> 	Synthetic ester	Lithium-Calcium-Soap	00	320 40	-50	+80	Gear lubricant for open gear drives, readily biodegradable according to OECD 301 C, excellent wear protection, excellent adhesion, very high load-carrying capacity, contains light-coloured solid lubricants
<b>BECHEM High-Lub FA 67-400 KS</b> 	Mineral oil	Lithium-Calcium-Soap	2	400 30	-20	+140	Long-term lubricating grease, good sealing capacity excellent water resistance, particularly effective corrosion protection, excellent conveyance properties in central lubrication systems, EP properties
<b>Berulub ECO Super 1</b> 	Synthetic ester	Lithium-Calcium-Soap	1	110 14	-55	+120	Lubricating grease for roller and plain bearings, guides and other elements on construction machines, readily biodegradable according to OECD 301 C, reliable protection against corrosion, resistant to water, contains dewatering additives and solid lubricants
<b>Berulub ECO Super 2</b> 	Synthetic ester	Lithium-Calcium-Soap	2	110 14	-45	+120	Lubricating grease for roller and plain bearings, guides and other elements on construction machines, readily biodegradable according to OECD 301 C, reliable protection against corrosion, resistant to water, contains solid lubricants
<b>Berulub ECO GD 40 Spray</b> 	Ester				-30	+90	Multifunction spray, quickly biodegradable in accordance with OECD 301 C, acid-free and resin-free, is used as rust remover, corrosion protection, a cleaning and care agent, water-repellent, penetrating properties
<b>Beruclean ECO</b> 							Universal cold cleaner, quickly biodegradable in accordance with OECD 301 F, in addition to oil and grease contamination also removes wax, resin, bitumen, tar, and oil carbons, strong dissolving effect, good cleaning characteristics
<b>Berucoat AF 339</b> 					-70	+250	2-component PTFE anti-friction coating for lifetime lubrication of components on cranes, particularly for tribological optimization of the existing grease lubrication, excellent adhesion, outstanding corrosion protection, oil-resistant and grease-resistant

\*Value indicates unworked penetration

All indications and values correspond to latest knowledge and do not represent any product specification.