

High performance chain oils



BECHEM
LUBRICATION
TECHNOLOGY



High performance chain oils for extreme temperatures

BECHEM – Lubrication solutions for industry

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

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

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

Tomorrow's technologies. Today.

PICTOGRAMS

APPLICATIONS

- Automotive industry 
- Food grade/
Pharmaceutical technology 

ATTRIBUTES

- Low temperatures 
- High temperatures 
- High loads 
- Corrosion protection 
- Resistant to water 
- Compatible with plastics 
- Available in aerosols 

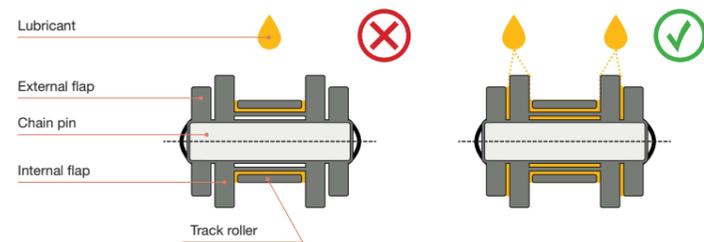
All indications and values correspond to latest knowledge and do not represent any product specification

Best properties for optimum performance

Drive and conveyor chains are working at maximum capacity. And this almost continuously. Therefore high performance chain oils are required for lubrication to guarantee smooth operation at lowest maintenance efforts.

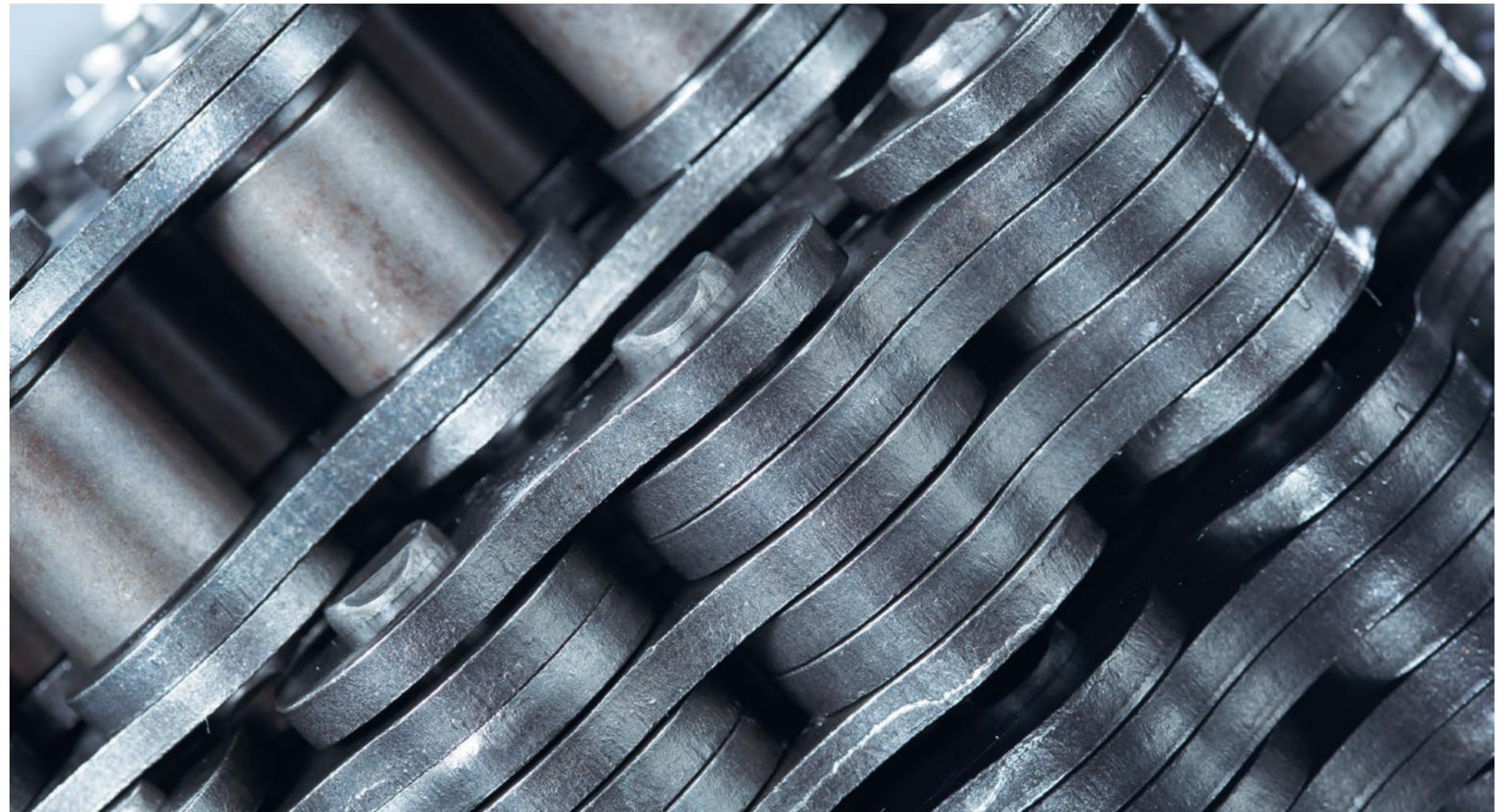
Chains are running under mixed friction, therefore the excellent friction and wear reducing properties of BECHEM high performance chain oils are of special importance. The natural adhesive capacity thanks to polar qualities guarantee lowest oil consumption and avoid dripping and centrifuging off of the oil in case of correct dosage. In combination with their outstanding wetting and creeping properties, BECHEM high performance chain lubricants are especially economical in their application.

The oil that penetrates the chain links is decisive for the lubricating properties, not the lubricant which is visible outside the chain.



The BECHEM chain oil has to be applied in a way that it directly reaches the chain link along the internal and external flaps and the flap edges to lubricate the point of friction.

» Chain damages are mainly the result of wrong lubrication. «



Powerful and efficient

Low evaporation, low friction and excellent lubrication guarantee the high performance of the chain even at high temperatures. In general chain lubrication is done by periodical application of fresh oil without oil recycling; thus lowest oil consumption is economical and clean. Cleaning of the chains is very simple or even unnecessary since oil residues are dissolved by fresh oil.

Attention: An already wet chain will not absorb more oil, excess oil will drip off!

Besides the use on drive and conveyor chains, BECHEM high-performance chain oils are well suitable for the lubrication and corrosion protection of cams, sliding surfaces and tooth systems.



Many BECHEM products are also available in spray cans.

» Oil structure and additive content are tailored to the specific application. «

Lubricant consumption of a roller chain Guidance on viscosity selection

CRITERION	RESULTS OF OILS WITH A HIGHER VISCOSITY
Duration of lubricating effect	longer, optimum at ISO VG 220/320
Corrosion protection	better
Oil penetration	lower
Pumpability	lower
Wash-out stability	better
Tackiness	better
Dust absorption	lowest at very low and very high viscosity
Evaporation loss	best results at ISO VG 100 to ISO VG 220/320
Chain size	
small/fine chains	worse suitability
large/coarse chains	better suitability
Ability to dissolve residues (cleaning effect)	lower
Load carrying capacity	better, max. at ISO VG 220/320
Wear protection	better, max. at ISO VG 220/320



BECHEM products meet highest requirements of chain lubrication e.g. in the production of rubber gloves.

Smooth operation non-stop

BECHEM produces a large selection of oils for high temperature applications. The oil structure and additives with or without solid lubricant have been tailored to the corresponding requirements of special fields of application.

Synthetic BECHEM chain oils can be mixed with mineral oils. They thus facilitate the oil change and have a certain cleaning effect by dissolving oil residues. The better tackiness of the oil allows extended lubricating intervals without wear problems and simultaneously is the precondition for good corrosion protection and economic oil consumption. In case of correct application the BECHEM oils do not form any laquer like residues when used at high temperatures.

BECHEM lubricants for the food processing and pharmaceutical industry meet the standards and requirements of the international organisations for product tests and certifications. In addition, several products are certified as halal and kosher. For BECHEM products with H1 and H2 approval as well as their compliance with dietary rules, please refer to the information given in the table.

	PRODUCT	PROPERTIES						Properties
		Base oil	Kinematic viscosity at 40 °C [mm ² /s]	Viscosity index	Pour point [°C]	Flash point [°C]	Certificate Compliance	
High performance chain oils for universal applications	Berulyth CU 46 	Ester	54	120	-51	≥ 260	H2	Fully synthetic high-performance chain oil, very good penetration capability, good protection against corrosion, also suitable for high temperatures, low evaporation rate and dust absorption
	Berulyth CU 100 	Ester	100	115	-42	≥ 260	H2, Halal, Kosher	High-temperature chain oil, wide temperature range, good wetting and creeping properties, hot/cold water resistant, good protection against corrosion, no formation of critical residues
	Berulyth CU 250 	Ester	250	120	-45	≥ 250	H2	High-temperature chain oil, wide temperature range, very good wetting and creeping properties, hot and cold water resistant, good protection against corrosion, no formation of critical residues of critical residues
	Berulyth CU 3000 	Ester	3000	170	-27	≥ 250	-	High-performance chain oil for long-life lubrication, excellent wash-out stability, excellent corrosion and wear protection, extremely adhesive even at high centrifugal forces, manual application only
High performance chain oils for special applications	Berulit IKP 	Mineral oil	115	-	-39	≥ 190	-	Chain oil to lubricate slow moving, transport and conveyor chains with large chain links and exposed to high tensional stresses, high load-carrying capacity, low dust absorption, very good wear and corrosion protection, contains graphite
	Berulyth CA 100 	Ester	100	110	-48	≥ 260	-	High-performance chain oil for chains in drying furnaces in paint shops, compatible with paint, no critical formation of residues, low evaporation rate even at high temperature
	Berulyth CF 250 	Ester	250	115	-40	≥ 250	-	High-temperature chain oil for film stretching machines, compatibility with plastics, especially PP-foils, low evaporation rate even at high temperatures, compatible with copper
	Berulyth CW 50 	Ester	54	115	-45	≥ 260	-	High-temperature chain oil to lubricate the roller systems of continuous double belt presses (chip board production), good penetration properties and dissolution of residues, low evaporation rate
	Berulyth CW 280 	Ester	280	160	-40	≥ 260	-	High-temperature chain oil to lubricate the roller systems and belts of continuous double belt presses (chip board production), very low evaporation rate in the high temperature area
High performance chain oils for the food processing industry	Berulyth CB 180 H1 	Ester	180	145	-45	≥ 235	H1, Halal, Kosher, ISO 21469	Synthetic high-temperature chain oil, optimised for the use in baking and drying ovens, very good penetration capability, hot/cold water resistant, wide service temperature range
	Berulyth CG 370 H1 	Polyglycol	370	230	-	≥ 200	H1	Synthetic high-temperature chain oil, very good corrosion protection, high wash-out stability, no critical formation of residues, above 200 °C dry lubrication after evaporation of the carrier fluid, for chains with large chain links, contains graphite
	Berulyth 15 H1 → 1000 H1 	Polyalpha-olefin (PAO)	15	125	-65	≥ 170	H1, Halal, Kosher, ISO 21469	High-performance oil to lubricate transportation chains, drive chains and machines (hydraulics, gears, circular lubrication, fans, air compressors, etc.), effective corrosion and wear protection, neutral towards conventional seals and paints, neutral in smell and taste
		32	140	-65	≥ 220			
		46	140	-60	≥ 240			
		68	145	-55	≥ 240			
		100	145	-50	≥ 250			
150		145	-50	≥ 250				
220	150	-50	≥ 250					
320	150	-45	≥ 250					
460	150	-40	≥ 255					
680	155	-35	≥ 260					
1000	165	-35	≥ 260					
Other chain lubricants	Berulyth CP 20 	Ester	13,5	-	-63	≥ 180	-	Low-temperature chain oil, effective corrosion and wear protection, good dry running properties based on solid lubricant content, pumpable up to -55 °C, sprayable in oil-air-systems
	Berulyth CP 73 	Polyglycol	-	-	-45	≥ 200	-	High-temperature chain oil, wide temperature range, good protection against corrosion, reduces wear, good emergency running properties, no critical formation of residues, good creeping and penetration capability
	Berulyth CP 80 	Mineral oil	-	-	-	-	-	Chain lubricant for extended lubrication intervals in outdoor applications, best adhesion after evaporation of the solvent, good dry running properties based on solid lubricant MoS ₂
	Berulyth CC 100 	Synthetic oil	100	133	-39	-	-	High-performance chain oil developed for cleaning purposes during operation, excellent cleaning effect, suitable for automatic lubrication systems, tailored to the Berulyth product series CU and CW
								(100 and 1000 H1)

H1: Identification of food grade lubricants, i. e. lubricants which can be applied where incidental food contact cannot be excluded.

H2: Identification of lubricants for the general use in the food processing industry, provided food contact is excluded.

Halal: Identification of products which are classified as “halal” (legal) according to the Islamic dietary regulations.

Kosher: Identification of products which are classified as “kosher” (suitable, clean) according to the Jewish dietary laws.

ISO 21469: International standard which specifies the hygiene requirements for the formulation, manufacture and use of lubricants where incidental food contact cannot be excluded.

*Halal and kosher certificates refer only to the lubricant

High performance oils under test

In the BECHEM laboratories, very modern and practical tests guarantee the permanent development and increased performance of the chain oils.

Excellent evaporation behaviour

Here we show a less suitable synthetic chain oil in comparison to Berusynth CU 250 in the evaporation test at 210 °C. The result: hard and brittle residues with the comparison oil contrary to almost unchanged oil structure with Berusynth CU 250 after a test duration of 3 days.



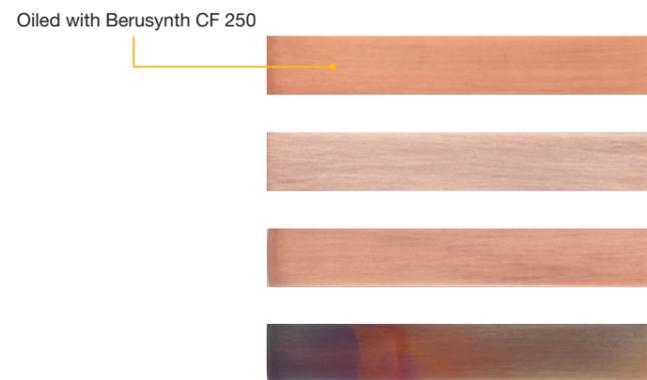
synthetic chain oil



Berusynth CU 250

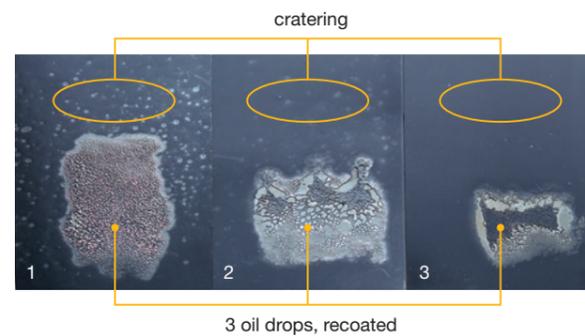
Optimised behaviour towards copper

During the test Berusynth CF 250 shows an optimised behaviour towards copper, which among others offers a special advantage when the chains are applied in film stretching machines.



Excellent paint compatibility

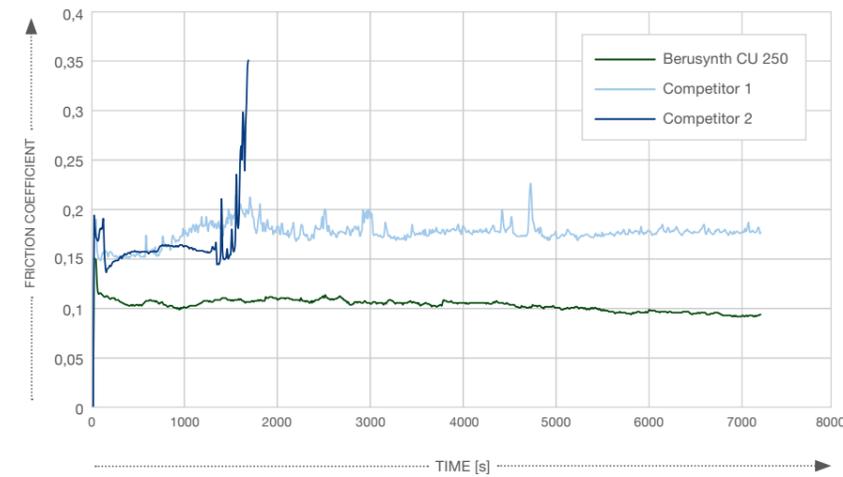
The photo shows test sheets for cratering. Three synthetic chain oils are compared, (1) an unsuitable product with strong cratering and damaged paint, (2) a less suitable product, (3) the suitable Berusynth CA 100 approved for this water soluble paint.



Wear protection and friction value SRV test at temperatures above 200 °C

Even with a vertical contact area Berusynth CU 250 shows a considerably increased lifetime in the SRV test compared to conventional synthetic chain oils. Low and uniform friction means reliable lubrication without intermediate relubrication, even in case of extended lubrication intervals.

Vibrational wear test run with defined load



Worth their price – BECHEM lubricants

High-quality lubricants are indispensable products that are not only worth their price but that have also been honoured with numerous well-known awards. They have earned this status by making a decisive contribution to performance, energy efficiency and sustainability in a variety of industrial applications.



Awarded for Berufluid – a mutual project with the Fraunhofer-Institut for Process and Technology and the Braunschweig Institute for Machine Tools and Production Technology.



BECHEM was awarded a prize for tailor-made solutions for vehicles in the premium segment.



As an award winner, BECHEM now belongs to the 20 most innovative companies in North Rhine-Westphalia.



BECHEM received an award for innovative lifetime lubrication of various vehicle components.

Lubrication solutions for industry



CARL BECHEM GMBH

Weststr. 120 · 58089 Hagen · Germany · Phone +49 2331 935-0 · Fax +49 2331 935-1199 · bechem@bechem.de · www.bechem.com