



High performance chain oils



Smooth operation non-stop

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. BECHEM high performance chain oils offer optimum performance.

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 avoids dripping and centrifuging off of the oil in case of correct dosage. In addition, BECHEM high performance chain oils offer good wetting and creeping properties since the oil inside the chain and not the lubricant which is visible outside the chain is responsible for lubrication.

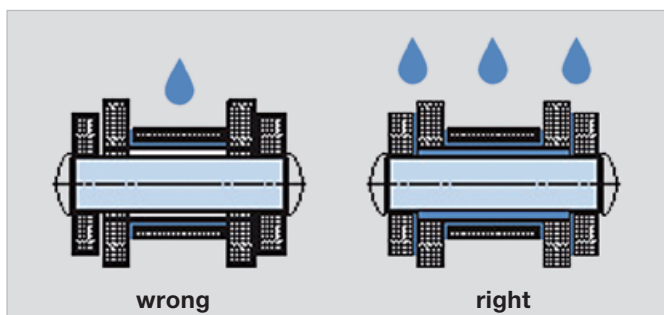
Cleaning of the chain is simple or even unnecessary since some of the residues are dissolved by fresh oil.

Low evaporation, low friction and excellent lubrication guarantee the high performance of the chain even at high temperatures.

Besides the use as chain oil, the BECHEM high performance lubricating oils are also well suitable for the lubrication and corrosion protection of cams, sliding surfaces and tooth systems.

In general chain lubrication is done by periodical application of fresh oil without oil recycling; thus lowest oil consumption is economical and clean.

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



Lubricant consumption of a roller chain – support for the selection of the right viscosity

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
Pump ability	lower
Wash-out stability	better
Tackiness	better
Dust absorption	lowest at very low and very high viscosity

Criterion	Results of oils with a higher viscosity
Evaporation loss	best results at ISO VG 100 to ISO VG 220/320
Chain size - small/fine chains - large/coarse chains	- worse suitability - 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

Oils for high temperature applications

BECEM 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.

These synthetic 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 BECEM oils do not form any laquer like residues when used at high temperatures.

High performance chain oils for univers

Product Name	Product Type	Temperatures
BERUSYNTH CU 46 ¹⁾	Synthetic high temperature chain oil	< -40 °C to +220 °C
BERUSYNTH CU 100	Synthetic high temperature chain oil	-40 °C to +250 °C
BERUSYNTH CU 250 ¹⁾	Synthetic high temperature chain oil	-30 °C to +250 °C
BERUSYNTH CU 3000 ¹⁾	Synthetic high temperature chain oil	-15 °C to +220 °C

High performance chain oils for special

BERUSYNTH CA 100	Synthetic high temperature chain oil	-35 °C to +220 °C
BERUSYNTH CF 250	Synthetic high temperature chain oil	-30 °C to +240 °C
BERUSYNTH CW 50	Synthetic high temperature chain oil	< -40 °C to +220 °C
BERUSYNTH CW 280	Synthetic high temperature chain oil	-30 °C to +260 °C
BERUSYNTH H1 series	Synthetic oils	-30 °C to +200 °C

Other chain lubricants

BECEM PLANTFLUID	Chain oil for bakeries	0 °C to +290 °C ²⁾
BERUMOLY P 20	Synthetic chain oil	-60 °C to +100 °C
BERUMOLY P 73	Synthetic suspension	-30 °C to +160 (450) °C
BERUMOLY P 80	Chain oil	-15 °C to +150 °C

¹⁾ Product also available as aerosol, ²⁾ Baking oven temperature

BEICHEM lubricants for the food processing and pharmaceutical industry meet the standards and requirements of such modern products.

Some information on the subject »Food Grade Lubricants« according to NSF H1 and NSF H2:

NSF H1: Labelling for Food Grade Lubricants. These are lubricants which are applied where incidental food contact cannot be excluded.

NSF H2: Labelling for lubricants for general use in the food processing technology without food contact.



al applications

Oil Viscosity	Oil Type	Main Applications
ISO VG 46	Ester	Small chains
ISO VG 100	Ester	Oven chains manufacture of insulation materials (e.g. mineral wool)
ISO VG 220/320	Ester	Textile tenter frames
ISO VG 3000	Ester	Environmental influences

al applications

ISO VG 100	Ester	Paint shops in the automotive industry
ISO VG 220/320	Ester	Film stretching machines
ISO VG 46	Ester	Continuous-press chains
ISO VG 220/320	Ester	Continuous-press belt/roller elements
ISO VG 15 to 1000	Polyalphaolefin/NSF H1	Food processing/pharmaceutical industry

al applications

ISO VG 46	Native oil/NSF H1	Bakeries
ISO VG 15	Ester + MoS ₂	Freezing plants, small chains
ISO VG 100	Polyglycol + MoS ₂	Furnaces, roller tables
ISO VG (10) 6000	Polymer + MoS ₂	Agricultural machinery

High performance chain oils under test

To achieve low oil consumption, long lubrication intervals and to check the compatibilities extensive tests with these BECHEM lubricants in their defined fields of application are essential.

Evaporation test

Here we show a less suitable synthetic chain oil ① in comparison to BERUSYNTH CU 250 ② 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 ①



BERUSYNTH CU 250 ②



Another advantage:

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.



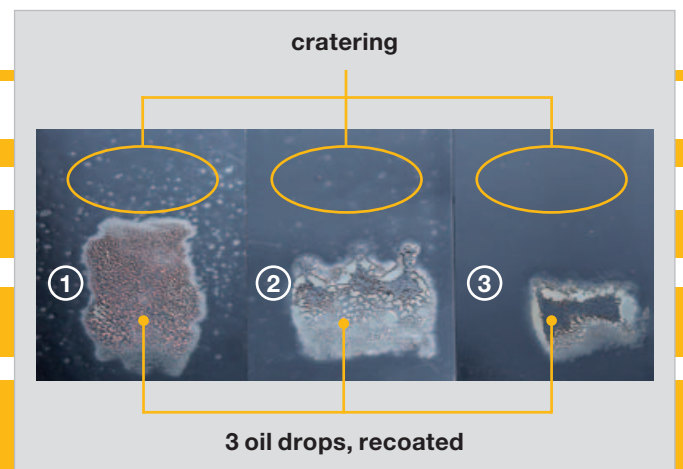
Wear protection and friction value SRV test at temperatures above 200 °C

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.



A special case – 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.



That'Special!

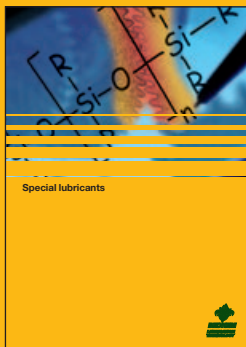
A tradition we are proud of since 1834. This is still today demonstrated by our trademark: the Rhus Flower. After permanent development, BECHEM is today a »Global Player«.

BECHEM special lubricants, industrial lubricants, metal working fluids and solutions for forming technology are based on our extensive experience in the development of special chemistry and on the latest tribologic knowledge. Our know-how with regard to friction, wear and lubrication always takes account of our customers' requirements for economical and ecological optimisation. We feel obliged to tradition and progress. That'Special!

Besides the headquarter in Hagen, BECHEM has two other production sites in Germany – in Mieste and Kierspe. In addition to that, our worldwide distribution network allows us to develop markets all over the world. With daughter companies in France, India and Switzerland, as well as Joint Ventures in the USA, South Africa, Sweden and China, BECHEM shows its international presence.

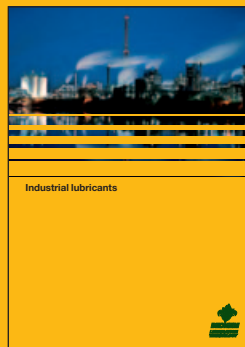
It is our target to supply our customers with high-quality products and to simultaneously meet the corresponding international standards. The quality of our products is guaranteed by our quality management system in accordance with the automotive standard ISO/TS 16949. All our production sites are systematically controlled by internal audits and regular external inspections by the certification association TÜV NORD CERT GmbH. Audits which are regularly carried out by our customers confirm the compliance with our high quality requirements.

Further information material is available either direct from us or at www.bechem.com



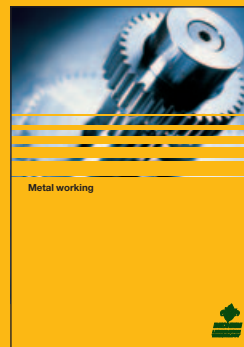
Special lubricants

- Low and high temperature lubricants
- Plastic lubrication
- Electrical contact lubricants
- Food grade lubricants
- Valve lubricants
- Anti-Friction Coatings



Industrial lubricants

- High performance multipurpose greases
- Heavy duty and high temperature lubricants
- Hydraulic oils
- Gear lubricants
- »Green« lubricants



Metal working

- Deep drawing/punching oils
- Coolant lubricants
- Cutting and grinding oils
- Deep drilling oils
- Corrosion protection oils
- Cleaning agents



Forming technology

- Wire drawing lubricants
- Cold forging oils
- Semi hot/hot forging
- Tube drawing lubricants
- Cold massive forming oils



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