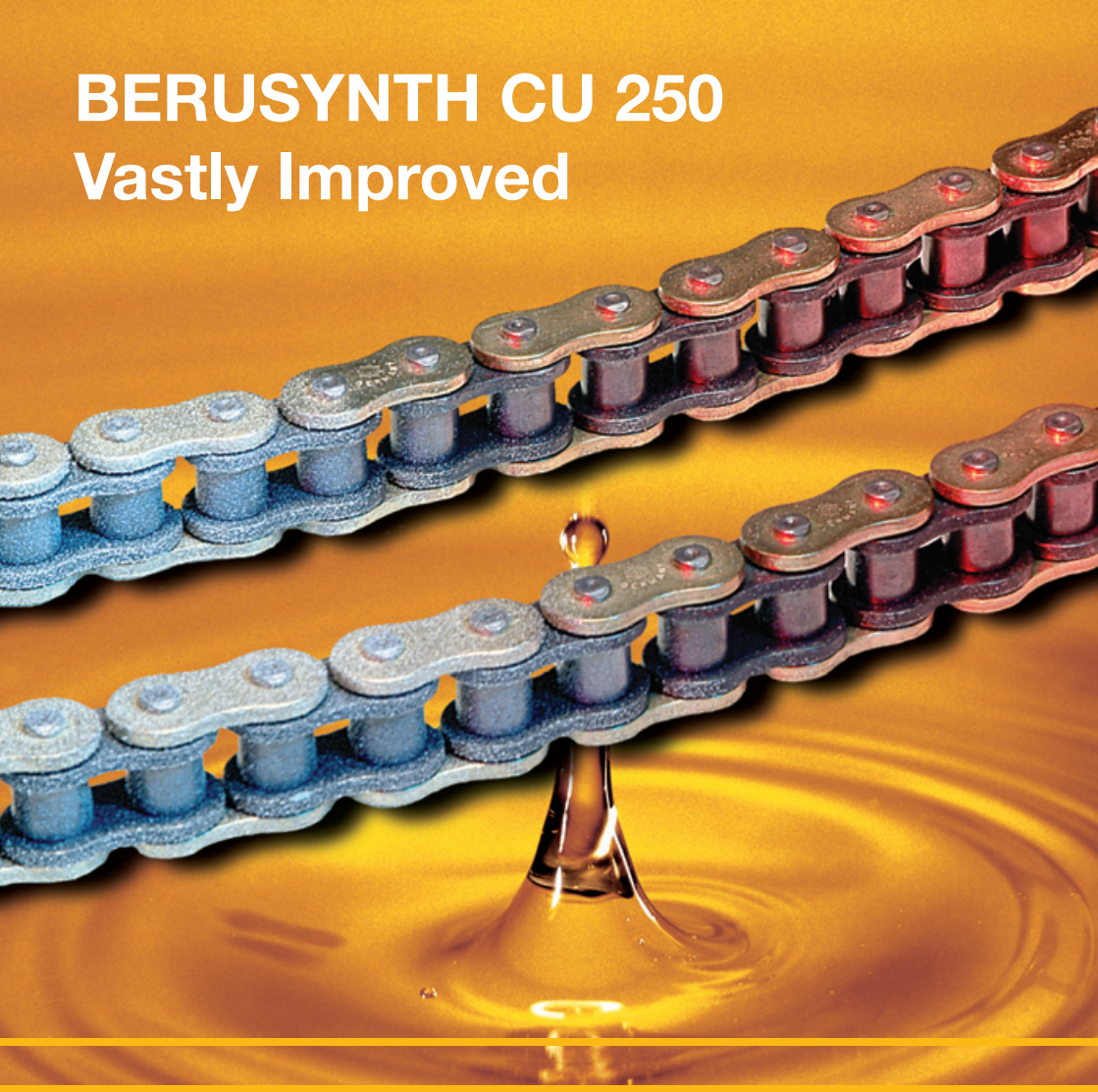
BERUSYNTH CU 250
Vastly Improved



Extended lubrication intervals
Lower evaporation
Less residues
Excellent lubrication under all conditions

BECHEM
LUBRICATION TECHNOLOGY

Previous Performance and Field Experiences

BERUSYNTH CU 250 was created primarily for the use as chain oil in high temperature applications. It is suitable for the use in chains of textile stenters, conveyors and other high temperature applications and achieves results which are comparable to those of high performance synthetic chain oils from known competitors. This especially with regard to chain life, oil consumption and cleanliness of the chains. Only small amounts of residues will remain on the chain. They will be softened and resolved by the fed fresh oil, thus chain maintenance is required at extended intervals only.

BERUSYNTH CU 250 – how does it work on the chain?

It is an intended behaviour of this high performance chain oil to form a thin but sufficient and very adhesive lubricating film on the chain and at the same time it penetrates into the actual lube spots inside the chain between bolts and rollers. Contrary to many chain lubricants, **BERUSYNTH CU 250** is not turning dark and sticky on the chain; when determining the relubrication intervals it has to be considered that the thin film on the chain must not be interpreted as a dry chain. Otherwise too much oil will be applied on the chain which leads to undesired side effects such as high consumption, oil drip off, contamination, smoke formation, etc.

The following tests show the extraordinary performance of **BERUSYNTH CU 250**.

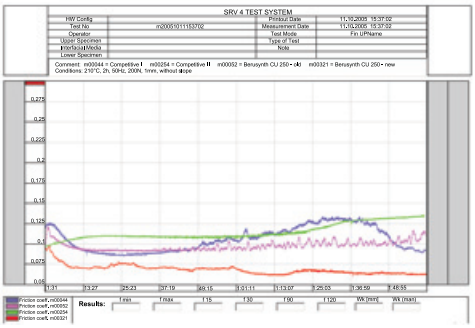
BERUSYNTH CU 250 –
how does it compare to competitive oils

The performance of high temperature chain oils regarding friction and anti wear properties is tested today on the SRV rig at 210°C. Low and steady friction together with minimal wear on the test specimen is the requirement to a top chain oil. Standard is to run these tests for two hours.
Photograph chart 1 shows the SRV test rig in standard arrangement.
Chart 2 compares the friction development of 4 oils over two hours.
All oils are high class synthetic ester chain oils in a viscosity range between ISO VG 220 and 320.

Chart 1

Test rig SRV in horizontal (normal) arrangement

Chart 2



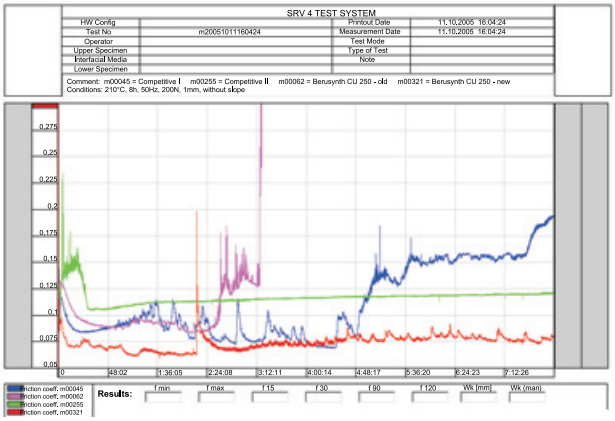
SRV results of synthetic high temperature chain oils at 210 °C

1 Competitor Oil A
2 Competitor Oil B
3 BERUSYNTH CU 250
4 BERUSYNTH CU 250 NEW

Extended SRV Test

The successful standard test over 2 hours is enough to prove the good performance of a chain oil. But as the four oils all passed that criteria, another SRV test over 8 hours was conducted to rate the oils and determine differences. The results are shown in chart 3. Based on that CARL BECHEM GMBH started to further develop and improve the performance of oil 3 (previous **BERUSYNTH CU 250**) into the new version (oil 4).

Chart 3



SRV results for test run 8 hours at 210°C

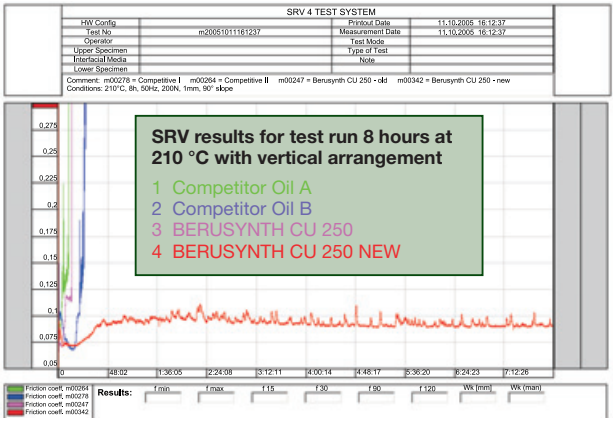
1 Competitor Oil A
2 Competitor Oil B
3 BERUSYNTH CU 250
4 BERUSYNTH CU 250 NEW

New Test Procedure for Vertical Lube Contacts

In a horizontally running chain, the inner lube contacts between bolts and rollers have a vertical position. So the oil might run down and leave the lube spot dry and unlubricated already after a short while. The SRV test rig of CARL BECHEM GMBH can be swivelled by 90° which makes it possible to test a vertical lube contact, see chart 4. As this reproduces the condition in the chain, chain oils can be tested even closer at field conditions and are thus more reliable. The results are very surprising, see chart 5. Except oil 4 (the new **BERUSYNTH CU 250**) all other oils failed already after a few minutes, their friction rose and the contact seized. The photograph chart 6 of the lube contact after the 8 hours test at 210°C with the new **BERUSYNTH CU 250** shows minimized smoothening of the contact surfaces only. No scratches or severe wear!

The perfect lubrication with <u>one drop of oil only !</u>

Chart 4



Microscope view of the friction surface on the test body. After 8 hours at 210 °C in vertical arrangement lube contact shows only little smoothening and no scratches. A perfect result!

What is new about BERUSYNTH CU 250?

A permanent and very comprehensive research helped us to find a perfect composition of the oil and its additives. Now even on vertical hot lube contacts it perfectly performs the demanding SRV test for more than 8 hours at 210°C. Even at 230°C the SRV test over 8 hours has been passed with best results.

New Standard in Performance

Besides the wear test on the SRV the evaporation of the new **BERUSYNTH CU 250** has been improved. Measurements according to the CARL BECHEM GMBH – house standard test see Chart 7, comparison of results is shown in Chart 8.

Chart 7
CB house test for evaporation behaviour of high temperature chain oils

Not only the reduced evaporation but also the long test time where the oil stays liquid is remarkable. Further the small amount of residues is important since these low quantities can be easily removed from chains and other hot surfaces and will cause fewer risks to close pipes in hot environment.

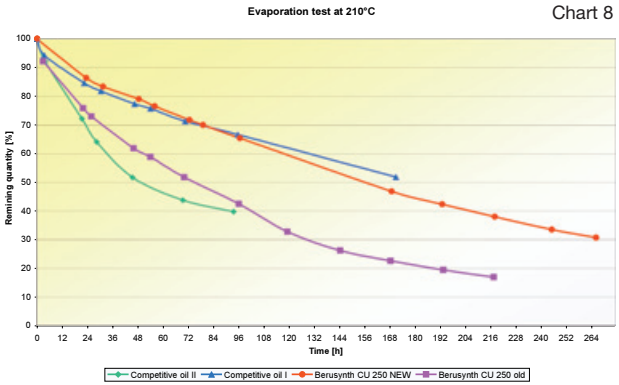


Chart 8

Results of the evaporation test at 210 °C. BERUSYNTH CU 250 NEW (oil 3) has a low evaporation rate, it remains liquid over a long period of time (265 hours) and X: the oil remains liquid until that time.

The results of the new BERUSYNTH CU 250

The results of the new **BERUSYNTH CU 250** found in field tests confirm the big step forward compared to the previous quality and even to the top oils of the competition. Oil consumption is considerably lower now. **BERUSYNTH CU 250** offers the user further advantages, such as lower friction (power saving) and life time of the chain because of minimized wear and reliable lubrication far beyond 200°C.

This new concept of oil and additives will be extended to all oils of the **BERUSYNTH CU** series.

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 latest tribologic knowledge. Our know-how with regard to friction, wear and lubrication always considers our custormer´requirements for economic and ecologic optimisation of processes. We feel obliged to tradition and progress.
That´Special!

Besides the headquarter in Hagen, BECHEM has two more 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 the daughter companies in France, India, Switzerland and China, as well as the Joint Ventures in the USA, South Africa, Sweden and Russia BECHEM shows its international presence.

It is our target to supply our customers with high quality products and to simultaneously meet the valid international standards. The quality of our products is confirmed by the certification according to the automotive standard ISO/TS 16949. The requirement to our standard is guaranteed by the systematically effected internal audits and regular inspections by the RWTÜV at all sites, as well as by audits carried out by our customers.

Further information material can be ordered directly with us or is available under www.bechem.com.

BECHEM
LUBRICATION
TECHNOLOGY

CARL BECHEM GMBH
Weststraße 120, 58089 Hagen, Germany
Telefon +49 2331 935-0, Fax +49 2331 935-1199
E-Mail: bechem@bechem.de, www.bechem.com

7902909994 / 0307