Environmentally-friendly lubricants and additives
Biodegradable lubricants for environmentally sensitive areas

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.
Expertise in environmentally-friendly lubricants

BECHEM has developed a powerful product range of environmentally-friendly lubricants and additives as a product of extensive research and development work. In addition to quick biological degradability and partly renewable raw materials, the biodegradable lubricants from BECHEM are characterized by a high level of technical lubrication performance.

BECHEM biodegradable lubricants demonstrate a high level of efficiency. This is made clear by prolonged machine running times due to lower wear and extended oil change intervals, depending on the application.

For every requirement, BECHEM offers the right native, semi-synthetic or fully synthetic biodegradable lubricant products.

»Biodegradable lubricants make an important contribution to environmental protection.«

The base oils of the BECHEM bio lubricants are partly based on renewable raw materials.
Environmentally-friendly lubrication oils and greases

Whether as a hydraulic fluid, gear or chain saw oil – BECHEM offers a product range for many applications, which makes a significant contribution to the environmentally sound use of lubricating oils. The base oils, partly based on renewable raw materials, are far superior to conventional oils in technical performance as a pioneering generation of semi and fully synthetic biodegradable lubricants.

The non-aging BECHEM products are characterized by a high level of technical lubrication performance, preserve resources and fulfill a number of standards and requirements.

The voluntary European Environmental Label (EU Eco label) introduced by an EU ordinance is a quality seal for products that are distinguished by a high level of environmental compatibility.

All indications and values correspond to latest knowledge and do not represent any product specification.
Environmentally-friendly rail lubricants

The frequent exposure of rail lubricants with the environment requires the use of environmentally compatible, biologically quickly biodegradable qualities in order to meet existing legal requirements. BECHEM rail lubricants meet these requirements and are optimally suited for the various requirements in global use with respect to temperature behavior, sprayability, centrifugal behavior or pressure stability.

In addition to a powerful product range, BECHEM also develops special custom lubricants.

»Lubricants are developed according to customer requirements.«

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>Type</th>
<th>Viscosity [mm²/s] @ 40°C</th>
<th>Viscosity [mm²/s] @ 100°C</th>
<th>Service Temperature [-]</th>
<th>Washability</th>
<th>Reelubrication intervals</th>
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<th>UV resistance</th>
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</table>
| BECHEM Ecorail 2001 Plus | Synthetic oil combination | Gel | - | 11 | 3 | -30 | +80 | Switch lubricant, readily biodegradable according to OECD 301 C, medium relubrication intervals, medium adhesion, resistant to oxidation and UV radiation, SNCF approval No. IEM 05 004, excellent sprayability, contains light-coloured solid lubricants
| BECHEM Ecorail 2002      | Synthetic oil combination | Gel | - | 17 | 4 | -30 | +80 | Switch lubricant, readily biodegradable according to OECD 301 C, long relubrication intervals, medium adhesion, oxidation and UV resistant, contains light-coloured solid lubricants
| BECHEM Ecorail 2009      | Ester             | Bentonite                | 000° | 46 | 9 | -30 | +80 | Switch lubricant, readily biodegradable according to OECD 301 B, very long relubrication intervals, excellent adhesion, contains light-coloured solid lubricants
| BECHEM Ecorail 2012      | Synthetic oil combination | Lithium/calcium soap | 000° | 20 | 6 | -30 | +80 | Switch lubricant, readily biodegradable according to OECD 301 B, very long relubrication intervals, very good adhesion, even for high-speed tracks, for all climatic conditions, contains light-coloured solid lubricants, approval: DB FSP 519 759 (Kx)
| BECHEM Ecorail 2016      | Synthetic oil combination | Lithium/calcium soap | 000° | 20 | 6 | -30 | +80 | Switch lubricant, readily biodegradable according to OECD 301 B, very good adhesion, even for high-speed tracks, for all climatic conditions, contains light-coloured solid lubricants, SNCF approval No. MTP 1729
| BECHEM Ecorail 5501      | Ester             | Lithium/calcium soap     | 1 | 110 | 14 | -55 | +120 | Lubrication of rail systems, readily biodegradable according to OECD 301 C, contains light-coloured solid lubricants, high absorption of pressure and shock loads, good adhesion, also available in NLGI-grade 2
| BECHEM Ecorail 7010      | Synthetic oil combination | Lithium/calcium soap | 0 | 20 | 6 | -30 | +100 | Light-coloured buffer disc and high-performance multipurpose grease for locomotives and wagons, readily biodegradable according to CEC L-33-A-93, high load carrying capacity, contains light-coloured solid lubricants
| BECHEM Ecorail 8000      | Ester             | Lithium soap              | 00 – 000° | 50 | 9 | -30 | +80 | Wheel flange lubricant, readily biodegradable according to CEC L-33-A-93, fluid, without solid lubricants, resistant to oxidation, DB Material No. 526 234 (SSL-3)
| BECHEM Ecorail 8200      | Synthetic oil combination | Lithium/calcium soap | 0 | 35 | 7,5 | -40 | +100 | Wheel flange lubrication, readily biodegradable according to OECD 301 B, reliable corrosion and wear protection, very high load carrying capacity, good adhesion, high part of light-coloured solid lubricants

*Value indicates unworked penetration. **Value stated in grey indicates short-term maximum temperature.
All indications and values correspond to latest knowledge and do not represent any product specification.

**Test bench for wheel flange lubrication**
Good for the environment

BECHEM biodegradable lubricants make an important contribution to environmental protection. They are used in environmentally sensitive areas and are characterized by outstanding technical properties combined with a rapid biodegradability. In the application areas of forestry and construction, rail-bound transport systems and hydraulic engineering systems, the requirements for biodegradable lubricants are steadily rising. Environmentally friendly lubricants and additives from BECHEM meet these high standards and represent an alternative to mineral oil-based products.

Through intensive research and development work as well as investments in national and international research projects, BECHEM has the knowledge to optimally adapt high-performance lubricants to any application. In the BECHEM laboratories, the latest chemical-physical testing and analysis systems are available that are used to characterize lubricants, to monitor their application, to analyze customer problems and finally to develop the appropriate lubricant solutions.

High quality lubricants are indispensable products which are worth their investment, they are winners of prestigious awards – by making a decisive contribution to performance, energy efficiency and sustainability of products and processes.

Award for Berufluid – a joint project with Fraunhofer Institute IVV and IWF Braunschweig.

BECHEM wins award for tailored solutions in the premium vehicle sector.

BECHEM as an award-winner is one of the 20 most innovative companies in North Rhine-Westphalia.

BECHEM wins the award for innovative lifetime lubrication of different vehicle components.

BECHEM wins the NRW 2015 Efficiency Award for innovative and resource-efficient coating in cold massive forming.
Lubrication solutions for industry