Special lubricants for the fitting industry
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BECHEM – Lubrication solutions for industry

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

BECHEM products stand out through innovative formulations in the most diverse industrial applications – in machining and forming for metalworking 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.
Intensive research and development as well as state-of-the-art equipment are the vital basis that allows BECHEM to create new, intelligent product concepts for the various, demanding tribological tasks in the fitting industry.

By means of latest chemical-physical test and analysis systems, the BECHEM laboratories characterise lubricants, monitor their application, analyse customers’ problems and finally elaborate the suitable lubricant solutions.

This is only one of the many reasons why the BECHEM valve lubricants meet the technical, chemical and constructive requirements of drinking water taps in the household, industry and health sector, as well as of fittings for technical gases and aggressive media.

The analyses of lubricants in the BECHEM laboratories decisively contribute to the reduced development period of products in the fitting industry.

BECHEM special lubricants for the fitting industry comply with the relevant guidelines and regulations in the drinking water sector (the corresponding approvals for BECHEM products are listed in the tables on pages 8, 9, 10 and 11).

Lubricant guidelines

(derived from KTW recommendations)
German guidelines for hygienic assessment of lubricants in contact with drinking water (sanitary lubricants). These guidelines, as do the KTW guidelines (KTW stands for “plastics and drinking water” in German), consist of the positive list of usable raw materials for the manufacture of materials and constituents, the compulsory testing processes (migration test process) and the test values with limit value character which need to be observed.

NSF Standard 61

NSF International is a certification organisation for the sectors of health and environment which is established and accredited in the USA, Canada and Europe. The NSF Standard 61 defines the requirements with regard to chemical impurities and mixtures which are indirectly added to drinking water in the drinking water systems due to the products and materials used.

WRAS

The Water Regulation Advisory Scheme (WRAS) is the English certification body for products with drinking water contact.

ACS

The Attestation de Conformité Sanitaire (ACS) is the French certificate for products with drinking water contact. Accredited test laboratories test the lubricants for conformity with the French positive list.

BELGAQUA

BELGAQUA is the Belgian authority for the water sector. Products with the BELGAQUA certificate may be used in the Belgian drinking water sector.

BAM

The BAM (Bundesanstalt für Materialforschung und -prüfung) in Berlin is the leading German authority for testing, analysis and approval in material sciences. The BAM tests behaviour in oxygen atmosphere of oxygen valves and units.

DVGW

The Deutsche Vereinigung des Gas- und Wasserfaches e. V. (DVGW) stands for technical self-administration in the gas and water sector. The technical specifications are the basis for safety and reliability within the German gas and water supplier industries.

DIN-DVGW test symbol

Only lubricants which have been tested by neutral testing laboratories (e.g. the DVGW research laboratory in Karlsruhe) on the basis of DIN EN 377 or DIN 3536 and then approved with the DIN-DVGW test symbol may be used in gas appliances and fittings.
Best features for highest performances

BECHEM special lubricants are important construction elements in the fitting industry. Depending on the product category, our lubricants for drinking water taps fulfill the following criteria:

### Chemical-physical
- Prevention of migrating lubricant components (verification by TOC measurement)
- Compatibility with elastomers, e.g., NBR and EPDM
- No tension crack formation in plastics, e.g., ABS, POM, PPE/PS, PSU, PBT, PA, PP, and SAN
- No non-ferrous metal discoloration
- Prevention of tribo-chemical influences by additives
- Prevention of corrosion, erosion and hard deposits on metal sealing surfaces (protective function)
- Prevention of corrosion, erosion and hard deposits on plastic and ceramic surfaces

### Physiological-microbiological
- No medium for microorganisms (verification by MDOD test or oxygen consumption)
- Odour, taste and foaming tendency of drinking water is not negatively affected
- The lubricants are free of toxic ingredients (current state of legislation)

### Mechanical-dynamic
- Reduction of frictional resistance during switching operations (torque reduction)
- Low-wear operation on frictional contacts from metal (no abrasive wear)
- Maintenance of switching capacity of construction elements with rubber-elastic sealing surfaces (no "sticking")
- Prevention of stick-slip in valve tops at high torques (tested at 500,000 load changes)
- Regulation of ceramic valves and cartridges with constant, low torques over a wide temperature range
- High wash-out resistance at standard flow speeds of around 3 m/s

### Gas taps
- Emergency sealing at worn primary sealing systems (natural gas pipelines)
- Improvement of secondary sealing effect of "soft-sealed" fittings
Lubricants for drinking water applications

Berulub FO 34
PTFE/Silicone oil
-40 +160
For-life lubrication of hot and cold water taps, suitable for material combinations plastic/plastic, plastic/metal, ceramic/ceramic and ceramic/plastic, high adhesive strength and water resistance

Berulub Sihaf 2
PTFE/Silicone oil
-40 +160
Special lubricant for lifetime lubrication, especially for plastics and elastomers, compatible with beer froth, contains PTFE, H1 registered, halal and kosher certified, certified according to ISO 21469

Berulub Sihaf 1
PTFE/Silicone oil
-40 +160
See Berulub Sihaf 2, however NLGI grade 1

Berusil CDG 352
PTFE/Silicone oil
-40 +160
For-life lubrication of hot and cold water taps, suitable for material combinations plastic/plastic, plastic/metal, ceramic/ceramic and ceramic/plastic, high adhesive strength and water resistance

Berusil FO 25
Gel/Silicone oil
2 -3
-40 +160
Multipurpose grease for rubber-elastic seals and plastic bearings, hot and cold water resistant, extremely good high and low-temperature resistance

Berusil FO 26
Gel/Silicone oil
2 -3
-40 +160
See Berusil FO 25, however with higher base oil viscosity and better sealing effect

Berusil K 66
Special calcium complex soap/PAO
2 -30
Special synthetic special grease, high base oil viscosity, good plastic/elastomer compatibility, good oxidation resistance, low oil separation, prevents stick-slip, H2 registered

Berusil FU 5
Gel/PAO
2 -20
-100
Short-fibered multipurpose grease to lubricate non-ferrous metal bearings and sanitary hot and cold water taps, resistant to oxidation

Berusil SM 350
Silicone oil
-40 +150
Silicone oil, physiologically harmless, wide application temperature range, excellent plastics and elastomer compatibility, good wetting behavior, thermal stability and oxidation stability, H1 registered, halal and kosher certified

Berusil SM 2000
Silicone oil
-50 +180
For plastic bearings and gears which require a high base oil viscosity, high viscosity index, resistant towards water, H1 registered

Berusil P 140 Spray
Silicone oil
-40 +150
Suitable for non-ferrous metals, plastics and elastomers, extremely low evaporation losses in high temperature range, physiologically harmless, neutral in odour and taste, H1 registered

»Tailored to the specific service conditions, BECHEM lubricants contribute to extended lifetime of fittings.«
Lubricating greases for special applications

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<th>TECHNICAL DATA</th>
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<tr>
<td>Berulub OX 40 EP</td>
<td>PTFE/Silicone oil</td>
<td>3° -30 +200</td>
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<tr>
<td>Berulub OX 100 EP</td>
<td>Inorganic pigments/PFPE</td>
<td>2° -40 +200</td>
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<tr>
<td>Berulub PG 3 F</td>
<td>Polyurea/Synthetic oil combination</td>
<td>3 -20 +150</td>
<td>•</td>
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<tr>
<td>Berulub Siluf 2</td>
<td>PTFE/Silicone oil</td>
<td>3 -40 +160</td>
<td>•</td>
</tr>
<tr>
<td>Berulub VPT 54-2</td>
<td>PTFE/PFPE</td>
<td>2 -30 +230</td>
<td>•</td>
</tr>
<tr>
<td>Berulup FH 28 G</td>
<td>Polyurea/PAO</td>
<td>1 -40 +300</td>
<td>•</td>
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<tr>
<td>Berulub 100 T 2</td>
<td>PTFE/PFPE</td>
<td>1 -2 -20 +260</td>
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<tr>
<td>Berulub Hydrohaf GR</td>
<td>Bentonite/Ester</td>
<td>1 -2 -10 +140</td>
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<tr>
<td>Berulub Hydrohaf 2</td>
<td>Bentonite/Polyglycol</td>
<td>2 -10 +150</td>
<td>•</td>
</tr>
<tr>
<td>Berulub PAL 3</td>
<td>PTFE/Esther</td>
<td>3° -20 +150</td>
<td>•</td>
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</table>

*Value indicates unworked penetration. *Value in grey indicates a possible short-term maximum temperature.

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