Special Lubricants for the Fitting Industry
Clear guidelines for smooth operations

BECHEM special lubricants for the fitting industry comply with the relevant guidelines and regulations in the drinking water sector (certification for BECHEM products is listed in the tables on pages 4, 5, 7 and 8).

- **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.

- **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.

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

- **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.

- **BELGAQUA**
  Belgian authority for the water sector. Products with the BELGAQUA certificate may be used in the Belgian drinking water sector.
Clear concepts for clean results

Based on intensive research work and huge experience BECHEM offers the fitting industry new, intelligent product concepts for the various and demanding tribological challenges.

In this case, BECHEM understands itself to be a real development partner for its customers and enables the development of tailor-made products with its extremely modern chemical-physical testing and analysis systems, and therefore plays its part in shortening product development times.

BECHEM valve lubricants completely fulfil the requirements of drinking water fittings manufacturers in the household, industry and health sectors, as well as of fittings for technical gases and aggressive media in technical, chemical and constructive respects.
# Lubricating greases for fittings

## TECHNICAL DATA

<table>
<thead>
<tr>
<th>Product</th>
<th>Thickener/Base oil</th>
<th>NLGI-grade</th>
<th>Service temperature range [°C]</th>
<th>Valve tops, classic</th>
<th>Valve tops, ceramic taps</th>
<th>Single lever taps, ceramic sealing disc</th>
<th>1) Shower heads</th>
<th>Thermostats, temperature regulators</th>
<th>Tap cocks, cocks</th>
<th>Ball cocks</th>
<th>Strand valves</th>
<th>Flushing valves</th>
<th>Pressure reducers</th>
<th>O-rings, gaskets</th>
<th>Glands</th>
<th>Gas appliance and controlling devices</th>
<th>Oxygen machine parts</th>
<th>Oxygen pressure reducers and valves</th>
<th>Assembly and wind-up devices</th>
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<tbody>
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## APPLICATION

- **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
- **For equipment related to food and drinking water** such as air and rotary diffusers in filling machines and ceramic seals in mixing valves
- **Multipurpose grease for rubber-elastic seals and plastic bearings, hot and cold water resistant, extremely good high and low-temperature resistance**
- **Long-term lubrication of material combinations non-ferrous metal/non-ferrous metal, plastic/plastic and plastic/metal with a wide service temperature range, e.g. for single lever taps and thermostats**
- **Short-fibred multipurpose grease to lubricate non-ferrous metal bearings and sanitary hot and cold water taps, resistant to oxidation**
- **Suitable for non-ferrous metals, plastics and elastomers, extremely low evaporation losses in high temperature range, physiologically harmless, neutral in odour and taste**

*Value refers to unworked penetration

1) with ceramic sealing and regulating discs

 ongoing application

Pictogram directory on page 08
Clear benefits for high expectations

BECHEM special lubricants are important construction elements in the fitting industry. Lubricants for drinking water fittings fulfil the adjoining criteria in accordance with their selection.

**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)

**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 discolouration
- Prevention of tribo-chemical influences by additives
- Prevention of corrosion, erosion and hard deposits on metal sealing surfaces (protective function)
Clear benefits for high expectations

**Physiological-microbiological**
- No medium for microorganism (verification by MOOG 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)

**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, PTFE, PSU, PBT, PA, PP and SAN
- No non-ferrous metal discolouration
- Prevention of tribo-chemical influences by additives
- Prevention of corrosion, erosion and hard deposits on metal sealing surfaces (protective function)

**BECHEM special lubricants are important construction elements in the fitting industry. Lubricants for drinking water fittings fulfill the adjacent criteria in accordance with their selection.**

**APPLICATION**
- Oxygen pressure reducers and valves
- Oxygen plant components, for oxygen pressures surges up to 40 bar at +60 °C operating temperature, e.g. in medical sector
- Lubricating grease for fittings and machine elements under high and low temperatures, e.g. in aerospace sector
- Long-term lubricating grease, even under vacuum, radiation, corrosion and wear protection, contains graphite
- Preventing melt-back, reduced formaldehyde and water, ensures maximum stability and avoids liquids, high corrosion and wear protection, contains graphite
- Elastomer lubricant for oxygen fittings and other oxygen plant components, for oxygen pressures surges up to 60 bar at +180 °C operating temperature, e.g. in medical sector
- Lubricant for oxygen fittings and other oxygen plant components, for oxygen pressures surges up to 200 bar at +300 °C operating temperature, e.g. in aerospace sector
- Cream coloured, solid lubricant combating high and low temperatures in gas taps and controlling elements, as well as gas taps, distributors, supply lines and controlling devices in gas equipment in domestic installations
- Gearing of tap cocks and sealing elements, high and low-temperature resistant for gas taps, distributors, supply lines and controlling devices in gas equipment in domestic installations
- Thermostats, temperature regulators, stainless steel joins, o-rings, gaskets
- Gas appliance and controlling devices, as well as gas taps, distributors, supply lines and controlling devices in gas equipment in domestic installations
- Oxy-metals, non-ferrous metal, avoids stick-slip, compatibility for material combinations metal/elastomer and non-ferrous metal/non-ferrous metal, good plastic and elastomer compatibility
- Place in aerosols
- Resistant to water, steam, aqueous alkaline and acidic liquids, high operating temperature, e.g. in medical sector
- Food grade
- Product in aerosols

**APPROVALS**
- ACS
- KTW
- WRAS
- Pharmaceutical technology
- Compatible with plastics
- Resistant to water, steam, aqueous alkaline and acidic liquids

**APPLICATIONS**
- Plumbing fittings
- Sanitary fittings
- Aviation industry
- Food grade

**PROPERTIES**
- High load
- High temperatures
- High loads
- Compatiblity with plastics
- Water resistant
- Available in aerosols
- Product in aerosols

**TECHNICAL DATA**

**Product**
- Berulub
- Berulub Sodium 1
- Berulub Sodium 2
- Berulub Sodium 3
- Beruox 40 EP
- Berutemp PG 3 F
- Berutemp FH 28 G
- Berutox GS 3
- Berutemp VPT 64 BN 3
- Berulub 500 T 2
- Berulub

**Chemical data**
- Ester
- PTFE/Mineral oil
- PTFE/PFPE
- Polyeurethane/pigments/Thickener/bases oil
- Polyurea/Mineral oil combi
- Polyurea/PFPE
- Special

**Service temperature range [°C]**
- +280
- +300
- +250
- +200
- +150
- +120
- +100
- +80
- +60

**Value refers to unworked penetration

*The lubricant marked with this icon is not suitable for consumption!*
Clear solutions for individual requirements

**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
Lubrication Solutions for Industry

With over 175 years of experience, BECHEM is one of the leading manufacturers of premium quality special lubricants and metal working fluids.

Close cooperation with research institutes, industry partners and product users as well as the knowledge, skills and major commitment by our staff are guarantees of new and innovative high performance lubricants, which contribute to the success of our customers at home and abroad.

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

Tomorrow’s technologies. Today.