



Special lubricants for the fitting industry

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.

APPLICATIONS

- Sanitary fittings 
- Industrial fittings 
- Plain bearings 

ATTRIBUTES

- High loads 
- Low temperatures 
- High temperatures 
- Resistant to water 
- Food grade/Pharmaceutical technology 
- Compatible with plastics 
- Corrosion protection 
- Available in aerosols 
- Product in aerosols 

All indications and values correspond to latest knowledge and do not represent any product specification

Development partner for tribological challenges

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.



Certified for multiple use

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

BEICHEM special lubricants are important construction elements in the fitting industry. Depending on the product category, our lubricants for drinking water taps fulfil 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 discolouration
- Prevention of tribo-chemical influences by additives
- Prevention of corrosion, erosion and hard deposits on metal sealing surfaces (protective function)
- Prevention of erosion and hard deposits on plastic and ceramic surfaces

Physiological-microbiological

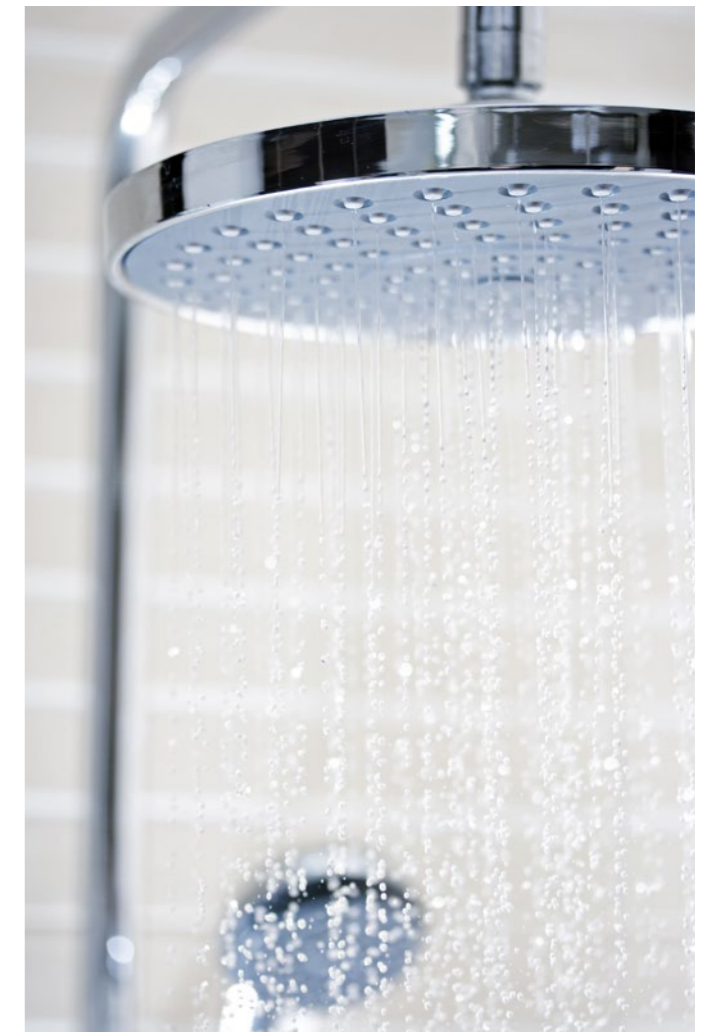
- No medium for microorganisms (verification by MDOD test or oxygen consumption)
- Odour, taste and foaming tendency of drinking water is not negatively affected
- The lubricants are free of toxic ingredients (current state of legislation)

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

	PRODUCT	TECHNICAL DATA				APPLICATIONS										APPROVALS						Description				
		Thickener/ base oil	NLGI-grade	Service temperature range [°C]		Valve tops, classic	Valve tops, ceramic taps	Single lever taps, ceramic sealing disc ¹⁾	Shower heads	Thermostats, temperature regulators	Tap cocks, cocks	Ball cocks	Strand valves	Flushing valves	Pressure reducers	O-rings, gaskets	Glands	Assembly and wind-up devices	DIN-DVGW test symbol	NSF Standard 61	Lubricant guidelines (according to KTW)		WRAS	ACS	BELGAQUA	toim
Lubricating greases	Berulub FO 34 	PTFE/Silicone oil	0 - 1*	-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	3	-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	1	-40	+160		•	•	•	•	•		•	•	•			•	•	•	•	•	•	•	•	See Berulub Sihaf 2 , however NLGI grade 1
	Berusil CDG 352 	PTFE/Silicone oil	2	-40	+150		•	•	•				•	•	•			•	•	•	•	•	•	•		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
	Berusoft 30 	Special calcium complex soap/ PAO	2	-30	+150	•	•		•	•	•	•	•					•	•	•	•	•	•	•		Synthetic special grease, high base oil viscosity, good plastic/elastomer compatibility, good oxidation resistance, low oil separation, prevents stick-slip, H2 registered
	Berulub FU 5 	Gel/PAO	2	-20	+100	•					•	•								•	•	•	•	•		Short-fibred multipurpose grease to lubricate non-ferrous metal bearings and sanitary hot and cold water taps, resistant to oxidation
Lubricating oils	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																					•

*Value indicates unworked penetration ¹⁾with ceramic sealing and regulating discs



» Tailored to the specific service conditions, BECHEM lubricants contribute to extended lifetime of fittings. «

Lubricating greases for special applications

PRODUCT	TECHNICAL DATA			APPLICATIONS											APPROVALS			
	Thickener/ base oil	NLGI-grade	Service temperature range [°C] ¹⁾	Thermostats, temperature regulators	Tap cocks, cocks	Ball cocks	Strand valves	Flushing valves	Pressure reducers	O-rings, gaskets	Glands	Gas appliance and controlling devices	Oxygen machine parts	Oxygen pressure reducers and valves	Assembly and wind-up devices	DIN-DVGW test symbol	BAM "oxygen" test	Description
Berulub OX 40 EP 	PTFE/Silicone oil	3*	-30 +200										•	•	•		•	Elastomer lubricant for oxygen fittings and other oxygen plant components, for oxygen pressure surges up to 40 bar at +60 °C operating temperature, e.g. in medical sector
Berulub OX 100 EP 	Inorganic pigments/PFPE	2*	-40 +200 +250											•	•	•		Lubricant for oxygen fittings and other oxygen plant components, for oxygen pressure surges up to 140 bar at +60 °C operating temperature, e.g. in aerospace sector, H1 registered, Halal certificate
Berulub PG 3 F 	Polyurea/ Synthetic oil combination	3	-20 +150			•						•			•	•		Cream-coloured, solid lubricant containing high and low-temperature grease to lubricate tap cocks and sealing elements, as well as gas taps, distributors, supply lines and controlling devices in gas equipment in domestic installations
Berulub Sihaf 2 	PTFE/Silicone oil	3	-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
Berutox VPT 54-2 	PTFE/PFPE	2	-30 +230		•	•											•	Longlife lubrication, reduction of friction and wear, high thermal and chemical resistance, very good oxidation resistance, excellent elastomer and plastic compatibility even in case of vacuum and radiation, resistant against solvents and aggressive chemicals
Berutemp FH 28 G 	Polyurea/PAO	1	-40 +200		•	•	•				•							Completely synthetic grease, resistant against hot and cold water, steam, aqueous alkaline and acidic liquids, high corrosion and wear protection, contains graphite
Berutemp 500 T 2 	PTFE/PFPE	1 - 2	-20 +260		•	•											•	Long-term lubricating grease, even under vacuum, radiation, solvents and aggressive chemicals, exceptional plastic and elastomer compatibility, extremely thermally stable, high wear and corrosion protection, resistant to acids, bases, disinfectants, H1 registered, halal and kosher certified, certified according to ISO 21469
Berulub Hydrohaf GR 	Bentonite/Ester	1 - 2	-10 +140	•		•	•	•	•	•							•	Longlife lubrication of hot and cold water taps, resistant to oxidation, good plastic and elastomer compatibility, good adhesion, water resistant, prevents stick-slip
Berulub Hydrohaf 2 	Bentonite/ Polyglycol	2	-10 +150	•		•	•	•	•	•							•	Lubrication of hot and cold water taps, especially suitable for material combinations metal/elastomer and non-ferrous metal/non-ferrous metal, good plastic and elastomer compatibility
Berulub PAL 3 	PTFE/Ester	3*	-20 +150	•	•	•					•							Multi-purpose, low-temperature paste, prevents stick-slip, extends relubrication intervals, excellent adhesion, media-resistant, contains PTFE, optimally suited for contact combinations of steel with PTFE/PA

¹⁾Value indicates unworked penetration ²⁾Value in grey indicates a possible short-term maximum temperature

» Proven quality worldwide –
 BECHEM lubricants for the fitting industry. «

