



**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

Product	TECHNICAL DATA				APPLICATION														APPROVALS						Properties					
	Thickener/ base oil	NLGI-grade	Service temperature range [°C]		Valve tops, classic	Valve tops, ceramic taps	Single lever taps, ceramic sealing disc <sup>1)</sup>	Shower heads	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	NSF Standard 61	Lubricant guidelines (according to KTW)		WRAS	ACS	BEL GAQUA	igim	
<b>Berulub FO 34</b> 	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
<b>Berulub Sihaf 2</b> 	PTFE/ Silicone oil	3	-40	+160	•	•	•	•		•		•	•	•					•	•		•	•	•	•	•	•	•	For equipment related to food and drinking water such as air and rotary diffusers in filling machines and ceramic seals in mixing valves	
<b>Berulub Sihaf 1</b> 	PTFE/ Silicone oil	1	-40	+160	•	•	•	•		•		•	•	•					•			•							See <b>Berulub Sihaf 2</b> , however NLGI grade 1	
<b>Berusil CDG 352</b> 	PTFE/ Silicone oil	2	-40	+160	•	•	•					•	•	•					•			• <sup>2)</sup>	• <sup>2)</sup>	• <sup>2)</sup>	• <sup>2)</sup>				For-life lubrication of hot and cold water taps, suitable for material combinations of plastic/plastic, plastic/metal, ceramic/ceramic and ceramic/plastic, high adhesive strength and water resistance	
<b>Berusil FO 25</b> 	Gel/ Silicone oil	2 - 3*	-40	+200			•												•			•							Multipurpose grease for rubber-elastic seals and plastic bearings, hot and cold water resistant, extremely good high and low-temperature resistance	
<b>Berusil FO 26</b> 	Gel/ Silicone oil	2 - 3*	-40	+200			•			•		•	•	•	•				•			•							See <b>Berusil FO 25</b> , however with higher base oil viscosity and better sealing effect	
<b>Berusoft 30</b> 	Special calcium complex soap/PAO	2	-30	+150	•	•		•	•	•	•	•							•			•	•	•	•	•	•		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	
<b>Berulub FU 5</b> 	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	
<b>Berusil P 140 Spray</b> 	Silicone oil		-40	+250															•							•			Suitable for non-ferrous metals, plastics and elastomers, extremely low evaporation losses in high temperature range, physiologically harmless, neutral in odour and taste	

Drinking water applications

<sup>1)</sup>Value refers to unworked penetration <sup>2)</sup>with ceramic sealing and regulating discs <sup>3)</sup>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**

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- 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**

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- 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)



# Lubricating greases for fittings

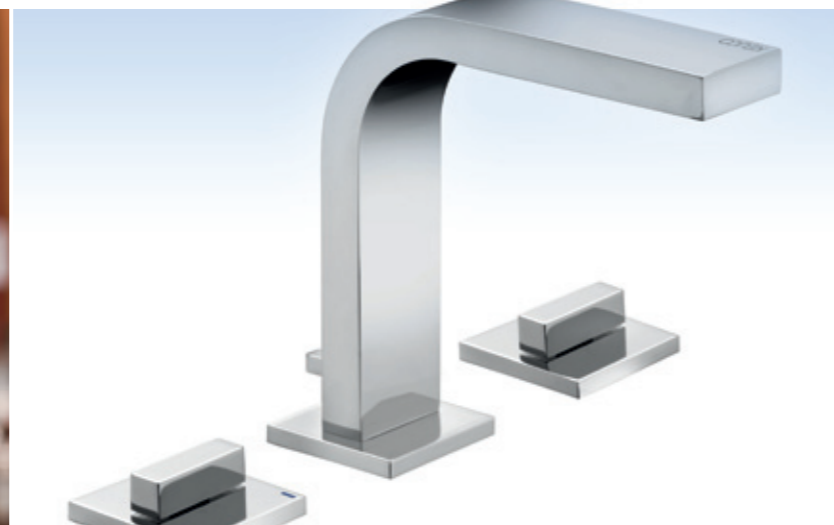
### TECHNICAL DATA

### APPLICATION

### APPROVALS

Product	Thickener/ base oil	NLGI-grade	Service temperature range [°C]	APPLICATION																	APPROVALS								Properties
				Valve tops, classic	Valve tops, ceramic taps	Single layer taps, ceramic sealing disc <sup>1)</sup>	Shower heads	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	NSF Standard 61	Lubricant guidelines (according to KTW)	WRAS	ACS	BEL GAQUA	igm		
<b>Berutemp FH 28 G</b> 	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	
<b>Berulub OX 40 EP</b> 	PTFE/ Special polysilo- xane	3*	-30 +200																									Elastomer lubricant for oxygen fittings and other oxygen plant components, for oxygen pressures surges up to 40 bar at +60 °C operating temperature, e.g. in medical sector	
<b>Berulub OX 100 EP</b> 	Anorg. pigments/ PFPE	2*	-30 +200 +250																									Lubricant for oxygen fittings and other oxygen plant components, for oxygen pressure surges up to 200 bar at +60 °C operating temperature, e.g. in aerospace sector	
<b>Berulub PG 3 F</b> 	Polyurea/ Synthetic oil combi- nation	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	
<b>Berutemp GSV 3</b> 	Polyurea/ Mineral oil	2 - 3	-20 +140																									Greasing of tap cocks and sealing elements, high and low-temperature lubricant for gas taps, distributors, supply lines and controlling devices in gas equipment in domestic installations	
<b>Berutox VPT 64 BN 3</b> 	PTFE/ PFPE	3	-20 +280 +300																									Lubrication of fittings and machine elements under the influence of aggressive media, exceptionally stable against thermal and chemical decomposition, plastic and elastomer-compatible	
<b>Berutemp 500 T 2</b> 	PTFE/ PFPE	2	-20 +260 +280																									Long-term lubricating grease, even under vacuum, radiation, solvents and aggressive chemicals, exceptional plastic and elastomer compatibility, extremely thermally stable	
<b>Berulub Hydrohaf 2</b> 	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	
<b>Berulub PAL 3</b> 	PTFE/ Ester	3*	-20 +150																									For material combinations of plastic/plastic, plastic/metal and non-ferrous metal/non-ferrous metal, avoids stick-slip, even at high surface pressure, also available in NLGI grade 1 and as spray	

<sup>1)</sup>Value refers to unworked penetration  
<sup>1)</sup>with ceramic sealing and regulating discs



### APPLICATIONS

- Sanitary fittings
- Industrial fittings
- Aviation industry

### PROPERTIES

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

\* The lubricant marked with this icon is not suitable for consumption!  
 All indications and values correspond to latest knowledge and do not represent any product specification

# 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 180 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.**

