



**Special Lubricants for the Food Processing
and Pharmaceutical Industry**



MULTIFARIOUS APPLICATIONS REQUIRE SPECIAL PRODUCTS

Food grade lubricants are used for lubrication, power transmission and corrosion protection of machines to produce and process food, food related commodities, cosmetics, pharmaceutical products, tobacco products and animal feed.

With the rising quality requirements in the food processing industry the expectations of lubricants for this market segment are increasing as well.

Food grade lubricants are subject to strict regulations, have to be physiologically harmless and must offer special features under different operating conditions, such as

- High water resistance
- Oxidation stability
- Low wear rates
- Compatibility with construction materials
- Good adsorption and adhesion on metal and plastics
- Steam resistance (when filling wine, beer or soft drinks)



BECHEM food grade lubricants meet the standards and requirements of modern lubricants applied in the food processing industry. They comply with the strict regulations

of the international organisation for product testing and certification, NSF International.



Explanations:

NSF-H1: Identification of Food Grade Lubricants, i.e. lubricants which can be applied where incidental food contact cannot be excluded.

NSF-H2: Identification of lubricants for the general use in the food processing industry, provided food contact is excluded.

Halal: Identification of products which are classified as “halal” (legal) according to the Islamic dietary regulations.

Kosher: Identification of products which are classified as “kosher” (suitable, clean) according to the Jewish dietary laws.



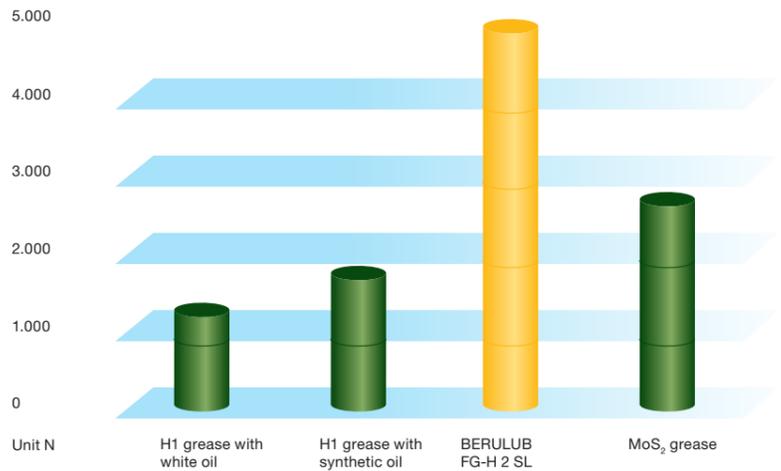
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LUBRICATING GREASES

FOR THE FOOD PROCESSING AND PHARMACEUTICAL INDUSTRY

For extreme requirements

BEICHEM food grade lubricants cover a wide range of applications. Even for most demanding requirements e.g. with the regard to load carrying capacity BEICHEM offers high-performance products such as **BERULUB FG-H 2 SL** (compare chart). Based on special calcium complex soaps the product exceeds even conventional MoS₂ and graphite greases concerning the wear properties.



Determination of the weld load in the four-ball test rig according to DIN 51350

TECHNICAL DATA

APPLICATIONS

PRODUCT	Base oil/ Thickener	NLGI -grade	Base oil viscosity (mm ² /s) at 40 °C / 100 °C	Service temperature range [°C] ¹⁾	Approval	Solid lubricants																Properties
						Roller bearings	Plain bearings	Slideways / hinges	Slide rails	Roller	Cam disk	Gear rack	Threaded spindle	Central lubrication	Gaskets	Gland nut	Fittings	Small gears	Elastomers, plastics	Screw connections	Plug-in connectors	
BERULUB SIHAF 1 Silicone oil/ PTFE	1	3.100 1.200	-40 +160	H1 Halal Kosher	•	•															Special lubricant for lifetime lubrication, especially for plastics and elastomers, contains PTFE	
BERULUB SIHAF 2 Silicone oil/ PTFE	3	3.100 1.200	-40 +160	H1 Halal Kosher	•	•															Special lubricant for lifetime lubrication, especially for plastics and elastomers, compatible with froth, contains PTFE	
BERUSOFT 15 PAO/ Polyurea	1	900 100	-40 +150	H2	•	•	•	•													Special grease for noise damping, excellent compatibility with elastomers, good resistance to oxidation, low oil separation	
BERUSOFT 20 PAO/ Polyurea	0-1*	1.400 150	-40 +150	H2	•		•	•	•	•	•	•									See BERUSOFT 15 , with higher base oil viscosity, softer consistency and different solid lubricants	
BERUTEMP 490 RS Mineral oil/ Polyurea	1-2	490 32	-20 +180	H2	-	•	•	•	•												Long-term lubricating grease with excellent consistency/temperature properties and EP-properties, high corrosion protection, e.g. for pellet presses in the wood processing industry	
BERUTEMP 500 G 2 PFPE/ Gel	2	510 45	-35 +260 +280	H1 Halal	-	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	High-temperature and long-life lubricant for ejector pins/slides (plastic industry) and plain bearings, compatible with plastics and elastomers, UV tracer	
BERUTEMP 500 T 2 PFPE/ PTFE	2	510 45	-20 +260 +280	H1 Halal Kosher	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	High-temperature lubricant, high wear and corrosion protection, resistant to acids, leaches, disinfectants, compatible with plastics	
BERUTOX FH 28 KN PAO/ Polyurea	1-2	400 40	-30 +180 +200	H2	-	•	•	•	•	•	•	•	•	•	•						For the lubrication of roller and plain bearings to reduce friction and wear even at high temperatures and loads	
BERUTOX VPT 54-1 PFPE/ PTFE	1	210 20	-30 +230	H1 Halal	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Reduction of friction and wear at high temperatures, suitable for all sliding speeds permitted for grease lubrication	
BERUTOX VPT 54-2 PFPE/ PTFE	2	210 20	-30 +230	H1 Halal	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	See BERUTOX VPT 54-1 , higher consistency	

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

for pictograms see last page



MORE PERFORMANCE, MORE SECURITY

The lubricant series **BERUSYNTH H1** offers various advantages and has delivered optimal performance in food grade applications and tests.

Advantages of the **BERUSYNTH H1** oil series:

- Viscosity grades meet with the requirements of the machine manufacturers as well as with the DIN and ISO standards
- Number of products is reduced to a minimum thanks to multifunctional properties
- Product is free from mineral oil
- Product is free from ester
- Neutral towards conventional seals and paints
- Miscible and compatible with remaining quantities of conventional, mineral-oil based lubricants
- The individual viscosity grades are miscible with each other
- **BERUSYNTH H1** oils offer extremely long service life

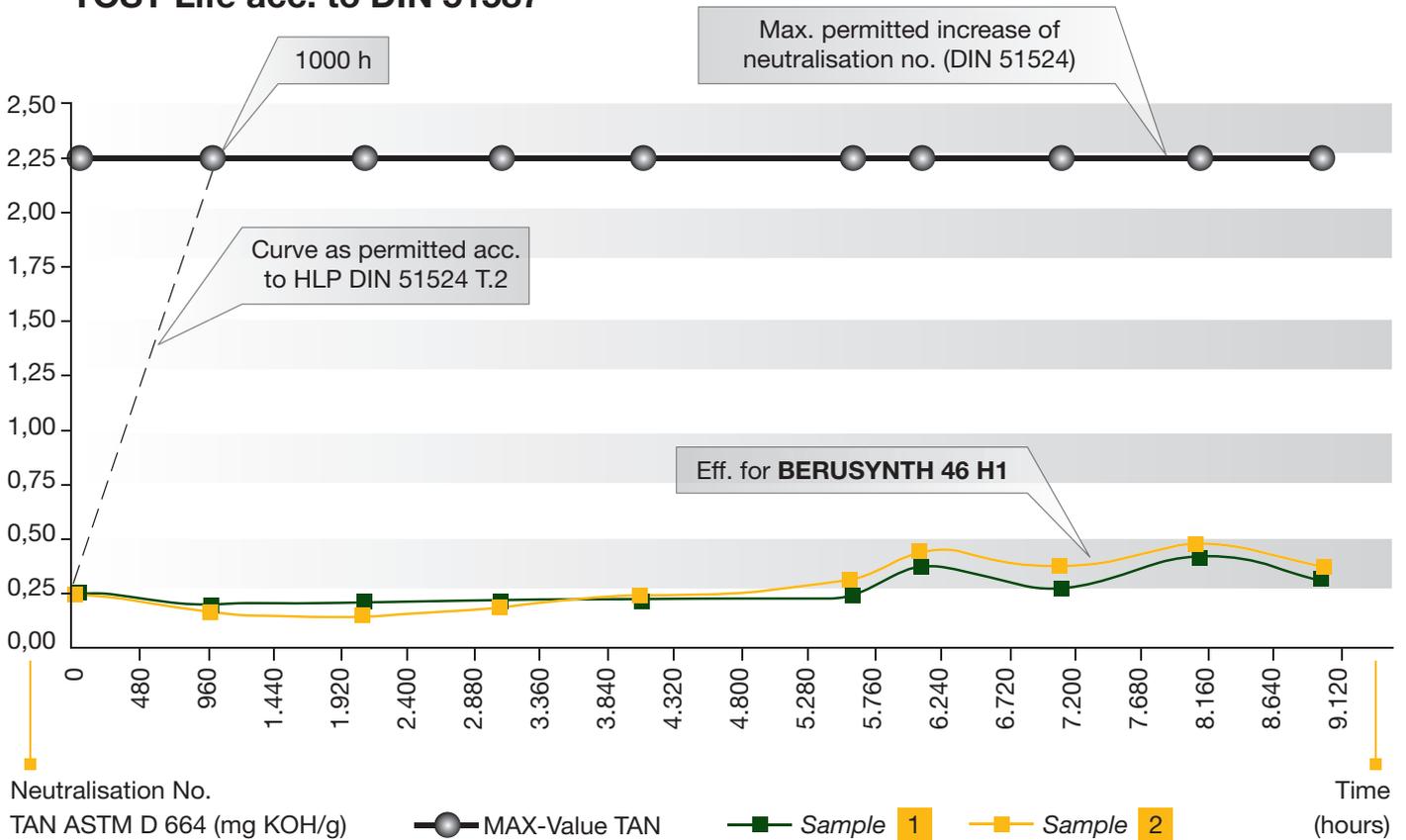


Excellent ageing resistance

The ageing behaviour of industrial lubricating oils is an essential performance criterion which can be determined according to different standards. To characterise the ageing behaviour of a vapour turbine and hydraulic oil the increase in neutralisation number during max. 1000 h when treating the oil with oxygen in the presence of water, steel and copper is determined (DIN 51587).

The below represented change in the neutralisation number during the test run shows that a conventional hydraulic oil achieves the neutralisation number* of 2.25 mg KOH/g already after 1000 hours.

Ageing test of BERUSYNTH 46 H1
TOST Life acc. to DIN 51587



* Neutralisation number:
 Quantity (in mg) of caustic potash (KOH) which is required for the neutralisation of acid and alkaline ingredients contained in 1 g oil.

LUBRICATING OILS FOR THE FOOD PROCESSING AND PHARMACEUTICAL INDUSTRY

PRODUCT	TECHNICAL DATA								APPLICATIONS														Properties				
	Base oil	Base oil viscosity (mm ² /s) at 40 °C / 100 °C		Viscosity index	Pourpoint (°C)	Flash point (°C)	Approval	Type	Circulating lubrication	Hydraulics	Planetary gear	Spur gear	Small-wheel and bevel gear	Transport and drive chains	Central lubrication	Dough divider	Pneumatic service unit	Vacuum pumps	Plastics and elastomers	Screw compressors	Reciprocating compressor	Flat and mesh belt lubrication		Cleaner	Heat transmission		
BECHEM PLANTFLUID	Native oils	42 9,3	225	-15	340	H1 Halal	E																				High-temperature lubricant for continuous ovens, transparent, reliable protection against corrosion, eliminates squeaking noises, prevents stiffening of conveyor belts
BECHEM STAROIL HTO 32 H1	Medical white oil	35 6	115	-5	200	H1	AN																				Heat transfer oil for indirect heating of drying channels, autoclaves, calenders, chipboard presses, stentering frames, vulcanising tanks, tank heatings, etc.
BERUCLEAN ECO	-	-	-	-	≥65	H1 Halal	Cleaner																				Universal cold cleaning agent, removes oil and grease contaminations as well as waxes, resins, bitumen, tar and oil carbon, as well as paints and colours which have not yet hardened
BERUDRAW 3985	Native oils	250 20	85	-35	230	H1 Halal	E																				Mineral oil free drawing and chain oil on native ester basis, high lubricating performance, allows optimal individual deformations in forming operations, ideal for the lubrication of proofer chains in industrial bakeries
BERUFLUID WO	Medical white oil	17 -	-	-20	180	H1	AN																				Medical white oil, neutral in smell and taste, water repellent, protection against corrosion, resin and acid free, medaically compatible, eliminates squeaking noises, removes dirt, high creeping capacity, to lubricate the guidebars of dough dividers
BERULUB FLUID W+B	Medical white oil	70 8,5	105	-18	225	H1	AN																				Multifunctional oil, neutral in smell and taste, water repellent, corrosion protection, removes dirt and rust, resin and acid free, medically compatible (DAB 10), ideal for chains in flour-dust surroundings
BERUSIL SM 350	Silicone oil	270 (25 °C) 110	40	-45	300	H1 Halal	AN																				Silicone oil, physiologically harmless, wide service temperature range, excellent plastics and elastomer compatibility, good wetting behaviour, good thermal and oxidation stability
BERUSYNTH CG 370 H1	Polyglycol	370 -	-	-	>200	H1	PG with Graphite																				Synthetic high-temperature chain oil, at +200 °C as fluid lubricant, at higher temperatures the synthetic carrier fluid evaporates without leaving any residues, the remaining dry lubricating film guarantees reliable lubrication at temperatures up to +650 °C
BERUSYNTH CU 250	Ester	250 25	125	-45	≥250	H2	E																				High-temperature chain oil, wide temperature range, very good wetting and creeping properties, hot and cold water resistant, good protection against corrosion, no formation of critical residues, NSF-H2 approval
BERUSYNTH MV 46 H1	Synthetic oil combination	46 6,8	110	-55	240	H1 Halal	HLP HC																				High-performance hydraulic oil for hydraulic applications, especially suitable for machines with magnetic valves
BERUSYNTH MV 68 H1	Synthetic oil combination	68 8	85	-45	200	H1 Halal	HLP																				See BERUSYNTH MV 46 H1 , higher base oil viscosity
BECHEM PARAFFINUM SUBLIQUIDUM	Medical white oil	70 8,5	105	-10	260	H1, H3, 3H Halal	AN																				Medical white oil according to DAB 10 and Food and Drug Administration (FDA Regulation 21 CFR 178.878, 178.3620)

for pictograms see last page



SPRAYS FOR THE FOOD PROCESSING AND PHARMACEUTICAL INDUSTRY

PRODUCT	TECHNICAL DATA						APPLICATIONS						Properties
	Base oil	Thickener	Base oil viscosity (mm ² /s) at 40 °C	Viscosity index	Service temperature range (°C)	Approval	General oil lubricating point	Ball and roller bearings	Transport- and drive chains	Rust dissolver	Plastics and elastomers	Cleaner	
BERUCLEAN H1 SPRAY	-	-	-	-	-	H1						•	Fat solvent and brake cleaner, evaporates without leaving any residues, removes all types of oil and grease contaminations as well as not yet hardened coatings and paints
BERUGLIDE SPRAY	PFPE	PTFE	160		-40 +190	H1	•	•				•	Fully synthetic special grease, resistant to oxidation as well as to aggressive media and environmental influences, high compatibility with construction materials, such as elastomers, polymers, (non-ferrous) metals
BERULUB FG-H 2 EP SPRAY	PAO	Special Ca-complex soap	150		-40 +160	H1	•	•					High-performance lubricant, very wide service temperature range, high load carrying capacity as well as good corrosion protection, multifunctional use, reduces the number of products used in maintenance, good adhesion and sealing effect, largely resistant to hot and cold water
BERULUB GD 50 H1 SPRAY	-	-	-	-	-	H1	•					•	Multifunctional rust solvent with additional lubricating and anti-corrosion properties, excellent creeping properties, removes rust and strong contaminations even at points difficult to access
BERULUB SPRAY W+B	Medical white oil	-	70	105	-18 +120	H1	•		•	•		•	Neutral in smell and taste, water repellent, excellent creeping properties, protects machine elements against corrosion, removes dirt and rust, ideal for chains in flour-dust surroundings, resin and acid free, medically compatible
BERUSIL P 140 SPRAY	Silicone oil	-	270	460	-40 +250	H1	•		•			•	High-performance antiseize, assembly and maintenance product for various materials, especially for non-ferrous metals, plastics and elastomers
BERUSYNTH 1000 H1 SPRAY	PAO	-	1.000	165	-35 +200	H1	•		•				Fully synthetic adhesive high-performance chain oil spray, forms a transparent and well adhesive lubricating film with EP properties on the friction point, excellent protection against wear and corrosion
BERUSYNTH H1 SPRAY	PAO	-	100	140	-50 +200	H1	•		•				High-performance adhesive chain oil spray, forms a physiologically harmless, transparent lubricating film, good adhesive properties, high load carrying capacity, solvent free

APPLICATIONS

- Roller bearings 
- Plain bearings 
- Closed gears 
- Hydraulic 
- Chains 
- Thread lubrication 
- Sanitary fittings 
- Industrial fittings 
- Deep drawing 
- Automotive industry 

ATTRIBUTES

- High temperatures 
- Low temperatures 
- High loads 
- Good pumpability 
- Resistant to water 
- Noise damping 
- Compatible with plastics 
- Corrosion protection 
- Cleaning agent 
- Available in aerosols 
- Product in aerosols 



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

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.

