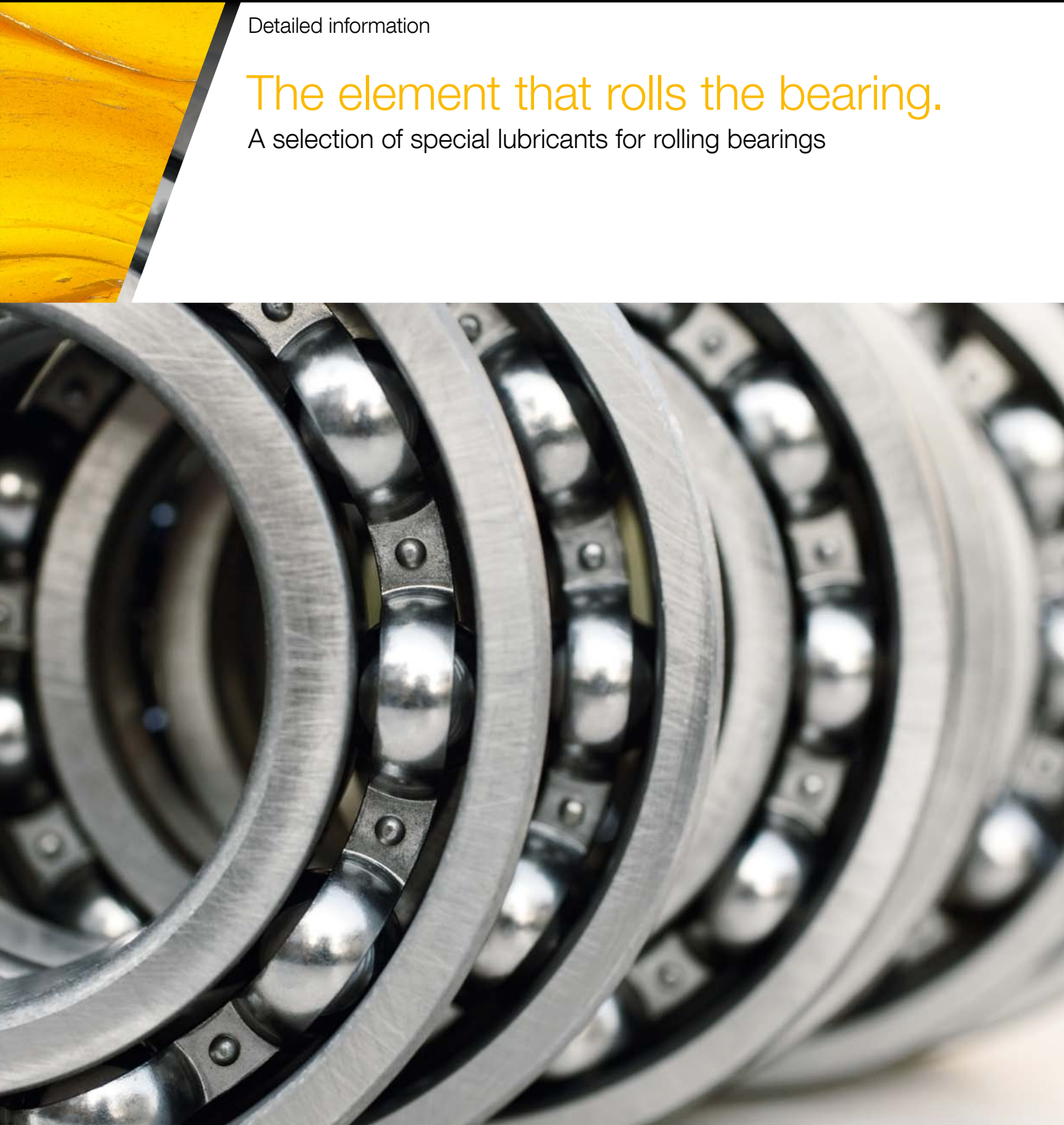


your global specialist

Detailed information

## The element that rolls the bearing.

A selection of special lubricants for rolling bearings





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# Klüber speciality lubricants – always a good choice

## **Quality put to the test**

- Klüber Lubrication has more than 110 test rigs, which include standardised equipment as well as tools Klüber Lubrication has developed to regularly test the quality of its products.
- Test results prove the high quality level and provide you with a solid basis for selecting the right lubricant.
- You can obtain products made by Klüber Lubrication in consistent quality at our production plants worldwide.

## **Benefit from experience**

- Close cooperation with OEMs and operators since 1929
- Series supplier to many OEMs on all continents
- OEMs in all industries recommend Klüber lubricants for their components
- Alliances with partner companies for maximum user benefit
- The product range comprises oils, greases, pastes, waxes and bonded coatings, so the right lubricant for any application can be selected.

## **Time is money – we help to save you both by enabling**

- Optimised processes
- Higher productivity
- Compliance with legal requirements and quality standards
- Reduction of maintenance times and repair costs
- Development partnerships giving you a head-start in innovation and differentiating yourself from the competition

## **Humans and the environment – what really counts**

- Products that last a lifetime and enable minimum-quantity lubrication to be used help to save resources and reduce disposal quantities.
- Speciality lubricants optimised for higher efficiency reduce energy consumption and hence CO<sub>2</sub> emission.
- Clean, safe products that are easy to handle are the fundamental criteria used in the lubricant development by the Klüber experts.

## **KlüberServiceSystem - consultation, training & monitoring**

- Comprehensive consulting and technical support
- Development of plant lubrication charts
- Automatic lube point monitoring
- Analysis of your used lubricants and components
- Klüber Asset Support at your facility
- Tailor-made training for your staff

# High-temperature greases

Upper service temp.	Speed factor n·dm [min <sup>-1</sup> ·mm], approx.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
260 °C 500 °F	600 000	-50 °C -58 °F	190	34	265 to 295	PFPE	PTFE	white
260 °C 500 °F	300 000	-40 °C -40 °F	420	40	265 to 295	PFPE	PTFE	white
220 °C 428 °F	300 000	-20 °C -4 °F	420 <sup>3)</sup>	34 <sup>3)</sup>	265 to 295	ester oil, PFPE	polyurea, solid lubricant	beige
200 °C 392 °F	1 000 000	-50 °C -58 °F	110	26.5	265 to 295	PFPE	PTFE	white
200 °C 392 °F	1 000 000	-40 °C -40 °F	130 <sup>3)</sup>	20 <sup>3)</sup>	240 to 270	PFPE, ester oil	PTFE, polyurea	beige
200 °C 392 °F	500 000	-40 °C -40 °F	400	40	280 to 310	synthetic hydrocarbon	polyurea	light beige

1) Product colours may vary depending on the materials used.

2) This lubricant is NSF H1 registered and was developed for incidental contact with products and packaging materials in the food-processing, cosmetics, pharmaceutical or animal feed industries. The use of this lubricant can contribute to increase safety of your production processes. We nevertheless recommend conducting an additional risk analysis, e.g. HACCP.

3) The base oil viscosity stated herein is based on calculation as base oils are not miscible.



Product	Article number	Description/ application examples
BARRIERTA KM 192	090122	<ul style="list-style-type: none"> <li>- Wide service temperature range</li> <li>- Very good corrosion protection</li> <li>- Long service life under extreme alternating operating temperatures</li> </ul>
BARRIERTA L 55/2	090013	<ul style="list-style-type: none"> <li>- The long-life grease for rolling bearings operating at high temperatures</li> <li>- Very good long-term stability</li> <li>- Very good corrosion protection</li> <li>- Approved and recommended by many OEMs</li> <li>- Registered for use in the food processing industry according to NSF H1<sup>2)</sup></li> </ul>
Klübersynth BH 72-422	094072	<ul style="list-style-type: none"> <li>- Patented hybrid grease concept for the long-term lubrication of slow, large rolling bearings, plain bearings and slideways</li> <li>- Enables direct grease application on thin anticorrosion films, removing the need for initial cleaning</li> </ul>
Klüberalfa BF 83-102	090127	<ul style="list-style-type: none"> <li>- The PFPE smooth-running grease for high temperatures and speeds</li> <li>- Offers the highest speed factor for this type of grease</li> <li>- Excellent compatibility - typical of PFPE - with commercial elastomers and plastics</li> </ul>
Klübersynth BHP 72-102	094102	<ul style="list-style-type: none"> <li>- Patented hybrid grease concept for long-term lubrication</li> <li>- Extended service life also in wet and corrosive environments and in vibration applications, e.g. vehicle construction</li> <li>- In many cases, enables direct grease application on thin anticorrosion films, removing the need for initial lubrication</li> </ul>
Klübersynth HB 74-401	004282	<ul style="list-style-type: none"> <li>- For long-term lubrication over a wide temperature range</li> <li>- Good wear and corrosion protection</li> <li>- Preferred choice for rolling and plain bearings operating under high loads, e.g. in the steel, cement or paper industry</li> </ul>

# High-temperature greases

Upper service temp.	Speed factor n·dm [min <sup>-1</sup> ·mm], approx.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
180 °C 356 °F	1 000 000	-40 °C -40 °F	80	11	250 to 280	ester oil	polyurea	beige
180 °C 356 °F	1 000 000	-40 °C -40 °F	80	11	250 to 280	ester oil	polyurea	beige
180 °C 356 °F	1 000 000	-30 °C -22 °F	55	8.8	280 to 310	ester oil	polyurea	whitish pink
180 °C 356 °F	700 000	-40 °C -40 °F	97.5	14	265 to 295	ester oil	polyurea	beige
160 °C 320 °F	500 000	-30 °C -22 °F	165	18	265 to 295	mineral oil, synthetic hydro- carbon	polyurea	light beige - light brown

1) Product colours may vary depending on the materials used.



Product	Article number	Description/ application examples
Klübersynth BEP 72-82	094092	<ul style="list-style-type: none"> <li>- For motor vehicle applications, e.g. pulleys, generators, clutch release bearings</li> <li>- Excellent corrosion protection</li> <li>- Long bearing life due to wear protection additives preventing premature material fatigue caused by vibration, high temperatures and high speeds</li> </ul>
Klübersynth BQP 72-82	094116	<ul style="list-style-type: none"> <li>- For application in small electric motors, e.g. in fan bearings and windshield wiper motors</li> <li>- Excellent corrosion protection</li> <li>- Long bearing life due to wear protection additives preventing premature material fatigue caused by vibration, high temperatures and high speeds</li> </ul>
Klübersynth HB 72-52	094028	<ul style="list-style-type: none"> <li>- For the long-term lubrication of EPDM materials</li> <li>- For electric motor bearings in ABS systems</li> </ul>
Klübersynth HB 72-102	094068	<ul style="list-style-type: none"> <li>- For long-term lubrication within a wide service temperature range</li> <li>- Very good corrosion protection</li> <li>- For clutch release bearings in motor vehicles</li> </ul>
PETAMO GHY 133 N	094061	<ul style="list-style-type: none"> <li>- For the long-term lubrication of, e.g., electric motor bearings, pulley bearings in motor vehicles, water pump bearings, hub units</li> </ul>

# Low-temperature greases

Lower service temp.	Upper service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Speed factor n·dm [min <sup>-1</sup> ·mm], approx.	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
-70 °C -94 °F	110 °C 230 °F	9	2.6	1 000 000	280 to 320	ester oil	lithium soap	light yellow
-65 °C -85 °F	220 °C 428 °F	90	25	300 000	265 to 295	PFPE	PTFE	white

1) Product colours may vary depending on the materials used.





Product	Article number	Description/application examples
ISOFLEX PDL 300 A	004074	– Heavy-duty grease for particularly low temperatures and low friction moments
BARRIERTA KL 092	090123	– High- and low-temperature grease for low running torque at low temperatures and reliable long-term stability under high temperatures and influence of media

# High-purity and low-noise greases



Speed factor n·dm [min <sup>-1</sup> ·mm], approx.	Upper service temp.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
2 000 000	160 °C 320 °F	-40 °C -40 °F	60	9.5	220 to 250	synthetic hydrocarbon, ester oil	polyurea	beige
1 000 000	180 °C 356 °F	-45 °C -49 °F	72	9.5	250 to 280	ester oil	polyurea	beige
1 000 000	150 °C 302 °F	-50 °C -58 °F	25	5	245 to 275	ester oil	lithium soap	beige- light yellow
700 000	180 °C 356 °F	-40 °C -40 °F	100	11	250 to 280	ester oil	polyurea	beige

1) Product colours may vary depending on the materials used.



Product	Article number	Description/application examples
Klüberquiet BQ 74-73 N	094098	<ul style="list-style-type: none"> <li>- For lifetime lubrication</li> <li>- For vertically mounted bearings subject to high speeds and/or with a rotating outer ring</li> </ul>
Klüberquiet BQ 72-72	094008	<ul style="list-style-type: none"> <li>- For lifetime and long-term lubrication at high and low temperatures</li> <li>- For double-sealed and capped rolling bearings</li> <li>- Applied e.g. in electric motors, fans, air conditioning systems and hard disc drives</li> </ul>
Klüberquiet BQ 42-32	094074	<ul style="list-style-type: none"> <li>- For low temperatures and low friction moments</li> <li>- For the lifetime lubrication of double-sealed ball bearings like miniature and instrument bearings</li> </ul>
Klüberquiet BQH 72-102	094023	<ul style="list-style-type: none"> <li>- For the long-term and lifetime lubrication at high temperatures</li> <li>- For double-sealed and capped rolling bearings</li> <li>- Applicable in electric motors, car radiator fans, etc.</li> </ul>

# High-speed and spindle bearing greases



Speed factor n·dm [min <sup>-1</sup> ·mm], approx.	Upper service temp.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
2 300 000	120 °C 248 °F	0 °C 32 °F	30	6	250 to 280	ester oil	lithium soap	beige
2 100 000	120 °C 248 °F	-50 °C -58 °F	22	5	220 to 250	synthetic hydrocarbon, ester oil	polyurea	beige
2 000 000	120 °C 248 °F	-50 °C -58 °F	22	5	250 to 280	ester oil, synthetic hydrocarbon	polyurea	beige
2 000 000	160 °C 320 °F	-40 °C -40 °F	60	9.5	220 to 250	synthetic hydrocarbon, ester oil	polyurea	beige
1 000 000	130 °C 266 °F	-40 °C -40 °F	21	4.5	265 to 295	mineral oil, ester oil, synthetic hydrocarbon	barium complex soap	beige
1 000 000	120 °C 248 °F	-50 °C -58 °F	15	3.5	265 to 295	mineral oil, ester oil	lithium soap	yellow

1) Product colours may vary depending on the materials used.



Product	Article number	Description/ application examples
Klüberspeed BFP 42-32	004271	<ul style="list-style-type: none"> <li>- For hybrid bearings, angular contact ball and cylindrical roller bearings</li> <li>- For horizontal, vertical and inclined mounting positions</li> <li>- For very high speeds</li> </ul>
Klüberspeed BF 72-23	004246	<ul style="list-style-type: none"> <li>- For high-speed spindle bearings</li> <li>- Especially for inclined and vertical, but also for horizontal shafts in machine tools</li> </ul>
Klüberspeed BF 72-22	004043	<ul style="list-style-type: none"> <li>- For high-speed spindle bearings in machine tools</li> <li>- Preferably for horizontal shafts</li> <li>- Very good resistance to water</li> <li>- Very good corrosion protection</li> </ul>
Klüberquiet BQ 74-73 N	094098	<ul style="list-style-type: none"> <li>- For high speeds and vertical mounting position and/or rotating outer ring</li> <li>- For lifetime lubrication</li> </ul>
ISOFLEX NBU 15	004026	<ul style="list-style-type: none"> <li>- The spindle bearing grease for machine tools</li> <li>- Tried and tested over many years and in many applications</li> </ul>
ISOFLEX LDS 18 Special A	004013	<ul style="list-style-type: none"> <li>- Light grease with low starting torque for low temperatures and high speeds in rolling and plain bearings</li> <li>- Applicable e.g. in starter motors, machine tool spindles, textile spindles and spindles in electric utensils</li> <li>- For horizontal shafts only</li> </ul>

# Special greases for the heavy industry

Upper service temp.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
<b>Heavy-duty lubricating greases</b>							
150 °C 302 °F	-10 °C 14 °F	1 500	60	310 to 340	mineral oil	lithium soap, solid lubricant	black-grey
140 °C 284 °F	-20 °C -4 °F	540	28	265 to 295	mineral oil	lithium soap	brown
140 °C 284 °F	-30 °C -22 °F	130	15	265 to 295	synthetic hydrocarbon, mineral oil	lithium special soap, solid lubricant	yellow
<b>Heavy-duty greases for wet processing zones</b>							
160 °C 320 °F	-40 °C -40 °F	400	40	290 to 320	synthetic hydrocarbon	calcium complex soap	brown
140 °C 284 °F	-15 °C 5 °F	220	19	245 to 275	mineral oil	calcium special soap	light brown
140 °C 284 °F	-10 °C 14 °F	500	31	245 to 275	mineral oil	calcium special soap	light brown
130 °C 266 °F	-20 °C -4 °F	220	19	285 to 315	mineral oil	barium complex soap	light brown

1) Product colours may vary depending on the materials used.



Product	Article number	Description / application examples
Klüberlub BE 41-1501	097115	<ul style="list-style-type: none"> <li>- For low speeds</li> </ul>
Klüberlub BE 41-542	020269	<ul style="list-style-type: none"> <li>- For low and medium speeds</li> </ul>
Klüberlub BEM 41-122	020158	<ul style="list-style-type: none"> <li>- For pivoting bearings, plain bearings and rolling bearings subject to high surface pressure and/or oscillating movements</li> <li>- Decreases tribocorrosion by forming tribo-layers</li> </ul>
Klübersynth HBE 94-401	004295	<ul style="list-style-type: none"> <li>- Synthetic special grease for long-term or lifetime lubrication in applications subject to high loads and elevated temperatures</li> <li>- Excellent wear and corrosion protection as well as very good resistance to water</li> </ul>
Klüberplex BE 31-222	017132	<ul style="list-style-type: none"> <li>- For ball bearings subject to high loads in wet processing zones</li> <li>- At medium rotating speed</li> </ul>
Klüberplex BE 31-502	017126	<ul style="list-style-type: none"> <li>- For ball bearings subject to high loads in wet processing zones</li> <li>- For low speeds</li> </ul>
STABURAGS NBU 12/300 KP	017062	<ul style="list-style-type: none"> <li>- Hot water resistant</li> <li>- Long-term grease for rolling and plain bearings</li> <li>- Good pressure absorption capacity</li> <li>- For rolling bearings with high percentages of sliding friction</li> </ul>

# Special greases for other industrial applications

Speed factor n·dm [min <sup>-1</sup> ·mm], approx.	Upper service temp.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
<b>Lubricating greases for oscillating movements</b>								
1 000 000	150 °C 302 °F	-40 °C -40 °F	130	14	310 to 340	synthetic hydrocarbon, mineral oil	lithium special soap	yellow
400 000	140 °C 284 °F	-35 °C -31 °F	130	15.5	265 to 295	synthetic hydrocarbon, mineral oil	calcium special soap	beige- light brown
300 000	140 °C 284 °F	-30 °C -22 °F	290	20	310 to 340	mineral oil	lithium special soap	yellow- brown
<b>Lubricating greases for roller bearings</b>								
1 000 000	160 °C 320 °F	-40 °C -40 °F	48	7.6	245 to 275	ester oil, synthetic hydrocarbon	lithium special soap	yellow- brown
1 000 000	140 °C 284 °F	-40 °C -40 °F	47	8	275 to 305	synthetic hydrocarbon	lithium special soap	beige
600 000	150 °C 302 °F	-50 °C -58 °F	100	14.5	265 to 295	synthetic hydrocarbon	lithium soap	beige

1) Product colours may vary depending on the materials used.





Product	Article number	Description/application examples
Klüberplex BEM 41-141	020320	<ul style="list-style-type: none"> <li>- For heavy-duty rolling and plain bearings</li> <li>- For vibrations and oscillations</li> <li>- Applicable e.g. in main bearings in wind turbines</li> </ul>
Klüberplex BEM 34-132	017141	<ul style="list-style-type: none"> <li>- For the long-term and lifetime lubrication of rolling bearings and linear motion guides</li> <li>- Good wear protection in oscillating and small movements</li> <li>- For applications like car hub units, water pump bearings and shaft bearings in power trains</li> </ul>
MICROLUBE GL 261	20195	<ul style="list-style-type: none"> <li>- For rolling and plain bearings</li> <li>- For vibration and oscillating movements</li> <li>- Good pressure absorption capacity</li> <li>- Good wear protection</li> <li>- Pumpable through auto lubrication systems</li> </ul>
Klübersynth BL 42-42	004264	<ul style="list-style-type: none"> <li>- Optimised oil supply for rolling bearings with linear contact</li> <li>- Product streamlining is possible due to manifold application options enabled by a wide service temperature range</li> </ul>
Klübersynth BM 44-42	004261	<ul style="list-style-type: none"> <li>- For long-term or lifetime lubrication of heavily loaded rolling bearings and ball screws, also for linear contact or small oscillating motion</li> <li>- Tried and tested in automotive applications, e.g. steering systems</li> </ul>
ISOFLEX TOPAS L 152	004144	<ul style="list-style-type: none"> <li>- For medium-sized and large rolling bearings with an elevated percentage of sliding friction</li> <li>- Wide service temperature range, particularly suitable for low temperatures</li> </ul>

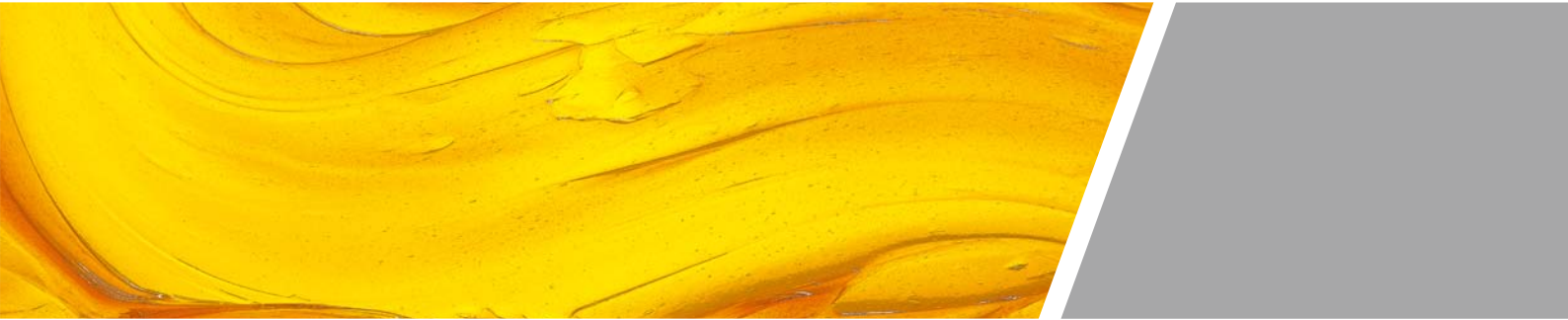
# Greases for food-processing technology and the pharmaceutical industry



Speed factor n·dm [min <sup>-1</sup> ·mm], approx.	Upper service temp.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>
700 000	120 °C 248 °F	-45 °C -49 °F	30	6	310 to 340	synthetic hydrocarbon, ester oil	aluminium complex soap	whitish-yellow
500 000	140 °C 284 °F	-40 °C -40 °F	65	10	265 to 295	ester oil, synthetic hydrocarbon	silicate	beige
500 000	120 °C 248 °F	-45 °C -49 °F	150	22	310 to 340	synthetic hydrocarbon	aluminium complex soap	beige
500 000	120 °C 248 °F	-35 °C -31 °F	300	30	320 to 360	synthetic hydrocarbon	calcium complex soap	beige
300 000	260 °C 500 °F	-40 °C -40 °F	420	40	265 to 295	PFPE	PTFE	white

1) Product colours may vary depending on the materials used.

2) This lubricant is NSF H1 registered and was developed for incidental contact with products and packaging materials in the food-processing, cosmetics, pharmaceutical or animal feed industries. The use of this lubricant can contribute to increase safety of your production processes. We nevertheless recommend conducting an additional risk analysis, e.g. HACCP.



Product <sup>2)</sup>	Article number	Description/application examples
Klübersynth UH1 14-31	096029	<ul style="list-style-type: none"> <li>- Smooth running grease</li> <li>- Particularly suitable for low temperatures</li> <li>- Good water resistance</li> <li>- Good corrosion protection</li> <li>- Good pumpability characteristics in central lubrication systems</li> </ul>
Klübersynth UH1 64-62	096046	<ul style="list-style-type: none"> <li>- Good resistance to high and low temperatures</li> <li>- Good water resistance</li> <li>- Good corrosion protection</li> <li>- For the long-term lubrication of e.g. rolling bearings, joints, lifting cylinders, cam discs</li> <li>- NSF ISO 21469-certified. Supports compliance with the hygienic requirements of your production</li> </ul>
Klübersynth UH1 14-151	096037	<ul style="list-style-type: none"> <li>- Very good low-temperature characteristics</li> <li>- Good wear protection</li> <li>- Less susceptible to corrosion and premature bearing failure due to good water resistance</li> <li>- For medium rotating speeds</li> <li>- NSF ISO 21469-certified. Supports compliance with the hygienic requirements of your production</li> </ul>
Klüberfood NH1 94-301	096105	<ul style="list-style-type: none"> <li>- Good wear protection and good load-carrying capacity</li> <li>- Good water resistance</li> <li>- Good corrosion protection</li> <li>- For the long-term lubrication of rolling bearings and linear guides, also when performing micromovements</li> <li>- Good pumpability in centralised lubricating systems</li> </ul>
BARRIERTA L 55/2	090013	<ul style="list-style-type: none"> <li>- The long-life grease for high-temperature rolling bearings</li> <li>- Very good long-term stability</li> <li>- Very good corrosion protection</li> <li>- Approved and recommended by many OEMs</li> <li>- NSF ISO 21469-certified. Supports compliance with the hygienic requirements of your production</li> </ul>

# Electroconductive lubricating greases

Electric resistance based on DIN 53482 <sup>2)</sup> [ $\Omega \times \text{cm}$ ]	Upper service temp.	Lower service temp.	Base oil viscosity DIN 51562 [ $\text{mm}^2/\text{s}$ ] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [ $\text{mm}^2/\text{s}$ ] at approx. 100 °C / 212 °F	Speed factor n·dm [ $\text{min}^{-1} \cdot \text{mm}$ ], approx.	Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener
≤ 10 000	150 °C 302 °F	-40 °C -40 °F	150	19	1 000 000	280 to 295	synthetic hydrocarbon	lithium soap, solid lubricant

1) Product colours may vary depending on the materials used.

2) Spark gap 1 cm, electrode surface 1 cm<sup>2</sup>



Colour <sup>1)</sup>	Product	Article number	Description/application examples
black	Klüberlectric BE 44-152	091053	– For the long-term lubrication of rolling bearings subject to static electricity, e.g. in electric motors, paper making machines, copying machines, film stretchers, guides in belt conveyors and fans

# Cleaning and protecting rolling bearings



Description/application examples	Solvent
Solvent and cleansing agent for the cleansing of metallic surfaces	hydrocarbon
Solvent and cleansing agent for pre-cleaning that can be used in order to achieve optimum adhesion for the subsequent application of PFPE / PTFE-based grease	PFPE

Description/application examples	Base oil	Thickener
Anticorrosion fluid with lubricating effect for rolling bearings offering good wear protection in case of micro-movements	synthetic hydrocarbon	lithium soap
Synthetic lubricating and corrosion protection oil for the protection of rolling bearings	ester oil, synthetic hydrocarbon	without
PFPE-based anticorrosion fluid for bearing protection. Can be followed by PFPE/PTFE greases without pre-cleaning.	PFPE	without

1) Product colours may vary depending on the materials used.



Colour <sup>1)</sup>	Product	Article number
colourless	Klüber Metallreiniger SMR-Spray	081244
colourless, clear	Klüberalfa XZ 3-1	810033

Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / approx. 104 °F	Colour <sup>1)</sup>	Product	Article number
40	beige, milky	Klübersynth BZ 44-4000	047076
20	brown, clear	Klübersynth MZ 4-17	047122
–	colourless, clear	Klüberalfa XZ 3-3	810036

# Assembly pastes

Description/application examples	Upper service temp.	Lower service temp.	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 40 °C / 104 °F	Base oil viscosity DIN 51562 [mm <sup>2</sup> /s] at approx. 100 °C / 212 °F
High-temperature lubricating paste for the assembly of rolling bearings and positive connections. Above 200 °C/392 °F it acts as a dry lubricant. Makes dismantling easier	1 000 °C 1 832 °F	-40 °C -40 °F	42	10
Fretting corrosion-preventing lubricating and assembly paste with solid lubricants that is suitable for pressing on and pressing in of rolling bearings	150 °C 302 °F	-15 °C 5 °F	46	6.5
White lubricating and assembly paste for applications in the food-processing, cosmetics, pharmaceutical and animal feed industries <sup>2)</sup>	120 °C 248 °F	-45 °C -49 °F	200	75

1) Product colours may vary depending on the materials used.

2) This lubricant is NSF H1 registered and was developed for incidental contact with products and packaging materials in the food-processing, cosmetics, pharmaceutical or animal feed industries. The use of this lubricant can contribute to increase safety of your production processes. We nevertheless recommend conducting an additional risk analysis, e.g. HACCP.





Worked penetration DIN ISO 2137 [0.1 mm], approx.	Base oil	Thickener	Colour <sup>1)</sup>	Product	Article number
325 to 340	ester oil, PAG	combination of solid lubricants	black	Klüberpaste HEL 46-450	089032
250 to 280	mineral oil	calcium complex soap	beige	Klüberpaste ME 31-52	005115
310 to 340	synthetic hydrocarbon	PTFE/solid lubricants	white	Klüberpaste UH1 84-201	005113

## On the intention of this lubricant selection brochure

The intention of this lubricant selection is to provide a logical guide through the Klüber Lubrication specialised product range. The structure of the brochure considers firstly the various application requirements and then leads you toward selection of the appropriate lubricant solution.

Whenever products appear to have similar properties, we highlight the differences in grey in the respective fields to assist with the final product selection. Should you not find a lubricant “tailored” exactly to your requirements we recommend contact with your local Klüber Lubrication representative, who will be able to offer additional assistance with product selection from our extensive lubricant portfolio.

We generally recommend to consult our lubrication experts prior to selecting a lubricant.





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The data in this document is based on our general experience and knowledge at the time of publication and is intended to give information of possible applications to a reader with technical experience. It constitutes neither an assurance of product properties nor does it release the user from the obligation of performing preliminary field tests with the product selected for a specific application. All data are guide values which depend on the lubricant's composition, the intended use and the application method. The technical values of lubricants change depending on the mechanical, dynamical, chemical and thermal loads, time and pressure. These changes may affect the function of a component. We recommend contacting us to discuss your specific application. If possible we will be pleased to provide a sample for testing on request. Klüber products are continually improved. Therefore, Klüber Lubrication reserves the right to change all the technical data in this document at any time without notice.

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## Klüber Lubrication – your global specialist

Innovative tribological solutions are our passion. Through personal contact and consultation, we help our customers to be successful worldwide, in all industries and markets. With our ambitious technical concepts and experienced, competent staff we have been fulfilling increasingly demanding requirements by manufacturing efficient high-performance lubricants for more than 80 years.



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