Detailed information

The element that rolls the bearing.
A selection of special lubricants for rolling bearings
Klüüber 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.

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 CO2 emission.

- Clean, safe products that are easy to handle are the fundamental criteria used in the lubricant development by the Klüber experts.

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.

KlüüberServiceSystem - 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

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

Klüüber speciality lubricants – always a good choice

- High-temperature greases
- Low-temperature greases
- High-purity and low-noise greases
- High-speed and spindle bearing greases
- Special greases for the heavy industry
- Special greases for other industrial applications
- Greases for food-processing technology and the pharmaceutical industry
- Electroconductive lubricating greases
- Cleaning and protecting rolling bearings
- Assembly pastes
- On the intention of this lubricant selection brochure
### High-temperature greases

<table>
<thead>
<tr>
<th>Upper service temp.</th>
<th>Speed factor n·dm</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 40 °C / 104 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 100 °C / 212 °F</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil</th>
<th>Thickener</th>
<th>Colour</th>
<th>Product</th>
<th>Article number</th>
<th>Description/application examples</th>
</tr>
</thead>
</table>
| 260 °C | 500 °F | 600 000 | –50 °C / –58 °F | 100 | 34 | 265 to 295 | PFPE | PTFE | white | BARRIERTA KM 102 | 000122 | – Wide service temperature range  
  – Very good corrosion protection  
  – Long service life under extreme alternating operating temperatures |
| 260 °C | 500 °F | 300 000 | –40 °C / –40 °F | 420 | 40 | 265 to 295 | PFPE | PTFE | white | BARRIERTA L 55/2 | 000013 | – The long-life grease for rolling bearings operating at high temperatures  
  – Very good long-term stability  
  – Very good corrosion protection  
  – Approved and recommended by many OEMs  
  – Registered for use in the food processing industry according to NSF H1  

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 increases 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.

<table>
<thead>
<tr>
<th>Product</th>
<th>Article number</th>
<th>Description/application examples</th>
</tr>
</thead>
</table>
| Klübersynth BH 72-402 | 004072 | Patented hybrid grease concept for the long-term lubrication of slow, large rolling bearings, plain bearings and slideways  
  – Enables direct grease application on thin anticorrosion films, removing the need for initial cleaning |
| Klübersynth BHP 72-102 | 004102 | Patented hybrid grease concept for long-term lubrication  
  – Extended service life also in wet and corrosive environments and in vibration applications, e.g. vehicle construction  
  – In many cases, enables direct grease application on thin anticorrosion films, removing the need for initial lubrication |
| Klübersynth HB 74-401 | 004282 | For long-term lubrication over a wide temperature range  
  – Good wear and corrosion protection  
  – Preferred choice for rolling and plain bearings operating under high loads, e.g. in the steel, cement or paper industry |
## High-temperature greases

<table>
<thead>
<tr>
<th>Upper service temp.</th>
<th>Speed factor n·dm [min⁻¹ · mm], approx.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 40 °C / 104 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 150 °C / 212 °F</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil</th>
<th>Thickener</th>
<th>Colour</th>
<th>Article number</th>
<th>Product</th>
<th>Description/application examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>180 °C / 356 °F</td>
<td>1 000 000</td>
<td>–40 °C / –40 °F</td>
<td>80</td>
<td>11</td>
<td>250 to 290</td>
<td>ester oil</td>
<td>polyurea</td>
<td>beige</td>
<td>Klübersynth SEP 72-52 004022</td>
<td>– For motor vehicle applications, e.g. pulleys, generators, clutch release bearings – Excellent corrosion protection – Long bearing life due to wear protection additives preventing premature material fatigue caused by vibration, high temperatures and high speeds</td>
<td></td>
</tr>
<tr>
<td>180 °C / 356 °F</td>
<td>1 000 000</td>
<td>–40 °C / –40 °F</td>
<td>80</td>
<td>11</td>
<td>250 to 280</td>
<td>ester oil</td>
<td>polyurea</td>
<td>beige</td>
<td>Klübersynth SEP 72-52 004116</td>
<td>– For application in small electric motors, e.g. in fan bearings and windshield wiper motors – Excellent corrosion protection – Long bearing life due to wear protection additives preventing premature material fatigue caused by vibration, high temperatures and high speeds</td>
<td></td>
</tr>
<tr>
<td>180 °C / 356 °F</td>
<td>1 000 000</td>
<td>–30 °C / –22 °F</td>
<td>56</td>
<td>8.8</td>
<td>280 to 310</td>
<td>ester oil</td>
<td>polyurea</td>
<td>whitish pink</td>
<td>Klübersynth HBP 72-52 004028</td>
<td>– For the long-term lubrication of EPDM materials – For electric motor bearings in ABS systems</td>
<td></td>
</tr>
<tr>
<td>180 °C / 356 °F</td>
<td>700 000</td>
<td>–40 °C / –40 °F</td>
<td>97.5</td>
<td>14</td>
<td>265 to 295</td>
<td>ester oil</td>
<td>polyurea</td>
<td>beige</td>
<td>Klübersynth HBP 72-102 004028</td>
<td>– For long-term lubrication within a wide service temperature range – Very good corrosion protection – For clutch release bearings in motor vehicles</td>
<td></td>
</tr>
<tr>
<td>160 °C / 320 °F</td>
<td>500 000</td>
<td>–30 °C / –22 °F</td>
<td>165</td>
<td>18</td>
<td>265 to 295</td>
<td>mineral oil, synthetic hydrocarbon</td>
<td>polyurea</td>
<td>light beige - light brown</td>
<td>PETAMO GHY 133 N 004061</td>
<td>– For the long-term lubrication of, e.g., electric motor bearings, pulley bearings in motor vehicles, water pump bearings, hub units</td>
<td></td>
</tr>
</tbody>
</table>

1) Product colours may vary depending on the materials used.
## Low-temperature greases

<table>
<thead>
<tr>
<th>Lower service temp.</th>
<th>Upper service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx.</th>
<th>Speed factor n·dm [min⁻¹·mm], approx.</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil</th>
<th>Thickener</th>
<th>Colour¹)</th>
<th>Product</th>
<th>Article number</th>
<th>Description/application examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-70 °C / -94 °F</td>
<td>110 °C / 230 °F</td>
<td>9</td>
<td>2.6</td>
<td>1 000 000</td>
<td>ester oil</td>
<td>lithium soap</td>
<td>light yellow</td>
<td>ISOFLEX PDL 300 A</td>
<td>604074</td>
<td>Heavy-duty grease for particularly low temperatures and low friction moments</td>
</tr>
<tr>
<td>-65 °C / -85 °F</td>
<td>220 °C / 428 °F</td>
<td>90</td>
<td>25</td>
<td>300 000</td>
<td>PFPE</td>
<td>PTFE</td>
<td>white</td>
<td>BARRIERTA KL D92</td>
<td>G90123</td>
<td>High- and low-temperature grease for low running torque at low temperatures and reliable long-term stability under high temperatures and influence of media</td>
</tr>
</tbody>
</table>

¹) Product colours may vary depending on the materials used.
## High-purity and low-noise greases

<table>
<thead>
<tr>
<th>Speed factor n·dm [min⁻¹ · mm], approx.</th>
<th>Upper service temp.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 40 °C / 104 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 150 °C / 212 °F</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil Thickener</th>
<th>Colour¹</th>
<th>Product</th>
<th>Article number</th>
<th>Description/application examples</th>
</tr>
</thead>
</table>
| 2 000 000                               | 160 °C / 320 °F     | –40 °C / –40 °F     | 60                                                            | 9.5                                                           | 220 to 250                                                    | polyurea            | beige   | Klüberquiet BQ 74-73 N | 004068 | – For lifetime lubrication  
– For vertically mounted bearings subject to high speeds and/or with a rotating outer ring |
| 1 000 000                               | 160 °C / 320 °F     | –45 °C / –49 °F     | 72                                                            | 9.5                                                           | 250 to 280                                                    | ester oil           | polyurea | Klüberquiet BQ 72-72 | 004008 | – For lifetime and long-term lubrication at high and low temperatures  
– For double-sealed and capped rolling bearings  
– Applied e.g. in electric motors, fans, air conditioning systems and hard disc drives |
| 1 000 000                               | 160 °C / 320 °F     | –50 °C / –58 °F     | 25                                                            | 5                                                            | 246 to 275                                                    | ester oil           | lithium soap | Klüberquiet BQ 42-32 | 004074 | – For low temperatures and low friction moments  
– For the lifetime lubrication of double-sealed ball bearings like miniature and instrument bearings |
| 700 000                                 | 160 °C / 320 °F     | –40 °C / –40 °F     | 100                                                           | 11                                                           | 250 to 280                                                    | ester oil           | polyurea | Klüberquiet BQH 72-102 | 004023 | – For the long-term and lifetime lubrication at high temperatures  
– For double-sealed and capped rolling bearings  
– Applicable in electric motors, car radiator fans, etc. |

¹) Product colours may vary depending on the materials used.
High-speed and spindle bearing greases

<table>
<thead>
<tr>
<th>Speed factor n·dm [min⁻¹·mm], approx.</th>
<th>Upper service temp.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx.</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil Thickener</th>
<th>Colour</th>
<th>Product</th>
<th>Article number</th>
<th>Description/application examples</th>
</tr>
</thead>
</table>
| 2 300 000                             | 120 °C / 248 °F     | 0 °C / 32 °F        | 30                                            | 6                                             | 250 to 280                                       | ester oil        | lithium soap | Klüberspeed BFP 42-32 004271   | 001 – For hybrid bearings, angular contact ball and cylindrical roller bearings  
<– For horizontal, vertical and inclined mounting positions  
<– For very high speeds |
| 2 100 000                             | 120 °C / 248 °F     | –50 °C / –58 °F     | 22                                            | 5                                             | 220 to 250                                      | polyurea         | beige          | Klüberspeed BF 72-23 004246    | 002 – For high-speed spindle bearings  
<– Especially for inclined and vertical, but also for horizontal shafts in machine tools |
| 2 000 000                             | 120 °C / 248 °F     | –50 °C / –58 °F     | 22                                            | 5                                             | 250 to 280                                      | ester oil, synthetic hydrocarbon | polyurea | beige          | Klüberspeed BF 72-22 004043    | 003 – For high-speed spindle bearings in machine tools  
<– Preferably for horizontal shafts  
<– Very good resistance to water  
<– Very good corrosion protection |
| 2 000 000                             | 160 °C / 320 °F     | –40 °C / –40 °F     | 60                                            | 9.5                                           | 220 to 250                                      | polyurea         | beige          | Klüberquiet BQ 74-73 N 004098   | 004 – For high speeds and vertical mounting position and/or rotating outer ring  
<– For lifetime lubrication |
| 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          | ISOFLEX NBU 15 004026          | 005 – The spindle bearing grease for machine tools  
<– Tried and tested over many years and in many applications |
| 1 000 000                             | 120 °C / 248 °F     | –50 °C / –58 °F     | 15                                            | 3.5                                           | 265 to 295                                      | mineral oil, ester oil | lithium soap | yellow          | ISOFLEX LDS 18 Special A 00413  | 006 – Light grease with low starting torque for low temperatures and high speeds in rolling and plain bearings  
<– Applicable e.g. in starter motors, machine tool spindles, textile spindles and spindles in electric utensils  
<– For horizontal shafts only |

1) Product colours may vary depending on the materials used.
## Special greases for the heavy industry

<table>
<thead>
<tr>
<th>Upper service temp.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 40 °C / 104 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 150 °C / 212 °F</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil</th>
<th>Thickener</th>
<th>Colour¹</th>
<th>Product</th>
<th>Article number</th>
<th>Description / application examples</th>
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<tbody>
<tr>
<td><strong>Heavy-duty lubricating greases</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150 °C / 302 °F</td>
<td>–10 °C / 14 °F</td>
<td>1 500</td>
<td>60</td>
<td>310 to 340</td>
<td>mineral oil</td>
<td>lithium soap, solid lubricant</td>
<td>black-gray</td>
<td>Klüberlub BE 41-1501</td>
<td>007115</td>
<td>For low speeds</td>
</tr>
<tr>
<td>140 °C / 284 °F</td>
<td>–23 °C / –4 °F</td>
<td>540</td>
<td>28</td>
<td>265 to 295</td>
<td>mineral oil</td>
<td>lithium soap</td>
<td>brown</td>
<td>Klüberlub BE 41-542</td>
<td>002089</td>
<td>For low and medium speeds</td>
</tr>
<tr>
<td>140 °C / 284 °F</td>
<td>–30 °C / –22 °F</td>
<td>130</td>
<td>15</td>
<td>265 to 295</td>
<td>synthetic hydrocarbon, mineral oil</td>
<td>lithium special soap, solid lubricant</td>
<td>yellow</td>
<td>Klüberlub BEM 41-122</td>
<td>002158</td>
<td>For pivoting bearings, plain bearings and rolling bearings subject to high surface pressure and/or oscillating movements. Decreases tribocorrosion by forming tribo-layers</td>
</tr>
<tr>
<td><strong>Heavy-duty greases for wet processing zones</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>160 °C / 320 °F</td>
<td>–40 °C / –40 °F</td>
<td>400</td>
<td>40</td>
<td>290 to 320</td>
<td>synthetic hydrocarbon</td>
<td>calcium complex soap</td>
<td>brown</td>
<td>Klüberlub BEM 31-061</td>
<td>004295</td>
<td>Synthetic special grease for long-term or lifetime lubrication in applications subject to high loads and elevated temperatures. Excellent wear and corrosion protection as well as very good resistance to water</td>
</tr>
<tr>
<td>140 °C / 284 °F</td>
<td>–15 °C / 5 °F</td>
<td>220</td>
<td>19</td>
<td>245 to 275</td>
<td>mineral oil</td>
<td>calcium special soap</td>
<td>light brown</td>
<td>Klüberplex BE 31-222</td>
<td>017132</td>
<td>For ball bearings subject to high loads in wet processing zones. At medium rotating speed</td>
</tr>
<tr>
<td>140 °C / 284 °F</td>
<td>–10 °C / 14 °F</td>
<td>550</td>
<td>31</td>
<td>245 to 275</td>
<td>mineral oil</td>
<td>calcium special soap</td>
<td>light brown</td>
<td>Klüberplex BE 31-502</td>
<td>017126</td>
<td>For ball bearings subject to high loads in wet processing zones. For low speeds</td>
</tr>
<tr>
<td>130 °C / 266 °F</td>
<td>–20 °C / –4 °F</td>
<td>220</td>
<td>19</td>
<td>285 to 315</td>
<td>mineral oil</td>
<td>barium complex soap</td>
<td>light brown</td>
<td>STABURAGS NBU 12/300 KP</td>
<td>017062</td>
<td>Hot water resistant. Long-term grease for rolling and plain bearings. Good pressure absorption capacity. For rolling bearings with high percentages of sliding friction</td>
</tr>
</tbody>
</table>

¹) Product colours may vary depending on the materials used.
### Special greases for other industrial applications

#### Lubricating greases for oscillating movements

<table>
<thead>
<tr>
<th>Speed factor n·dm [min⁻¹ · mm], approx.</th>
<th>Upper service temp.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 40 °C / 104 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 100 °C / 212 °F</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil</th>
<th>Thickener</th>
<th>Colour¹)</th>
<th>Product</th>
<th>Article number</th>
<th>Description/application examples</th>
</tr>
</thead>
</table>
| 1 000 000 | 150 °C / 302 °F | –40 °C / –40 °F | 130 | 14 | 310 to 340 | synthetic hydrocarbon, mineral oil | lithium special soap | yellow | Klüberplex BEM 41-141 | 000310 | – For heavy-duty rolling and plain bearings
– For vibrations and oscillations
– Applicable e.g. in main bearings in wind turbines |
| 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 | Klüberplex BEM 34-132 | 017141 | – For the long-term and lifetime lubrication of rolling bearings and linear motion guides
– Good wear protection in oscillating and small movements
– For applications like car hub units, water pump bearings and shaft bearings in power trains |
| 300 000 | 140 °C / 284 °F | –30 °C / –22 °F | 200 | 20 | 310 to 340 | mineral oil | lithium special soap | yellow-brown | MICROLUBE GL 261 | 20165 | – For rolling and plain bearings
– For vibration and oscillating movements
– Good pressure absorption capacity
– Good wear protection
– Pumpable through auto lubrication systems |

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Greases for food-processing technology and the pharmaceutical industry

<table>
<thead>
<tr>
<th>Speed factor n·dm [min^{-1} · mm], approx.</th>
<th>Upper service temp.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 100 °C / 212 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 150 °C / 302 °F</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil Thickener Colour1)</th>
<th>Product2)</th>
<th>Article number</th>
<th>Description / application examples</th>
</tr>
</thead>
</table>
| 700 000                                  | 120 °C / 248 °F     | –45 °C / –90 °F     | 30                              | 6                               | 310 to 340                     | synthetic hydrocarbon, ester oil | aluminium complex soap | whitish-yellow | Klübersynth UH1 14-31 | – Smooth running grease  
– Particularly suitable for low temperatures  
– Good water resistance  
– Good corrosion protection  
– Good pumpability characteristics in central lubrication systems |
| 800 000                                  | 140 °C / 284 °F     | –40 °C / –40 °F     | 65                              | 10                             | 265 to 295                     | water oil, synthetic hydrocarbon | silicate | beige | Klübersynth UH1 64-62 | – Good resistance to high and low temperatures  
– Good water resistance  
– Good corrosion protection  
– For the long-term lubrication of e.g. rolling bearings, joints, lifting cylinders, cam discs  
– NSF ISO 21469-certified. Supports compliance with the hygienic requirements of your production |
| 800 000                                  | 120 °C / 248 °F     | –45 °C / –90 °F     | 150                             | 22                             | 310 to 340                     | synthetic hydrocarbon           | aluminium complex soap | beige | Klübersynth UH1 14-151 | – Very good low-temperature characteristics  
– Good wear protection  
– Less susceptible to corrosion and premature bearing failure due to good water resistance  
– For medium rotating speeds  
– NSF ISO 21469-certified. Supports compliance with the hygienic requirements of your production |
| 500 000                                  | 120 °C / 248 °F     | –35 °C / –31 °F     | 300                             | 30                             | 320 to 360                     | synthetic hydrocarbon           | calcium complex soap | beige | Klüberfood NH1 94-301 | – Good wear protection and good load-carrying capacity  
– Good water resistance  
– Good corrosion protection  
– For the long-term lubrication of rolling bearings and linear guides, also when performing micromovements  
– Good pumpability in centralised lubricating systems |
| 300 000                                  | 200 °C / 392 °F     | –40 °C / –40 °F     | 420                             | 40                             | 265 to 295                     | PRPE                   | PTFE    | 090013 | – The long-life grease for high-temperature rolling bearings  
– Very good long-term stability  
– Very good corrosion protection  
– Approved and recommended by many OEMs  
– NSF ISO 21469-certified. Supports compliance with the hygienic requirements of your production |

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, cosmetic, 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.
### Electroconductive Lubricating Greases

<table>
<thead>
<tr>
<th>Electric resistance based on DIN 53482[^2] (Ω x cm)</th>
<th>Upper service temp.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 45 °C / 104 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 150 °C / 212 °F</th>
<th>Base oil penetration DIN ISO 2157 [0.1 mm], approx.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 100 °C / 212 °F</th>
<th>Base oil Speed factor n·dm [min⁻¹-mm], approx.</th>
<th>Worked penetration DIN ISO 2157 [0.1 mm], approx.</th>
<th>Speed factor n·dm [min⁻¹-mm], approx.</th>
<th>Base oil Thickener</th>
<th>Colour[^1]</th>
<th>Product</th>
<th>Article number</th>
<th>Description/application examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 10 000</td>
<td>150 °C / 302 °F</td>
<td>−40 °C / −40 °F</td>
<td>150</td>
<td>19</td>
<td>1 000 000</td>
<td>280 to 295</td>
<td>synthetic hydrocarbon</td>
<td>lithium soap, solid lubricant</td>
<td>black</td>
<td>Klüberelectric BE 44-152</td>
<td>091053</td>
<td>– For the long-term lubrication of rolling bearings subject to static electricity, e.g. electric motors, paper making machines, copying machines, film stretchers, guides in belt conveyors and fans</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[^1]: Product colours may vary depending on the materials used.

[^2]: Spark gap 1 cm, electrode surface 1 cm²
# Cleaning and protecting rolling bearings

<table>
<thead>
<tr>
<th>Description/application examples</th>
<th>Solvent</th>
<th>Colour</th>
<th>Product</th>
<th>Article number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent and cleansing agent for the cleansing of metallic surfaces</td>
<td>hydrocarbon</td>
<td>colourless</td>
<td>Klüber Metallreiniger SMR-Spray</td>
<td>081244</td>
</tr>
<tr>
<td>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</td>
<td>PFPE</td>
<td>colourless, clear</td>
<td>Klüberalfa XZ 3-1</td>
<td>810033</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description/application examples</th>
<th>Base oil</th>
<th>Thickener</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 40 °C / approx. 104 °F</th>
<th>Colour</th>
<th>Product</th>
<th>Article number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticorrosion fluid with lubricating effect for rolling bearings offering good wear protection in case of micro-movements</td>
<td>synthetic hydrocarbon</td>
<td>lithium soap</td>
<td>40</td>
<td>beige, milky</td>
<td>Klübersynth BZ 44-4000</td>
<td>047026</td>
</tr>
<tr>
<td>Synthetic lubricating and corrosion protection oil for the protection of rolling bearings</td>
<td>ester oil, synthetic hydrocarbon</td>
<td>without</td>
<td>20</td>
<td>brown, clear</td>
<td>Klübersynth MZ 4-17</td>
<td>047122</td>
</tr>
<tr>
<td>PFPE-based anticorrosion fluid for bearing protection. Can be followed by PFPE/PTFE greases without pre-cleaning.</td>
<td>PFPE</td>
<td>without</td>
<td>–</td>
<td>colourless, clear</td>
<td>Klüberalfa XZ 3-3</td>
<td>810036</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Description/application examples</th>
<th>Upper service temp.</th>
<th>Lower service temp.</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 40 °C / 104 °F</th>
<th>Base oil viscosity DIN 51562 [mm²/s] at approx. 100 °C / 212 °F</th>
<th>Worked penetration DIN ISO 2137 [0.1 mm], approx.</th>
<th>Base oil</th>
<th>Thickener</th>
<th>Colour</th>
<th>Product</th>
<th>Article number</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
<td>1 000 °C 1 832 °F</td>
<td>–40 °C –40 °F</td>
<td>42</td>
<td>10</td>
<td>325 to 340</td>
<td>ester oil, PAG</td>
<td>combination of solid lubricants</td>
<td>black</td>
<td>Klüberpaste HEL 46-450</td>
<td>089032</td>
</tr>
<tr>
<td>Fretting corrosion-preventing lubricating and assembly paste with solid lubricants that is suitable for pressing on and pressing in of rolling bearings</td>
<td>150 °C 302 °F</td>
<td>–15 °C 5 °F</td>
<td>46</td>
<td>8.5</td>
<td>250 to 280</td>
<td>mineral oil</td>
<td>calcium complex soap</td>
<td>beige</td>
<td>Klüberpaste ME 31-52</td>
<td>005115</td>
</tr>
<tr>
<td>White lubricating and assembly paste for applications in the food-processing, cosmetics, pharmaceutical and animal feed industries²</td>
<td>120 °C 248 °F</td>
<td>–45 °C –49 °F</td>
<td>200</td>
<td>75</td>
<td>310 to 340</td>
<td>synthetic hydrocarbon</td>
<td>PTFE/solid lubricants</td>
<td>white</td>
<td>Klüberpaste UH1 84-201</td>
<td>005113</td>
</tr>
</tbody>
</table>

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.
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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Klüber Lubrication München SE & Co. KG
Geisenhäuserstraße 7
81379 München
Germany

Local first-instance court Munich, Germany
Certificate of registration 46624
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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.