Klüberlub BE 41-1501

Heavy-duty grease for highly-loaded rolling bearings operating at low speeds

Your benefits at a glance

- **Excellent wear protection under the highest dynamic load conditions**
- **Good load-carrying capacity at low rotational speeds**
- **Reliable lubricant film formation at high service temperatures**
- **Emergency lubricating properties due to the addition of special solid lubricants**

Your requirements - our solution

Would you like to increase the service life of your highly-loaded rolling bearings running at low speed? Do you need a lubricant for a wide service temperature range?

Klüberlub BE 41-1501 is designed to meet the requirements of rolling bearings subject to extreme conditions. The appropriate combination of base oil and additives enables improved wear protection.

FAG FE 8 tests have confirmed the effectiveness of Klüberlub BE 41-1501 under these conditions.

If the lubricating film becomes adversely stressed under extreme conditions, e.g. during high levels of oscillation and friction, the solid lubricants MoS2 and graphite contained in Klüberlub BE 41-1501 ensure excellent emergency lubricating properties providing additional reliability in the event of starved lubrication. The product also provides good corrosion protection and is compatible with seals, e.g. made of NBR elastomers. Klüberlub BE 41-1501 is approved by leading component OEMs, e.g. Flender and David Brown.

Please do not hesitate to contact our experts regarding the demands in your own application.

Application

Klüberlub BE 41-1501 was developed for highly-loaded large rolling bearings running at low speeds as well as toothed gear systems such as industrial and rail traction gear couplings.

Typical applications and requirements include: spherical roller bearings in roller presses, bowl mill crushers and rotary crushers in the mining and base materials industries.

The operating conditions of roller bearings require use of a heavy-duty grease with high base oil viscosity with suitability for the following conditions:

- low speed, n = 10-30 rpm
- high load, P/C = 0.25 - 0.50
- bearing temperature approx. 50-70 °C
- shock loading and vibration

Owing to its excellent lubricating properties, Klüberlub BE 41-1501 can also be used successfully for the lubrication of pivoting bearings, plain bearings and industrial gear couplings.

Application notes

When using Klüberlub BE 41-1501 with automatic grease pumps, the ambient temperature should be ≥ 15 °C.

Material safety data sheets

Material safety data sheets can be requested via our website www.klueber.com. You may also obtain them through your contact person at Klüber Lubrication.

Pack sizes	Klüberlub BE 41-1501
Bucket 25 kg	+
Drum 180 kg	+

Product data	Klüberlub BE 41-1501
Article number	097115
Chemical composition, thickener	special lithium soap
Lower service temperature	-10 °C / 14 °F

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Product data	Klüberlub BE 41-1501
Upper service temperature	150 °C / 302 °F
Colour space	black
Texture	homogeneous
Texture	long-fibred
Density at 20 °C	approx. 0.92 g/cm³
Worked penetration, DIN ISO 2137, 25 °C, lower limit value	310 x 0.1 mm
Worked penetration, DIN ISO 2137, 25 °C, upper limit value	340 x 0.1 mm
Kinematic viscosity of the base oil, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 40 °C	approx. 1 500 mm²/s
Kinematic viscosity of the base oil, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 100 °C	approx. 60 mm²/s
Corrosion inhibiting properties of lubricating greases, DIN 51802, (SKF-EMCOR), test duration: 1 week, distilled water	<= 1 corrosion degree
NLGI grade, DIN 51818	1
Flow pressure of lubricating greases, DIN 51805, test temperature: -10 °C	<= 1 400 mbar
Drop point, DIN ISO 2176, IP 396	>= 180 °C
Testing of lubricating greases on FAG FE9 rolling bearing tester, DIN 51821, speed: 3000 min-1, axial load: 1500 N, temperature: 150 °C, service life F50:	>= 100 h
Rolling bearing test FAG FE8, tapered roller bearing 31312 a, 75 min-1, 80 kN, 80 °C, 500 h, wear of cage	<= 100 mg
Rolling bearing grease test FAG FE8, tapered roller bearing 31312 A, 75 min-1 / 80kN, 80°C , 500 h, wear of rolling bearing	<= 30 mg
Speed factor (n x dm)	approx. 100 000 mm/min
Compatibility with elastomers, 72 NBR 902 ,168h/ 100°C,change in volume	< 10 %
Compatibility with elastomers, 72 NBR 902 ,168h/ 100°C, hardness (Shore A)	approx. -5 unit
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	36 months

Behaviour towards elastomers and plastics

Compatibility with elastomers 100 °C; 168 h	Change in volume %	Change in hardness Shore A, approx.
72 NBR 902	< 10	-5

Table 1: **Klüberlub BE 41-1501 has been tested and verified for use with selected plastics and elastomers, however, we recommend checking compatibility prior to series application to ensure reliable equipment operation.**

Antiwear behaviour

500 h test on the FAG-FE-8 rolling bearing test rig	
1 test run / 2 angular contact ball bearings 7312 TP / Fa = 80 kN, P/C = 0.54, n = 7.5 rpm	
Steady-state temperature, °C	36,4*
Friction moment, Nm	19,7*
Rolling element wear (V50), mg	2**

500 h test on the FAG-FE-8 rolling bearing test rig	
2 test runs / 4 tapered roller bearings 31312 A / Fa = 50 kN, P/C = 0,24, n = 75 rpm	
Steady-state temperature, °C	46*
Friction moment, Nm	15,5*
Rolling element wear (V50), mg	18**

* Average values
** Requirement of FAG/Schweinfurt “heavy-duty grease”: ≤ 35 mg

Summary of FAG test results (excerpt):

“From the test results it can be concluded that Klüberlub BE 41-1501 meets the requirements for FAG grease category LG12. This means that it is suitable for application in low-speed rolling bearings subject to very high loads and shocks (in case of point and linear contacts) used, for example, in roller presses and bowl mill crushers.“

Product information

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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.

**Klüber Lubrication München SE & Co. KG /
Geisenhausenerstraße 7 / 81379 München / Germany /
phone +49 89 7876-0 / fax +49 89 7876-333.**