

Klüberlub BE 41-542

Unleaded heavy-duty grease for high-load rolling bearings



Description

Klüberlub BE 41-542 is a heavy-duty lubricating grease ("extreme-pressure grease") based on highly viscous mineral oil, special lithium soap, EP/AW, anti-oxidant and anti-corrosion additives.

Performance characteristics:

- Highly loadable lubricant film
- Excellent wear protection
- Good water resistance
- Service temperatures up to 140°C
- Excellent adhesion

Klüberlub BE 41-542 is free from polluting substances such as chlorine or heavy metals.

Applications

Typical Klüberlub BE 41-542 applications are in high-load rolling bearings operating at low to medium speeds such as for

- load rollers in rotary kilns for the cement industry,
- crane wheels,
- bucket wheel excavators,
- hammer crushers, hammer mills,
- work rolls in hot strip mills,
- cold pilger rolling mills, and
- rolling bearings subject to shock or pulsating stress.

Application notes

The ambient temperature should be $\geq 15^\circ\text{C}$ when applying the product with an automatic grease pump.

Minimum shelf life

Minimum shelf life is approx. 24 months if the product is stored carefully in its unopened original packing in a dry room.

Anti-wear effect

500 h test on the FAG FE8 rolling bearing grease test rig.

Pack sizes

25 kg hobcock
180 kg cask

Tapered roller bearings

31312 A, $F_a = 50\text{ kN}$, $P/C = 0.24$, $n = 75\text{ min}^{-1}$	
Steady-state temperature, °C	39.5*
Friction moment, Nm	10.5*
Rolling element wear (V_{50}), mg	22**
Cage wear (V_{50}), mg	42**

* Average

** FAG/Schweinfurt requirement for a "heavy-duty grease": $\leq 100\text{ mg}$

- Heavy-duty grease
- For highly loaded rolling bearings
- Free from lead, chlorine, and heavy metals

Current material safety data sheets can be downloaded from our website www.klueber.com or requested from Klüber Lubrication.

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Product data

Base oil/thickener	mineral oil/special lithium soap
Service temperature range*, [°C] approx. FAG FE9 test run, DIN 51821 T02, n = 6,000 min ⁻¹ , F _a = 1,500 N, F ₅₀ running time, [h/°C]	-20 to 140 121 / 140
Flow pressure of lubricating greases, DIN 51805, at -20 °C, [mbar]	<1,400
Colour	brown
Texture	homogeneous
Drop point, DIN ISO 2176, [°C]	> 230
Cone penetration of lubricating greases, DIN ISO 2137, worked penetration at 25 °C; [0.1 mm], approx.	265 – 295
Speed characteristics** for deep groove ball bearings (n x d _m), [mm/min], approx.	300,000
Consistency class, DIN 51818, NLGI	2
Anti-corrosion effect of lubricating greases, DIN 51802 (SKF Emscor), 1 week, distilled water, corrosion rating	0/1
Water resistance, DIN 51807 T01, 3h/90°C, rating	0/1
VKA welding force, DIN 51350 T04, [N]	> 3,000
Kinematic base oil viscosity, DIN 51562 T01, Ubbelohde, 40 °C, [mm ² /s], approx. 100 °C, [mm ² /s], approx.	540 32
Density, at 20 °C, [g/cm ³], approx.	0.93

* **Service temperature range:** Service temperatures are approximations that can vary with lubricant composition, intended use, and application method. Depending on the kind of mechanical dynamic load, the consistency, apparent viscosity or viscosity of lubricants will vary with temperature, pressure, and time. These changes in product characteristics may affect the function of a component.

** **Speed characteristics:** Speed characteristics are approximations that depend on the type and size of rolling bearings and local operating conditions. They need to be confirmed by tests carried out by the user in each individual case.

The **upper** service temperature was determined acc. to DIN 51825 and DIN 51821 T 2, the **lower** service temperature acc. to DIN 51825 and 51805.

Compatibility with elastomers and plastics

Following elastomer types were tested for 168 h at 100 or 140 °C to check their resistance to Klüberlub BE 41-542.

Material	72 NBR 902	70 ACM 370	75 FPM 585
Test period/temperature	168 h/100°C	168h/140°C	168h/140°C
Change in volume (%)	8	10	2
Change in hardness (SHA)	- 4	- 6	4
Tensile strength (%)	- 11	- 26	- 40
Elongation at tear (%)	- 1	- 4	- 54

We recommend checking the resistance of all materials in contact with the lubricant, especially prior to series applications (our test results were obtained with random samples. They are no substitute for your own compatibility tests).

This product information data sheet is based on our general experience and knowledge by the time it went to press and is intended to inform technically experienced readers about possible applications. It is no warranty of product properties or suitability in the individual case. Nor does it release the user from performing preliminary tests with the selected product. We recommend contacting our technical consultants for a discussion of your specific needs. If requested and possible we shall gladly provide samples for testing. Klüber products are continually improved. Klüber Lubrication, therefore, reserves the right to change any and all technical information contained in this publication at any time and without prior notice.



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