

Klüberalfa® BHR 53-402

High-temperature long-term lubricating grease



Description:

Klüberalfa BHR 53-402 is a fully synthetic high-temperature long-term lubricating grease. Preferred temperature range: > 150 to 260 °C.

Klüberalfa BHR 53-402 has good anticorrosion and antiwear properties. It is almost neutral towards many materials (metals, thermosetting plastics, thermoplastics, elastomers).

Klüberalfa BHR 53-402 can be removed without the use of CFCs.

Result of the Klüber 4" cam roller test (D = 80 mm, n = 20 rpm) after **1000 h at a steady temperature of 250 °C**:

All cam rollers rotate freely, the raceways and the rolling elements are covered with a sufficient lubricant film; the used grease is soft and pasty and still has a good lubricating capacity.

Application:

Preferred applications are in rolling bearings with **lifetime** or **long-term** lubrication which are subject to very high temperatures, e.g.

- load, guide or return rollers in drying installations, conveyor systems and automatic baking machines,
- chain and clip load rollers in textile stenters or film stretching machines,
- bearings of kiln trucks (carrying wheels) used in ceramics or brick manufacturing,
- electric motors, fans.

The product can also be used to lubricate electric contacts or friction points with plastic/plastic or plastic/metal combinations, e.g. in precision mechanics or in the optical industry (cameras, recorders, projectors ...).

Application notes:

Klüberalfa BHR 53-402 can be applied with a grease metering gun or automatic metering devices for small quantities.

Anticorrosion agents have to be removed from the friction points prior to initial lubrication to ensure optimum lubricant adhesion. Cleaning is not required if the anticorrosive layer is **thin**.

Klüberalfa BHR 53-402 can be mixed with lubricants with the same base oil.

Klüberalfa BHR 53-402 (e.g. used grease in rolling bearings) can be removed with **water-miscible neutral cleaning agents**, for example with Klüber SOLUTIN NR, a biodegradable product (a mixture of 90% water and 10% SOLUTIN NR has proven effective).

Klüberalfa BHR 53-402

- High-temperature long-term grease up to 260 °C
- Good anticorrosion properties
- Excellent antiwear properties (VKA welding force > 5000 N)
- USDA-H2 approved
- Can be removed without CFCs

Minimum shelf life:

The minimum shelf life is approx. 36 months if the product is stored in the original closed container in a dry place.

Package size:

1 kg cans

Product data:

Service temperature range*, °C	– 40 to 260
Base oil/thickener	perfluorinated polyether oil/ Na complex soap
Flow pressure, DIN 51 805, ≤ 1400 mbar, °C, approx.	– 40
Colour	white
Density at 20 °C, DIN 51 757, g/cm ³ , approx.	1.82
Base oil viscosity, DIN 51 561 at 40 °C, mm ² /s, approx. at 100 °C, mm ² /s, approx.	400 35
Drop point, DIN ISO 2176**	not measurable
Speed factor*** (n x d _m), mm x min ⁻¹ , approx.	300,000
Worked penetration, DIN ISO 2137; 0.1 mm	265 to 295
Consistency class, DIN 51 818, NLGI	2

* Service temperatures are guide values which depend on the lubricant's composition, the intended use and the application method. Lubricants change their consistency, apparent dynamic viscosity or viscosity depending on the mechanical loads, time, pressure and temperature. These changes in product characteristics may affect the function of a component.

Klüberalfa BHR 53-402 is non-toxic if applied in the temperature range stated above. However, chemical conversion may result in toxic vapours above 280 °C. Some contact materials (e.g. titanium, aluminum and their alloys) may cause lower decomposition temperatures. Ensure adequate ventilation, if required.

** In accordance with DIN 2176 the drop point of this high-temperature lubricating grease is not measurable (it does not melt); however, a certain degree of oil separation may occur above 180 °C.

*** Speed factors are guide values which depend on the type and size of the rolling bearing type and the local operating conditions, which is why they have to be confirmed in tests carried out by the user in each individual case.

Klüberalfa® BHR 53-402

Safety Data Sheet

1.1 Product name: Klüberalfa BHR 53-402 Code-No.: 090 070 26.06.2001
1.2 Klüber Lubrication München KG Geisenhausenerstraße 7 D-81379 München Tel. ++49 - 89 78 76 - 0 telephone exchange Fax: ++49 - 89 78 76 - 333 Emergency telephone no.: ++49 - 89 7876 - 0
2. Composition / information on ingredients Chemical characterization (preparation): Fluorinated polyether oil, sodium complex soap
3. Hazards identification No particular hazards known
4. First aid measures After inhalation: Not applicable After contact with skin: Wash off with soap and plenty of water After contact with eyes: Rinse with plenty of water After ingestion: Do not induce vomiting. Obtain medical attention Advice to doctor: Treat symptomatically
5. Fire-fighting measures Suitable extinguishing media: The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment Special hazards: In case of fire the following can be released: Traces of fluorinated products Special protective equipment for firefighters: Standard procedure for chemical fires Additional information: Water mist may be used to cool closed containers. In the event of fire and/or explosion do not breathe fumes
6. Accidental release measures Personal precautions: Not required Environmental precautions: Do not flush into surface water or sanitary sewer system Methods for cleaning up / taking up: Use mechanical handling equipment. Dispose of absorbed material in accordance with the regulations Additional information: None
7. Handling and storage Advice on safe handling: No special handling advice required Advice on protection against fire and explosion: No special precautions required Requirements on storage rooms and vessels: No special storage conditions required Incompatible materials: Do not store together with food Further information on storage conditions: Store at room temperature in the original container
8. Exposure controls / personal protection Additional advice on system design: Not applicable Ingredients and specific control parameters: None Respiratory protection: No special protective equipment required Hand protection: No special protective equipment required Eye protection: No special protective equipment required Body protection: No special protective equipment required Other protection measures: No special protective equipment required General protection and hygiene measures: Avoid prolonged and/or repeated contact with skin. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work; apply skin cream. Keep away from tobacco products

9. Physical and chemical properties Form: paste Colour: white Odour: none Drop point: not melting, DIN ISO 2176 Flash point: none (base oil) Ignition temperature: not applicable Lower explosion limit: not applicable Upper explosion limit: not applicable Vapour pressure-first: not applicable Density: approx. 1.82 g/cm ³ , 20 °C Water solubility: dispersible pH value: not applicable Kinematic viscosity: not applicable Further information: none
10. Stability and reactivity Conditions to avoid: None Materials to avoid: Strong bases, alkali metals, alkaline earth metals, Lewis acids Hazardous decomposition products: > 260 °C traces of fluorinated products Additional information: Some materials (e.g. titanium, aluminium or alloys of these materials) may cause lower decomposition temperatures
11. Toxicological information The toxicological data has been taken from products of similar composition Acute toxicity: LD ₅₀ /oral/rat = > 2 g/kg (literature data) Chronic toxicity: None Human experience: Prolonged skin contact may cause skin irritation and/or dermatitis
12. Ecological information Information on elimination (persistence and degradability): Product is insoluble in water. May be separated out mechanically in purification plants Behaviour in environmental compartments: Ecological injuries are not known or expected under normal use Ecotoxic effects: Aquatic toxicity is unlikely due to low solubility Additional information: Should not be released into the environment
13. Advice on Disposal Code of waste: 120 112. Wastes from shaping and surface treatment of metals and plastics; wastes from shaping (including forging, welding, pressing, drawing, turning, cutting and filling); spent waxes and fats Disposal: Can be incinerated when in compliance with local, state and federal regulations. Contains halogens Dispose of contaminated packaging and recommended cleaning: Offer rinsed packaging material to local recycling facilities
14. Transport information GGVS / GGVE: not applicable ADN / ADNR: not applicable IMDG-Code: not applicable ICAO / IATA-DGR: not applicable Further information: Not classified as dangerous in the meaning of transport regulations
15. Regulatory information Labelling according to EU-guidelines: The product does not require a hazard warning label in accordance with EC-directives/German regulations on dangerous substances National regulations
16. Other information Issue-department of Safety Data Sheet: Chemical Documentation, Tel.: ++49 - 89 7876 - 564

The data in this product information is based on our general experience and knowledge at the time of printing 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 tests with the selected product. We recommend contacting our Technical Consulting Staff to discuss your specific application. If required and possible we will be pleased to provide a sample for testing. Klüber products are continually improved. Therefore, Klüber Lubrication reserves the right to change all the technical data in this product information at any time without notice.



Klüber Lubrication München KG, a member of the Freudenberg group