Klübersynth GE 6-320

Synthetic high-performance gear oil

Your benefits at a glance

- **High scuffing protection**
- **Good wear protection for gears and rolling bearings**
- **High micropitting resistance**
- **Good shear stability for reliable lubricant film formation**
- **Excellent ageing and oxidation resistance**
- **Wide service temperature range due to good viscosity-temperature behaviour**
- **Low foaming tendency**
- **Energy savings due to optimised friction behaviour**
- **Good elastomer compatibility**

Your requirements - our solution

Klübersynth GE 6-320 is a synthetic high-performance gear oil based on polyglycol satisfying the growing requirements and increasing power density of modern gears. Klübersynth GE 6-320 is based on especially high-grade raw materials and advanced additives, enabling maximum performance in the lubrication of all gear components.

Klübersynth GE 6-320 clearly exceeds CLP requirements according to DIN 51517-3. Corresponding gears can be switched to Klübersynth GE 6-320 without prior consultation with the gear manufacturer provided the general application notes are observed.

Klübersynth GE 6-320 offers high scuffing load capacity. Gears are sufficiently protected against scuffing even at extremely high peak loads, vibrations or oscillations, or if no running-in was performed. The excellent wear protection of both gears and rolling bearings ensures that the service life calculated for the lubricated components is achieved, leading to lower maintenance and repair costs. The oil's high micropitting resistance of GFT ≥ 10 according to FVA 54/7 offers sufficient protection to gears that are subject to high loads and would normally be susceptible to this type of damage.

Klübersynth GE 6-320 offers a much longer service life than mineral oils due to the excellent ageing and oxidation resistance of the selected raw materials; thus service intervals can be extended and maintenance costs reduced. In certain applications, even lifetime lubrication is possible. The product's low foaming tendency and anti-corrosive properties enable problem-free gear operation. Freudenberg seals made of 72 NBR 902, 75 FKM 585, 75 FKM 260466 and 75 FKM 170055 are resistant to Klübersynth GE 6-320. Oil leakage leading to contamination is prevented.

The excellent viscosity-temperature behaviour supports the formation of a sufficient lubricant film across a wide service temperature range, even at elevated and high temperatures.

The optimised friction behavior of Klübersynth GE 6-320 enabled by the carefully selected base oils based on polyglycol reduces power loss and improves gear efficiency.

By using Klübersynth GE 6-320 you can benefit from a number of advantages that will help you save costs easily and efficiently. We look forward to hearing from you.

Application

Klübersynth GE 6-320 was especially developed for the lubrication of spur, bevel, hypoid and planetary gears that are subject to high loads. Such gears are frequently used in the wind, steel and mining industries.

Klübersynth GE 6-320 can also be used for the lubrication of plain and rolling bearings, all kinds of toothed couplings, chains, guideways, joints, spindles and pumps, especially in applications where the equipment is exposed to elevated temperatures or pronounced temperature fluctuations.

Application notes

Klübersynth GE 6-320 can be applied by means of immersion, immersion circulation or injection. The use of drip-feed oilers, brushes, oil cans or suitable automatic lubricating systems is also possible. When using automatic lubricating systems, please note the manufacturer's instructions regarding the maximum permissible viscosity.

Klübersynth GE 6-320 is not miscible with mineral oil or synthetic hydrocarbons. Prior to switchover, lubrication points should be cleaned, or gears or enclosed systems be flushed with the Klübersynth GE 6-320 oil to be used.

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Klübersynth GE 6-320 is neutral towards ferrous and nearly all non-ferrous metals.

There may be increased wear when the contact surfaces of design elements made of aluminium or aluminium alloys are exposed to dynamic loads. If necessary, preliminary wear tests should be carried out.

For use at permanent temperatures of 80 °C max., seals made of NBR may be used. For higher temperatures, seals made of FKM should be chosen. It should be noted that elastomers from one or several manufacturers can behave differently; therefore tests should be performed.

When applying Klübersynth GE 6-320 oil we recommend the use of two-component paints (reaction paints) for interior coating. Oil gauge glasses should preferably be made of natural glass or polyamide materials. Other transparent plastics, e.g. Plexiglas, have a tendency to crack under stress. The suitability of materials used in contact with Klübersynth GE 6-320 oil should be tested, especially prior to series application.

For checking the contact pattern during running-in, the inspection paint Klübertop P 39-362 Spray (Art. No. 081295) can be used.

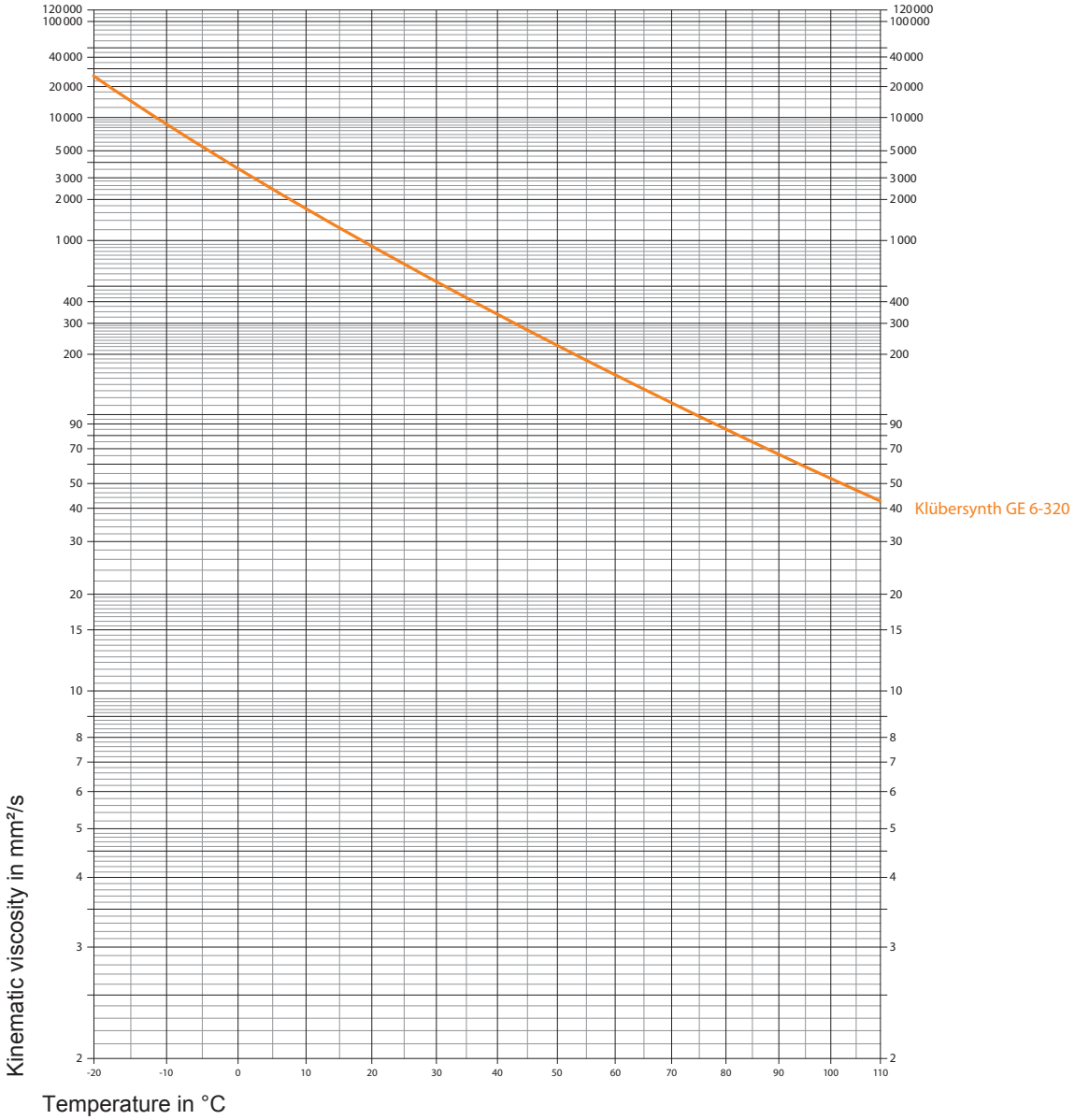
Klübersynth GE 6-320 is miscible with the special running-in and anti-corrosion oil Klübersynth GEZ 6-220.

Klübersynth GE 6-320 has a better viscosity-temperature behaviour than mineral oils, so its actual viscosity during operation varies and can be determined by means of the enclosed diagram.

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.

Viscosity-temperature diagram



Pack sizes	Klübersynth GE 6-320
Canister 20 l	+

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Product data	Klübersynth GE 6-320
Article number	096150
Marking acc. to DIN 51502	CLP PG 320
Classification acc. to ISO 12925-1	CKC 320
Lower service temperature	-30 °C / -22 °F
Upper service temperature	160 °C / 320 °F
Density, based on DIN 51757) at 15 °C	approx. 1 065 kg/m³
Foam test, ASTM-D 892, ISO 6247, sequence I/24 °C	<= 100/10 ml
Foam test, ASTM-D 892, ISO 6247, sequence II/ 93.5 °C	<= 100/10 ml
Foam test, ASTM D 892, ISO 6247, sequence III/24°C	<= 100/10 ml
Flash point, DIN EN ISO 2592, Cleveland, open-cup apparatus	>= 220 °C
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 20 °C	approx. 840 mm²/s
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 40 °C	approx. 320 mm²/s
Kinematic viscosity, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 100 °C	approx. 56 mm²/s
ISO viscosity grade, DIN ISO 3448	320
Viscosity index, DIN ISO 2909	>= 220
Anticorrosive properties on steel, DIN ISO 7120, method A, steel, 24 h/60 °C	no rust corrosion degree
Copper corrosion, DIN EN ISO 2160, 24 h/100°C	1 - 100 corrosion degree
Pour point, DIN ISO 3016	<= -30 °C
Ageing properties, ASTM D 2893, increase in viscosity	<= 6 %
FZG scuffing test, DIN ISO 14635-1, A/8.3/90, scuffing load stage	>= 12
FZG scuffing test, based on DIN ISO 14635-1, A/16.6/90, scuffing load stage	>= 12
FAG FE8 rolling bearing test, DIN 51819-3, D 7,5/80-80, wear of cage	<= 200 mg
FAG FE8 rolling bearing test, DIN 51819-3, D 7,5/80-80, wear of rolling element	<= 30 mg
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	36 months

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 /
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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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