Product information

Klübersynth UH1 6 oils

Synthetic gear and high-temperature oils for the food-processing and pharmaceutical industries

Benefits for your application

- **The oils meet the requirements according to DIN 51 517 – 03, CLP**
- **Registered by NSF as H1 lubricants for use in food-processing and pharmaceutical industries, complies with FDA 21 CFR Sec. 178.3570**
- **ISO 21469 certified – supports the compliance with the hygienic requirements in your production. You will find further information about ISO Standard 21469 on our website www.klueber.com.**
- **Much longer service life than mineral oils due to the excellent ageing and oxidation resistance of the base oil; thus maintenance intervals can be extended and in certain cases even lifetime lubrication is possible**
- **Owing to the wide service temperature range it is possible in many cases to use just one viscosity grade for both low and high temperatures**
- **The optimum friction behavior of the polyglycol base oil reduces power losses and improves efficiency**
- **The good wear protection of both gears and rolling bearings ensure that the service life calculated for the lubricated components is achieved.**
- **The oils' high micropitting resistance offers sufficient protection to gears that are subject to high loads and would normally be susceptible to this type of damage.**
- **The excellent viscosity-temperature behavior supports the formation of a sufficient lubricating film even at elevated and high temperatures.**
- **Seals made of 72 NBR 902 or 75 FKM 585 are resistant against Klübersynth UH1 6 oils.**
- **Approved by Flender, SEW Eurodrive, Getriebebau Nord, Stöber Antriebstechnik, Lenze, ZAE Antriebstechnik Baldor, Boston Gear, Bonfiglioli, Watt Drive etc.**

Description

Klübersynth UH1 6 oils are gear oils on a polyglycol basis. They have a high scuffing load capacity and
micro-pitting resistance. These oils have also proved their good wear protection in rolling bearings on the FAG FE 8 test rig for gear oils.

Klübersynth UH1 6 oils stand out for their excellent ageing and oxidation resistance, good viscosity-temperature behaviour and very good thermal stability.

Application

Klübersynth UH1 6 oils are used for the lubrication of bevel and spur gears, rolling and plain bearings as well as all types of denture clutches, especially when exposed to high temperatures.
Klübersynth UH1 6 oils were especially developed for the lubrication of worm gears with steel/bronze pairings.
The polyglycol base oils and special additives reduce the friction coefficient and provide low wear values, which is a clear advantage in these applications.

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Klübersynth UH1 6 oils achieve a particularly low wear intensity according to DIN 3996 (calculation of load capacity).
Klübersynth UH1 6 oils can also be used for the lubrication of lifting, drive and transport chains.

Application notes

Klübersynth UH1 6 oils can be applied by immersion, immersion/circulation and injection.

Klübersynth UH1 6 oils are **not** miscible with mineral oils and synthetic hydrocarbons like polyalphaolefins.

Application notes

We recommend cleaning the lubrication points or rinsing gears with the Klübersynth UH1 6 oil which will be used after conversion.

Klübersynth UH1 6 oils are neutral towards ferrous metals and almost all nonferrous 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 tests should be carried out.

For permanent temperatures up to 80°C seals made of 72 NBR 902 may be used. For higher temperatures, we recommend to use seals made of 75 FKM 585.
It should be noted that elastomers from one or several manufacturers can behave differently.

When applying Klübersynth UH1 6 oils 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 UH1 6 oils should be tested, especially prior to series application.

Viscosity selection

When determining the oil viscosity for gears, the manufacturer's instructions take priority. Only in cases where there are no gear manufacturer's instructions, the viscosity can be selected in accordance with the enclosed worksheet "Klübersynth UH1 6 oils – selection of oil viscosity for gears".

To determine the correct oil viscosity for bearings, please observe the bearing manufacturer's instructions.

For determining the existing viscosity, please refer to the enclosed viscosity-temperature diagram indicating the differing viscosity-temperature behavior of Klübersynth UH1 6 oils as compared to mineral oils.

Minimum shelf life

The minimum shelf life is approx. 36 months if the product is stored in its unopened original container in a dry, frost-free place.

Pack sizes

20 l canister
200 l drum

Material Safety Data Sheets

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

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Product data

Klübersynth UH1 6- …	100	150	220	320	460	680
NSF-H1 registration*, registration no.	137872	124437	124438	124439	124440	124441
ISO VG DIN 51 519	100	150	220	320	460	680
Density, DIN 51 757, at 15 °C, [kg/m³], approx.	1040	1050	1060	1065	1075	1075
Kinematic viscosity, DIN 51 562, pt. 01 at 20 °C, [mm²/s], approx. at 40 °C, [mm²/s], approx. at 100 °C, [mm²/s], approx.	 250 100 19.5	 390 150 28.5	 610 220 41	 840 320 56	 1270 460 78	 1900 680 115
Viscosity index, DIN ISO 2909, approx.	≥ 190	≥ 210	≥ 220	≥ 220	≥ 240	≥ 250
Flash point, DIN ISO 2592, [°C]	≥ 220	≥ 220	≥ 220	≥ 220	≥ 220	≥ 220
Pour point, DIN ISO 3016, [°C]	≤ -45	≤ -35	≤ -35	≤ -30	≤ -30	≤ -25
Foaming characteristics, ASTM D 892, sequence I, II, III [ml]	≤ 100/10					
Copper corrosion, DIN EN 2160, 24 h, corrosion rating	1 - 100					
Corrosion protection on steel, DIN ISO 7120	0 – A					
Ageing characteristics, ASTM D 2893, increase in viscosity, [%]	≤ 6					
FZG gear test rig, A/8.3/90 DIN 14635-1, scuffing load stage	≥ 12					
Rolling bearing test rig FE 8, D 7,5/80-80, DIN 51 819-3, wear of rolling elements, [mg]	≤ 30					
Lower service temperature range**, [°C]	-35		-30			-25
Upper service temperature range**, [°C]	160					

* This lubricant is registered as H1, which means that it has been designed for incidental, technically unavoidable food contact. Experience shows that it can be used for equivalent applications in the cosmetic and pharmaceutical industry under the conditions described in the product information leaflet. Specific test results as e.g. biocompatibility, which could be an additional requirement for applications in the pharmaceutical industry, are not available for this product. Therefore, before using the lubricant adequate risk analyses should be performed and, if necessary, suitable measures be taken by the manufacturer and user of installations in order to exclude the risk of health hazards and personal injuries.

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

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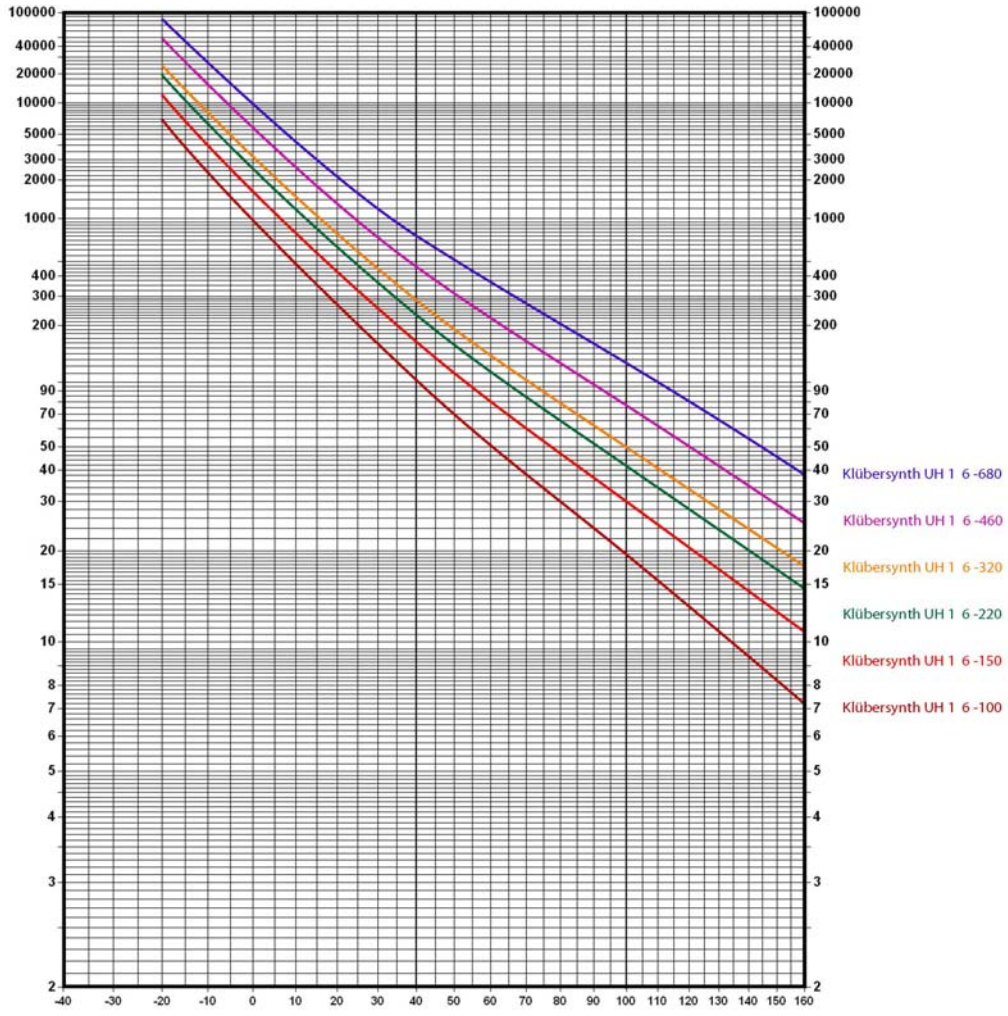
Viscosity-Temperature Diagram



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