

# KLÜBERBIO EG 2-320 200 LTR

Product group: **681** Product number: **210062**

KLÜBERBIO EG 2-320 is a synthetic Environmentally Acceptable Lubricant (EAL) specially formulated to protect your gears. By providing high scuffing resistance, it safeguards your gear teeth against fretting damage — even at high peak loads.



## Product information

The offshore and maritime industry employs the use of a variety of gears that are subject to much scuffing and pitting — sometimes in harsh and difficult conditions. To protect your gear teeth reliably against the damage these factors could cause, KLÜBERBIO EG 2-320 offers high scuffing resistance, reducing fretting damage, even at high peak loads.

Moreover, KLÜBERBIO EG 2-320 provides high shear stability, forming a strong hydrodynamic oil film even when taking on big loads. This makes it a good choice for the safe and enduring operations of your gear.

Formulated with synthetic ester oil, KLÜBERBIO EG 2-320 is biodegradable and non-toxic to our marine environments, reducing the harm that would arise in an event of a leakage. It contains over 90% renewable raw materials and meets the U.S. EPA's 2013 VGP (Vessel General Permit)'s biodegradability, minimally toxic, and non-bioaccumulating standards.

Moreover, KLÜBERBIO EG 2-320 has obtained the European Ecolabel, affirming its sound formulation that meets high environmental standards throughout its life cycle, from raw material extraction to production, distribution and disposal.

Standard NBR and FKM elastomers of leading propeller shaft seal manufacturers are resistant to and hence approved for use with KLÜBERBIO EG 2-320, as they successfully prevent leakages and contamination from impurities.

## Features

- Compliant with the requirements for Environmentally Acceptable Lubricants (EAL) as defined by the EPA 2013 Vessel General Permit
- Awarded the European Ecolabel
- Biodegradable and non-toxic to marine organisms
- Scuffing resistance
- Shear stability
- Compatible to use with standard NBR and FKM elastomers

## Benefits

- Environmentally-friendly
- Protects your gear against fretting damage, even at high peak loads
- Maintains good performance under high loads
- Reduces leakage and contamination

## Specification

### General

Invent Hazard Material (IMO/EU) classification	C-3
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### Dimensions/Weight

Packing Size	200 ltr
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### Performance data

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
Flash point, DIN EN ISO 2592, Cleveland, open-cup apparatus [°C]	≥270
Foam test, ASTM-D 892, ISO 6247, sequence I/24 °C [ml]	≤100/10
Foam test, ASTM-D 892, ISO 6247, sequence II/ 93.5 °C [ml]	≤100/10
Foam test, ASTM-D 892, ISO 6247, sequence III/24°C [ml]	≤100/10
FZG scuffing test, based on DIN ISO 14635-1, A/8.3/90, scuffing load stage	>13
Lower service temperature	-25°C / -13°F
Pour point, DIN ISO 3016 [°C]	≤-25
Upper service temperature	120°C / 248°F

### Physical properties

Biodegradability of the base oil, acc. to OECD 301 F, (within 28 days) [%]	≥60
Density, DIN 51757 at 15 °C [kg/m <sup>3</sup> ]	~ 943
Kinematic viscosity of the base oil, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 100 °C [mm <sup>2</sup> /s]	~ 34
Kinematic viscosity of the base oil, DIN 51562 pt. 01/ASTM D-445/ASTM D 7042, 40 °C [mm <sup>2</sup> /s]	~ 320

### Technical data

ISO viscosity grade of the base oil, DIN ISO 3448	320
Marking acc. to DIN 51502	CLPE320
Shelf life [months]	36
Viscosity index, DIN ISO 2909	~ 150

## Documents

[SDoC and MD for IHM](#)

## Directions for use

KLÜBERBIO EG 2-320 is ideal for the lubrication of ships' gearboxes, particularly for thrusters and rudder propellers. It is tried, tested and recommended by leading manufacturers of thruster and propeller shaft seals.

Given its wear and pitting protection properties, KLÜBERBIO EG 2-320 complies with the requirements of rolling bearing manufacturers for use on highly loaded, large rolling bearings in pod drives.

KLÜBERBIO EG 2-320 is generally miscible with mineral oils and synthetic hydrocarbons. However, please conduct a miscibility test to safely and completely rule out the possibility of incompatibility between different additives.

Before the changeover, clean the lube points or flush the gear with the KLÜBERBIO EG 2-320 oil to be used. Please note that KLÜBERBIO EG 2-320 needs to be approved by the OEMs of the equipment — if it is not, or the equipment's specification has been changed, consult the OEM prior to changing the oil.

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