

Klüberbio RM 2-100, 2-150

Environmentally compatible, synthetic stern tube oils



Your benefits at a glance

- Comply with the requirements for Environmentally Acceptable Lubricants as defined in Appendix A of the EPA 2013 VGP (Vessel General Permit)
- Ultimately biodegradable and not toxic to marine organisms with more than 90% renewable raw materials
- High operational reliability due to the formation of a strong, hydrodynamic oil film and a very good compatibility with FKM elastomers available from leading propeller shaft seal manufacturers.

Your requirements - our solution

Klüberbio RM 2 oils are ultimately biodegradable oils for stern tubes based on synthetic ester oil showing very good ageing and oxidation stability.

Klüberbio RM 2 oils show a high shear stability and form a strong hydrodynamic oil film even when subject to high loads.

As the lubricants are biodegradable oil loss or leakage are less dangerous to the environment. Klüberbio RM 2 oils contain > 90 % of renewable raw materials and bear the European Ecolabel.

Attaining EU Ecolabel certification provides ship owners and/or operators with independent assurance that the product achieves the U.S. EPA's requirements for classification as an Environmentally Acceptable Lubricant (EAL). Therefore, these high-performance lubricants meet the biodegradability, minimally toxic, and non-bioaccumulating standards set in Appendix A of the U.S. EPA's VGP.



The EU Ecolabel is a label of environmental excellence that is awarded to products and services meeting high environmental standards throughout their life cycle: from raw material extraction, to production, distribution and disposal.

Application

Klüberbio RM 2 oils were developed for the lubrication of propeller bushes made of white metal and propeller shaft seals.

Klüberbio RM 2 oils are tested and approved by all leading propeller shaft seal manufacturers.

Please contact Klüber Lubrication or the seal manufacturer for technical consultation on your specific seal-lubricant combination.

Application notes

In general, Klüberbio RM 2 oils are miscible with mineral oil based stern tube lubricants. However, a miscibility test should be performed in order to totally rule out the possibility of an incompatibility between different additives. Prior to changeover, we recommend flushing the stern tube with the Klüberbio RM 2 oil.

Klüberbio RM 2 oils need to be approved by the OEMs of your propeller shaft seal or bearing. In case the oil has not yet been approved or the specification of the seal or bearing has been changed - e.g. type, design or material - we recommend consulting the OEM prior to the oil change.

Owing to the many different elastomer compositions of seals we recommend - prior to series application - checking the compatibility and other influencing factors that are relevant for the application with the component under conditions similar to practice.

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.

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Pack sizes	Klüberbio RM 2-100	Klüberbio RM 2-150
Canister 1 l	+	+
Canister 20 l	+	+
Drum 200 l	+	+

Characteristics	Klüberbio RM 2-100	Klüberbio RM 2-150
Article number	009031	009025
Service temperature, lower limit	-25 °C	-25 °C
Service temperature, upper limit	120 °C	120 °C
EU Ecolabel registration number	DE/027/261	DE/027/262
Biodegradability, OECD 301 F, 28, within days	≥ 60 %	≥ 60 %
Density, DIN 51757, 20°C	approx. 0.94 g/cm ³	approx. 0.92 g/cm ³
Flash point, DIN EN ISO 2592, Cleveland open cup	≥ 230 °C	≥ 250 °C
ISO viscosity grade, DIN ISO 3448, ISO VG	100	150
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 100°C	approx. 14 mm ² /s	approx. 18 mm ² /s
Kinematic viscosity, DIN EN ISO 3104 / DIN 51562-1 / ASTM D445 / ASTM D7042, 40°C	approx. 100 mm ² /s	approx. 150 mm ² /s
Viscosity index, DIN ISO 2909	approx. 137	approx. 135
Copper corrosion, DIN EN ISO 2160, 24 h, 100°C	1 - 100 - 24 corrosion degree	1 - 100 - 24 corrosion degree
Steel corrosion, DIN ISO 7120 / ASTM D665, method A, 24 h, 60°C	rust-free	rust-free
Pour point, DIN ISO 3016	≤ -30 °C	≤ -30 °C
Minimum shelf life from the date of manufacture - in a dry, frost-free place and in the unopened original container, approx.	36 months	36 months

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 90 years.

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