

HYDROX BIO RANGE

DESCRIPTION

HYDROX BIO is a range of environmentally acceptable lubricants, based on synthetic esters, which provide an excellent level of lubrication in both neat and emulsion forms.

APPLICATIONS

The **HYDROX BIO** range have been specifically designed for use in Sterntube and stabiliser applications in sensitive environments where there is potential for fluid loss or water ingress to occur. Designed primarily for use where lip type seals and other circulatory oil feed systems are in operation.

HYDROX BIO 68 and **HYDROX BIO 100** are also recommended as hub lubricants for certain controllable pitch propeller systems.

VGP

HYDROX BIO and its components have been evaluated by independent laboratories. Using these test results, Vickers Oils has determined that it meets the VGP definition of an Environmentally Acceptable Lubricant.

FEATURE

The **HYDROX BIO** range will absorb any sea or fresh water which may enter the Sterntube to form a relatively fluid emulsion which remains stable and therefore reduces the risk of free water being present in the Sterntube. The **HYDROX BIO** range provide an excellent level of lubrication in both neat and emulsion forms. Above 10% water content, it is recommended that some of the emulsion is drained from the system and fresh lubricant added.

Conventional oils do not emulsify in the same way and tend to separate, exposing components to free water and potential wear damage.

HYDROX BIO 68 and **HYDROX BIO 100** are the viscosity grades generally recommended by the bearing and seal manufacturers for regular running in the Sterntube, where there is potential for sea or fresh water contamination to the lubrication system. Both can also be used in certain types of stabilisers.

HYDROX BIO 150 is for use in newbuilds if the shipyard recommends an ISO VG 150 Sterntube EAL in order to give improved oil film thickness under severe conditions as may arise if the AFT bearing is subject to edge loading. This can occur when the design tolerances or other factors are marginal.

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Accredited to the ISO
9001 Quality Standard
and the ISO 14001
Environmental
Management Standard

HYDROX BIO RANGE

HYDROX BIO 220 is recommended for use particularly where vessels require emergency assistance in reducing the leakage past a damaged or worn AFT seal. It absorbs a very high amount of water and has proven very effective in reducing the rate of leakage. In the majority of cases a reduction of 70% can be achieved, but cannot be guaranteed in all cases.

HYDROX BIO achieves a biodegradability of greater than 60% in the 28 day OECD 301B test and is considered non-toxic in the marine environment.

BENEFITS

- Absorbs any sea or fresh water entering the Sterntube to form a relatively fluid emulsion which remains very stable and thereby reduces the risk of free water being present in the Sterntube.
- Excellent lubrication under both the boundary and hydrodynamic lubricating conditions encountered in a Sterntube.
- Corrosion protection is maintained even during prolonged standing and the stable emulsion ensures that a lubricating film is present between the propeller shaft and bottom of the bearing at the critical time of start-up.
- Bearing Compatibility: **HYDROX BIO** Sterntube lubricants are suitable for use with both white metal and composite bearings. If fitting new white metal bearings, lead free designs should be selected. (Please consult with Vickers Oils if further details are required).
- Good compatibility with the rubbers used for lip seal systems and approved by many of the major lip and face stern seal manufacturers. (Please contact Vickers Oils to check the latest approval status before use).
- **HYDROX BIO 220** is compatible with most engine oils commonly used in the Sterntube and can therefore be added to existing oil through a top up procedure.
- **HYDROX BIO 220** is expected to be effective in reducing the rate of oil leakage past a damaged AFT seal.

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TYPICAL CHARACTERISTICS

HYDROX BIO	68	100	150	220	TEST METHOD
Appearance	Clear	Clear	Clear	Clear	
Colour	Yellow	Yellow	Yellow	Yellow	ASTM D1500
Viscosity @ 40°C (cSt)	68	100	150	220	ASTM D7042
Viscosity Index	215	184	180	200	ASTM D2270
Density @ 15°C (kg / l)	0.92	0.93	0.93	0.93	ISO 12185
Pour Point (°C)	<-24	<-24	<-24	<-12	ASTM D7346
Flash Point (Cleveland Open Cup) (°C)	>170	>170	>170	>170	ASTM D92
Shelf Life	3 years in original containers whilst stored out of direct sunlight				

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