



# HYDROX BIO RANGE

## **DESCRIPTION**

**HYDROX BIO** is a range of environmentally acceptable lubricants, based on synthetic esters, which provide and 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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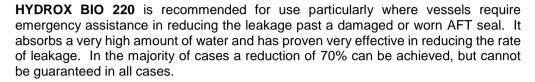








## **HYDROX BIO RANGE**



**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	( 0)	\ _ 1	721	721	12	7.01111.010
(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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Accredited to the ISO 9001 Quality Standard and the ISO 14001 Environmental Management Standard