

# INSTRUCTIONS FOR USE HYDROX BIO



## Instructions for use in the Sterntube

### KEY POINTS

#### 1. Stern Seal OEMs

- Approved by all major seal OEMs subject to some conditions e.g. seal type
- Contact us for details and follow OEM guidelines

#### 2. Bearings

- Suitable for white metal and composite
- New builds should use lead free designs

#### 3. Shelf Life Before Use

- 3 years in sealed packages, out of direct sunlight, under cover
- To avoid contamination, do NOT transfer to storage tanks

#### 4. Change Over

- Carry-over of previous mineral or ester based fluid should not exceed 5%
- To ensure seal OEM warranty, follow OEM guidelines for fluid changeover

#### 5. Top-up / Mixing of HYDROX BIO with other oils

- Vickers Oils does not recommend mixing oils. Any cross-contamination should not exceed 5%.
- We accept no product liability where our EALs have been mixed with another fluid
- In an emergency, please refer to Section 5 on Page 3

#### 6. Oil Condition Monitoring

- Use a comprehensive OCM test suite appropriate to EALs
- Periodic microbial testing is recommended

#### 7. Water Content guidance

- **HYDROX BIO** emulsifies to prevent wear and corrosion by any water in the sterntube
- To ensure seal OEM warranty, follow OEM guidelines
- In case of seal damage, take remedial action if water content exceeds 10%

#### 8. Purification

- Some purification techniques can be used for removing water - please consult us
- Avoid long term use of high temperature purifiers

#### 9. Disposal

- **HYDROX BIO** can be incinerated as normal under safe controlled conditions
- Do not mix with mineral oil waste oil if going for re-refining

Please read the detailed instructions on the following pages

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The **HYDROX BIO** range of environmentally acceptable lubricants (EALs) are based on synthetic esters. These instructions are relevant for the use of **HYDROX BIO** as a sterntube lubricant. For any other applications, please consult us prior to use.

## 1. OEM Sterntube Seal Approval

**HYDROX BIO** sterntube lubricants have been approved for use by all the major sterntube seal manufacturers. In some cases, this is subject to certain OEM conditions. Please therefore check with us for details of these approvals and specific recommendations prior to introducing **HYDROX BIO** into the sterntube system.

## 2. Bearing Compatibility

**HYDROX BIO** sterntube lubricants are suitable for use with both white metal and composite bearing. If fitting new white metal bearings, lead free designs should be selected. Please consult with us if further details are required.

## 3. Storage and Shelf Life

**HYDROX BIO** is supplied in sealed packages and should be stored in those packages until used. The drums should be stored out of direct sunlight and preferably under cover. In order to avoid risk of contamination by water, dirt and microbes etc. **HYDROX BIO** should **NOT** be decanted from the original packages into storage tanks.

The **HYDROX BIO** products have a 3-year shelf life whilst in original Vickers sealed containers when stored out of direct sunlight. They are formulated to give 5 years service life under normal operating conditions, subject to oil condition monitoring advice.

## 4. Change Over Procedures

It is not possible to give exact instructions for the changeover procedure when introducing **HYDROX BIO**, as the method will largely depend on circumstances, including the design of the oil-feed system, overall oil volume, size / location of header tank, circulatory or gravity feed, and the degree of any leakage problem, i.e. top up rate.

Unless it is an emergency leakage situation, the preferred conditions for changeover to **HYDROX BIO** are during new build or in dry-dock when routine procedures can be observed. Mixing different EALs and / or converting from mineral oil to EALs should be done with due care and attention and with proper draining of the existing charge so as not to compromise product integrity. Carry-over should be kept at a maximum of 5%.

Many of the seal OEMs recommend flushing prior to the introduction of an EAL. Care should therefore be taken to follow the relevant OEM guidelines. Please consult with us or the OEM for further details.

**N.B.** Please note that any residual oil, left over from the oil drain, is liable to reduce the life of the fresh oil.

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## 5. Top-up / Mixing of HYDROX BIO with Other Oils

### Mixing HYDROX BIO with other (non-Vickers) EALs

We recommend against mixing oils intended for regular use. However, where a vessel cannot obtain supplies of the EAL already in use and has no alternative to topping up with an alternative EAL, the following should be noted:

- Whilst the ester base-oils used in Vickers Oils EALs are normally miscible with the ester base-oils found in other EALs, this does not necessarily mean that the additives are miscible or will work in combination under all conditions.
- **HYDROX BIO** is not miscible with fluids having a density >1.0 e.g. glycol fluids.
- We are unable to comment on the performance of a mixture of two or more oils, which may drop to (or below) that of the lower performing oil.
- When topping up used oil, any significant ageing of the used oil is liable to reduce the performance of the fresh oil.
- We accept no product liability where our EALs have been topped up with another fluid, or used to top up another fluid.
- We are unable to offer specific advice about mixtures of oils unless both are Vickers EALs.

### Mixing HYDROX BIO with oil additives / leak-stoppers

We strongly recommend not mixing HYDROX BIO with oil additives / leak-stoppers. They have been found to lead to a reduction in the service life of the lubricant.

### Mixing HYDROX BIO with conventional mineral oils

In general, **HYDROX BIO** has been found to be compatible with most (but not all) mineral oils. Compatibility cannot however be guaranteed and we recommend that you seek advice from us prior to any mixing. Please also note that a sterntube system that has an EAL / mineral oil mix may not be able to claim the high environmental credentials associated with **HYDROX BIO**. We suggest mineral oil content should not exceed 5%.

**N.B.** The **HYDROX BIO** grades should not be mixed with products which have a Total Base Number (TBN) of  $\geq 30$ . Please consult with us for further information should your current sterntube oil have a TBN  $\geq 30$ .

### Mixing HYDROX BIO with Vickers mineral oil grades

The **HYDROX BIO** oils are physically compatible with the products in Vickers' mineral based sterntube range. In line with good practice however we would not encourage regular running on mixtures of lubricants with different additive types, in sterntube systems. As noted above, any EAL / mineral oil mix may not be able to claim the high environmental credentials associated with **HYDROX BIO**.

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## 6. Oil Condition Monitoring

EALs are high performance, premium products that deserve proper maintenance to ensure a good return on the investment. Used EAL samples should be landed regularly and examined under the oil condition monitoring (OCM) programme that complies with the requirements of Classification Societies. The OCM test suite should be comprehensive and include testing appropriate to EALs. Periodical microbial testing should also be included.

Please contact us for details of our Condition Monitoring Scheme (CMS).

## 7. Water Content Guidance

Vickers' **HYDROX BIO** oils (neat product and product plus 20% water contamination) have been successfully tested by Class and their stability, lubricating and corrosion protection performance have been verified. In accordance with best practice and some OEM guidelines we would however always recommend monitoring water content.

Remedial action should be taken once the water content reaches 10%, or if a breach of seal is indicated; or if the levels exceed specific OEM limitations for regular running. Please consult the relevant seal OEM or with us for individual OEM water content guidelines.

## 8. Purification

Whilst some purification techniques can be used for removing water from **HYDROX BIO** emulsions we do not recommend the use of long-term high temperature technologies. Please consult with us for further details.

## 9. Disposal

**HYDROX BIO** can be incinerated as normal under safe controlled conditions. Do not mix with mineral oil waste oil if going for re-refining.

We trust that these recommendations cover the majority of questions however please do not hesitate to contact us for any further advice.

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