

Emulsifiable v Non-emulsifiable Lubricants

Free salt water causes corrosion and can lead to sterntube bearing damage on start-up. It is sometimes difficult, in certain AFT seal designs, to undertake the separation of free water.

Emulsifiable lubricants absorb sea or fresh water entering the sterntube to form a fluid emulsion. This reduces the risk of free water being present and continues to provide the required lubrication and corrosion protection. Emulsifiable sterntube lubricants are a practical solution to water ingress and can also enable vessels to delay an emergency dry-docking.

Emulsifying lubricants form a high viscosity emulsion at the point of water entry. This helps to stop or reduce the leak until repairs can be undertaken thereby minimising marine pollution.

Emulsifiable lubricants are able to reduce the oil/water transfer across the seals whereas this is not possible with non-emulsifying lubricants

Non-emulsifiable lubricants expose the bearing and other components to low viscosity free water and potential wear damage. If a non-emulsifiable lubricant is used then free water **must** be removed. This often requires a separator and it may prove impossible to remove water from the seal housing. The use of separators, in themselves, can cause problems with overheating of the oil and depletion of some additives combined with the concentration of some salts in the oil (eg. sodium).

Non-emulsifiable lubricants are unable to reduce any leaks since they do not form an emulsion.

Both emulsifiable and non-emulsifiable lubricants have the same level of hydrolytic stability. This is an indication of the ability of the lubricant to withstand breakdown by water at high temperature over time.

If a separator can be used successfully to remove water from the seal housing, the risk of hydrolysis may be reduced. However, in practice this is often very difficult to achieve.

For sterntubes the major OEMs approve both emulsifiable and non-emulsifiable lubricants and Vickers Oils is able to supply both technologies.

Vickers' philosophy is that emulsifying oils are more suited to sterntube applications because there is a strong likelihood of water presence. We recommend non-emulsifying oils for gear and hydraulic applications since free water has an adverse effect on equipment and should be separated off on a regular basis.

If you have any further questions however please do not hesitate to contact us for further advice.

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