

*Technical  
Issue Nr. 1  
January 2010*

## ***Impact of new EU directive 2005/33/EC Applicable from the 1<sup>st</sup> January 2010***

Dear customers,

Effective the 1<sup>st</sup> January 2010, the EU directive 2005/33/EC requires the use of fuel oil by ships, while "at berth" in EU ports to be limited to 0.1% maximum of sulphur.

### **1 - General**

---

In this directive, the expression "at berth" refers to ships which are securely moored or anchored in a Community port while they are loading, unloading or waiting for instructions (i.e. when the ship is not engaged in cargo operations).

If the main engine is not operating during time spent at berth, it can be shut down and started up on a fuel exceeding the 0.1% sulphur limit content. The 0,1% fuel sulphur limit is however applicable to all types of running combustion machinery on board – including boilers – during the time spent at berth, regardless what kind of marine fuel is used. In practice, this means that all running machinery operating on marine fuel with a sulphur content exceeding 0.1% has to change over to fuels with a sulphur content below 0,1%.

The EU 0.1% marine fuel sulphur requirement does not apply to the following situations:

- Whenever, according to published timetables, ships are due to berth for less than two hours,
- Until the 1st January 2012 for certain vessels listed in the Annex from the directive 2005/33/EC and operating exclusively within the territory of the Hellenic Republic,
- Ships which switch off all engines and use shore-side electricity while at berth in ports,
- Ships using, on certain conditions, an approved emission abatement technology.

Warships are subject to a special clause.

In that respect lubricant recommendations have been setup depending on the engine maker guidelines. The following document has to be understood as a general recommendation and does not replace the engine designer instructions and recommendations. TOTAL Lubmarine shall not be liable for any damage or injury arising from the use of information based on this document.

### **2 - Two stroke engine**

---

As far as the two stroke engines are used onboard as a propulsion engine, these engines are not in use while the ship is "at berth". Such engines are not affected by the EU regulation and do not require any special instructions.

If, for any purpose, a two stroke engine has to be used at berth for more than two scheduled hours, please contact your TOTAL Lubmarine technical correspondent.



### 3 - Four stroke engine

The 4-stroke engine requires a specific Trunk Piston Engine Oil according to the grade of fuel in use.

When operating continuously on **HFO, AURELIA TI** with a BN 30 or higher is recommended.  
When operating continuously on **MDO, DISOLA M** is recommended.

When switching operation between HFO and MDO (so called mixed operation), **it will be the time of use of MDO which will dictate whether to change or not to a low BN lubricant.**  
This period is defined by the 4-stroke engine makers as follow:

|                                      | MAN   | WÄRTSILÄ                                      | MaK                                   | YANMAR                                | DAIHATSU                             | HiMSEN                               |
|--------------------------------------|---|---|---------------------------------------|---------------------------------------|--------------------------------------|--------------------------------------|
| <b>Mixed Operation (HFO and MDO)</b> | <b>Usual lubricant for operation with HFO</b> | <b>Usual lubricant for operation with HFO</b> | <b>BN 15 if time at MDO &gt; 750h</b> | <b>BN 15 if time at MDO &gt; 300h</b> | <b>BN 15 if time at MDO &gt;300h</b> | <b>BN 15 if time at MDO &gt;200h</b> |

For the other engine designers not listed above, please contact your technical correspondent and the engine designer representative.

The SAE grade has to be selected as per engine designer instructions.

Both AURELIA TI and DISOLA M are miscible and compatible.

The most important point is to maintain sufficient BN in service to protect the engine against corrosion. Moreover, it is highly advisable to indicate on any sample label if you have mixed AURELIA TI and DISOLA M in order to get correct comments on your lube oil analysis report.

**Particular:** If, for an engine using permanently MDO, it is decided to modify the engine operation, in order to use alternatively or permanently HFO, then the switch from DISOLA M range to AURELIA TI range is necessary.

In case of doubt, please contact your Lubmarine technical representative.

This document is for information only and TOTAL Lubrifiants shall in no event be liable for its content or any consequence thereof. Please, refer to the original wording of the EU directive 2005 / 33 / EC.