# INLAND NAVIGATION FUEL AS PER 1ST JANUARI 2011

Based on the EU Directive 2009/30/EC of 23rd April 2009 implementation of low sulphur gas oil with a sulphur level of maximum of 10 ppm for inland navigation is required as per 1st of January 2011.

Originally in improving emission of inland navigation the European Committee intended to introduce one type of low sulphur fuel specification, being the EN590. However, this was let loose and the final directive only gives limits to the maximum sulphur content in gas oil for inland shipping being maximum 10 ppm (10 mg/kg) or 0,001 % m/m.

In January 2010 the IVR released a report on the implementation of low sulphur fuel and possible consequences thereof, "*IVR report on the impact on implementation of low sulphur fuel in seagoing per 1-1-2010 and inland navigation per 01-01-2011 from a practice viewpoint*", available on www.ivr.nl.

Due to the fact that only the maximum fuel sulphur content is regulated by the EU directive, it cannot be excluded that different qualities of gas oil will be supplied throughout Europe, which, although most probably applying to the maximum allowed sulphur content, on different fuel specifications might be less up to standard than would be desirable.

It is a fact that quite a number of vessels have “older” propulsion- and auxiliary engines installed which are less equipped for low sulphur fuel usage. These so-called “older” engines are more susceptible to wear of fuel system components with all resulting consequences.

Also fuel system component seals of the “older” engines might suffer leakage when using low sulphur fuel.
For all engines finding a new balance between the low sulphur fuel end lube oil TBN (a measure of a lubricant's reserve alkalinity) will be required.

All considering, it can be stated that implementing low sulphur fuel in the inland shipping is no problem provided that, in consultation with engine manufacturers and lube oil suppliers, possible required modifications at the engine and its fuel systems are carried out, lube-oil TBN is well adjusted to the low sulphur fuel and good, preferably EN590, spec fuel is bunkered.

In general, low sulphur fuel will result in a cleaner combustion and emission, a cleaner engine, a somewhat higher fuel consumption, however with a risk of fuel system components wear of older engines if no EN590 fuel to which lubricity additives are added during the refinery process is used.

Also bio-components up to 5 to 7% can be added to the fuel by the refinery or fuel supplier. Bio-components have a cleaning effect and is more sensitive for forming of bacteria with resulting risk of clogging of the fuel system.

None of fore mentioned issues will create problems when proper attention is given to the implementation of low sulphur fuel, the quality thereof, the correct modifications of the fuel systems of the “older” engines and a correct adaptation of the lube oil.

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## HOW TO PREVENT PROBLEMS?

In order to prevent problems when using low sulphur fuel, whether or not mixed with 5 to 7 % bio-components, a number of steps are to be taken.

### STEP 1 ❑

Contact your engine(s) manufacturer(s) in order to establish if and if so which adaptations to the engine and it's fuel systems are required when switching over to low sulphur fuel. These possible modifications will differ from make and type of engine, so engine manufacturers or dealers need to be consulted.

### STEP 2 ❑

Bunker EN590 gas oil or gas oil which complies with the EN590 quality criteria.

### STEP 3 ❑

Consult with the engine manufacturer(s) and lube oil supplier about the lube oil to be used when running your engine on low sulphur fuel, this because the lube oil TBN should be in balance with the low sulphur fuel used.

### STEP 4 ❑

If you have exhaust after treatment systems, consult with your supplier about possibly required modification when using low sulphur fuel.

### STEP 5 ❑

In relation to the cleaning effect of bio-components in the fuel, clean fuel tank and fuel system immediately before use in order to prevent forming of sludge and bacteria, clogging of filters and pumps and damage to the fuel system.

### STEP 6 ❑

Regularly inspect fuel system seals for possible leakage as a result of seals being affected by the low sulphur fuel usage and regularly inspect and clean fuel filters.

### STEP 7 ❑

Carry out frequent lube oil analyses and monitor the effects on engine parts of low sulphur fuel usage during engine maintenance.