



Alfa Laval high-speed separators are biofuel ready!

Are you considering a switch to biofuel as a way of reducing emissions and improving sustainability? Alfa Laval will support you in the transition and ensure smooth operation.

Biofuels are much like fossil fuel oil, but some of their characteristics differ.

Biofuel Ready

Fuel characteristic

Issue

Alfa Laval's solution

Stability

FAME is hydrophilic and has a **lower stability** compared to fossil fuel oil. It is more prone to degrading over time, forming hydroperoxides, aldehydes, carboxylic acids, alcohols and insoluble material. The degradation of FAME is inevitable, and the presence of water accelerates it.

Potential corrosion

The formation of acid groups can affect the fuel's compatibility and lead to corrosion in the fuel system.

Assured compatibility

Today's *Alfa Laval marine separators* can withstand the acidity of FAME conforming to EN14214 or ASTM D6751. (The compatibility of older equipment should be verified.)

Potential clogging

The intrusion of water can lead to residue and microbial sludge build-up that may clog filters, the separator disc stack and injectors.

Continuous impurity removal

Alfa Laval marine separators continuously and efficiently remove water and sludge.

Soapy sludge

Adding conditioning water to soften the sludge may cause the FAME to become soapy. Soapy sludge arises when free fatty acids from the FAME react with the water and salts.

No conditioning water

When FAME is selected as fuel in the *ALCAP separator control system*, no conditioning water is used.

Note! Conditioning water is required for proper bowl discharge when running on residual fuels. Selecting the correct operating fuel will ensure that conditioning water is applied as needed.

Relative permittivity

FAME and HVO have a higher relative permittivity compared to fossil fuel oil.

Water transducer alarms

In Alfa Laval's *ALCAP separators*, the water transducer detects escaping water by measuring electrical capacitance at the clean oil outlet. Since water has a higher relative permittivity than oil, any water flowing through the transducer will peak the capacitance.

A small deviation in capacitance will trigger draining or discharge, but a larger deviation indicates an error and will result in an alarm. FAME and HVO are problematic because they have much higher relative permittivity than diesel oil or heavy fuel oil.

Control system update

The *Alfa Laval EPC 60* software has been updated to accommodate the relative permittivity of biofuels. (The older *Alfa Laval EPC 50* can be adjusted manually.)

Incorrect separation interface

In purifier-type separators, a gravity disc that does not account for lower HVO density will direct the flow incorrectly, impeding separation.

Optimized gravity discs and bowl bottom

An optimized gravity disc design for *Alfa Laval P separators* and an optimized bowl bottom design for *Alfa Laval MIB 503 separators* are available to ensure correct function with HVO.

Density

HVO has a **lower density** (770–790 kg/m³) compared to fossil fuel oil.

Insufficient pressure

Due to lower HVO density, the light phase may not produce enough pressure to push the heavy phase (water) towards the paring tube in *ALCAP separators*. This can keep water from being removed, allowing it to escape via the light phase outlet. In addition, the low pressure will trigger an alarm.

Control system update for HVO

An update of the *Alfa Laval EPC 60* software is available. The update ensures proper water removal and alarm function during HVO operation.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com