

HEATBASE Ltd Factsheet 32

Bio Kerosene

Version 1 April 2015

What is Bio Kerosene and FAME and should we use it?

Fatty acid methyl esters (FAME) are a type of fatty acid ester that is derived by transesterification of fats with methanol. The molecules in Bio Kerosene are primarily FAMEs, usually obtained from vegetable oils by transesterification. They are used to produce detergents and biodiesel. FAMEs are typically produced by an alkali-catalysed reaction between fats and methanol in the presence of base such as sodium hydroxide or sodium methoxide.

Biofuel may contain small but problematic quantities of water, although it is hydrophobic (non-miscible with water molecules), it is also said to be hygroscopic (has the ability to attract and retain water molecules from the surrounding environment and atmosphere through either absorption or adsorption). Therefore, before using biofuels you must ensure your fuel tank is clear of water and sludge, and ensure that the tank is kept free of water whilst storing the fuel.

If and when adopted, Bio Kerosene will be a mixture of Standard Kerosene blended with 30% FAME; it is expected to be around 10p per litre (15-25%) more expensive than standard kerosene. It has a shorter shelf life than standard kerosene and is a much more aggressive fuel. Certain equipment such as Oil tanks, oil supply lines, filters, fire valves, de-aerators, oil pumps and other components may not be compatible with the fuel and so will need replaced. Due to the shorter shelf life of the fuel it should be stored in smaller storage tanks meaning smaller and more frequent deliveries (which usually incurs additional costs) and may require installation of electric trace heating on the oil supply line to keep the fuel warm enough to stop it thickening in colder weather.

Points to consider:

1. Bio kerosene would only be viable if it is adopted as part of the Governments RHI (renewable heat incentive) scheme, which may last for up to 7 years.
2. Some Burner companies are already stating that fuel filters will need to be replaced "at least" 4 times per year meaning Service and callout costs will quadruple.
3. Oil tank maintenance will become even more important to try to ensure there is no water ingress into the Oil Storage Tank.
4. There is an increased chance of component failure and therefore increased costs and problems for the end user.
5. Like other fuels that are "renewable" and part of the RHI; Once the RHI payments stop you would then be left with a more expensive fuel than standard kerosene.

Regardless of the above points no doubt we will have Bio Kerosene pushed onto us at some point.