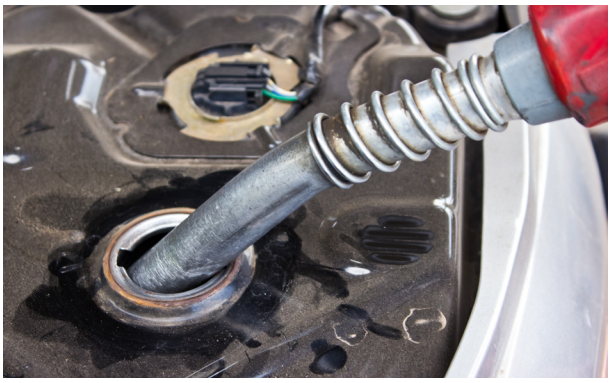
Changes in the bio content of diesel - The impact on the industry

Have you noticed a change in your fuel?
Do your tank filters keep blocking more quickly?
Does your fuel look cloudy or full of sludge?

If you're in the fuel industry, or store diesel to refuel your vehicles/machinery on site, then it's likely you've noticed a recent change in the fuel. With filters blocking more regularly, we've had many customers ask us if we know what's going on with the fuel quality that they're currently experiencing. However, it appears quality is not the issue but a change in the bio content of fuel.

Tougher renewable energy targets set by the European Renewable Energy Directive and the UK's Renewable Transport Fuel Obligation are forcing suppliers to gradually increase the amount of biodiesel in their total fuel supply. In January of this year, we saw the target percentage rise from 7.25% to 8.5%, which is further set to increase in January 2020 to 9.75%. But what does this increase in bio content mean for the industry and those using it? What problems can it cause and how do we overcome them? This is what we will answer here…



What is FAME and it's knock on effects?

Biodiesel is a diesel replacement primarily made from recycled cooking oils, animal fats and plant oils. During the manufacturing process, Fatty Acid Methyl Esters (or FAME) are created that are consequently blended into the fuel.

The quality of European diesel fuel is specified by the EN 590 standard, which currently stipulates a FAME limit of 7%. Up until recently, we've seen the FAME content in diesel float around 5%, but now we're experiencing levels more around the maximum. Therefore, whilst the fuel being supplied into the market is still on spec, the two key characteristics of FAME are likely to be contributing to the noticeable change in your diesel.

1. It is **hygroscopic**, which means it attracts and holds onto water. The problem associated with water content in fuel causing sludge, mould and bacteria to arise has been widely reported for years. More FAME, means more water, which means more nasty microbial growth.
2. It acts as a **detergent**, essentially cleaning any residual dirt or impurities from the tank walls and pipework it passes through, which ultimately ends up in the fuel itself.

A filter clogged up with diesel sludge

Unfortunately, both of these characteristics mean that an increased level of bio content can result in an increased level of fuel contamination after it has been stored for a while. This is why tank owners are likely finding their filters blocking quicker and them needing to be replaced a lot more regularly.

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Changes in the bio content of diesel - What you can do...

As well as an overall increase in bio content, it could also be the type of FAME blended into the fuel that is responsible for some of these problems. As biodiesel made from animal fat has a higher level of saturates, it begins to crystallise at higher temperatures than bio made from vegetables oils, making your fuel appear cloudy and your filters clog. This higher cloud point makes the use of such biodiesel less suitable in the winter, and with the cold weather season officially upon us, this could too explain the issues the industry is experiencing.

So, as a tank owner, what can you do?

Advice to limit FAME related issues

- Keep spare filter elements on site and change them as soon as you notice a drop in the flow rate. Replacing your blocked filter quickly reduces any tank downtime. **Remember**…A blocked filter is a filter that's done its job! If a filter is blocked, then it's full of contaminants. If it wasn't there, such contaminants would have entered the vehicle and caused some real damage. Better replacing the filter than the vehicle engine!
- Before your next fuel delivery consider having your tank professionally cleaned. By ensuring that the internal tank walls and pipework are as free as possible from water, solid deposits, rust or mould, the detergent nature of the biodiesel will have less to act on.
- Safeguard your tank against any water ingress by monitoring any leaks, replacing filler caps after deliveries and keep your tank topped up with regular fuel deliveries. Air holds moisture, so the fuller the tank, the less air there is inside the tank for moisture to be drawn out of.
- Keep an eye out for your fuel looking cloudy or the presence of sludge. These are important signs of contamination that need to be dealt with.
- Don't let fuel sit stagnant! If your fuel tank isn't regularly used, then it's more susceptible to the problems associated with the water content in bio. To prevent nasty contamination, a fuel recirculation unit could be installed to prevent the bacteria from settling and creating the nasty microbial sludge.

If you're noticing a change in the fuel you've had delivered, or if your customers have reported that they are experiencing such issues then the above recommendations will help. For official notice and advice from UKIFDA; the UK and Ireland Fuel Distributors Association (formerly FPS) please **click here.**

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