

Frequently Asked Questions – Vplus7 and biofuels

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I'm considering using SVO what are my choices?

To use 100% SVO you will need a fuel system conversion. This is not a cheap option, but there are a number of companies offering kits and conversion services. A good quality kit will enable safe use of SVO, however a specialist fuel treatment such as Vplus7 should still be used to maintain performance and prevent accelerated engine degradation. Alternatively SVO can be blended with diesel and used in many unmodified engines. The strength of blend (typically from 20% to 50% SVO) will depend on a number of factors, including the fuel system components, engine and temperature at which it is used. Appropriate blends are vehicle specific, and many vehicles are not suited at all. Further information can be found on internet user groups. When using SVO blend it is even more important to use a specialist treatment such as Vplus7, as the fuel is far from the optimal specification for the engine.

Why use fuel treatment?

Engines are designed to run on mineral diesel. Diesel contains additives to help maintain engines. If you use any biofuel you are putting a fuel into your vehicle for which it was not designed, and this will exacerbate any fuel related problems. Deposits from vegetable oil fuels are also much worse than from diesel, and their stability is poor. Using such a fuel in an engine for which it was not designed and without any additives is asking for trouble.

What does Vplus7 do?

Vplus7 is a fuel treatment specifically designed for use in SVO and SVO blends. It will also be effective in biodiesel. It maintains injector cleanliness, reduces combustion chamber deposits, enhances combustion and stabilises the fuel. This leads to longer lived engines, higher fuel efficiency and lower emissions.

What does Vplus7 not do?

Vplus7 does not thin vegetable oil (it is only used in tiny proportions). Diesel can be used for thinning, which is the principle behind using SVO blends, and heating can also thin vegetable oil, which is the principle behind SVO conversions. Vplus7 does not reduce the acid level in used vegetable oil. Vplus7 does not affect the cold temperature properties of the fuel. We are currently testing our cold winter additive for biodiesel.

Why is Vplus7 more expensive than other fuel treatments?

Vegetable oil based fuels are harsher on the engine than diesel. They tend to leave heavier deposits that harden into a lacquer. The fuels are also much less stable, reacting with metals and oxygen. Both the range of active components and their concentration must be significantly higher than typical diesel additives to achieve similar results, therefore treatment of vegetable oils does cost more than treatment of diesel. In the end you get what you pay for.

I'm confused, are there different types of biofuel?

There are two types of biofuel for diesel cars. EN14214 biodiesel which is made by reacting vegetable oil with fossil methanol and DIN51605 pure vegetable oil, also known as SVO (straight vegetable oil) or PPO (pure plant oil). The viscosity of biodiesel to EN14214 is close to fossil diesel and this makes it suitable for use in nearly all vehicles, and therefore suitable for general distribution. This is the fuel that some manufacturers warranty their vehicles for. However it is not as environmentally efficient as using the vegetable oil itself.

Can I mix fossil diesel and vegetable oil?

Yes, they are co-soluble and can be mixed. In fact, for all unmodified vehicles you must use SVO as a blend with diesel. For vehicles with "strong" fuel pumps this mixing can take place in the fuel tank. For other vehicles it is safer to mix prior to adding the blend to the fuel tank. Due to the difference in viscosity between SVO and diesel the SVO will initially sink to the bottom of the fuel tank. If you add SVO to the tank and start using it with a cold engine, the pure SVO that is initially pumped through could break some fuel pumps, particularly during

cold weather. Adding it when the engine is warm, and then driving is generally safe.

What car models are suitable for SVO blend?

Many diesel cars are suitable provided the correct blend is used with Vplus7. However, we strongly recommend against use in vehicles under warranty, as SVO blends are not warranted by motor manufacturers (Some cars are warranted to run on EN14214 biodiesel and a suitable supplier should be sought). SVO blends of any strength are not suited to Peugeot/Citroen common rail fuel systems (Hdi) due to a weak in-tank auxiliary fuel pump.

Does the fuel perform as well as fossil diesel?

It often performs slightly better (if our additive is used). Many people have noticed an improvement of around 5% fuel efficiency. If performance is noticeably worse it is best not to use it.

Is biofuel cheaper than diesel?

Yes, if you qualify as a small producer. However, there will be higher maintenance costs through more frequent fuel filter changes and performing an engine oil flush on each service. Biofuel use should be viewed as a green option that will not cost you more than the non green alternative, rather than as a way to save money.

What are the potential problems when using SVO blends?

The single biggest issue we have seen relates to blocked fuel filters. Other issues are lube oil dilution, engine coking and fuel pump failure. All these issues are covered in separate FAQ's below.

1. Filter blockages...?

All current diesel biofuels have higher cloud and wax points than mineral diesel, and in winter can lead to filter blockages. Blending with winter grade diesel can significantly lower the cloud point, and our recommended winter grade blends should not cause problems, except in unusually severe conditions when it is advisable to run on pure diesel.

We have also had filter blockages resulting from micro-organisms growing in the fuel tank. These may have been present for a long time without causing problems, but have left a black sludge in the fuel tank. As SVO blend is thicker it

can help lift this sludge and transport it to the fuel filter. Biofuels are also more biodegradable and can encourage rapid microbial growth in hot weather.

As the fuel is thicker than diesel it is intolerant to partially blocked filters. Adding additional diesel can temporarily help, until you are able to get a new filter. The fuel filter should be changed at every service.

Filter blockages will lead to a loss of power, particularly at high revs. With a common rail system it is important to take immediate action, as the auxiliary fuel pumps can fail if the filter becomes blocked.

It is advisable to carry a spare filter with you.

2. Lube Oil Dilution...?

Lube oil dilution is a potentially serious issue (unburnt vegetable oil or biodiesel slipping past piston rings) as this will polymerise in the lube oil and could lead to engine failure. Use of blends much stronger than we advise could cause this problem. As small quantities of fuel will inevitably contaminate the lube oil, an oil flush should be performed on each oil change. It is important to perform oil changes at the recommended intervals. Extended service intervals of 20 - 25,000 miles between oil changes are an option on some vehicles. To use SVO blends or biodiesel the vehicle should be derated to standard oil change intervals.

3. Coking...?

Unburnt vegetable oil can lead to higher levels of coking in the combustion chamber. Again, our advice on blend strength should be followed. Our Vplus7 fuel additive package helps combat this potential problem.

4. Fuel Pumps...?

SVO blend is thicker than diesel. Some fuel pumps are not tolerant to this increase in viscosity and care should be taken to use the right blend.

Can I buy vegetable oil and blend it with diesel in my fuel tank?

Yes, however care should be taken on two counts. First, only clear vegetable oil should be added. If it has gone cloudy due to low temperatures it should be brought into a warm room to clear prior to use. Once mixed with diesel the cloud point will be lower. Secondly, if you are recommended to operate on a weak blend we advise you to pre-mix diesel with SVO outside the fuel tank (in winter this must be done). When first added SVO will sink to the bottom of the fuel tank and pure biofuel could be drawn into the fuel system, causing a pump failure.

Can I make my own biofuel from used cooking oil?

You can, but it is a bit like home brewing. Once you have got the oil, processed it, cleared up the mess, provided you have done a good job it will be drinkable...

er... burnable. You probably won't save much money if you account for your time, and you will find most restaurants already have someone regularly collecting their UCO. It is much more important to use a suitable additive package, such as Vplus7, with UCO derived fuel, in particular both UCO and UCO derived biodiesel will require the combustion enhancers and stability additives found in Vplus7.