Biodiesel Frequently Asked Questions

Biodiesel is fast becoming a widely recognized blending agent for petroleum diesel due to its performance and environmental qualities. Biodiesel blends range from B2 (2% biodiesel and 98% diesel) up to B20 (20% biodiesel and 80% diesel) for on-road use. For off-road use, many farmers use higher blend levels in their equipment.

What is biodiesel?

Biodiesel is the name of a clean-burning, biodegradable alternative fuel produced from renewable resources, such as vegetable oils and animal fats. It can be used in diesel engines with no major modifications. Biodiesel is easy to use, non-toxic and free of sulfur and harmful aromatics.

Is vegetable oil biodiesel?

No. Vegetable oils are the feedstock for making biodiesel. Vegetable oils must go through a manufacturing process that converts oils into chemicals called esters, or biodiesel. Biodiesel must meet the American Society for Testing and Materials (ASTM D6751) quality specifications.

Is biodiesel used as a pure fuel or is it blended with petroleum diesel?

Biodiesel can be used as a pure fuel or blended with petroleum diesel in any percentage. B20 (a blend of 20% biodiesel and 80% petroleum diesel) has demonstrated significant environmental benefits for fleet operators or other motorists without additional cost.

What do I need to do to use biodiesel in my existing diesel engine?

B20 or lower blends work in any diesel engine with no modifications to the engine or the fuel system. Biodiesel has a solvent effect that may release petroleum diesel deposits that could accumulate on tank walls and pipes. These deposits may end up in fuel filters initially, so fuel filters should be checked more frequently when biodiesel is first used.

Does biodiesel take more energy to produce than is gained?

No. Biodiesel actually has the highest fossil energy balance of any transportation fuel. According to the U.S. Departments of Agriculture and Energy, for every unit of fossil energy used to make biodiesel, 3.2 units of energy are produced. This takes into account the planting, harvesting, fuel production and fuel transportation to the customer when using an agricultural feedstock.

Is biodiesel better for human health than petroleum diesel?

Yes. Scientific research confirms that biodiesel exhaust is less harmful to humans than petroleum diesel. Pure biodiesel emissions decrease cancer causing compounds, reduce the risks associated with asthma and other diseases due to a 47% reduction in particulate matter emissions, and lowers carbon monoxide emissions by 48%.

Does biodiesel cost more than regular diesel?

Market forces and crude oil prices will determine the cost of biodiesel. Federal and state incentives usually result in a lower biodiesel cost. In addition, many fleet managers have determined that biodiesel is their least-cost strategy to comply with state and federal fleet regulations when you also consider no engine modifications are needed and the same infrastructure can be used.

Does biodiesel perform as well as petroleum diesel?

One of the major benefits of using biodiesel is that it can be used in existing engines and fuel injection equipment. Biodiesel improves performance and has a higher cetane number than diesel fuel, providing better ignition capabilities. In more than 50 million miles of in-field demonstrations, B20 showed similar fuel consumption, horsepower, torque and haulage rates as conventional diesel fuel. Biodiesel also has superior lubricity and the highest BTU content of any alternative fuel (ranging between #1 and #2 diesel fuel).

Does biodiesel harm gaskets and/or seals?

The recent switch to low-sulfur diesel to meet EPA emission standards has caused most Original Equipment Manufacturers (OEMs) to switch to components that are also suitable for use with biodiesel.

Biodiesel used in pure form (B100) can soften and degrade certain types of elastomers and natural rubber compounds over time. Using high percent blends can impact fuel system components (primarily fuel hoses and fuel pump seals) that contain elastomer compounds incompatible with biodiesel, although the effect is lessened with lower blend levels. Experience with B20 or lower blends has found that no changes to gaskets or hoses are necessary.

How does biodiesel perform in cold weather?

Biodiesel blends up to 20% should be managed the same as #2 diesel. If higher blends are utilized, additional precautions are necessary during cold weather operation.

Will using biodiesel void my warranty?

The use of biodiesel in existing diesel engines does not void parts or materials workmanship warranties of any major U.S. engine manufacturer.