

Chemicals	Features and benefits
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Bio Diesel Additive

Biodiesel is an excellent alternative fuel to use in diesel engines. However, in some applications special care must be taken to assure peak performance is achieved from the engine. Testing has shown that deposits can form as a result of using B100 and lower percent biodiesel blends in current technology engines. Specifically at risk for deposits are Tier 3 / Stage IIIA engine fuel systems. These deposits can result in significant power loss and reduced fuel economy.



Biodiesel Protect 100 is a high performance diesel fuel injection system cleaner specifically designed to prevent and remove injector deposits caused by biodiesel. Tests have proven that the harmful deposits that result from using biodiesel are different from those created by conventional diesel. It is important that the correct detergent product be used to prevent power loss and reduced fuel economy resulting from injector deposits. This new product, when used as recommended, prevents deposits and maintains performance in all diesel engines.

Part Number	Description	For use in engines
YU00100	ADDITIVE, BIODIESEL, 25L	John Deere PowerTech Plus or PowerTech E engines that comply with Tier 3 regulations, as well as in engines of earlier designs

Specific features of biodiesel (EN 14214) fuel

Biodiesel is a fuel that is produced from renewable raw materials (predominantly rapeseed). John Deere has conducted intensive, long-term tests to investigate the specific features of biodiesel in connection with its use. The results of these tests provide users with valuable information on the

handling and use of biodiesel fuel:

Biodiesel has an approximately 10% lower power density. This affects engine performance and fuel consumption.

In the case of older engines, some rubber or synthetic components are not resistant to biodiesel fuel. It may therefore be necessary to retrofit a number of seals, gaskets and hoses. Your local John Deere dealer can advise if this is necessary for your vehicle.

Where a vehicle has been converted to biodiesel, the fuel filter must be changed after filling the tank with biodiesel in shorter intervals; otherwise, diesel fuel deposits may clog the filter.

Biodiesel could dilute engine oil. John Deere recommends shorter oil change intervals and the use of premium oil.

Owing to the solvent properties of biodiesel fuel, it is recommended to wipe any biodiesel spills from painted surfaces immediately, as is common practice for conventional diesel fuel use.

As is the case with mineral diesel, a thickening of the biodiesel fuel can occur at very low temperatures.

In the case of on-farm storage of biodiesel, it is necessary to ensure that:

the fuel storage and handling system is suitable for the storage of biodiesel (design approval, material compatibility) and the storage tank is completely clean prior to use (biodiesel is an effective cleaning agent).

Biodiesel fuel should be stored for no longer than three months, as biodiesel absorbs moisture, and any resulting water contamination can have an adverse effect on the fuel properties.

Questions and Answers

1. Why is an injection system cleaner necessary?

Field and dynamometer engine tests have shown when Tier 3/Stage IIIA engines operate on B100 and higher-level (eg B20, B30) biodiesel blends, injector tip deposits can form which result in significant power loss and reduced fuel economy. The deposits are carbonaceous and can block fuel spray holes, which reduces fuel flow and alters the fuel spray pattern. Most biodiesel blends are splash blended, resulting in blend errors. Due to splash blending errors, a "B20" blend is often a much greater blend, such as a B40. In order to prevent the formation of and remove any existing injector tip deposits, John Deere requires that Biodiesel Protect 100 be used on a regular basis for B20 or higher blends.

2. What are the benefits of using Bio-diesel Protect 100?

Biodiesel Protect 100 prevents the formation of fuel system deposits and offers protection against engine power loss and increased fuel consumption.

3. Is fuel quality important?

Yes, a customer should only use biofuel that meets EN14214 standard and request a certificate of analysis for that batch of fuel before purchasing.

4. Why does John Deere require the use of an additive with B20 and higher blends of bio-diesel?

John Deere wants customers to have a positive experience when using biodiesel fuels. The potential for the formation of deposits with higher blends of biodiesel has been observed in tests. John Deere is very interested in customers obtaining the optimum performance from their machine. Using Bio-diesel Protect 100 will keep the fuel system clean and the engine

performing to the design specifications.

5. Will any detergent additive work in biodiesel?

The detergent additive used in Bio-diesel Protect 100 is formulated to remove and prevent deposits created by biodiesel. Many commercial detergent additives only work on petrodiesel deposits. This was verified by engine testing. Customers should not use any product that has not been engine tested using biodiesel.

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