REV biodiesel™
the revolution of fuel

✓ No Modifications ✓ 80% Less Emissions

Thank you for choosing REV Biodiesel.

Your choice to use biodiesel fuel makes valuable contributions both to the reduction of America's dependence upon petroleum and to the reduction of pollutants in our environment. REV Biodiesel fuel is produced from renewable sources that meet the ASTM International D6751, the standard for biodiesel. However, it is the responsibility of the customer to determine that REV Biodiesel fuel is compatible with his or her equipment. Pure Earth Energy Resources, LLC dba REV Biodiesel, shall not be liable for any loss, damage or injury incurred by storing, dispensing or using our biodiesel fuel when recommendations of the U.S. National Fire Protection Agency, the Environmental Protection Agency and the National Renewable Energy Laboratory are not followed. *Please read the all of the following information about biodiesel properties, use and storage before you begin using biodiesel fuel.*

Biodiesel

- Is nontoxic and safe to handle
- Contains no nitrogen or aromatics
- Is biodegradable and non-toxic
- In most engines, fuel efficiency is the same as diesel or #2 oil.

As with any fuel, proper maintenance of your diesel engine is imperative when using biodiesel. While biodiesel can be used in diesel engines with little or no modification, it is important to follow certain maintenance procedures to ensure fuel quality and proper equipment performance.

- In general, the standard storage and handling procedures used for petroleum diesel can be used for biodiesel. The fuel should be stored in a clean, dry, dark environment. Acceptable storage tank materials include aluminum, steel, fluorinated polyethylene, fluorinated polypropylene and teflon. Use of copper, brass, lead, tin, and zinc for storage could impact the integrity of the biodiesel.
- Biodiesel fuel should not be stored for more than 6 months.
- Keep biodiesel totes clean and watch for routine fuel contaminants such as sediment and water.
- Biodiesel is a mild solvent. Prolonged contact with painted surfaces may remove coating.
- Always wipe up spills and dispose of rags in a safe manner.

Switching to B99: Recommended Procedures

Engine Components: Certain materials are incompatible with B99 and should be replaced. These include natural rubber compounds, polypropylene, polyvinyl, and Tygon materials. Material incompatibility is usually only an issue with engines made before 1995 because, at that time, most original equipment manufacturers made component changes to accommodate the switch to low-sulfur diesel fuel. The new materials used are also compatible with B99. Components that may need to be replaced include hoses, gaskets, seals, and other parts that would have prolonged exposure to B99. Materials that are compatible with B99 include Teflon, Viton, fluorinated plastics, and Nylon. B99 suppliers and equipment vendors should be consulted to determine which components need to be changed. However, this process is not overly difficult or expensive.

Fuel Filters: B99 is likely to dissolve the accumulated sediments in diesel storage and engine fuel tanks, which can lead to plugged fuel and dispensing filters. Before using or storing B99, clean the fuel system (including fuel tanks) where sediments or deposits may be present. Then, be sure to monitor fuel filters and change them as needed until the sediment build-up is eliminated. Previous successful use of B20 does not mean that tanks are without sediment. B20 is too dilute to "clean" tanks and therefore caution is still warranted when switching to B99. Plan and budget for the cleaning fuel systems in advance, and for increased fuel filter changes afterwards.

Oil Changes: Some B99 may make its way past the piston rings and into the oil pan. This is due to the slightly higher viscosity and density of biodiesel compared to petroleum diesel. High levels of biodiesel present in the engine oil may polymerize over time and cause some engine oil sludge. This can be remedied with more frequent engine oil changes. Blends of B99 might reduce extended drain intervals. Monitor and test engine oil as necessary.

Ph. 480.398.4888 Fx. 480.398.4889 | 1980 W. Commerce Ave. Gilbert, AZ 85233 | www.REVbiodiesel.com

Cold Weather Management

Unlike gasoline, both petroleum diesel and biodiesel can gel ("cloud" or thicken) at cold temperatures. If the fuel begins to gel, it can cause increased stress on fuel pumps and fuel injection systems. It can also clog filters or eventually become too thick to pump from the fuel tank to the engine. B99 can cloud at around 35°F. To prevent cold flow issues, some users switch from B99 to a blend of B50 in cold weather (below 35°F). B50 provides adequate dilution to prevent cold weather gelling. Other options for using B99 in cold weather include keeping vehicles in a heated garage, using fuel system heaters, or using winterized biodiesel (biodiesel with cold flow additives).

Biodiesel Storage for B99

Many petroleum companies do not recommend storing petroleum diesel for more than six months, and the same holds true for biodiesel blends. Current industry recommendations are for biodiesel to be used within six months or reanalyzed to ensure that fuel continues to meet ASTM D 6751 specifications. Most tanks designed to store diesel fuel will store blends of B20 and above with no problem. However, B99 requires some additional considerations as follows:

Tank Materials: Acceptable storage tank materials include aluminum, steel, fluorinated polyethylene, fluorinated polypropylene, Teflon, and most fiberglass.

Moisture: Keep tanks dry. Moisture is detrimental when combined with any biodiesel product and can ultimately affect both equipment performance and equipment maintenance. Keeping tanks dry also minimizes bacteria and algae growth. Periodic testing is recommended to ensure that water and microorganisms are not present.

Temperature: B99 should be stored at above 40° F. B99 can be stored underground in most cold climates without additional considerations as underground storage temperatures are normally above 45° F. Above-ground fuel systems should be protected with insulation, agitation, heating systems, or other measures if temperatures regularly fall below the cloud point of the fuel. Make sure that fuel pumps, lines, and dispensers are protected from cold and wind chill with properly approved heating and/or insulating equipment.

Cleanup: Because of its solvency properties, B99 can remove decals and some types of body and engine paint if the fuel is not wiped up immediately. Although biodiesel has a high flash point (300°F), all materials that are used to wipe up biodiesel spills should be considered combustible and should be stored in a fireproof safety can.

For more information regarding biodiesel use and storage, go to **http://www.nrel.gov/vehiclesandfuels/npbf/pdfs/43672.pdf**.

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