



What is biodēzi?

Biodēzi is a brand name biodiesel fuel marketed by Greenleaf Biofuels, LLC. Biodiesel is a cleaner burning, domestic and renewable fuel that can be refined from vegetable oil, animal fats or waste grease. The biodiesel we sell is made from virgin soy bean oil grown on American farms. It can be used in compression-ignition (diesel) engines and oil-fired home heating systems with little or no modifications. Biodiesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics.

What is the technical definition of biodiesel?

Biodiesel, n—a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the requirements of ASTM D 6751.

How is biodiesel made?

Biodiesel is refined from vegetable oils through a fairly simple chemical reaction called transesterification. Vegetable oils primarily consist of triglycerides: three carbon chains connected by a glycerin molecule. In the reaction process, an alcohol (methanol or ethanol) is used with a catalyst (potassium or sodium hydroxide) to separate the glycerin molecule from the carbon chains. The long carbon chains in biodiesel have a very similar profile to petroleum middle distillates. The fatty acid alkyl esters, the chemical name for biodiesel, are then separated from the co-product glycerol. The glycerol mixture can be refined into glycerin - a valuable pharmaceutical ingredient used in soaps and other health and beauty products.

What is the energy balance of biodiesel?

Independent studies show that for every one unit of fossil energy put into the production of biodiesel, the yield is 3.2 units of energy out. This is the highest energy balance of any transportation fuel.

Will I need to make any modifications to my diesel car, truck or tractor?

If your vehicle is a 1994 model year or newer, no modifications are needed. Older vehicles will need to have fuel lines and fuel pump gaskets replaced if you run high biodiesel blends (>B30) for an extended period of time. Biodiesel contains a natural solvent that degrades older rubber formulations. Newer materials such as Teflon and Viton resist solvents. This solvent also cleans your fuel system. In older vehicles the petroleum sediment dislodged in the fuel tank may begin to clog your fuel filter. This is a temporary condition that can be overcome simply by replacing your fuel filter. Any loss of power or fuel mileage may indicate a clogged filter.

Can I use biodiesel in the winter?

Yes, but you must blend pure biodiesel with petrodiesel when operating in temperatures below 35 degrees Fahrenheit. A B50 blend is operational down to 15 degrees, and B20 is operational down to -5 degrees. The B100 should be dispensed at a minimum of 50 degrees when blending with petrodiesel in the winter.

Where can I get more information on using biodiesel?

See the NREL's Biodiesel Handling and Use Guidelines:
<http://www.nrel.gov/vehiclesandfuels/nrbf/pdfs/tp36182.pdf>

Why should I use biodiesel?

Biodiesel offers exceptional lubricity for prolonged engine life. Using biodiesel also supports our domestic economy, reduces our dependence on foreign oil and enhances our national security. Furthermore, using biodiesel will significantly decrease emissions of greenhouse gases, unburned hydrocarbons and particulate matter that contribute to lung disease. Biodiesel is the only alternative fuel to have fully completed the health effects testing requirements of the Clean Air Act. Biodiesel in its pure form (B100):

- is less toxic than table salt
- biodegrades as fast as sugar
- blends easily with petroleum products
- reduces CO2 emissions by up to 78% (16% in a B20 blend)
- substantially reduces unburned hydrocarbons, carbon monoxide, and particulate matter, thus reducing the localized formation of smog
- dramatically reduces polycyclic aromatic hydrocarbons (PAH) and nitrated polycyclic aromatic hydrocarbons (nPAH), which have been identified as potential cancer causing compounds
- essentially eliminates emissions of sulfur oxides and sulfates (20% reduction in a B20 blend), thus reducing major components of acid rain.

Can I purchase biodiesel blends in bulk?

Yes. We can deliver biodiesel blends through our distribution partners for your fleet or retail station.