COMMONLY ASKED QUESTIONS

What is biodiesel?

Biodiesel is the name of a clean burning alternative fuel produced from domestic, renewable resources. Biodiesel contains no petroleum, but it can be blended at any level with petroleum diesel to create a biodiesel blend. It can be used in compression-ignition (diesel) engines with no major modifications. Biodiesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics.

Technical Definition: *Biodiesel, n*—a fuel composed of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100, and meeting the requirements of ASTM (American Society for Testing & Materials) D 6751.

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 in any percentage. B20 (a blend of 20 percent biodiesel with 80 percent petroleum diesel) has demonstrated significant environmental benefits with a minimum increase in cost for fleet operations and other consumers.

Is it approved for use in the U.S.?

Biodiesel is registered as a fuel and fuel additive with the Environmental Protection Agency (EPA) and meets clean diesel standards established by the California Air Resources Board (CARB). Neat (100 percent) biodiesel has been designated as an alternative fuel by the Department of Energy (DOE) and the U.S. Department of Transportation (DOT).

How do biodiesel emissions compare to petroleum diesel?

Biodiesel is the only alternative fuel to have fully completed the health effects testing requirements of the Clean Air Act. The use of biodiesel in a conventional diesel engine results in a substantial reduction of unburned hydrocarbons, carbon monoxide, and particulate matter compared to emissions from diesel fuel. In addition, the exhaust emissions of sulfur oxides and sulfates (major components of acid rain) from biodiesel are essentially eliminated compared to diesel.

Of the major exhaust pollutants, both unburned hydrocarbons and nitrogen oxides are ozone or smog forming precursors. The use of biodiesel results in a substantial reduction of unburned hydrocarbons. Emissions of nitrogen oxides are either slightly reduced or slightly increased depending on the duty cycle of the engine and testing methods used. Based on engine testing, using the most stringent emissions testing protocols required by EPA for certification of fuels or fuel additives in the U.S., the overall ozone (smog) forming potential of the hydrocarbon exhaust emissions from biodiesel is nearly 50 percent less than that measured for diesel fuel.

Can I use biodiesel in my existing diesel engine?

Biodiesel works in any diesel engine with few or no modifications to the engine or the fuel system. Biodiesel has a solvent effect that may release deposits accumulated on

tank walls and pipes from previous diesel fuel usage. The release of deposits may end up in fuel filters initially, so fuel filters should be checked more frequently at first. Ensure that only fuel meeting the biodiesel specification (D 6751) is used.

Can biodiesel help mitigate "global warming"?

Biodiesel is the best greenhouse gas mitigation strategy for today's medium and heavy duty vehicles. A 1998 biodiesel lifecycle study, jointly sponsored by the U.S. Department of Energy and the U.S. Department of Agriculture, concluded biodiesel reduces net carbon dioxide emissions by 78 percent compared to petroleum diesel. This is due to biodiesel's closed carbon cycle. The CO^2 released into the atmosphere when biodiesel is burned is recycled by growing plants, which are later processed into fuel.

Does biodiesel take more energy to make than it gives back?

No. Biodiesel actually has the highest "energy balance" of any transportation fuel. The DOE/USDA lifecycle analysis shows for every unit of fossil energy it takes to make biodiesel, 3.2 units of energy are gained. This takes into account the planting, harvesting, fuel production and fuel transportation to the end user.

Is biodiesel better for human health than petroleum diesel?

Scientific research confirms that biodiesel exhaust has a less harmful impact on human health than petroleum diesel fuel. Pure biodiesel emissions have decreased levels of polycyclic aromatic hydrocarbons (PAH) and nitrited PAH compounds that have been identified as potential cancer causing compounds. Also, particulate matter, an emission linked to asthma and other diseases, is reduced by about 47 percent, and carbon monoxide, a poisonous gas, is reduced by about 48 percent.

Does biodiesel cost more than other alternative fuels?

A federal tax incentive is expected to help lower the cost of biodiesel blends in both taxable and tax exempt markets. Additionally, when reviewing the high costs associated with other alternative fuel systems, many fleet managers determine biodiesel is their least-cost-strategy to comply with state and federal regulations. Use of biodiesel does not require major engine modifications. That means operators keep their same fleets, spare parts inventories, refueling stations and skilled mechanics.

Do I need special storage facilities?

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. Copper, brass, lead, tin, and zinc should be avoided. The DOE Biodiesel Handling/Use Guidelines can be found at www.biodiesel.org.

Where can I purchase biodiesel?

Biodiesel is available anywhere in the U.S. The National Biodiesel Board (NBB) maintains a list of registered fuel suppliers as well as petroleum distributors and retail fueling sites. A current list is available on the biodiesel web site at www.biodiesel.org.