



Biodiesel Facts

COMMONLY ASKED QUESTIONS

What is biodiesel?

Biodiesel is the name of a clean burning alternative fuel, produced from domestic, renewable resources such as vegetable oils from plants and recycled restaurant greases. 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.

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 by volume biodiesel with 80 percent by volume 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 US?

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 US 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 substantial reduction of unburned hydrocarbons, carbon monoxide, and particulate matter compared to emissions from diesel fuel. In fact, the overall ozone forming potential from biodiesel is nearly 50 percent less than that measured for diesel fuel. The exhaust emissions of sulfur oxides and sulfates (major components of acid rain) from biodiesel are essentially eliminated compared to diesel. In addition, biodiesel reduces the soot associated with diesel exhaust and also reduces air toxics and cancer-causing compounds. Scientific research confirms that biodiesel exhaust has a less harmful impact on human health than petroleum diesel fuel. Biodiesel emissions have decreased levels of polycyclic aromatic hydrocarbons (PAH) and nitrated PAH compounds that have been identified as potential cancer causing compounds.

Test results indicate PAH compounds were reduced by 75 to 85 percent, with the exception of benzo(a) anthracene, which was reduced by roughly 50 percent. Targeted nPAH compounds were also reduced dramatically with biodiesel fuel, with 2-nitrofluorene and 1-nitropyrene reduced by 90 percent, and the rest of the nPAH compounds reduced to trace levels.

Can biodiesel help mitigate “global warming”?

A 1998 biodiesel lifecycle study, jointly sponsored by the US Department of Energy and the US Department of Agriculture, concluded biodiesel reduces net CO² emissions by 78 percent compared to petroleum diesel. This is due to biodiesel’s closed carbon cycle. The CO² released into the atmosphere when biodiesel is burned is recycled by growing plants, which are later processed into fuel.

Is biodiesel safer than petroleum diesel?

Pure, 100% biodiesel is non-toxic and biodegradable. If spilled, it will quickly degrade into natural organic residues. This makes biodiesel an excellent choice for use in marine applications.

Does biodiesel cost more than other alternative fuels?

Biodiesel currently tends to be more expensive than diesel fuel. However, when reviewing the high costs associated with other alternative fuel systems, many fleet managers have determined 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 fleets, their spare parts inventories, their refueling stations and their skilled mechanics. The only thing that changes is air quality.

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.

Can I use biodiesel in my existing diesel engine?

Biodiesel can be operated in any diesel engine with little or no modification 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 storage. The release of deposits may clog filters initially and precautions should be taken. The solvent property of 100% biodiesel can also result in the degradation of natural rubbers, so its use in older engines may require replacement of seals in fuel systems with synthetic materials. Such precautions are generally not needed with biodiesel blends. Ensure that only fuel meeting the biodiesel specification is used.

Where can I purchase biodiesel?

In the Seattle area, biodiesel in blended form (B20) can be purchased at Shilshole Bay Fuel Dock at Shilshole Bay Marina. Call (206) 783-7555 for current pricing. Biodiesel in pure form (B100) can be purchased at Elliott Bay Fuel Dock at Elliott Bay Marina and can also be blended with petroleum diesel. Call (206) 282-8424 for pricing.