



Biodiesel FAQs

What is biodiesel?

Biodiesel, or fatty acid methyl ester (FAME), is a cleaner-burning alternative fuel produced from renewable resources, such as vegetable oils and animal fat. Stringent product quality standards are critical to ensure good performance and to protect engines from fuel-related problems. Finished product should meet ASTM D6751 specifications.

Why use biodiesel?

Compared to diesel from petroleum...

- **Biodiesel diversifies our energy supply.**
- **Biodiesel has greater biodegradability.**
- **Biodiesel is renewable.** It can be produced from a variety of plant materials or animal fats.
- **Biodiesel reduces greenhouse gas emissions.** Depending on how the fuel is made, processed and transported, using 100 percent biodiesel (B100) can reduce CO₂ emissions.
- **Biodiesel has very low sulfur and aromatics levels and can help reduce emissions in some engines.** While NO_x (nitrogen oxides) emissions may increase slightly with biodiesel, particulate matter emissions, such as soot, can be reduced in vehicles without advanced emissions technology.

Where does biodiesel come from?

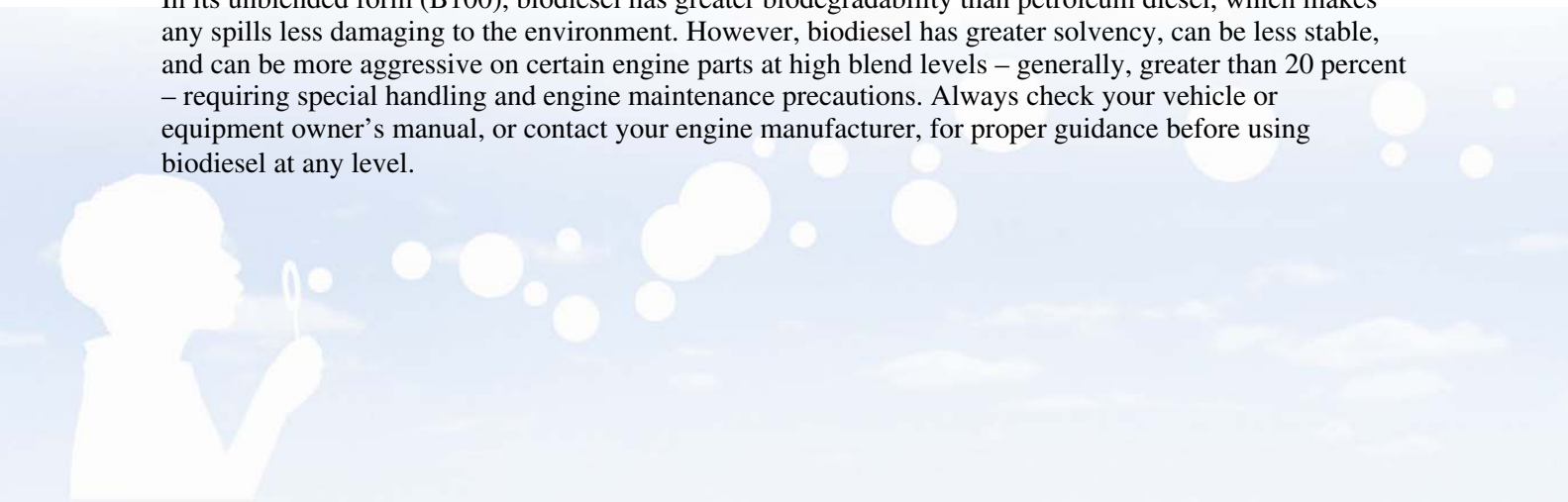
Biodiesel can be made relatively simply from a wide variety of oil-producing crops or animal fats. In the United States the typical feedstock is soybean. Through a chemical process known as *transesterification*, the oil is reacted with an alcohol such as methanol or ethanol at a processing plant to produce biodiesel and glycerol (which can then be used in a variety of household products).

What is biodiesel blending?

Biodiesel blending refers to mixing biodiesel (B100) with petroleum diesel to create a variety of biodiesel blends ranging from B1 (1 percent biodiesel) to B99 (99 percent biodiesel). However, at this time, most engine manufacturers only provide warranties for blends of up to 5 percent (B5).

Is it safe?

In its unblended form (B100), biodiesel has greater biodegradability than petroleum diesel, which makes any spills less damaging to the environment. However, biodiesel has greater solvency, can be less stable, and can be more aggressive on certain engine parts at high blend levels – generally, greater than 20 percent – requiring special handling and engine maintenance precautions. Always check your vehicle or equipment owner's manual, or contact your engine manufacturer, for proper guidance before using biodiesel at any level.





Cleaner Fuels Test Program

Is testing biodiesel going to affect AC Transit fares?

No. Cost is always a concern that AC Transit takes into account. For this test program, Chevron is providing AC Transit with biodiesel at regular diesel prices.

Why doesn't AC Transit use 100 percent biodiesel in all its buses?

AC Transit's primary mission is to provide the best possible service for its riders. We are testing B20 (20 percent biodiesel blend) to make sure there are no adverse effects on the engines. Currently, the manufacturer of AC Transit's engines will not warranty the engines for biodiesel blends above 20 percent.

Why is AC Transit testing biodiesel?

By testing biodiesel in the real world, AC Transit gains invaluable fuel handling and vehicle operational experience. Proving efficacy, reliability and cost effectiveness are critical first steps in encouraging further development of alternative fuels.

Where can I buy biodiesel?

Currently, unblended biodiesel (B100) or biodiesel blends are available at a small but growing number of stations. Chevron currently offers B5 at its retail stations in Portland, Oregon.

What types of vehicles can use biodiesel?

Biodiesel blends up to B5 can generally be used in any diesel-powered vehicle without modification. However, the greater the concentration of biodiesel, the more consumers should monitor the performance of their engines. Biodiesel has strong solvency and can degrade more rapidly than petroleum diesel. These factors can lead to clogged fuel filters and injector fouling. Use of biodiesel blends like B5 and B10 are not normally strong enough in concentration to cause these types of problems. Consumers who use B20 or greater blends up to B100 should monitor performance closely, especially during the early stages of use. Always check your owner's manual or with your engine manufacturer for guidance prior to using biodiesel at any level and take all appropriate precautions.

Will using biodiesel void my engine warranty?

Check your owner's manual or with the engine manufacturer. According to the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), most engine manufacturers currently allow the use of up to 5 percent biodiesel (B5), so long as the unblended biodiesel fuel used in the blended product meets the quality standards specified by ASTM D6751. Many engine manufacturers publish their guidelines for biodiesel use on their websites.





Cleaner Fuels Test Program

GTL Diesel FAQs

What is GTL diesel?

GTL stands for gas-to-liquids. The GTL process makes a liquid diesel fuel from natural gas, rather than from crude oil.

Why use GTL diesel?

Natural gas is more abundant than conventional crude oil, but poses transportation challenges in its gaseous form. Converting the gas to a liquid near the source makes it easier to transport and use in the current liquid fuel-based transportation system. GTL diesel allows us to broaden the range of potential fuel options, and has a number of additional benefits including:

- Virtually no sulfur (less than 5 ppm) or aromatic hydrocarbons
- High cetane number of 70+
- The potential to help reduce particulates, carbon monoxide, hydrocarbon and nitrogen oxide emissions from many diesel engines on the road today
- Requires no new distribution infrastructure
- Helps diversify the U.S. energy supply

Is it safe?

GTL diesel meets the safety standards for California diesel fuel.

Where can I buy GTL diesel?

GTL diesel is not generally available at stations in the United States. However, Chevron is conducting a demonstration program at one of its retail stations in Sacramento, Calif. where a blend of GTL diesel with Ultra Low Sulfur Diesel (ULSD) is being sold.

