

## How do I store B99?

Most tanks designed to store diesel fuel will store B99 with no problem. However, B99 may permeate some typical types of plastic (polyethylene, polypropylene) over time and those materials should not be used for storing B99. Acceptable storage tank materials include aluminum, steel, fluorinated polyethylene, fluorinated polypropylene, Teflon and most fiberglass. B99 should always be stored in clean, dry tanks at above 40° F.

B99 can be stored underground in most cold climates without additional considerations because 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. This precaution extends to piping, tanks and pumping equipment.

## How does biodiesel impact my engine warranty?

Engine manufacturers' warranties only cover the manufacturers' parts and workmanship. These warranties do not cover fuel whether it's regular diesel, ultra low sulfur diesel, or biodiesel. The use of biodiesel in diesel engines does not void these warranties. If there are engine problems caused by a fuel (whether that fuel is petroleum diesel or biodiesel) these problems are the responsibility of the fuel supplier. Whether or not a biodiesel blend is "recommended" is separate from the question of whether the use of biodiesel affects engine warranty coverage. Typically an engine company will define what fuel the engine was designed for and will recommend which fuel to use. All major engine companies have approved B5 as a recommended fuel, and most are moving to formally approve blends up to B20. Currently no engine companies have formally approved B99 as a recommended fuel.

## Once I start using B99, can I go back to petroleum diesel?

Yes! You can easily switch back and forth between B99 and petroleum diesel, and between various biodiesel blends.

**Booker Nagely, fleet manager for Pride Disposal, running over 30 pieces of rolling stock on B99.**

*"The main reason we were committed to using B99 was to be less dependent on foreign oil. The environment is pretty important to us, too, and we say the greener the better. We've been using a fuel additive the past four years that cleans our tanks so we weren't worried about B99's solvent effects. Just remember to keep water out of your tanks. Fleet managers need to know that when you use B99, your relationship with your fuel distributor is as important as with your banker."*



Go to [www.biofuels4business.com](http://www.biofuels4business.com)

for information on:

- Biodiesel distributors
- Maintenance procedures
  - Engine performance
  - Fleet success stories
- Using B20 and B99 blends
  - Fuel quality
- Air quality and health benefits
  - Engine warranties

*Make the Move – Call Your Fuel Distributor Today*

brought to you by:

**Northwest Biofuels Association  
Oregon Petroleum Association  
National Association of Fleet Administrators  
City of Portland**

# BIODIESEL

A BETTER CHOICE FOR BUSINESS



[www.biofuels4business.com](http://www.biofuels4business.com)



Printed on paper made with 100% post-consumer recycled content

## What is B99?

**B**99 is a diesel blend that contains 99% biodiesel and 1% petroleum diesel. Biodiesel is a cleaner burning, renewable fuel for diesel engines made from oilseed crops (like canola or soybean) or from used cooking oil and other fats. Biodiesel has many benefits. It's simple to use, biodegradable and nontoxic. Biodiesel is registered with the U.S. Environmental Protection Agency for use as a fuel and as a fuel additive.

B99 has physical and chemical properties similar to petroleum diesel and can be used in most diesel applications with little or no modification to the engine or fueling system. However, there are important differences between B99 and conventional diesel fuels that must be taken into consideration when handling or using B99.

## Why use B99?

**B**99 delivers the highest health and air quality benefits of any fuel. Although biodiesel can be blended with petroleum diesel at any ratio, B99 delivers the maximum biodiesel benefits of any blend. B99 meets the rigorous quality standards of ASTM D 6751.

## What are the benefits of using B99?

**AIR QUALITY.** Biodiesel is a cleaner fuel than petroleum diesel. Diesel pollution is a serious health threat that has been linked to lung cancer, upper respiratory illnesses, allergies, asthma attacks and death from heart and respiratory disorders. Emissions from diesel-fueled engines include more than 40 air toxics. B99 burns significantly cleaner than regular petroleum diesel and reduces polycyclic aromatic hydrocarbons and other toxic carcinogenic compounds found in diesel exhaust. When using B99, you substantially reduce the amount of harmful emissions released into the air.

## EMISSION REDUCTIONS ACHIEVED BY USING B99:

|                 |                  |
|-----------------|------------------|
| Carbon dioxide  | -78% (lifecycle) |
| Carbon monoxide | -48%             |
| Hydrocarbons    | -67%             |
| Particulates    | -47%             |
| Air toxics      | -60 to 90%       |
| Sulfates        | -99%             |
| Mutagens        | -89%             |

**WORKPLACE SAFETY.** B99 is one of the safest fuels to use, handle, and store because it does not produce combustible vapors and has a higher flash point (300° F) than petroleum diesel. B99 is non-toxic and is five times more biodegradable than diesel fuel. Biodiesel is even used to help clean up oil spills.

**ENGINE PERFORMANCE.** Sufficient fuel lubricity is necessary to reduce equipment wear and premature breakdown. B99 has superior lubricity to petroleum diesel, especially ultra low sulfur diesel. Increased lubricity enhances engine performance and can prolong engine life and decrease fleet operating costs.

Biodiesel has a higher cetane rating (47-70) than petroleum diesel (42-44). Biodiesel's high cetane rating results in a more complete combustion of the fuel. This improves engine efficiency, can improve the power output of the engine, and nearly eliminates white smoke. This increased cetane also aids in self-ignition of the fuel for easier starting, smoother running engine performance and quieter operation.



## What procedures are needed for switching to B99?

**FILTERS.** B99 has a tendency to dissolve the accumulated sediments in diesel storage and engine fuel tanks. These dissolved sediments can plug fuel filters. If you plan to use or store B99, first clean the fuel system, including fuel tanks, where sediments or deposits may occur. Once you've started using B99, make sure to monitor both your vehicle and dispensing filters and change them as needed until the sediment build-up is eliminated.

**OIL CHANGES.** 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 B50 and above might reduce extended drain intervals. Monitor and test engine oil as necessary.

**MATERIALS.** Certain materials are incompatible with B99 and should be replaced. These include natural rubber compounds (usually only an issue with engines made before 1995). The recent switch to low sulfur diesel fuel has caused most original equipment manufacturers to change to components that are also suitable for use with B99. However, B99 suppliers and equipment vendors should be consulted to determine material compatibility.

**TEMPERATURE.** Unlike gasoline, petroleum diesel and biodiesel can both start to gel as the temperature gets colder. B99 gels at a higher temperature than conventional diesel fuel. 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. Most B99 begins to thicken (cloud) at around 35° F. To prevent cold flow issues, switch from B99 to a blend of B50 in cold weather (below 35° F). B50 provides adequate dilution to prevent any cold weather gelling.