

What is Biodiesel Fuel??



- Fuel made from Vegetable based oil that runs in diesel engines
- Can be unused soy or canola oil or recycled from McDonalds
- Also can be a mixture of petroleum diesel and biodiesel

How do you make biodiesel fuel?

- First make a test batch to understand how to make biodiesel and perfect your mixture.
- **[DO NOT ACTUALLY DO THIS! --- this is only an example]**



How do you make biodiesel fuel? **Ingredients**

- 1 Liter of Vegetable oil [brand new and unused]
- 200mL of Methanol [99% pure or more; DriGas brand can be found in a hardware store]
- 3.5 grams of Lye [Red Devil Lye at the hardware store]

How do you make / buy biodiesel fuel? Directions

- Directions:
- Mix Lye and Methanol in a narrow necked glass container (an ehrlenmeyer flask will do)
- Will fume and get hot – mix for 15 minutes
- This mixture is called Sodium Methoxide and it is very dangerous (can burn away flesh)
- Have water ready in case accidents happen
- Warm Oil in a steel container to ~120 degrees F and no more than 130 degrees F
- Mix oil and Sodium Methoxide together slowly, mixing well
- The reaction should start immediately, with a golden clear liquid on top and light brown glycerine settling on the bottom of the container.
- Continue mixing for an hour, keeping the temperature the same
- Siphon out the Biodiesel (clear golden liquid on top) and leave the light brown glycerine in the container.

You Now Have Biodiesel!



PROs vs CONs of Biodiesel

- PRO's
- Lowers dependence on foreign oil, reducing need for wars in oil rich countries
- Sustainable, Renewable, Non-Toxic
- Almost ZERO emissions
- Self Cleans Engines, NO Engine Modifications, ever!
- Car runs quieter, produces less smoke

PROs vs CONs of Biodiesel

- Higher Gel Point, fuel becomes thicker and unusable at certain temperatures (you can add ingredients to solve this problem)
- Older vehicles (Pre-1990's) may need fuel line upgrades
- NOx emissions DO increase slightly (15%) with biodiesel fuel

In Summation . . .

Since there is an alternative fuel which:

- Has NO engine modification, self cleaning
- Cost Effective and a smoother ride
- Is renewable, sustainable, and non toxic

USE BIODIESEL - THE FUTURE, TODAY!



Q.E.D.

SITES CITED

- www.journeytoforever.org
- www.biodieselnow.com
- www.biodiesel.org