



Step 1: Find a 64oz Welch's juice cocktail plastic bottle. Find a lawn mower fuel line. Drill a whole on the bottle cap just a tiny bit smaller than the fuel line's diameter. Force insert fuel line hose into cap hole for about ¼ of an inch. You may want to cut the end of the hose at a diagonal to facilitate getting it in the hole.



Step 2: Get some pipe thread sealant or anything better. This just works for me. It never hardens and you must watch constantly for water leaks. I'd love to hear of a better idea to seal this. Apply generously on the cap and around the hose as shown on **Step 1**.



Step 3: Cut off bottom of the bottle and drill another whole on the now top of the bottle (old bottom) to insert the other side of the hose. This will keep the liquid from pouring out when the bottle is upside down.



Step 4: This photo shows a settled biodiesel minibatch to be poured out and washed. Take care not to pour any of the glycerol into the wash bottle.

Warning: There will be plenty of Methanol fumes in this mixture. Take care not to breath this in while pouring. Methanol fumes are very dangerous to your health and cause blindness among other terrible things.

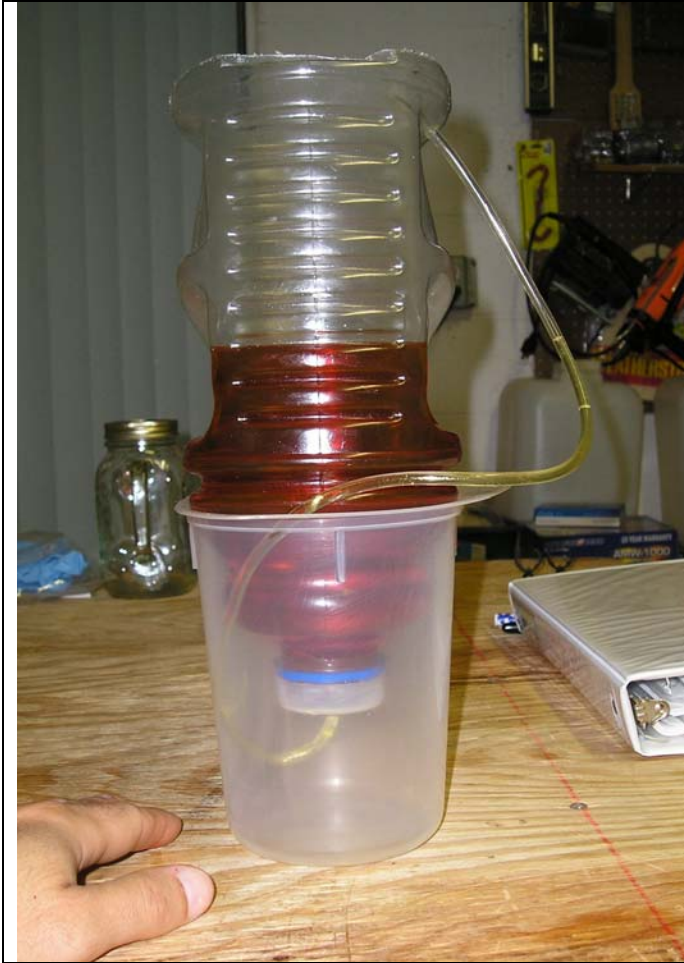


Step 5: This photo shows the settled biodiesel now poured into the wash bottle. Note that the drain hose is inserted through the hole on top (old bottom) of the bottle to keep the biodiesel from pouring out.



Step 6: Locate a small fish tank bubbler, hose and bubbler stone. The stones I've been using can be found at Walmart. The bubbler and hose can be bought at a pet store with fish tank supplies or I would check Walmart too.

Warning: The plastic in the bubbler stones I'm showing here will melt when exposed to biodiesel. There are wooden bubblers you can get from <http://www.utahbiodieselsupply.com/washingsupplies.php#bubbler>. If you decide to use mine, rinse the stones thoroughly with water after the washing is done and hopefully yours won't melt.



Step 7: Find a see-thru plastic or glass container where you can safely insert the wash bottle. See-thru is important because it allows you to see if the wash bottle is leaking and see the color of the wash water.



Step 8: Gently add some warm tap water to the wash bottle by running the water down the sidewall as shown. Add water to cover about a third of the bottle.



Step 9: You should now have three layers: water at the bottom, biodiesel in the middle and empty space on top (old bottom).



Step 10: Insert bubbler stone attached to the bubbler hose all the way to the bottom of the wash bottle as shown. I know, it is hard to see, but if you look carefully, you'll see that the blue stone is inside the bottle cap and the bubbler hose is attached to the bubbler on one end and to the stone on the other. The blue valve you see on the line can be found at a pet store with fish tank supplies and allows me to control the amount of bubbles being forced through the biodiesel layer.



Step 11: Turn on the bubbler and let it bubble for two or three hours. This photo shows gentle bubbling. **Do not bubble too aggressively or you'll get an emulsion** (white, soapy foam, you don't want). This photo also shows the bubbler hose being inserted from the top (old cut bottom) and the drain hose inserted and held fixed to keep the liquids from pouring out.



Step 12: After the first bubbling wash, the water will be very milky white.



Step 13: Drain the water by removing the drain hose from the top (old bottom) of the bottle and pointed to a kitchen sink drain. Note that the first wash water will kill vegetation, more so if using Sodium Hydroxide (NaOH) instead of Potassium Hydroxide (KOH). If your sink is attached to the city sewer system, you can drain it there. If you have a septic system you should not pour the wash water down the sink because the Methanol in it will kill the bacteria you want in your septic system. In that case, I would suggest pouring the wash water into a large glass container and taking it to some other location with city sewer service. I've heard that KOH is a good fertilizer. I've watered my lawn with KOH-based wash water AFTER the second wash without problems. **REPEAT THE WASH (steps 8-11) UNTIL THE WASH WATER ENDS UP AS CLEAR AS TAP WATER.**



Step 14: Once the wash water is clear, you can drain it and pour the biodiesel into a large, flat glass or compatible plastic container for drying. I use the glass jar from one of my old coffee pots.

I then wait for a sunny day and put the jar with the biodiesel on top of my car. Within a couple of hours, the biodiesel should be dry. Any water left in it should settle to the bottom of the bottle.

You can now pour your biodiesel off the top leaving the water behind.

RUN YOUR ENGINE 8-)