

Biodiesel Course Addenda 2008

HMRC

Current duty rate is 30.35p/l

Upcoming changes:

	From 1 October 2007	From 1 April 2008	From 1 April 2009	
Biodiesel	0.3035	0.3235	0.3419	

Small producers now exempt

A production threshold of 2,500 litres per annum below which producers will not need to enter premises, submit returns or pay duty

<http://www.hmrc.gov.uk/briefs/excise-duty/brief4307.htm>

Fuel duty differential is being phased out to make way for support via the Road Transport Fuels Obligation (RTFO). This is a trading scheme for renewable fuels credits. If you are a commercial supplier of fuel you can apply for tradeable certificates from April 2008 which will initially be worth 15p/litre. Administered by Dept for Transport:

<http://www.dft.gov.uk/rfa/>

Environment Agency

Relaxed regulations for <5000l/year

If you're producing the biodiesel by the trans-esterification process for your own personal use, we do not regulate this as it is not considered to be commercial production. This also applies to collective small-scale production by a group of individuals if it's just for their own use. The group should be a properly constituted mutual club or community group, with members participating on a not-for-profit basis.

As with the transport sector, small scale production (around 5000 litres a year) by farmers or businesses that have vehicles which are used for work as well as personal use, is generally considered to be non-commercial and we do not regulate this under PPC.

If you are not required to hold a PPC Permit, remember that the storage of waste oil is regulated under the Waste Management Licensing regulations. However, we do allow you to treat up to 100 litres of waste cooking oil to produce biodiesel. The waste cooking oil and the biodiesel must be securely stored.

Wherever possible, the by-product, glycerol, should be sent to another operator so it can be re-used. Where this is not possible you must consign and dispose of it as waste to a licensed facility. It should not be discharged to sewer without an appropriate Trade Effluent Consent.

<http://www.environment-agency.gov.uk/yourenv/857406/1173616/>

Titration

Turmeric is a very good and cheap substitute for phenolphthalein. Easiest to dissolve a half teaspoonful in some isopropyl alcohol and keep it in a dropper bottle.

Turmeric turns from yellow to red at the titration end point. Titrate until you see the colour change (don't keep going trying to get a specific shade of red). One thing to beware of: the colour change fades quite fast. So don't titrate too slowly, and don't be alarmed if it turns yellow again after you've finished.

Washing

A number of alternatives to water washing are now on the market. We don't feel they are yet ready to replace water washing for most applications.

Magnesol

A sort of industrial talc. Good results but you need serious filters to filter the stuff out . also creates a waste disposal issue.

Resins (Purolite, Amberlite, etc)

Can be effective, quite cheap. Disposable but lower volume than magnesol and no need for filtration. Really need to be post methanol recovery.

Dry wash

Involves removing all methanol from biodiesel and allowing soaps to drop out. Work continues, promising angle developed largely by Graham Laming:

<http://www.graham-laming.com>

Testing

<http://www.alcontrol.co.uk>

<http://www.intertek.com>

Both these companies will do full en14214 test or may do an indicative test covering 4 or 5 subtests for £40-£50.

Wash test

A useful test when buying biodiesel, also the most useful test for quick monitoring of your own fuel (is it fully washed?):

1. Fill a jam jar just under half full with tap water.
2. Fill up to nearly full with biodiesel.
3. Close the lid and shake well.
4. Leave to settle for 2 minutes.

Look for speed of separation of water and biodiesel, for layer between the two, and for discolouration of water.

This test will show up the most common bad biodiesel:

- Total mayonnaise : bad reaction chemistry (probably over or under catalysed)
- Pronounced middle layer: bad chemistry or bad washing
- Cloudy water: soaps: bad washing

Warnqvist test (aka 27/3 test)

A useful test to see how good your biodiesel process is:

1. Ensure a jar is spotlessly clean and dry.
2. Put 27ml of room temperature (20- 22deg C) methanol into the jar.
3. Use a syringe to put exactly 3ml of the room temperature biodiesel under test into the methanol.
4. Put top on Jar.
5. Shake jar hard for 5 seconds.

If the biodiesel completely dissolves into the methanol and no oil settles out on the bottom of the container you have very high conversion biodiesel. Don't get obsessed though: for many vehicles it may not be essential to pass this test perfectly.

Methanol and glycerol

Some people are now offering a service where they will collect your glycerol for free as long as it has methanol in it. You can get paid for demethed glycerol too, though that usually relates mostly to large r producers. Sometimes there's an option to buy low grade methanol from the same people. We are told that this works well, and although we can't recommend anybody in particular at the moment, some research on the forums will yield some options..eBay also has listings sometimes, though do be careful!

Forums

<http://www.vegetableoildiesel.co.uk>

a good UK-based forum

<http://biodiesel.infopop.cc>

the best international forum, awesome archives

<http://biodieselcommunity.org>

some of the best advice brought together from the infopop forum

<http://lowimpact.org/forums/>

new LILI forum: a place to keep in touch after the course

Biodiesel Outlets

<http://www.biodieselfillingstations.co.uk> partial list of UK outlets

<http://www.thebiodieselcook.com> another partial list

Beware: a lot of biodiesel outlets are selling fuel which is either sourced from overseas (with little or no carbon benefit) or substandard (fails even a simple wash test)

Good Fuel Co-op

A co-op of co-ops supporting existing and future co-operative and not-for-profit biodiesel co-ops.

<http://www.goodfuel.coop>

Insurance

<http://www.oamps.co.uk> for biodiesel plants

Goldenfuels

As well as running the courses we now :

- Offer Biodiesel locally and in bulk (IBC delivered to all UK)
- Build domestic and community scale reactors
- Sell Titration Kits