

# AIR

## Biodiesel Fact Sheet

### Biodiesel

#### What it is and where it is used-

- Biodiesel is a renewable fuel used in diesel engines and is derived from plant or animal based natural oils.
- An accepted standard of biodiesel has been registered with the Environmental Protection Agency as a fuel and fuel additive and is approved for blending (up to 20%) by the American Society of Testing and Materials (ASTM). This standard of ASTM D 6751 is what should be produced and used in blends.
- ASTM D 6751 in the pure form is called B100 and contains no petroleum. This B100 can be combined with any percentage of petroleum-based diesel fuel to produce "blends." Common blends include B5 (5% biodiesel and 95% petroleum diesel) and B20 (20% biodiesel and 80% petroleum diesel); however there are other blends available. ASTM D 6751 has been tested and approved for blending in concentrations up to B20.
- Biodiesel can be used with petroleum based diesel fuel (up to a B20 blend) in existing diesel engines with little or no modification. For use in existing diesel engines, always check with your engine manufacturer.
- Use of certain blends of the accepted standard of ASTM D 6751 is covered by some manufacturer's warranties. Check with your manufacturer for the most up-to-date warranty information.



#### What it is NOT -

- Biodiesel is not the same thing as raw vegetable oil or unaltered used frying grease. It is precisely produced by a chemical process which removes the glycerin from the oil. Other 'bio-derived' materials that do not meet D 6751 may cause engine and fuel system problems and void engine warranties.
- Biodiesel is not ethanol or E85. For more information on ethanol and E85, see the ethanol fact sheet.

#### Use of Biodiesel -

- Biodiesel blends up to B20 can be used in any diesel engine, without any modifications. Biodiesel is an excellent lubricant and can reduce wear in diesel engines. However, the solvent properties of biodiesel will clean out any residue present in an engine system. If left unchecked this could lead to clogged filters.

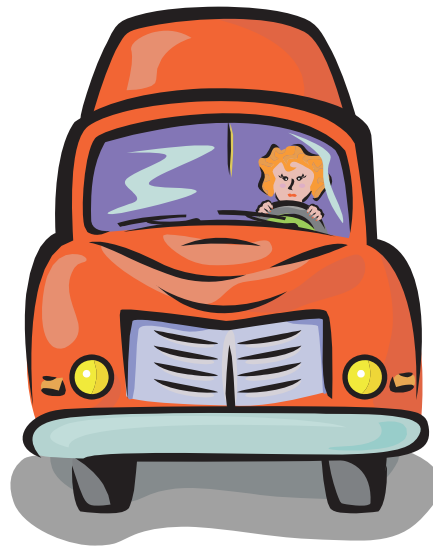
#### Emissions from biodiesel use/environmental effects -

- Use of biodiesel can reduce emissions of particulate matter (PM) and some ozone forming pollutants, including hydrocarbons (HC) and carbon monoxide (CO). The amount of emissions decreased depends on the blend concentrations, engine type and feedstock.
- When using B20, emission reductions are typically 10% for PM, 21% for HC and 11% for CO.
- Not all emissions are decreased; nitrogen oxides (NOx) are thought to increase by about 2% when using a B20 blend.

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## Permitting Biodiesel Production Facilities –

- Facilities with emissions under 40 TPY generally are “permit exempt” unless they are subject to an emission, equipment, or work practice standard under NSPS (New Source Performance Standards) or NESHAP (National Emissions Standards for Hazardous Air Pollutants), or meet the definition of a “major source.”
- The Air Quality Division (AQD) operates a dual permitting system – construction and operating permits.
  - A **construction permit** is required before a new source is constructed or an existing source is modified. The construction permit is issued after it is determined the source is designed to meet applicable rules and pre-construction requirements.
  - An **operating permit** is issued after construction is completed and demonstration is made that the source is capable of meeting applicable emissions limitations and air pollution control requirements. Permits and sources are further classified as either major or minor based on their potential-to-emit (PTE).
    - A **major source** is any source with PTE of 100 TPY or more of any regulated air pollutant, 10 TPY or more of any one HAP, or 25 TPY or more of any combination of HAPs. Major source permit fees range from \$900 to \$2,000.
    - **Minor sources** are those that do not meet the major source definition. Minor source permit fees range from \$150 to \$1500.
- If you aren’t sure whether you need a permit, you should request that the AQD staff perform an **Applicability Determination (AD)**. The AD is a written document issued by the DEQ to determine whether a particular source or operation is subject to



the requirements of a rule, including whether or not you need a permit. If you need a permit, the fee of \$250 for the AD is credited towards the permit fee.

### Where I can purchase biodiesel –

Currently the only public biodiesel fueling stations in Oklahoma are located in Lawton and Frederick.

### Contacts:

- For general information on biodiesel, contact Leon Ashford at 405-702-4173 or Tracy Rudisill at 405-702-4167.
- For permitting information on biodiesel production facilities, contact Phillip Fielder at 405-702-4180.

### Links for more information:

- Environmental Protection Agency [www.epa.gov](http://www.epa.gov)
- Association of Central Oklahoma Governments [www.acogok.org](http://www.acogok.org)
- Indian Nations Council of Governments [www.incog.org](http://www.incog.org)
- National Renewable Energy Laboratory [www.nrel.gov](http://www.nrel.gov)
- Alternative Fuels Data Center [www.eere.energy.gov/afdc/](http://www.eere.energy.gov/afdc/)
- National Biodiesel Board [www.nbb.org](http://www.nbb.org)



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