



 [NEWLEAFBIOFUEL.COM](http://NEWLEAFBIOFUEL.COM)

# Biodiesel Today

Clean Cities Feb. 11<sup>th</sup> 2014

# What Is Biodiesel?

A renewable fuel comprised of mono-alkyl esters of long fatty acids derived from vegetable oils

## Primary U.S. feedstocks

Soy beans

Canola, Rapeseed

Beef tallow

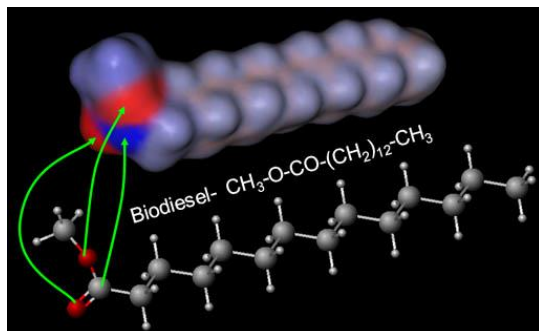
UCO

## Future feedstocks

Algae

Jatropha

Switchgrass



# How Is Biodiesel Made?

Inspect and receive UCO

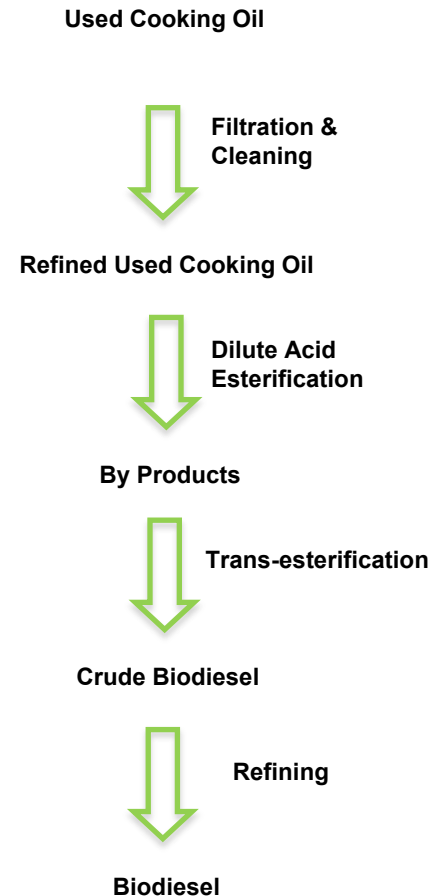
Remove impurities through a four stage filtration process

Dilute Acid Esterification

Begin the transesterification

Remove crude Glycerin and Biodiesel

Refine and wash the finished product



- Collect used cooking oil from over 900 restaurants locally in San Diego
- 2013 California Restaurant Association Gold Medallion winner
- We use up to 100% Biodiesel in our fleet of trucks



## Cleaner, Green Energy

using renewable energy fosters a positive public perception and is  
100% Biodegradable

## Cost Savings, Safety

efficient fuel economy, increased lubricity, ease of modification,  
EPACT compliance, airport authority permit compliance, free PR,  
higher flash point and less conductive than ULSD

## Public & Private Sector Support

federal, state & local legislation supports those that adopt biodiesel by  
offering financial incentives, tax credits

90% of manufacturers offer full-warranties on vehicles using biofuel

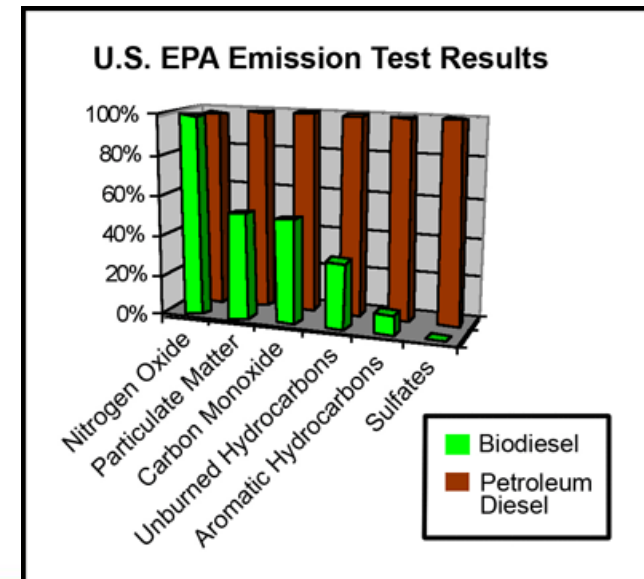
Biodiesel reduces greenhouse gases,  
hydrocarbons and particulate matter

Lower Carbon Footprint

Domestically grown and produced

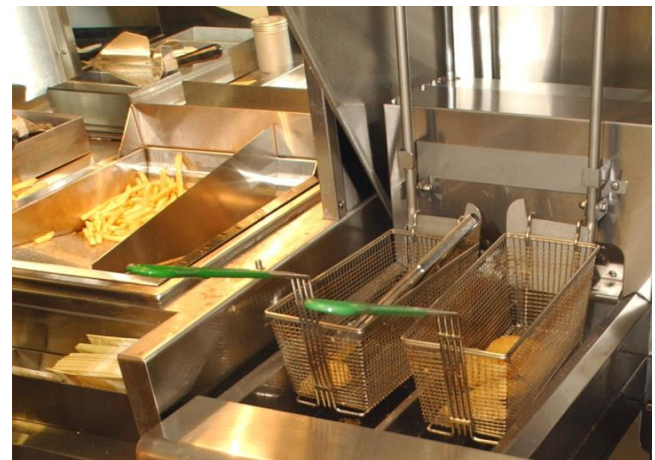
Cleaner Emissions

Higher Cetane Value





- Diesel engines can use Biodiesel without any changes
- Domestically produced



## Increased Lubricity

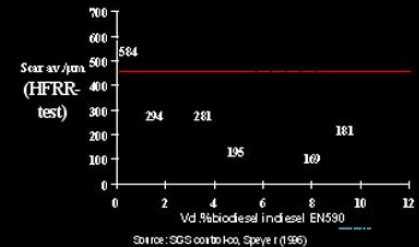
Biodiesel outperforms ULSD #2 in all lubricity tests

Correlates to a longer lasting engine with less wear



### BIODIESEL/ DIESEL LUBRICITY

#### Biodiesel/Diesel-blends Lubricity and wear



## Ease of Modification

Diesel engines can use Biodiesel with little or no changes

Vehicles manufactured prior to 1993 require an inspection of fuel hoses

All AST storage tanks and most existing UST fuel storage tanks can hold biodiesel



## Renewable Fuel Standard (RFS 2)

Federal goals to increase renewable fuel production

## Low Carbon Fuel Standard (LCFS)

Requires obligated refiners and distributors to use a percentage of renewable fuel to meet greenhouse gas (GHG) target reductions

## Blender's Tax Credit

\$1.00 federal tax credit provided when mixed with ULSD

## Epact Credits

Also known as Alternative Vehicle Credits, these require certain public and energy utility fleets to buy clean vehicles

## C.A.F.E. Credits

Corporate Average Fuel Economy, federally implemented goals to improve the overall fuel economy of vehicles, most light and medium duty Diesel vehicles exceed those targets

More than 90% of HD Diesel engines warranty B20 today



For a complete list of OEM statements visit [biodiesel.org](http://biodiesel.org)

Start with a clean tank

Use desiccant breathers

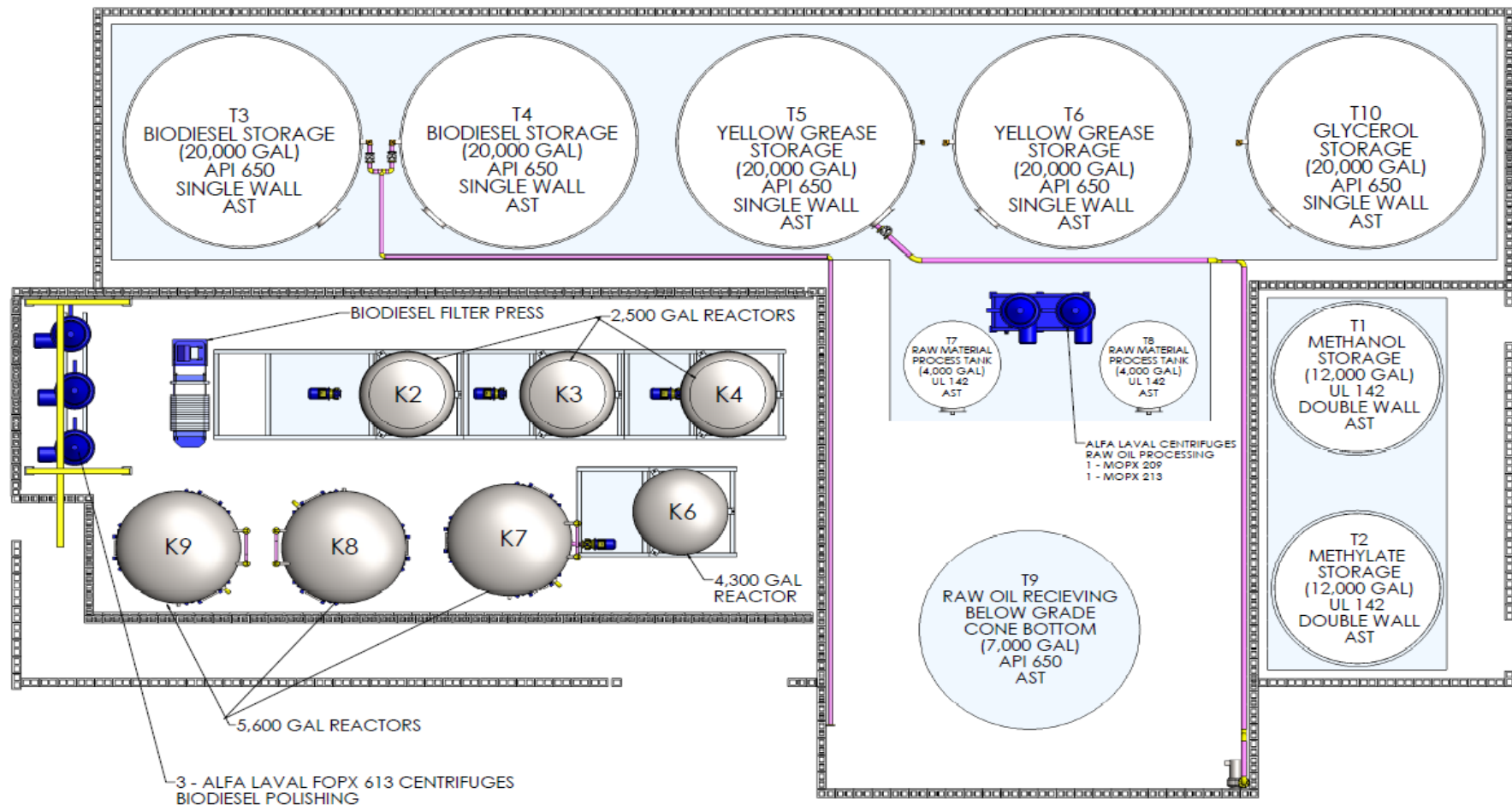
Use Biodiesel compatible filters

Retain fuel samples for 3 months

Sample tank every six months

Buy from a reputable and consistent source





- Site & tank inspection
- Confirm vehicle warranty
- Engines manufactured before 1993 should have their fuel lines inspected as they used natural rubber as opposed to synthetic.
- Purchase from a consistent and reliable source



 [NEWLEAFBIOFUEL.COM](http://NEWLEAFBIOFUEL.COM)

# Questions?