

What chemical process is utilized to make biodiesel?

A. Transesterification B. Ethanolization C. Glycerol conversion D. Fermentation

Biodiesel is a diesel-fuel substitute made from vegetable oil or animal fat obtained from renewable materials such as:

- Plant oils: canola, camelina, soy, flax, jatropha, mahua, pongamia pinnata, etc.;
- Waste cooking oil: yellow or tap grease;
- Other oils: tall, fish, and algae;
- Animal fats: beef or sheep tallow, pork lard, or poultry fat; and
- Potentially from cellulosic feedstock consisting of agriculture and forest biomass.

Biodiesel is made through a chemical process called **transesterification** reaction. The reaction occurs between the oil or animal fat and an alcohol in presence of a base catalyst. The process leaves behind two products -- methyl esters (the chemical name for biodiesel) and glycerin (a valuable by product usually sold to be used in soaps and other products).

Typically, biodiesel is blended with petroleum diesel to create a blend of varied ratios:

<u>Blend</u>	<u>Pure Biodiesel (B100)</u>	<u>Petroleum Diesel</u>
B2	2%	98%
B5	5%	95%
B10	10%	90 %
B20	20%	80%

References:

<http://www.nrcan.gc.ca/energy/alternative-fuels/fuel-facts/biodiesel/3509>

<http://www.nrcresearchpress.com/doi/pdf/10.4141/CJPS06067>

<http://biodiesel.org/what-is-biodiesel/biodiesel-basics>