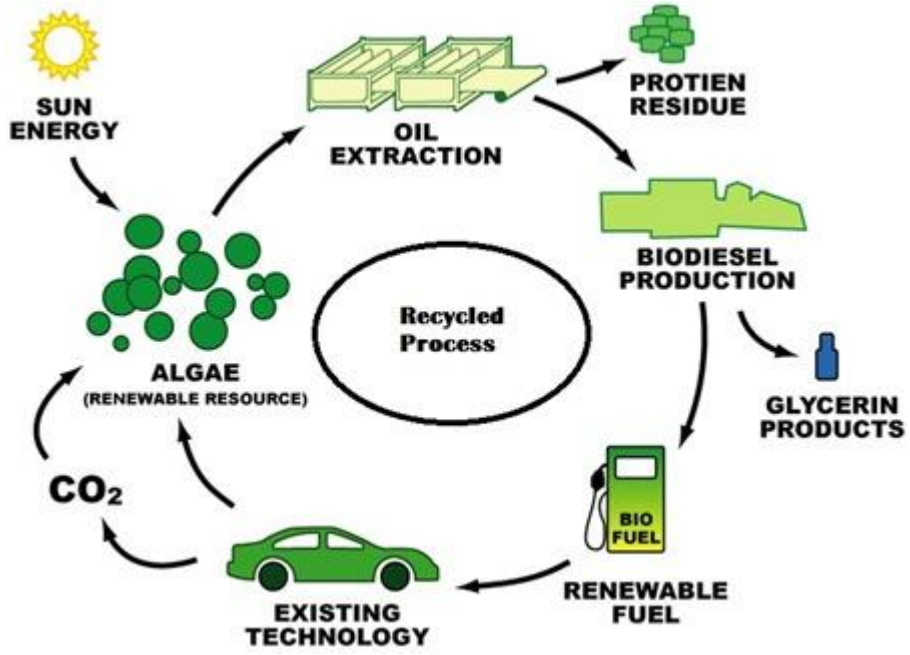
Biodiesel | Transesterification Reaction | Biodiesel Materials | Biodiesel Feedstock's | Biodiesel Blends

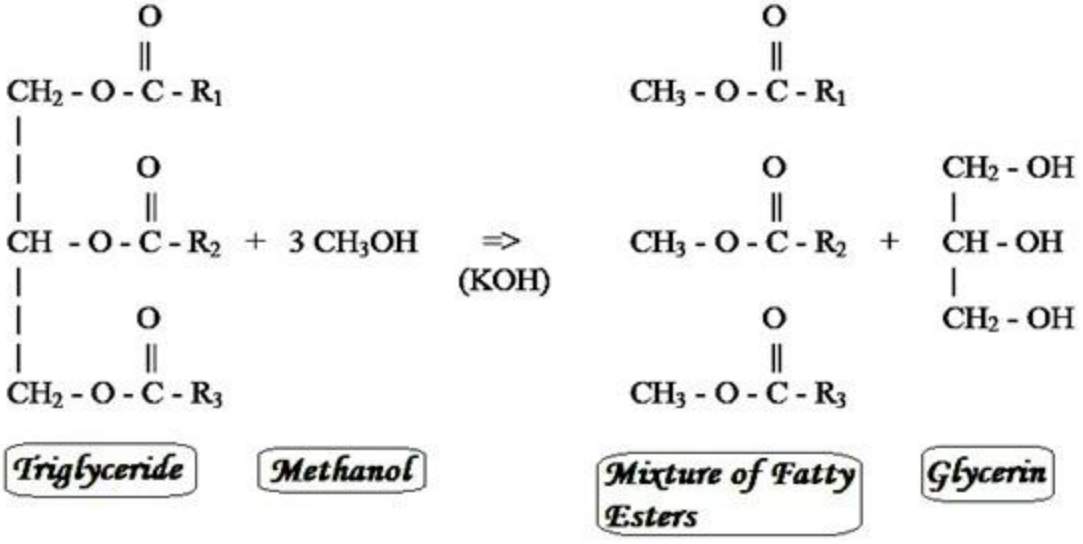
What Is Biodiesel?

Biodiesel is a fuel made from vegetable oils and alcohols (Methanol / Ethanol / ISO-Propanol) utilizing a chemical process called Transesterification. The resulting Mono-Alkyl Esters have an acceptable viscosity and can be used interchangeably with petroleum diesel.



What Is Transesterification?

The major components of vegetable oils and animal fats are Triglycerides. To obtain biodiesel, the vegetable oil or animal fat is subjected to a chemical reaction termed transesterification.



In that reaction, the vegetable oil or animal fat is reacted in the presence of a catalyst with an Alcohol (usually methanol) to give the corresponding Alkyl Esters (or for methanol, the methyl esters) of the fatty acid mixture that is found in the parent vegetable oil or animal fat.

Biodiesel Materials / Biodiesel Feedstock:

- Vegetable Oils
- Soybean
- Cotton seed
- Palm
- Peanut
- Rape Seed / Canola
- Sunflower
- Safflower
- Coconut
  - Animal Fats
- Tallow
  - Waste Oils
- Used Frying oils

Biodiesel Blends:

Biodiesel is often blended with petroleum diesel to produce a fuel that is compatible with diesel engines. Biodiesel blends reduce harmful emissions. Biodiesel blends will become more common as drivers are made aware of the many benefits.

B2 – 2% Biodiesel and 98% Diesel

B5 – 5% Biodiesel and 95% Diesel

B20 – 20% Biodiesel and 80% Diesel

Note: These blends with Petro diesel are not Biodiesel.

Advantages Of Biodiesel:

- Derivation from a renewable domestic resource, thus reducing dependence on and preserving petroleum
- Biodegradability
- Reduction of most exhaust emissions (Exception NO_x)
- Higher flash point leading to safer handling and storage
- Excellent lubricity

Disadvantages Of Biodiesel:

- Inherent higher price
- High expensive Feedstock's
- Increased NO_x exhaust emissions due to reduced excise taxes

Source:

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