

BIODIESEL PLANT

renewable
energies



BIODIESEL can be used in automotive diesel engines (trucks, tractors, vans, automobiles, etc.) or stationary engines (generators of electricity, heat, etc.), in its natural form or mixed with petroleum diesel, in different proportions. The **BIODIESEL** do not require any modification in the standard engines. Our **BIODIESEL PLANT** allows producing fuel that can be used in the above diesel applications. **BIODIESEL** is produced by the chemical reaction of a vegetable oil or animal fat with methanol or ethanol (waterless sugar cane alcohol) in the presence of a catalyst. This process is known as transesterification, and the catalyst can be alkaline, acid or enzymatic. This process also produces glycerin, used for the production of soaps and other products.

Our **TRANSESTERIFICATION PROCESS PLANTS** for **BIODIESEL** Production have been developed by experienced professionals, using conventional equipment components available on the common market and automated with the technical features used in industrial processes, allowing didactic application and investigations. With these plants it is possible to control the heating temperatures of the vegetable oil, of the reaction and of the washing. It is also possible to re-circulate the mixture during the reaction time.



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According to the requirements of the end users, our Technical Department is able to design **BIODIESEL PLANTS** with specific technical features. For instance, the capacity of the plant can be different from case to case. The plant may or may not include the alcohol recovery system or the ultrasound technology to improve the efficiency of the mixing phase. Therefore, the plant that is described hereunder must be considered as a sample pilot plant with specific features that can be further discussed with the end user. In this particular case, the plant has a capacity of 30 litres/batch, includes the alcohol recovery system and does not include the ultrasound device.

TECHNICAL FEATURES

OF THE BIODIESEL PLANT DL BIO-30:

CAPACITY OF THE PLANT: 30 litres/batch

MAIN COMPONENTS:

- Vegetable oils treatment system:
 - ☐ Tank for the reception of the raw material.
Capacity: 30 litres, complete with sieve to filter solid bodies in the upper side. In stainless steel
 - ☐ Electrical heating system
 - ☐ Thermometer
 - ☐ 10 µm filter
- Transesterification reaction system:
 - ☐ Conical tank in stainless steel AISI 316L.
Capacity: 30 litres
 - ☐ Stirring system
 - ☐ Electrical heating system
 - ☐ Alcohol recovery system
 - ☐ Pump
- Digital control panel
- Catalyst dispenser
- Tank in stainless steel AISI 304L for mixing the methyl.
Mixing capacity: 4 litres
- Decantation tank in stainless steel.
Capacity: 30 litres with recovery of the alcohol and condenser with an area of 0.5 m²
- Washing system with filtering:
 - ☐ Washing tank. Capacity: 30 litres
 - ☐ Stirring system
 - ☐ Electrical heating system
 - ☐ 10 µm and 1 µm filters
- Installation kit in stainless steel for interconnecting the equipment
- Accessories:
 - ☐ Digital scale
 - ☐ Thermometer
 - ☐ pH meter
 - ☐ Flat bottom 500 ml flask
 - ☐ 1000 ml beaker
 - ☐ Burette with support
 - ☐ Funnel
 - ☐ Graduated pipette
 - ☐ Volumetric pipette
 - ☐ Test tube
 - ☐ Sampling tubes with support
 - ☐ Bunsen beak
 - ☐ Tripod
 - ☐ Asbestos sheet
- Metal structure in carbon steel and high resistance epoxy paint



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