BIODIESEL PRODUCTION PILOT PLANT

Mod. UPB/EV
Mod. UPBa/EV automated

INTRODUCTION

Biodiesel is a liquid fuel obtained by transesterification from renewable raw materials such as, for instance, vegetable oils or animal fats. If compared to fossil fuels, this type of fuel offers a lot of advantages:

- Very low content of sulphur (< 0.001%) that provokes the phenomenon of acid rains
- Reduction of dust emissions down to 50%
- Absence of benzene and of other carcinogenic components
- As it has a high flash point, it is not classified as dangerous material, consequently it can be handled easily and safely
- High biodegradation (in case of dispersion it does not pollute)
- High lubricating power (it reduces the wear of engines)
- It develops a closed loop of CO_2 (the quantity of CO_2 released by its combustion is equal to that absorbed by plants from the air during their growing process).

This unit is mainly equipped with a multi-function reactor that enables to carry out all the typical operations of biodiesel production: esterification, transesterification, washing and restoring of methanol.

TRAINING PROGRAM

This unit enables to deepen the following issues:

- Transesterification of a vegetable oil
- Separation of glycerine
- Washing of biodiesel
- Restoring methanol

TECHNICAL SPECIFICATIONS:

- Framework of AISI 304 stainless steel with castors
- Multi-function reactor of borosilicate glass and AISI 304 stainless steel, with capacity of 18 litres, equipped with motor-driven stirrer and condenser
- Heating system by electric heaters, provided with thermostat
- Tank of borosilicate glass and AISI 304 stainless steel for reagent/catalyst, including stirring system
- 2 restoring tanks of borosilicate glass
- Switchboard IP55, complying with EC conformity mark, including plant synoptic and ELCB

Mod. UPBa/EV

Besides being provided with all the characteristics of mod. UPB/EV, this model also includes the following additional items:

- Microprocessor digital PID controller with serial card

- Supervision software for Windows: it enables to control ON-OFF signals, analog signals coming from PID controller, real-time trend and historical trend

Power supply: 230 Vac 50 Hz single-phase - 2 kVA (Other voltage and frequency on request)
Dimensions: 1300 × 700 × 1900 mm
Weight: 180 kg

REQUIRED

UTILITIES (PROVIDED BY THE CUSTOMER)

- Tap water (valve with ½" hose connector)
- Water drain
- Compressed air (valve with connection of ¼" F)

ACCESSORIES (NOT INCLUDED)

- Personal Computer running Windows (for mod. UPBa only)

SUPPLIED WITH

THEORETICAL – EXPERIMENTAL HANDBOOK

OPTIONAL

- Screw press for extracting oil from seeds mod. VIT/EV

VARIATIONS OF THE PLANT ON REQUEST

The equipment can be modified on request of the Customer.

 ELETTRONICA VENETA S.P.A. - 31045 Motta di Livenza (TV) Italy - Via Postumia 16 - Tel. +39 0422 765 802 - Fax +39 0422 861 901 - E-mail: export@elettronicaveneta.com