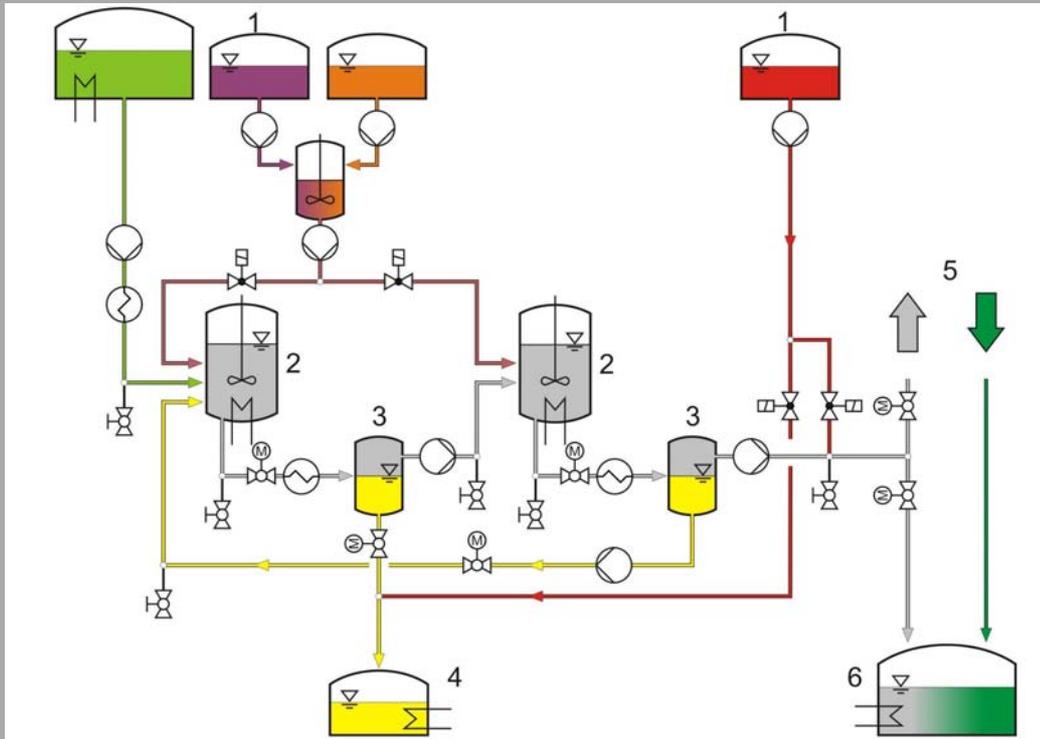


CE 650

Biodiesel Plant



1 storage tank, 2 stirred tank reactors, 3 phase separator, 4 by-product tank, 5 optional treatment, 6 product tank

*** Chemical transesterification**

*** Two-stage process**

*** Plant controlled via PLC and touchscreen**

Technical Description

The production of biodiesel from vegetable oils by adding methanol and caustic soda (as catalyst) is a chemical process known as transesterification.

The process is operated continuously in large-scale production. The input materials of vegetable oils, methanol and caustic soda are fed into the two stirred tank reactors. The chemical reaction takes place at temperatures of approximately 60°C and a retention time of approximately 2 hours, per stirred tank reactor. Any input materials that have not yet been consumed are then returned with any by-products, caused to react again and then separated.

The product mixture is neutralised with hydrochloric acid after successful transesterification and can be refined with an optional treatment.

Learning Objectives / Experiments

- fundamentals of chemical transesterification
- production of biodiesel from vegetable oil
- influence of retention time and temperature

Scope of Delivery

- 1 trainer
- 1 GUNT software CD + USB cable
- 1 set of instructional material

Specification

- [1] chemical transesterification of vegetable oils
- [2] two-stage process
- [3] two heated stirred tank reactors
- [4] educt dosing
- [5] neutralisation of by-products and main products
- [6] PLC for controlling the system
- [7] GUNT software for data acquisition via USB under Windows 7

Technical Data

- Stainless steel tank
- stirred tank reactors: approx. 5L
- storage tank (oil): approx. 50L
- storage tank (chemicals): approx. 5L
- product tank: approx. 50L
- Metering pumps (oil): 2,5L/h
- Metering pumps (chemicals): 0,3L/h

Dimensions and Weight

- LxWxH: approx. 5000x790x1900mm
- Weight: approx. 800kg

Required for Operation

- 400V, 50Hz, 3 phases
- Vegetable oil, caustic soda, methanol, hydrochloric acid

Order Details

083.65000 CE 650 Biodiesel Plant

