



Features

- Chemical and biological fixed bed catalysis
- 3 reactors for comparative experiments
- Product analysis with photometer

Catalysts enable or accelerate chemical reactions. Fixed Bed Catalysis Apparatus 32378 is designed for the decomposition reaction of dissolved saccharose in glucose and fructose.

A peristaltic pump transports the reactant (saccharose solution) into bottom of the reactor from a tank. The catalyst takes the form of a fixed bed in the reactor. The saccharose solution flows through the fixed bed.

In the process, saccharose is decomposed into glucose and fructose. The catalyst accelerates the reaction and so increases the yield of the product (glucose/fructose mixture). The product is collected in a tank.

Three reactors allow various catalyses to be compared. The chemical catalyst used is exchanger resin.

The recommended biological catalyst is the enzyme invertase. A regulated heating water circuit additionally permits analysis of the influence of temperature on the reaction.

To determine the glucose concentration in the product, a photometer specifically adapted to the unit is supplied. The photometer data are transferred to a PC and evaluated by software. The 'flow injection analysis' is available as an optional accessory. The 'flow injection analysis' enables a larger number of measurements to be performed during the experiment compared to manual analysis, while at the same time reducing the effort involved and improving reproducibility.

Note: Specifications are subject to change.

Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com
Website: www.tescaglobal.com

Specifications

- Investigation of catalytic reactions
- 3 reactors (PMMA) for comparison of various fixed bed catalysis
- Peristaltic pump with adjustable speed to transport the reactant into the reactors
- Regulated heating circuit with water tank, heater and pump to regulate the reactor temperatures
- 1 scaled container for reactant and product respectively
- Photometer for analysis of the product
- Optional software for data acquisition via USB under Windows
- 'Flow injection analysis' optionally available as accessory

Technical Specifications

- Reactors
 - Diameter: approx. 10mm
 - Height: approx. 120mm
- Peristaltic pump
 - Max. flow rate: approx. 28mL/min
- Heating circuit pump
 - Max. flow rate: 10L/min
 - Max. head: 30m
 - Power consumption: 120W
- Heating circuit
 - Tank: approx. 7500mL
 - Heater: approx. 1kW
- Tanks for reactant and product
 - Capacity: approx. 2000mL
 - Scale division: 50mL
 - Material: PP
- Photometer wavelength: 610nm

Experiments

- Fundamentals of chemical catalysis
- Fundamentals of enzymatic catalysis
- Use of a photometric analyser
- Drawing up a quantity balance
- Determining yield

Requirements

- Mains Power 220 – 240V @ 50Hz, 1Ph