KHT-165

FIXED BED CATALYSIS APPARATUS

Catalysts enable or accelerate chemical reactions. The **Fixed Bed Catalysis Apparatus Model KHT-165** is designed for the decomposition of dissolved saccharose into glucose and fructose.

A peristaltic pump transports the saccharose solution from a tank into the bottom of the reactor. The catalyst is arranged as a fixed bed within the reactor. As the saccharose solution flows through the fixed bed, it decomposes into glucose and fructose. The catalyst accelerates the reaction, increasing the yield of the product, which is collected in a tank.

Three reactors allow comparison of different catalyses. The chemical catalyst used is ion-exchange resin, while the recommended biological catalyst is the enzyme invertase. A regulated heating water circuit allows investigation of the influence of temperature on the reaction.

To determine the glucose concentration in the product, a photometer specifically adapted to the unit is provided. The photometer data can be transferred to a PC and evaluated using software. Optionally, flow injection analysis can be used, enabling a larger number of measurements to be performed with reduced manual effort, improved reproducibility, and more efficient experimentation.

Features

• Investigation of catalytic reactions
• Three reactors (PMMA) for comparison of various fixed bed catalysis
• Peristaltic pump with adjustable speed to transport reactant into the reactors
• Regulated heating circuit with water tank, heater, and pump to control reactor temperatures
• One 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. 10 mm
- Height: approx. 120 mm

Peristaltic Pump

- Maximum flow rate: approx. 28 mL/min

Heating Circuit Pump

- Maximum flow rate: 10 L/min
- Maximum head: 30 m
- Power consumption: 120 W

Heating Circuit

- Tank: approx. 7.5 L
- Heater: approx. 1 kW

Tanks for Reactant and Product

- Capacity: approx. 2 L
- Scale division: 50 mL
- Material: PP

Photometer

- Wavelength: 610 nm

Experiments
• Fundamentals of chemical catalysis
• Fundamentals of enzymatic catalysis