

CET-MKII Tubular reactor

The CET-MKII Tubular reactor is in the form of a tube wrapped in a spiral around an acrylic former which is enclosed in a transparent tank. Water at a controlled temperature (from the CEXC) is circulated within the tank, this maintains the reactants at constant temperatures.

The reagents are piped separately to the reactor through quick-release fittings mounted on the lid, they are preheated in stainless steel coils in the water tank before being mixed and fed into the reactor coil.

Mounting positions are provided for the CEXC water temperature sensor (in the water tank) and the conductivity probe (at the reactor output).

CET-MKII uses the saponification reaction and conductivity to measure the progress of the reaction.

Experimental content

- ▶ Determination of reaction rate constant using a tubular reactor
- ▶ Effect of varying the temperature on reaction rate
- ▶ Effect of varying the reactant concentration on reaction rate
- ▶ Effect of varying the feed rate
- ▶ Investigation of the effect of throughput on conversion
- ▶ Demonstration of the temperature dependence of the reaction and the rate constant
- ▶ Determination of the residence time distribution
- ▶ Study of the effect of flow rate on conversion
- ▶ To determine the kinetic constant of a reaction using an indicator for visually monitoring

When in use the CET-MKII is wholly contained on the CEXC. When removed from the CEXC, storage dimensions are 500mm high, 250mm wide and 300mm deep.

Ordering specification

- ▶ A small-scale tubular reactor for use with the CEXC capable of demonstrating large-scale behaviour
- ▶ The 20m long reactor coil is mounted in a clear acrylic vessel through which heating or cooling medium is circulated. Volume of reactor coil is 0.4L
- ▶ Two heat exchanger coils bring the reactants up to the reaction temperature separately before they are mixed to start the reaction
- ▶ Fitting points for temperature and conductivity sensors (supplied with the CEXC)



Requirements

CEXC

Scale



Requires CEXC Base unit to operate

Consumables:

- ▶ 50ml Ethyl Acetate
- ▶ 20g NaOH Sodium Hydroxide
- ▶ 100g Potassium Chloride

Overall dimensions

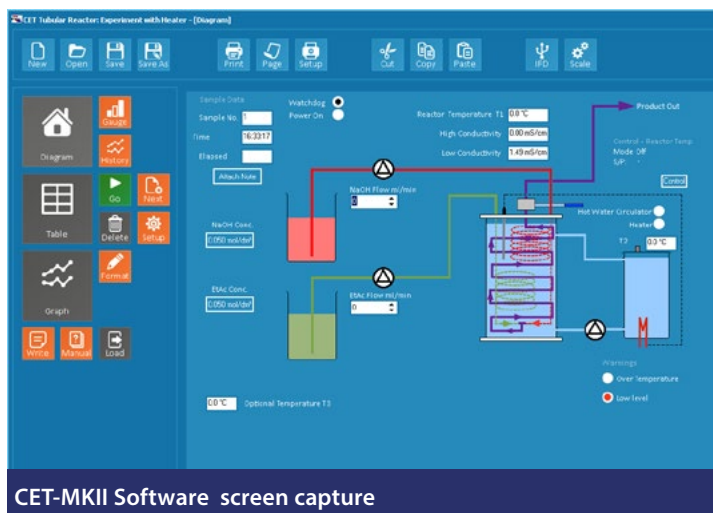
Length	1.00m
Width	0.50m
Height	0.50m

Packed and crated shipping specifications

Volume	0.2m ³
Gross weight	15Kg

Ordering codes

CET-MKII



CET-MKII Software screen capture