

Product Name :

Isothermal Continuously Stirred Tank Reactor

Product Code :

Reaction0003

**Description :**

Isothermal Continuously Stirred Tank Reactor

Technical Specification :

Isothermal Continuously Stirred Tank Reactor

In an ideal CSTR, the contents in reactor are well mixed and have uniform composition throughout. Thus the exit stream has the same composition as the fluid within the reactor. This type of reactor is known as mixed flow reactor. Entire set-up is used to study a non-catalytic homogeneous second order liquid phase reaction under isothermal condition.

It has two feed tanks through which two reactants are fed to the reactor. To determine the individual flow of Chemicals, Rotameters are used. The flow rate can be adjusted by operating the needle valves provided on respective Rotameter. The magnetic drive pump is used for circulation of feed. The CSTR is fitted with stirrer for proper mixing. From top outlet of it samples are collected for analysis. Constant temperature water bath arrangement is provided to conduct the experiment at various temperatures.

Isothermal Continuously Stirred Tank Reactor is used to augment the feasible and reliable bio-process system for the treatment of hydrocarbon-rich industrial wastewaters. These reactors are also known as vat- or backmix reactor.

CSTR is a model which helps to get an idea for the key unit operation variables. This condition is applicable when we try to use a continuous agitated-tank reactor to get the desired output.

The behaviors of CSTR are determined by using a Continuous Ideally Stirred-Tank Reactor (CISTR). All calculations are based on perfect mixing.

Experiments:

- Sponification Reaction study in Isothermal CSTR
- To determine the Reaction Rate Constant and effect of temperature on it

Utilities Required:

- Water Supply & Drain
- Electricity Supply: I Phase, 220VAC, 1.5kW.
- Instruments, Laboratory Glassware and Chemicals required for analysis as per the system adopted

Electrical and Electronics

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