

## Microlabequipment-Computer Controlled - RTD Studies in Continuous Stirred Tank Reactor With Data Logging Facility manufacturer in india (MTCRE-104B/CC)



### RTD Reactions:

Real reactors do not satisfy the idealized flow patterns, back mix flow or plug flow deviation from ideality can be due to channeling of fluid through the vessel, recycling of fluid within the vessel or due to the presence of stagnant region or pockets of fluid in the vessel. To predict the exact behavior of a vessel as a Chemicals reactor, RTD or stimulus response technique is used. The setup consists of one feed tank through which water is fed to the reactor. The flow rate can be varied by changing the speed of peristaltic pump. The continuously stirred tank reactor made of Stainless Steel is provided for understanding the R.T.D. characteristics.

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logging, printing the stored data, preparing spread sheets in Excel etc.

## **EXPERIMENTATION:**

- To plot RTD curve for a CSTR. Using pulse tracer.
- To determine the Dispersion No.

## **UTILITIES REQUIRED :**

- Electricity Supply: Single Phase, 220 V AC, 50 Hz, 5-15 Amp combined socket with earth connection. Earth voltage should be less than 5 volts.
- Water Supply.
- Floor Drain.

Instruments, Laboratory Glassware and Chemicals required for analysis as per the system adopted.

**Computer System:** i-3 processor with DVD Drive, Windows 7/8, MS-Office pre-loaded. One USB slot required in PC for Data Acquisition Card.

## **Specifications :**

- **Reactor** : Material Stainless Steel, variable volume 2Ltrs. (Approx)
- **Agitator** : Material Stainless Steel Impeller and shaft coupled with FHP motor
- **Feed Tank** : Material Stainless Steel, Capacity 20 Ltrs.
- **Feed Circulation** : By Peristaltic Pump (1No.), Computer controlled for different RPM
- **Piping** : Stainless Steel and Silicon pipe.
- **Product:** 0'0Analysis.
- By Electronic Sensor, Output 4-20 mA.
- **Control panel comprises of** : With Standard make on/off switch, Mains Indicator etc.

Arrangement is done to inject tracer into the reactor.

An ENGLISH instruction manual consisting of experimental procedures, block diagram etc. will be provided along with the Apparatus The whole set-up is well designed and arranged on a rigid structure painted with industrial PU Paint.