



**Product Code . JL-TWL-9135**

## Isothermal Batch Reactor

### Description

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Isothermal Batch Reactor

#### **Description:-**

A batch reactor can operate under conditions like Isothermal (Temperature of Reaction Mass remains constant), perfectly mixed (composition of reaction mixture is uniform throughout), and constant volume (volume of the

reaction mixture within the reactor remains constant, there is no appreciable change in the density of reaction mass).

This set-up is used to study a non-catalytic homogeneous reaction under isothermal condition.

A batch reactor is a closed system with no input and output streams.

The set up consists of a Reactor fitted in a constant temperature water bath.

The temperature of the bath can be maintained from ambient to 90°C with the help of Digital Temperature indicator Cum Controller.

Samples can be taken out with the help of a sampling pipette.

One stirrer is fitted for mixing the reactants in reactor and other is fitted in a water bath to keep the uniform temperature throughout in the bath.

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### **Utilities Required:-**

Earth voltage should be less than 5 volts.

Electricity Supply: Single Phase, 220 V AC, 50 Hz, 5-15 Amp combined socket with earth connection.

Water Supply.

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

Floor Drain.

Floor Area Required: 1.0 m x 0.5 m

### **Technical Details:-**

Reactor: Material Stainless Steel, Volume 2 Ltrs. (Approx.)

Water Bath: Material Stainless Steel, Double wall, insulated with Ceramic wool.

Temp. Sensor : RTD PT-100 type

Digital Temp. Controller: PID Controller, 0-199.9°C (For Water Bath)

With Standard make on/off switch, Mains Indicator etc.

Heater: Nichrome wire Heater

Stirrer: Stainless Steel Impeller and shaft coupled with FHP motor.

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