Isothermal Plug Flow Reactor (Coiled Tube Type)

Product Categories: Chemical Reaction Engineering Lab, Engineering Equipment
Product Page:
https://www.labappara.com/product/isothermal-plug-flow-reactor-coiled-tube-type/

Product Description

Isothermal Plug Flow Reactor (Coiled Tube Type)
Technical Description:
In an ideal Plug Flow Reactor (PFTR) there is no mixing in the direction of flow and complete mixing perpendicular to direction of flow. Concentration of reactants varies along the length of reactor but not in radial direction. In case of a coil turbulence is introduced due to frequent change in direction of flow and presence of secondary flow, so a higher value of reaction rate constant is expected in coil tube type plug flow reactor. This set-up is used to study a non-catalytic homogeneous reaction under iso-thermal condition.
The set up consists of two feed tanks through which two reactants are fed to the reactor. Rota-meters are provided to measure the individual flow of Chemicals. The flow rate can be adjusted by operating the needle valves provided on respective Rota-meter. The compressed air is used for circulation of feed. It is a helical coil tube type reactor kept in a constant temperature water bath to conduct the experiment at various temperatures. Reactants enter at lower end coming out of the top of coil from where samples are collected for analysis. Pressure Regulator,

Pressure Gauge and Safety Valve are fitted in the compressed air line.

Technical Specifications:

Reactor: Material Stainless Steel, Capacity 0.7 Ltrs. (approx) (Helical Coiled Tube Type)

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

Heater: Ni-chrome wire Heater

Stirrer (Water Bath): Material SS Impeller and shaft coupled with FHP motor

Feed Tank (2 Nos.): Capacity - 20 Ltrs.

Feed Circulation: By compressed air.

Flow Measurement: Rota-meter 2Nos. one each for Reactants

Piping: Stainless Steel and PVC.

Pressure Regulator: 0-2 Kg/cm2

Pressure Gauge: Bourdon type 0-2 Kg/cm2

Stop Watch: Electronic.

The whole set-up is ingeniously designed and schematically arranged on a powder-coated rigid structure.