



Product Code . EL-TWL-11791

RTD Packed Bed Reactor Apparatus

Description

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The flow rate can be adjusted by operating the needle valve provided on Rotameter.

Axial diffusion and dispersion of fluid in packed beds are important for design and operation of separation equipment and Chemicals reactors.

The tracer technique, the most widely used method for the study of axial dispersion.

The setup consists of a glass column packed with Rasching Rings and one feed tank.

In stimulus-response experimentation, we perturb the system using pulse input of tracer and then see how the system reacts or responds to this stimulus.

Water is fed to the reactor through a liquid distributor, fitted at the bottom of the column.

Rotameter is provided to measure the flow of water.

The analysis of the response gives the desired information about the system.

Samples can be taken periodically from the top outlet of the reactor.

For understanding the R.T.D. characteristics, a special arrangement to inject a tracer into the lower end of the reactor, using a syringe, is provided.

Pressure Regulator & Pressure Gauge are fitted in the compressed air line.

Objectives:-

To plot RTD curve for Packed Bed Reactor.

To determine the Dispersion No.

Required for Operation:-

Compressed Air Supply at 2 Bar, 0.25 CFM.

Water Supply.

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

Drain.

Specifications:-

Feed Tank: Material Stainless Steel, Capacity - 20 Ltrs.

Feed Circulation: By compressed air.

Packing: Rasching Rings, Material Borosilicate Glass, Size 8-10mm (approx)

Flow Measurement: Rotameter.

Reactor Column: Material Borosilicate Glass




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

Control Panel:-

Standard make On/Off switch, Mains Indicator etc.

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