

Order Code : 20213501.1.20
Name : Gas Absorption Column

Description

In the process of absorption, a mixture of gas and liquid, for the purpose of dissolving one or more components of the gas and to provide a solution of them into the liquid. For the liquid phase of water which is pumped at the top of column where it fall through the packing through the packing material. The contact of the two phases is in counter current operation and enhance the mixing and diffusion of CO₂ in the liquid phase at the room temperature and atmospheric pressure. The outlet gas leaves the system from the top of the column. A sample of the outlet gas mixture is also taken and sent to the CO₂ sensor located inside the console. Reading of CO₂ concentration is shown on the console's display. The outlet liquid leaves the system from the bottom of the Column and returns to the water tank. Samples of the liquid phase entering and exiting the system can easily be taken for further analysis. Desorption of the CO₂ absorbed in the water line is obtained by aeration of the 'charged' liquid.



Experimentation/Learning Objectives

- Study of basic principles of the absorption of a gas into a liquid using a packed column
- Determination of loading and flooding points.
- Study of hydrodynamic characteristics of a packed column.
- Demonstration of physical and chemical absorption.
- Demonstration of gas desorption
- Determination of the mass transfer coefficient

Technical Details

- Absorption column : Splits in two section
- Packing : Rasching rings (10 x 10 mm)
- Feed tank : 20L
- Pressure measurement : Electronic DPT, 2 nos.
- Conductivity measurement : At column inlet and outlet, 2 nos.
- Temperature sensor : RTD PT-100, 2nos
- Gas flow measurement : 2 nos.
- Liquid flow measurement : 1 no.
- CO₂ Detector : Will be provided.
- Magnetic pump
- 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.

Utilities Required

- Electricity Supply: 1 Phase, 220 V AC, 50Hz, 2A.
- CO₂ supply 20 lpm, 2 bar max
- Compressed Air Supply of 4 CFM at 2 bar.
- Water supply 5 lpm.

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.

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