

Permeation Dilution Unit

A **Permeation Dilution Unit (PDU)** consists of chambers separated by a permeable membrane. Connections are provided for sample inlet and outlet and carrier inlet and outlet. **PDU** devices are custom fabricated with a wide selection of materials. Membrane material, surface area, and thickness affect the permeation transfer rate for a given chemical. All volatile chemicals will permeate the membrane.

Sample:

The sample may be either gas or liquid. Particulates, mists, and droplets are blocked by the membrane, permitting only gas or volatile components contained in a sample to transfer into the carrier (diluent) sweeping the opposite side of the membrane.

Carrier:

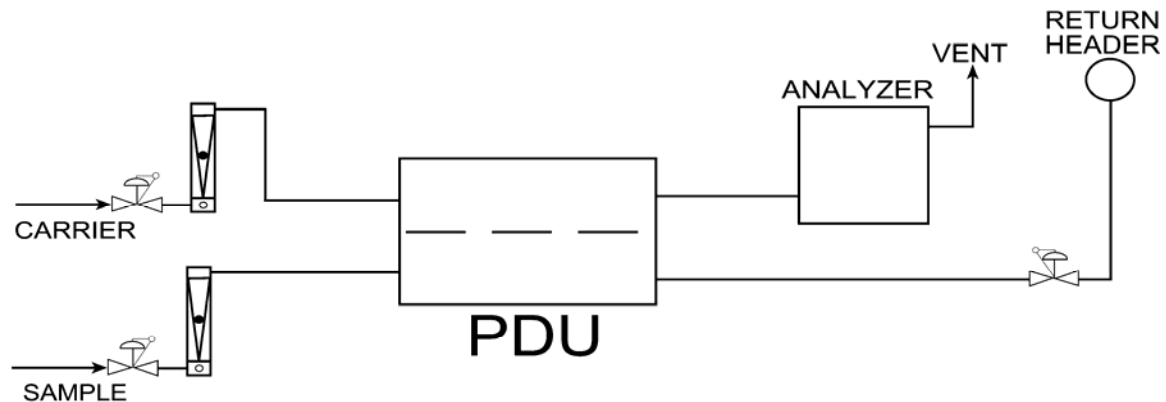
The carrier (diluent) may be either gas or liquid. Gas is normally utilized.

Flow:

Sample flow is not critical and may vary. Flow rates of 100-300 ml/min are recommended, with rates less than 25 ml/min to be avoided.

Pressure:

Gaseous samples require a constant pressure. Changes in sample pressure for liquids do not affect the output of the unit. Carrier pressure is regulated to maintain constant flow. Total pressure may require regulation to prevent membrane damage. Pressure rating of the **PDU** is 150 PSI.



The **Permeation Dilution Unit** may be designed to provide dilution ratios of 100:1 to 1,000,000:1. Typical materials of construction are stainless steel, aluminum, Teflon, acetyl, etc.

MTI Analytical Technology is available to assist with **Analytical Maintenance Management Software, Analyzers, Calibration/Validation Standards, CEMS Reporting Software, Electrodes, Sample Handling and Conditioning, Electrochemical Sensors, and Packaged Analytical Systems** requirements. Should there be questions or additional information required, please advise. Email Dale C. Merriman, CSAT at dcmerriman@mertechinc.com.