We think Globally and act Locally

Why us ?

THE DILEMMA

Gaseous sample analysis requires a clean, dry sample to produce accurate and reliable results. Filters will remove entrained particulates, but removing moisture from a sample without affecting the analytes is not so simple. Refrigeration dryers will remove water by condensation and collection,but water soluble analyte gases will dissolve in the condensate and be removed as well. Dessicant dryers will absorb water, but also typically absorb analyte gases. Permeation dryers will preferentially remove water, but also remove analytes.

SOLUTION

Nafion gas dryers are a superior alternative. They continuously and highly selectively remove water from gaseous samples without affecting analytes, reaching final sample dew points as low as -45˚c.

OPERATIONS

Permapure is the sole manufacturer of the tubing made of Nafion under exclusive license of Dupont, manufacturer of Nafion. This tubing is highly corrosion resistant and selectively permeable to water making it ideally suited for drying or humidification of gas samples as water vapour can be added to or removed from the sample without changing the composition of the sample.

Industrial Uses :

- Includes gas sample conditioning. Premapure offers complete systems to accomplish this sample preparation. Fuel cell humidification is a rapidly developing industrial application as well.

Medical Uses :

- Drying of breath for anesthesia monitoring
- Respirator monitoring
- Metabolic testing
- Humidification of respirator air or supplemental oxygen

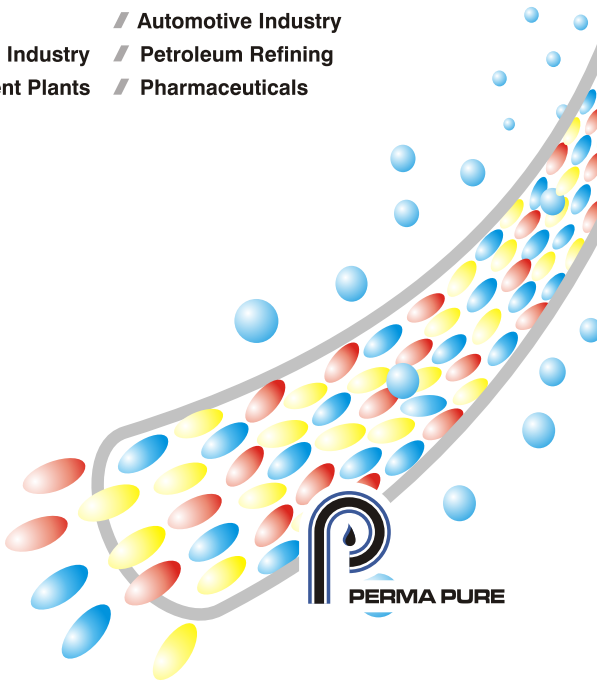
Scientific Uses :

- Exploitation of the electrochemical and ion exchange properties of Nafion
- Sample conditioning for laboratory analyses

APPLICATIONS

Premapure is operating predominantly in the following market sectors :

- **Environment Control**
- **Chemical Industry**
- **Cement Plants**
- **Incineration**
- **Iron And Steel Industry**
- **Water Treatment Plants**
- **Automotive Industry**
- **Petroleum Refining**
- **Pharmaceuticals**



What we offer

NAFION GAS **SAMPLE DRYERS :**

When gas containing water vapour passes through Nafion tubing, the water is absorbed by and moves through the walls of the tubing, evaporating into the surrounding air in a process called pre-evaporation. The remaining components in the gas are unaffected. The reaction is driven by humidity gradient until equilibrium is reached. If a dry purge gas flows over the exterior surface of the Nafion tubing, water vapour will be continuously extracted from the gas stream inside the tubing until the sample humidity matches that of the purge gas.

MD Series

MD–SERIES DRYER :

- It contains a single Nafion tube

PD Series

PD–SERIES DRYER :

- It contains a bundle of Nafion tubes

DM Series

DM–SERIES DRYER(DESICCANT/MEMBRANE)

- Used for portable applications

HD Series Heatless Dryer

HD-SERIES – **HEATLESS DRYERS :**

- They are ideal for low-flow, compressed air drying applications
- Dryer operation is fully automatic, with outlet dew points as low as 50°C

HUMIDIFIERS :

FC-SERIES

- They use an exclusive Nafion membrane tubing to continuously humidify gas streams
- These humidifiers operate over a wide range of flow rates
- They can use either liquid water or a humid gas stream as a source of humidity

FC Series Humidifier

The water-to-gas humidifiers :

- They have water on one side of the tube wall and the gas to be humidified on the other
- These humidifiers offer the greatest amount of humidification

The gas-to-gas humidifiers :

- They use counter-flowing arrangement to move water from one stream to other
- They can be used as heat exchangers as well

ME Series

ME – series moisture exchanger :

- It is ideal for both drying as well as humidifying gas streams
- It uses Nafion membrane tubing technology to transfer water to or from gas

MH & PH Series

MH & PH – series humidifiers :

- They use permeation distillation as the operating principle
- As only water molecules are transferred bacterial growth and contamination will not occur

FF 250 Series Filter

FF-250 – **SERIES FILTERS :**

- They are high-efficiency particulate and coalescing filters
- They are designed for high-temperature, corrosive service

FB Series inertial Bypass Filter

FB SERIES – INERTIAL BYPASS FILTERS :

- They are inertial separation filters for high particulate load applications
- Used upstream of fine particulate filters, FB-series filters will greatly increase the life and performance of particulate and coalescing filters

ZERO-AIR – GENERATOR:

- They produce purified air at rates up to 18 liters per minute with just a flip of a switch
- They convert ambient air into clean air that meets the norms of zero air for instrument calibration

Zero Air Generator

AS Series Ammonia Scrubbers

AS SERIES – AMMONIA SCRUBBERS :

- They remove ammonia from a gas stream
- They protect analyzers and sample lines from clogging due to the formation of ammonium salts

ED-SERIES – EDUCTORS :

- ED-series eductors or aspirators are non-mechanical pumps
- They exploit the Venturi effect to draw a liquid or a gas into a flowing stream
- They can serve where corrosion-free or maintenance-free operation is of particular concern

ED Series Educator

Micro Gas

Mini Gas Probe

Mini Gas System

GAS SAMPLE CONDITIONING SYSTEMS :

Premapure's unique sample conditioning technology assures that a cleaner, dryer gas is delivered for the most accurate analysis. Innovative probes, lines, filters, scrubbers dryers and controls work together in a complete package to achieve quality sample conditioning

GAS SYSTEMS COMPONENTS :

Hot, Wet, Dirty Gas Inlet. → **Collection and Transport -** Probes, Heated lines, Blow Back systems → **Filtration -** Particulate filters, Coalescing filters, Inertial filters, Automatic bypass Drains

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Specialty Scrubbers - Ammonia scrubbers, VOC scrubbers → **Dryers -** Nafion membrane dryers → **Cool, Dry, Clean Gas for Analysis**

Axis Engineering
info@axisindia.in, www.axisindia.in