Product Instructions

Diffusive Flow & Bubble Point Tests

Hydrophobic Cartridge

Preface

Hydrophobic filters are normally integrity testing using the Water Intrusion Test method. This does not require fully wetting out the membrane and makes it easier to drain and dry the filter before placing into service. In some cases, it may be desirable to perform a Diffusive Flow test or Bubble Point test on a hydrophobic filter. This can be accomplished by pre-wetting the filter with a low surface tension test fluid - such as 60/40 or 70/30 IPA/Water.

Introduction

With the exception of the wetting fluid, Diffusive Flow and Bubble Point testing require the same equipment set up and follow the same procedures as those required to test hydrophilic filters.

If using an automated integrity test system for measuring Diffusive Flow or Bubble Point is used, make sure the test parameters are properly set up for the filter to be tested. NOTE: These parameters are not necessarily the same for all membrane filters from different manufacturers.

If necessary, contact CustomerService@criticalprocess.com for appropriate parameters for your system.

Diffusive Flow Test Procedure

1. Install and wet out the cartridge as per Cartridge Wetting instructions. Make sure to use the appropriate low surface tension wetting fluid.

NOTE: In some cases, it may be possible to wet out the filter by submerging it in the test fluid outlet end up and agitating for two minutes to allow trapped air to escape. Then the filter can be installed in the test housing.

2. If necessary, remove the cartridge from the wetting housing and carefully install it in the integrity test housing. Take care that the cartridge is not allowed to dry out during this transfer.
3. Follow the instructions for Diffusive Flow Test for hydrophilic cartridges.
4. Record the diffusional airflow.
5. If required rinse the filter with water following the wetting procedures referenced above.
6. After draining, the filter can be dried in a 50 °C oven prior to use.

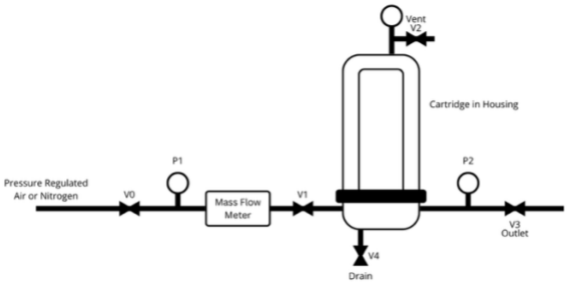

Figure 1A: Cartridge Diffusion Test Attachment to Housing Inlet

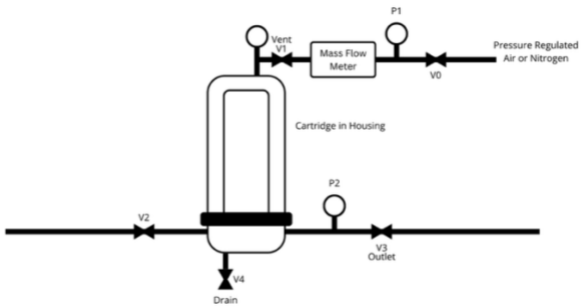

Figure 1B: Cartridge Diffusion Test Attachment to Housing Vent

A diffusional flow (diffusion rate) reading higher than the specification indicates that the system is not integral. This may be due to incomplete filter wetting, a leak in the test system or a defect in the filter.

Procedure Note

If the cartridge appears to fail the initial diffusion test, repeat the Cartridge Wetting procedure and increase the rinse time to twice the initial amount to assure that the media has been properly wetted. Then retest. If necessary, check the cartridge seal in the housing. Consult.

Bubble Point Test Procedure

1. Install and wet out the cartridge as per Cartridge Wetting instructions. Make sure to use the appropriate low surface tension wetting fluid.

NOTE: In some cases, it may be possible to wet out the filter by submerging it in the test fluid outlet end up and agitating for two minutes to allow trapped air to escape. Then the filter can be installed in the test housing.

2. If necessary, remove the cartridge from the wetting housing and carefully install it in the integrity test housing. Take care that the cartridge is not allowed to dry out during this transfer.
3. Follow the instructions for Bubble Point Test for hydrophilic cartridges.
4. If required rinse the filter with water following the wetting procedures referenced above.
5. After draining, the filter can be dried in a 50 °C oven prior to use.

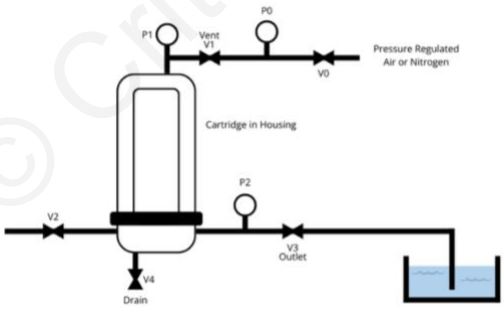

Figure 2A: Cartridge Bubble Point Test

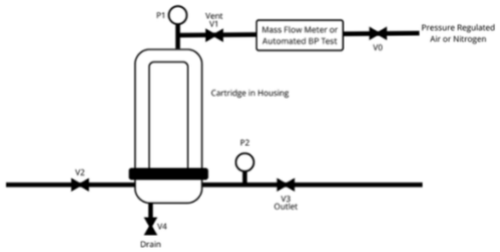

Figure 2B: Cartridge Bubble Point Test with Automated Test

A bubble point reading lower than the specification indicates that the system is not integral. This may be due to incomplete filter wetting, a leak in the test system or a defect in the filter.

Procedure Note

If the cartridge appears to fail the initial diffusion test, repeat the Cartridge Wetting procedure and increase the rinse time to twice the initial amount to assure that the media has been properly wetted. Then retest. If necessary, check the cartridge seal in the housing.

Any Questions?

For help determining the test values or additional information, contact customerservice@criticalprocess.com or call us at (603) 880-4420.

Critical Process Filtration, Inc. is an ISO-9001 certified manufacturer of process filters. We have been helping customers for over 25 years to build and improve process filtration systems. Our comprehensive testing, analysis, and validation services support your team whenever needed. Partnering with you and your process team is how we deliver your company's solution right the first time.

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