Technical Storage Procedure

This Technical Service Bulletin provides information required to store PVDF series modules and elements as spares or in-situ after they have been placed in service as well as provide recommendations for transit.

Introduction

PVDF series modules and elements are stored from our factory in a specific protective solution: 30% glycerin, 1% sodium bisulfite, 69% pure water.The function of glycerin is to prevent the membrane module from freezing at low temperatures, and the function of sodium bisulfite is to prevent the growth of microorganisms, inhibit bacteria, and protect the membrane filaments. The membrane components must be kept moist under any circumstances to prevent the membrane filaments from drying out, affecting membrane performance and causing irreversible damage.

Modules and Elements

The PVDF series product line is offered in either a module or element form.
Modules are self-contained, low pressure units, while elements need to be installed in a separate pressure vessel housings and can operate at higher pressures.

Storage of New Modules and Elements as Spares

New PVDF series modules and elements can be safely stored for up to 2 years
- Elements are to be stored horizontally and properly preserved in a sealed bag.
- Modules and Elements must be protected from direct sunlight and stored in a cool, dry place between 5-40 °C.

Storage Situation

Storage of unused membrane modules
After purchasing PVDF series membrane pressure ultrafiltration components, if they are not to be installed and used temporarily, they should be stacked in a cool and dry place. The ground must be flat and clean, and the surrounding environment must be free of corrosion and pollutants. The storage environment temperature is 1~40 °C.

The storage requirements for unused membrane modules are as follows:
1. Please place it in a cool place, avoid direct sunlight, and it is strictly prohibited to drain the liquid inside the membrane module;
2. Membrane modules should be stored in the original packaging as much as possible and placed indoors to prevent moisture.

Note: In cold areas, ensure that the temperature of the membrane module storage location is above 0°C. Please be careful not to freeze the membrane module to avoid irreparable damage to the membrane module.

Shutdown Protection of Ultrafiltration System

If the device needs to be shut down, and the membrane module is out of service for a short period of time (2 to 3 days), it can be run for about 30 to 60 minutes every day or a separate backwash procedure can be performed once a day to prevent bacterial contamination.

If the component is out of service for a long time (more than 7 days), the ultrafiltration device should be air washed, backwashed or chemically enhanced backwashed before shutting down, and a protective solution (such as 0.5%-1% sodium bisulfite) should be injected into the device, close all inlet and outlet valves of the ultrafiltration device. Check the pH value of the protective solution once a month. When the pH is <3, the protective solution should be replaced in time.

When it is put back into operation after being shut down for a long time, the ultrafiltration device should be continuously flushed until the discharge water is foam-free.

During shutdown, the ultrafiltration membrane should be kept in a wet state from beginning to end. Once dehydrated and dried, it will cause irreversible damage to the membrane module.

Transportation

PVDF series module(s)/element(s) being transported between the factory and plant site should adhere to the steps in the Storage of New Modules and Elements as Spares section above:

Typically crates contain 6 modules/elements to a crate. These crates are not to exceed stacking 2 high for shipping and storage purposes. For shipments containing less than 6 modules/elements, smaller crates may be used. In these cases, observance must be kept to avoid stacking larger crates on top of the smaller crates. During transportation, the modules should not be subject to:

1. colliding impact
2. direct sunlight
3. rain
4. mechanical damage

Note: For cold locations, do not allow the products to freeze. Calcium Chloride has a lower freezing point and acts as an anti-freezing agent, but care should still be taken to ensure products do not freeze.