

## Technical Service Bulletin

November 2011 TSB131.08

### HYDRAcap<sup>®</sup> Storage Procedure

This Technical Service Bulletin provides information required to store HYDRAcap<sup>®</sup> Ultrafiltration modules or elements under the following circumstances:

1. Storage of HYDRAcap<sup>®</sup> modules/elements as spares.
2. Storage of HYDRAcap<sup>®</sup> modules/elements in-situ after they have been placed in service.

#### Introduction

For the purpose of this TSB, the term “module” refers to products comprised of an outer shell, in which hollow fiber membranes are fixed at the ends, as well as, end caps, clamps, and product end adapters. The term “element”, denoted by an ‘E’ at the end of the product name, refers to products comprised only of an outer shell, in which hollow fiber membranes are fixed at the ends. Elements are normally operated inside of a pressure vessel.

HYDRAcap<sup>®</sup> modules/elements are stored in a 0.95% sodium bisulfite (SBS) to prevent biological growth.

**NOTE: HYDRAcap modules/elements do not contain anti-freezing agents (i.e., propylene glycol). HYDRAcap module/element must not be exposed to freezing conditions or fiber breakage may occur.**

#### Storage as Spares

New HYDRAcap<sup>®</sup> modules/elements can be safely stored for up to 2 years provided that the following guidelines are met:

1. The modules/elements are stored horizontally. Modules are stored with feed ports facing up.
2. The modules/elements are protected from direct sunlight and stored in a cool, dry place.
3. The sodium bisulfite solution is changed based on the table below:

Table 1: Storage solution replacement time

Ambient Temperature (°C)	
2-30	Change solution every 24 months
2-35	Change solution every 18 months
2-45	Change solution every 12 months

4. If the solution needs to be changed, follow the procedure below:

4.1. For HYDRAcap<sup>®</sup> modules:

- A. Remove the plastic caps on all three side ports.
- B. Drain 1 Liter of old preservative from the module.  
Through the upper feed port of the 60" module introduce a solution made up of:  
HYDRAcap<sup>®</sup>80- 80 grams  $\pm$  5 grams of SBS in 1000  $\pm$  50 ml of city water .  
  
HYDRAcap<sup>®</sup>60- 60 grams  $\pm$  5 grams of SBS in 1000  $\pm$  50 ml of city water .  
HYDRAcap<sup>®</sup>40 - 40  $\pm$  5 grams of SBS in 1000  $\pm$  50 ml of city water.
- C. Place caps onto all three ports to maintain cleanliness, prevent evaporation and reduce neutralization of SBS storage solution.
- D. For storage, place the modules horizontally with the feed ports facing up.

4.2. For HYDRAcap<sup>®</sup> 60 elements:

- A. Open the vacuum sealed bag.
- B. Drain 1 Liter of old preservative from the element and bag.
- C. With the element standing on one end, pour a solution made up of 60 grams  $\pm$  5 grams of SBS in 1000  $\pm$  50 ml of city water into the core tube.
- D. Reseal vacuum sealed bag to maintain cleanliness, prevent evaporation and reduce neutralization of SBS storage solution.
- E. For storage, place the modules horizontally.

### Storage in-situ

HYDRAcap<sup>®</sup> module(s)/element(s) that have already been rinsed, commissioned, and/or placed in service can be safely stored for up to 3 months by simply backwashing the module(s)/element(s) with sodium bisulfite (SBS) and isolating the module(s)/element(s) to ensure no loss of storage solution. The backwash water used should be fresh UF filtrate.

The table below shows the concentration of SBS needed for different storage times. If the storage time exceeds the allowed time, the SBS backwash procedure should be repeated.

Table 2: Concentration of SBS needed for various storage times

<b>Storage Time</b>	<b>Concentration of SBS</b>
<b>Up to 2 weeks</b>	<b>0.10%</b>
<b>Up to 1 month</b>	<b>0.50%</b>
<b>Up to 3 months</b>	<b>0.95%</b>

If the user prefers to store the modules without using an SBS backwash, they may perform a CEB3, rinse and store per the procedure below. The modules must be backwashed with fresh UF filtrate before being placed back into service. .

- A. Remove the module(s) from the rack.
- B. Drain all excess water from the module.
- C. Cap the bottom feed port.  
Through the upper feed port of the 60" module introduce a solution made up of:  
HYDRAcap<sup>®</sup> 80- 80 grams  $\pm$  5 grams of SBS in 1000  $\pm$  50 ml of city water .  
HYDRAcap<sup>®</sup> 60- 60 grams  $\pm$  5 grams of SBS in 1000  $\pm$  50 ml of city water.  
HYDRAcap<sup>®</sup> 40 - 40  $\pm$  5 grams of SBS in 1000  $\pm$  50 ml of city water.
- D. Place caps onto all three ports or place back onto rack (after removing bottom feed cap) to maintain cleanliness, prevent evaporation and reduce neutralization of SBS storage solution.
- E. For storage off the rack, place the modules horizontally with the feed ports facing up.

Note : This procedure does not apply to the HYDRAcap<sup>®</sup> 60E.

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