

## Industrial Tubular Products\* Storage Instructions

### STORAGE INSTRUCTIONS

#### A. SHELF LIFE

KSS tubular membrane products leave the factory conditioned with a glycerin storage solution. Subject to the limits shown in Sections B & C below, tubular membrane products, kept sealed and in original packaging, will have a one year shelf life from date of shipment.

#### B. HANDLING

1. The boxes should not be dropped or crushed.
2. The tubular products should be stored horizontally.

#### C. NEW PRODUCT STORAGE CONDITIONS

1. Tubes shall be kept unopened in original packaging.
2. Store tubes indoors and out of direct sunlight.
3. Do not allow the elements to dry out or freeze and they should be kept at less than 40°C (104°F).
4. Storage temperature must be kept between 10°C and 30°C (50 to 86°F), at relative humidity below 70%.

#### D. USED PRODUCT STORAGE SOLUTION

Water of proper quality should be used for storage. Please use the KSS Water Quality Guidelines for reference.

1. **Short-term shut-down (up to 30 days):** Tubes should be thoroughly cleaned. The tubes should then be filled with fresh water at 5-25°C (41 to 77°F). Exchange storage water with fresh water every one to two weeks.
2. **Long-term shut-down (30 days or longer):** Tubes should be thoroughly cleaned. The tubes should then be filled with one of the following chemicals:
  - a. KOCHKLEEN® 180 (or equivalent) solution at pH 3-4
  - b. Phosphoric acid solution at pH 3
  - c. Sodium bisulfite solution at 2,000 mg/l, 5-25°C, and pH 3-4

Replace storage solution every 30 days.

#### E. POST-STORAGE CLEANING PROCEDURE

Tubes should be cleaned according to a KSS recommended procedure prior to restarting the system on production.

#### F. WATER QUALITY GUIDELINES

For water quality guidelines for storage solutions please refer to KSS Water Quality Guidelines for cleaning, diafiltration & storage.

\* including FEG PLUS<sup>TM</sup>, ULTRA-COR<sup>®</sup>, INDU-COR<sup>TM</sup> and INDU-COR<sup>TM</sup> G tubular products.

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