

CLEANING CHEMICAL #1

1. Hazardous Material:

<i>Active Ingredient:</i>	Mixture contains no hazardous materials Phosphates/organic acids
<i>Hazard Data (Threshold Limit Value (TLV), Lethal Dosage (LD50), Lethal Concentration (LC50)):</i>	None
<i>Appearance and Odor:</i>	White Powder, odorless
<i>Solubility in Water:</i>	Complete
<i>pH of 2.4% Solution:</i>	11 +/- 0.5
<i>Fire and Explosion data:</i>	No hazard exists
<i>Reactivity Data:</i>	Stable
<i>Hazardous Polymerization:</i>	Will not occur
<i>Toxicity:</i>	No TLV's have been established for this mixture

2. Health Hazard Information:

<i>(a) Oral Ingestion:</i>	Not considered a primary route of contact
<i>(b) Eye Contact:</i>	Considered a moderate irritant
<i>(c) Skin Contact:</i>	Considered a mild irritant
<i>(d) Inhalation:</i>	Not considered a primary route of contact

3. Emergency First Aid:

<i>(a) Oral Ingestion:</i>	Not applicable
<i>(b) Eye Contact:</i>	Flush eye immediately with large volume of water. Get medical attention.
<i>(c) Skin Contact:</i>	Flush contacted area with water. Launder clothing before reuse.
<i>(d) Inhalation:</i>	Not applicable

4. Spill or leak: Steps to be taken in case material is released or spilled.

- (a) Vacuum or sweep/shovel into salvage containers.
(b) Flush area with water to remove final traces.

5. Waste Disposal Method:

- (a) Material may be diluted with water & flushed into an approved drain.
(b) Comply with all applicable federal, state, and local regulations.

6. Special Protection Information:

- (a) *Respiratory Protection:* None required
(b) *Ventilation:* None required
(c) *Protective Gloves:* Standard work gloves
(d) *Eye Protection:* Safety glasses

7. Handling and Storing: Conform to normal warehousing conditions

8. Product Information: Alkaline detergent is a powder cleaner specifically designed for the removal of organics, silt and other particulate deposits from polyimide membrane surfaces.

Figure 5-11. Alkaline Detergent Product Information

CLEANING CHEMICAL #2

1. Hazardous Material:

<i>Hazard Data (Threshold Limit Value (TLV), Lethal Dosage (LD50), Lethal Concentration (LC50)):</i>	500mg/24 hours on skin, Rabbit - moderate irritation 750mg/24 hours in eye. Rabbit - severe irritation.
<i>Appearance and Odor:</i>	White Powder with a sweetish odor
<i>Solubility in Water:</i>	Complete
<i>pH of 2.4% Solution:</i>	3_0.5
<i>Fire and Explosion data:</i>	No hazard exists
<i>Reactivity Data:</i>	Stable
<i>Hazardous Polymerization:</i>	Will not occur
<i>Toxicity:</i>	No TLV's have been established for this mixture

2. Health Hazard Information:

<i>(a) Oral Ingestion:</i>	Not considered a primary route of contact
<i>(b) Eye Contact:</i>	Considered a moderate irritant
<i>(c) Skin Contact:</i>	Considered a mild irritant
<i>(d) Inhalation:</i>	Not considered a primary route of contact

3. Emergency First Aid:

<i>(a) Oral Ingestion:</i>	Not applicable
<i>(b) Eye Contact:</i>	Flush eye immediately with large volume of water. Get medical attention.
<i>(c) Skin Contact:</i>	Flush contacted area with water. Launder clothing before reuse.
<i>(d) Inhalation:</i>	Not applicable

4. Spill or leak: Steps to be taken in case material is released or spilled.

- (a) Vacuum or sweep/shovel into salvage containers.
(b) Flush area with water to remove final traces.

5. Waste Disposal Method:

- (a) Material may be diluted with water & flushed into an approved drain.
(b) Comply with all applicable federal, state, and local regulations.

6. Special Protection Information:

- (a) *Respiratory Protection:* None required
(b) *Ventilation:* None required
(c) *Protective Gloves:* Standard work gloves
(d) *Eye Protection:* Safety glasses

7. Handling and Storing: Conform to normal warehousing conditions.

8. Product Information: Acid Cleaner is a powder cleaner specifically designed for the removal of metal hydroxides, calcium carbonate and other similar scales from polyimide membrane surfaces.

Figure 5-12. Acid Cleaner Product Information

Instructions For Use

SINGLE USE CLEANING CARTRIDGES

CONTACT INFORMATION

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The R.O. Unit must be cleaned with chemical when product water output falls below 80% of rated capacity output (i.e.: 20gph unit, clean when product water output falls below 16gph). **NOTE:** Feed water temperature & content will be factors in the R.O. Unit's output.

1. Turn Unit OFF.
2. Close raw water inlet sea cock, be sure cleaning valve (if unit is equipped with one) is in the normal overboard discharge position and perform a fresh water flush of the unit. (Refer to your manual, for fresh water flush procedure)
3. When fresh water flush is complete, shut unit down.
4. Turn Cleaning Valve (if unit is equipped with one) to the CLEAN position, creating a re-circulating loop (no overboard discharge should be seen).
5. Remove the pre-filter cartridge from the pre-filter housing and replace it with cleaning chemical #1 cartridge (Blue Stripe).
6. Fill the pre-filter housing with clean un-chlorinated (distilled) water and re-secure the housing, with the chemical cartridge now inside.
7. Place the R.O. Unit's High Pressure By-Pass Valve in the CLEAN (by-pass) position.
8. Start the R.O. unit's low pressure pump (or both the low pressure and high pressure pumps, if unit is wired for this only, i.e. Village Marine Tec.'s Little Wonder 12vdc units).
9. IF your R.O. unit does not have a high pressure by-pass valve, check the high pressure gauge and make sure the reading is '0'. IF NOT '0', then adjust the pressure down to '0' by turning the unit's pressure regulating valve counter-clockwise, until the pressure gauge reads '0'.
10. Let the unit run in this "re-circulate mode" for 30 minutes.
11. After 30 minutes, SHUT THE UNIT OFF.
12. Remove the cleaning chemical cartridge from the pre-filter housing and put a 5 micron filter cartridge in the housing. Fill housing with un-chlorinated (distilled) water and re-secure the filter housing in place.
13. Put the R.O. unit's CLEANING VALVE in the OVER-BOARD DISCHARGE position.
14. Now, flush the cleaning chemical out of the R.O. unit by opening the raw water inlet sea-cock and running the unit for 10 minutes, without high pressure (high pressure by-pass valve in CLEAN position, or pressure regulator backed off to '0' psi reading on the high pressure gauge). **NOTE:** You may also perform this "flushing out of the chemical" by performing a fresh water flush for 10 minutes. IF flushing with fresh water, be sure the water goes through a carbon block filter, prior to entering the R.O. unit either through a genuine Village Marine Tec. Fresh Water Flush kit, or by placing a carbon block filter in your R.O. unit's pre-filter housing, instead of the 5 micron pleated pre-filter cartridge.)
15. Return to STEP #3, above for cleaning chemical cartridge #2 (RED STRIPE) and repeat through STEP #14, then go to STEP #16, below.
16. You may now remove the 5 micron filter cartridge (or carbon block filter) from the pre-filter housing and replace it with a NEW 5 micron filter cartridge and return the unit to NORMAL operation (high pressure by-pass valve in NORMAL RO position, or pressure regulator adjusted for pressure reading of 800psi on high pressure gauge), for making water. OR go to PRESERVATION CHEMICAL instruction sheet (contained in genuine Village Marine Tec. Preservation Kit, pn: 85-0103), if preserving ("pickling") your R.O. Unit.



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