

EVAPORATOR TREAT CONCENTRATE

1. DESCRIPTION

Evaporator Treat Concentrate is a concentrated scale inhibitor of low molecular weight for the prevention of scale in salt or fresh water, flash or submerged element type evaporators. **Evaporator Treat Concentrate** was designed for systems, which require large quantities of fresh water production on a continuous basis.

2. APPLICATIONS

Evaporator Treat Concentrate is a concentrated phosphonate liquid compound.

3. DIRECTIONS FOR USE

UNI AMERICAS Evaporator Treat Concentrate should be dosed in fresh water and fed continuously to the evaporator feed water line, or directly to the evaporator shell using a recommended dosing system. The dosing system should consist of a dosing tank with flow meter and suitable inductor, or metering pump system.

Consult your local **UNI AMERICAS** Service Engineer for recommendations of the dosage rate based on specific problems and requirements onboard.

4. OTHER INFORMATION

- Ensures that evaporator system maintains optimal operating efficiency by keeping heat transfer surfaces free of scale.
- The highly concentrated formulation will remove existing scale through out the evaporator system. This will in turn reduce downtime and maintenance.
- Does not form adherent sludge.
- Highly concentrated product, safe liquid, easy and cost effective dosing.
- Concentrated formula for use on vessels where fresh water production is high, particularly on cruise vessels.

5. NOTES

THE MECHANISM OF SCALE FORMULATION

Scale forming salts have a negative solubility index, i.e. their solubility in water decreases as the temperature rises.



The calcium carbonate formed is relatively insoluble and precipitates as scale.

CONCENTRATED PHOSPHONATE LIQUID COMPOUND

Product Highlights

- Ensures that evaporator system maintains optimal operating efficiency by keeping heat transfer surfaces free of scale.
- The highly concentrated formulation will remove existing scale and in turn reduce downtime and maintenance.
- Does not form adherent sludge.
- Highly concentrated product, safe liquid, easy and cost effective dosing.
- Concentrated formula for use on vessels where fresh water production is high, particularly on cruise vessels.

Product Characteristics

| | |
|-------------------|--------------------|
| Appearance: | Clear amber liquid |
| Corrosive action: | None |
| Specific gravity: | 1.1 |
| Flash Point: | None |
| pH: | 2 |

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The magnesium carbonate remains formed in solution, but at temperatures of 80 degrees centigrade and higher it hydrolyses to magnesium hydroxide, which is insoluble and precipitates as scale.

At temperatures between 80-100 degrees centigrade evaporator scales consist of a mixture of calcium carbonate and magnesium hydroxide.

As the temperatures exceed the 100 degree centigrade level the third type of scale forming salt, calcium sulfate appears. At these types of temperatures the salts become insoluble in brine.

UNI AMERICAS Evaporator Treat Concentrate will provide protection in evaporators across the whole temperature range, because of it's non-selective absorption onto the scale forming salts, whereby a small amount of treatment prevents precipitation of a large amount of hardness salts.