LIQUIVAP CF

1. DESCRIPTION

LIQUIVAP CF combines a concentrated formula of advanced polymers, a specialized blend of surfactants and a FDA approved defoamer additive.

2. APPLICATIONS

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

3. DIRECTIONS FOR USE

UNI AMERICAS' **LIQUIVAP CF** 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.

4. INITIAL DOSAGE

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

5. OTHER INFORMATION

- Ensures that evaporator system maintains optimal operating efficiency by keeping heat transfer surfaces free of scale.
- FDA approved defoamer properties ensure that the distillate quality is optimal as carry over is eliminated.
- 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.

6. 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.

$$Ca(HCO_3)_2 = CaCO_3 + CO_2 + H_2O$$
$$Mg(HCO_3)_2 = MgCO_3 + CO_2 + H_2O$$

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

THE MOST ADVANCED TECHNOLOGY IN EVAPORATOR TREATMENTS

Approved for usage in "SERCK COMO Gmbh" MSF evaporator systems

Product Highlights

- Non-selective absorption onto the scale forming salts.
- **FDA** approved defoamer.
- Prevention of scale in salt or fresh water, flash or submerged element type evaporators.
- Does not form adherent sludge.
- Highly concentrated product, safe liquid, easy and cost effective dosing.

Product Characteristics

Appearance:	Liquid, clear, amber
Corrosive action:	None
Specific gravity:	1.1**(20°C)**
Flash Point:	None
pH:	2

This information is not to be taken as a warranty or representation for which we assume any legal responsibility. The information is offered solely for your consideration, investigation and verification

clean chemicals clean ships clean seas

LIQUIVAP CF

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' **LIQUIVAP CF** will provide protection in evaporators across the whole temperature range, because of its non-selective absorption onto the scale forming salts, whereby a small amount of treatment prevents precipitation of a large amount of hardness salts.