

# Introducing **BioTech** >

## > The **Slime Eliminator** for Ice Makers



Most ice makers are installed with activated carbon filters. These filters remove chlorine, the disinfectant added to municipal drinking water to destroy bacteria. Without a disinfectant, ice makers are left unprotected from bacteria slime growth. • The ice maker's location and environment can contribute to rapid bacteria slime growth. The BioTech system controls these unhealthy ice maker maintenance problems. • Bacteria can be killed with as little as 0.2 ppm chlorine, but to ensure adequate disinfection, 1.5 ppm is continuously dispensed to the ice maker. At this low level, no chlorine can be detected in the ice cubes.



Superior water treatment solutions  
at affordable prices!

**systems IV**®

## BioTech SPECIFICATIONS

> Capacity	For all ice makers up to 2400 lbs. <i>per day/cuber</i>
> Maximum Pressure	125 psi <i>non shock</i>
> Maximum Temperature	100° F
> Flow Rate	5.5gpm
> Dimensions	3" W X 24" H
> Fittings	1/2" NPT
> Shipping Weight	4" lbs.
REPLACEMENT CARTRIDGE	BT1

## Maintenance

Change BT1 cartridge approximately every six months.

## Installation

Install after IceTech water treatment systems for best results.



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### Systems IV

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# WATER MANAGEMENT FOR ICE MAKERS

## Solve Water Problems — Easily & Affordably

To successfully treat water for **ICE MAKER AND BEVERAGE** applications the following water impurities must be considered:

- Taste/Odor and Chlorine
- Suspended Solids
- Hardness
- Scaling & Corrosion
- Iron, Hydrogen Sulfide & Slime

### Taste/Odor and Chlorine

Chlorine is added to water by municipalities as an effective disinfectant. Chlorine also is an oxidizing agent to remove tastes and odors. After chlorine performs these desirable functions, the disagreeable taste of chlorine as well as its corrosive effects on metal can be removed by Systems IV activated carbon water treatment.

### Suspended Solids

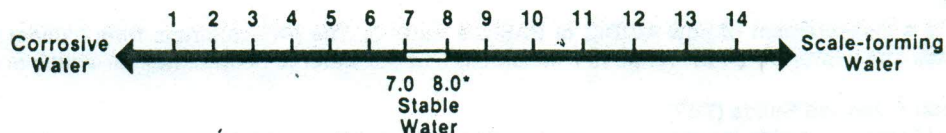
Suspended impurities or particles in water is a significant part of the scale forming process. These impurities also dramatically effect beverage carbonation. Systems IV water treatment removes particles down to 1 micron. Sub-micronic systems remove particles down to 0.2 microns.

### Hardness

Carbonate hardness, primarily dissolved calcium in water, is controlled by sequestration (usually some form of polyphosphate is used). Sequestration is a chemical process used to control scale formation, in which a sequestering agent holds scale-causing ions in solution, preventing them from precipitating (changing from a liquid to a solid) and forming scale. Systems IV sequestering agent is very effective within the pH\* range of 7.0 to 8.0. Either above or below this pH range a Systems IV high pH or low pH neutralizing buffer will also be needed for effective water treatment.

### Scaling & Corrosion

Scaling and corrosion are closely related problems in water treatment. They may be thought of as opposite ends of hypothetical stability scale.



The object of scale and corrosion control is to stabilize the water, thus preventing either scale formation or corrosion. The stable range is relatively narrow and approximately between 7.0 and 8.0 on the pH scale although this can vary with the amount of total dissolved solids (TDS)\*.

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## Scale

Scale is the familiar chalky-white deposit frequently found at the bottom of a tea kettle. Water with a pH above 8.0 may have a high amount of TDS and be highly alkaline. Scale forming minerals will precipitate (change from a liquid to a solid) and form scale. A high pH can be reduced with a Systems IV high pH buffer and a water treatment system by neutralizing the dissolved minerals that form scale.

## Corrosion

Corrosion is the oxidation of unprotected metal surfaces. Water with a low pH below 7.0 may have a high amount of TDS and be very acidic. A low pH can be increased with a Systems IV low pH buffer and a water treatment system by neutralizing the dissolved minerals that are corrosive.

## Iron, Hydrogen Sulfide and Slime

**Iron** in water causes reddish-brown stains. The iron water problem exists in two forms: either as iron bacteria having a reddish slime appearance or as metallic iron commonly called rust. Either iron condition can be controlled by a Systems IV chlorinator followed by a water treatment system.

**Hydrogen Sulfide** imparts a "rotten egg" odor and taste to the water and is very corrosive. Hydrogen Sulfide can be oxidized by a Systems IV chlorinator followed by a water treatment system.

**Slime** — there are three basic types of slime or algae:

- "Water Borne" — can be identified by a pastel color slime type deposit in the water flow area (light pink, light green, white, etc.)
- "Distillation" — a dark green or black growth that is found in drain lines.
- "Air Borne" — a dark reddish-brown substance with a rubber like texture.

Water borne slime can be controlled by a Systems IV chlorinator followed by a water treatment system. Distillation or Air Borne slime can be controlled with Systems IV water treatment but each problem must be evaluated individually.

## Water Analysis

Systems IV has designed a disposable "water analysis quick test kit" to allow "on-site" water testing to determine the type of water treatment system required. The test kit provides complete materials for four (4) tests — chlorine, hardness, iron and a pH test. The water analysis takes less than ten minutes and the results provide a reasonable amount of data for effective water treatment selection.

### \*pH

pH is a measurement of how ACIDIC or BASIC a water is. The pH scale runs from 0 (most acidic) to 14 (most basic). The center of the pH range is 7 indicating that the water is neutral, neither acidic or basic.

### \*Total Dissolved Solids (TDS)

Total Dissolved Solids is a term used to describe the level of Dissolved Minerals in water. Water has the ability to dissolve part of the minerals from rock, earth, pipes, etc. as it flows. Water can dissolve a variety of minerals and therefore is not the same anywhere. Depending on minerals dissolved, water can be either corrosive or scale forming. The greater the TDS the more difficult the water problem.

**Note:** Water softener or reverse osmosis can turn non-corrosive water corrosive.

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