



# Handbook for Water Treatment Solutions

Second Edition

**SeaKlear**<sup>®</sup>

Reliable & Effective



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Second Edition

## Contents

### SeaKlear Products

Natural Clarifier . . . . .	3
Enzyme Klear . . . . .	6
Chlorine-Free Shock . . . . .	6
PRS . . . . .	10
Algae Prevention & Remover . . . . .	14
Algae Klear . . . . .	14
Yellow Klear . . . . .	14
Phosphate Remover . . . . .	18
Metal Stain Control . . . . .	19
Stain Prevention & Remover—Professional Strength . . . . .	20
Metal Klear . . . . .	20
Stain Klear . . . . .	21
Natural Stain Remover . . . . .	23

### Topics of Interest

SeaKlear Water Treatment Solutions . . . . .	1
Overview of Water Clarity . . . . .	1
Causes of Cloudy Water & Their Solutions . . . . .	7
Dealing with Recreational Water Illness . . . . .	10
SeaKlear PRS Field Tests & Testimonials . . . . .	11
Algae . . . . .	15
Phosphates . . . . .	17
Metals, Minerals & Stains . . . . .	19
Metal Product Comparison Chart . . . . .	22
Pool Troubleshooting Chart . . . . .	24
SeaKlear Spa Product Spotlight . . . . .	25



Since its beginning, **SeaKlear®** has been a leader in supplying eco-friendly pool products. Our first product, SeaKlear Natural Clarifier, is made from all-natural chitosan—a substance derived from shrimp and crab shells. The chitosan we use to create a natural solution for cloudy pool water is recycled waste from the seafood industry. This year SeaKlear processed almost 900,000 pounds of shrimp and crab shells that otherwise could have ended up in a landfill.

SeaKlear products displaying the SeaKlear Eco-Friendly icon are made from naturally occurring substances that can lower your pool's impact on the environment by extending the life of the water in your pool and reducing the amount of harsh chemicals required to treat your water.

**HaloSource, Inc.**

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# SeaKlear® Water Treatment Solutions

The backyard pool or spa is a recognized part of the American Dream. Kids love to swim and play, parents love to relax in the water or unwind in the spa, and the whole family can enjoy entertaining in the backyard environment.

However, there can be many pitfalls awaiting unsuspecting pool, spa or hot tub owners. Most do not have a detailed understanding of what is required to keep that pool, spa or hot tub clean and safe for their family. Maintaining a pool, spa or hot tub on their own can be a challenge. Owners must have a basic understanding of the circulation system and how it works, learn to maintain their equipment, and learn the basics of water chemistry.

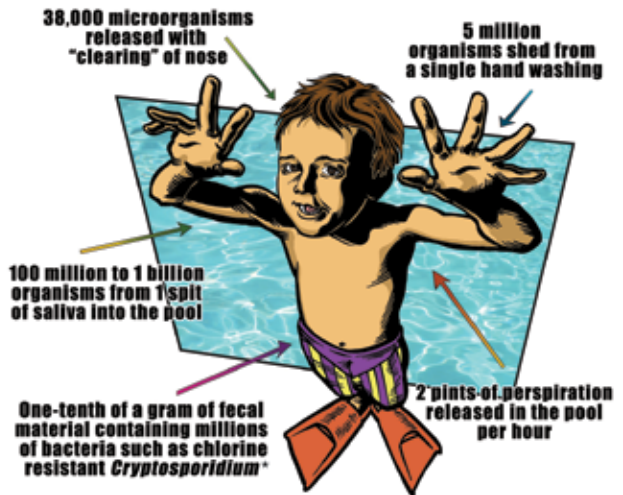
Pools, spas and hot tubs must be disinfected with a primary sanitizer, kept within water balance parameters including pH and total alkalinity (see "The Book on Water Clarity" at [www.seaklear.com](http://www.seaklear.com) for more details), and treated for problems that arise due to outside sources. The focus of SeaKlear water treatment solutions is to prevent and eliminate those problems.

Even in the best of situations problems can arise. SeaKlear water treatment solutions provide a reliable and effective way to prevent and eliminate these problems as part of a pool, spa or hot tub chemical maintenance program.

Key issues with pool, spa or hot tub maintenance:

- Water clarity
- Preventing recreational water illness
- Algae
- Surface stains or discolored water

## How Swimmers Affect Water Clarity



**Every time we enter the water our bodies shed millions of small particles that affect the clarity of pool water.**

\*Dr. Charles Gerba, University of Arizona (Washington State Public Health Association 1987)

## Overview of Water Clarity

No one wants cloudy, discolored or dull-looking water. Besides the aesthetic concerns, transparent, clean water is important to swimmer safety. Maintaining clear, clean and safe water is essential to any pool, spa or hot tub owner.

SeaKlear water treatment solutions provide a reliable and effective way to achieve this. Used together, the SeaKlear product line provides a total solution to all water clarity problems, virtually hassle-free.

- Proven effective and reliable

- Superior in quality
- Fast acting
- Simple and easy to use
- Naturally safe

## Importance of Water Clarity

Water clarity in pools, spas and hot tubs is important for three primary reasons:

- 1. Appearance:** Unsightly, cloudy or discolored water makes swimming undesirable. In spas and hot tubs, cloudy, foamy or discolored water makes the soaking experience less enjoyable.
- 2. Disease prevention:** Cloudy water can harbor bacteria and viruses, which can cause earaches, pinkeye, skin rashes and flu-like symptoms.
- 3. Swimmer safety:** Risk of drowning increases with cloudy water. Swimmers are in danger if those entering the pool can't see people already swimming under the cloudy water. If someone is in trouble under water and he or she can't be seen because of water cloudiness, the risk of drowning increases.

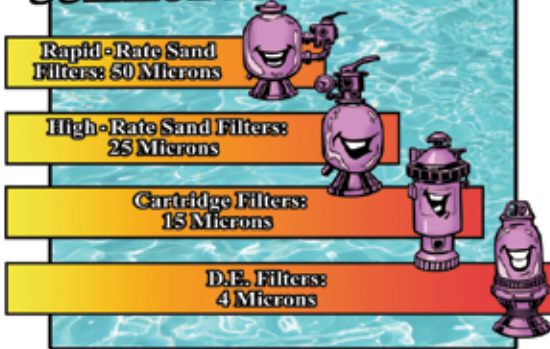
### Tip:

#### Always Check the Filters

When cloudy water occurs, remember to check the filter first. Chemicals for water clarity will not be effective if the filter is not functioning properly. Water clarifiers are especially dependent upon good filtration. If the water doesn't clear after using a clarifier, or becomes cloudier, the problem is most likely with the filter.

Basic water clarity is accomplished through a regular program of pool maintenance. Clean and clear water is accomplished through an effective pool filtration system, routine chemical maintenance including preventative measures, and keeping the pool free of debris. The following sections will address these topics in more detail.

## Common Pool Filter Types



### Filtration and Clarity

A pool filtration system clarifies water by removing suspended particulate matter from the water. Particulate matter includes small dirt particles, skin flakes, algae spores, bacteria and other debris.

The filter must be in proper working

condition to ensure clean and sparkling water. Filters should be cleaned regularly

according to manufacturers' specifications. Pool, spa and hot tub filters vary in their capability to remove micron-sized material. See "Common Pool Filter Types" for the most common filters and their micron-removal capabilities.

No chemical treatment is likely to be effective without a properly functioning filtration system.

## Chemicals and Clarity

A variety of chemicals are used to maintain pristine water clarity in pools, spas and hot tubs. These chemicals include sanitizers, oxidizers and clarifiers.

Beyond the basics of sanitizing the water, the keys to keeping water clear and oil-free are effective use of a natural clarifier, routine oxidation, and the use of a filter enhancer or enzyme treatment. Choosing the right product for these purposes is also a key to their success. The following sections will state the basic facts about these types of products.

### Tip: Salt Cells

Use **SeaKlear Natural Clarifier** to help prevent buildup of oily scum and scale on salt cells. Phosphates can interfere with salt cell performance. Use **SeaKlear Phosphate Remover** to remove phosphates from the water.



## Natural Clarifier

**SeaKlear Natural Clarifier** and **SeaKlear Spa Natural Clarifier** outperform other clarifiers at removing dirt and oil from pool, spa and hot tub water. When used regularly, this patented formula decreases excess metals and keeps filters cleaner, longer.

- Naturally clarifies cloudy water
- Removes oils and oily scum
- Compatible with all sanitizing systems
- Makes cleaning filters simple and easy
- **SeaKlear Natural Clarifier** treats 192,000 gallons per quart
- Biodegradable and environmentally safe



Item Code	Item Description	UPC	#/Case
SKP-C-Q	SK Natural Clarifier, quart	90402	12
SKP-C-G	SK Natural Clarifier, gallon	90302	4
1010123	SK Natural Clarifier, 5 gallon	90404	1
SKS-B-P	SKS Natural Clarifier, pint	90503	12
SKS-B-Q	SKS Natural Clarifier, quart	90403	12





Coagulation is to flocculation what a minivan is to a military transport plane. The minivan (coagulation) is able to pick up passengers and transport them. The military transport plane (flocculation) is able to pick up several minivans—passengers and all.

Available only from SeaKlear, **SeaKlear Natural Clarifier** removes more particles and delivers clear water through its proprietary use of all-natural chitosan flocculation technology.

## Chitosan Is Better Than Other Floccing Agents

Chitosan is a better floccing agent than oil or synthetic flocculants because chitosan-based flocs are able to bridge to form larger flocs, making them easier to trap in a pool's filter. In addition, chitosan-based flocs do not stick to filter media, as oil-based and synthetic-based floccules do.

## Filter Enhancement

For the best water clarity possible, the next step up from the clarity generated by **SeaKlear Natural Clarifier** is the patented dual-polymer technology of **SeaKlear PRS**. **SeaKlear PRS** utilizes dual-stage flocculation to trap particles down to less than half a micron in size, delivering unmatched water clarity in pools and spas. See the “Dealing with Recreational Water Illness,” “Algae” and “Phosphates” sections for more details about the capabilities of this product.

## Oxidizers

There is a distinct difference between a sanitizer and an oxidizer. Sanitizers kill germs while oxidizers are designed to remove nonbacterial contaminants and organics from the water through oxidation or burning up of chemical by-products, microscopic dirt, dead algae and swimmer waste. This process is often referred to as shocking.

According to the Washington State Public Health Association, one person in a pool releases 2 pints of perspiration per hour into the water. Our perspiration is made up largely of nitrogen waste (urea), a major source of water contamination, and is responsible for many pool problems, including cloudy water.

Routine oxidation should be accomplished through the use of **SeaKlear Chlorine-Free Shock** on a weekly basis during the swim season. Using **SeaKlear Chlorine-Free Shock** in combination with **SeaKlear Natural Clarifier** in a shock-and-floc routine can result in sparkling clear water.

### **Tip:** **Shock & Floc**

A good system of sanitizing and oxidizing helps keep pool water clear and clean. Regular weekly use of an oxidizer shock such as **SeaKlear Chlorine-Free Shock** reduces the number of nonbacterial molecules in the water.

## Enzymes

In situations where oil and oily scum are a severe problem, **SeaKlear Enzyme Klear** can be used to boost the effectiveness of **SeaKlear Natural Clarifier** or **SeaKlear PRS**. **SeaKlear Enzyme Klear** is an effective way to eliminate an

## Enzyme Klear

SeaKlear Enzyme Klear and SeaKlear Spa Enzyme Klear are natural enzyme cleaners that eliminate oils, lotions and organics in pool, spa and hot tub water, reducing the maintenance required for filters and spa surfaces.

- Biodegradable and environmentally safe
- Destroys oily scum lines and odors
- Assists in the removal of excess oils from spa and hot tub water
- Compatible with bromine, chlorine, ozone and peroxide sanitizers



Item Code	Item Description	UPC	#/Case
1110015	SK Enzyme Klear, quart	90576	12
1140103	SKS Enzyme Klear, pint	90582	12

## Chlorine-Free Shock

SeaKlear Chlorine-Free Shock and SeaKlear Spa Chlorine-Free Shock are superior shock products that keep your water clear and odor-free. Swimming or soaking can resume just 15 minutes after treatment.

- Removes odors and chlorine smell
- Works quickly—swimming can resume after just 15 minutes
- Shocks with active oxygen, not chlorine
- Eliminates organic contaminants, suntan oils and perspiration
- Use with bromine, mineral purifiers, ozone or chlorine-based systems for pools, spas and hot tubs



Item Code	Item Description	UPC	#/Case
SKM-W-01	SK Chlorine-Free Shock, 1 lb. bag	90506	24
SKM-W-10/4	SK Chlorine-Free Shock, 10 lb. bucket	90306	4
SKM-W-25	SK Chlorine-Free Shock, 25 lb. bucket	90206	1
SKM-W-50	SK Chlorine-Free Shock, 50 lb. bucket	90106	1
1140300	SKS Chlorine-Free Shock, 2 lb.	90804	12

existing oily scum line, maintain filter efficiency and assist in keeping water clear. Using clarifiers and filter enhancers, oxidizers, and enzymes can reliably deliver clean, clear water. The following section examines specific issues of water clarity and how to use these products to solve the problems.

## Causes of Cloudy Water & Their Solutions

Oftentimes, cloudy pool, spa or hot tub water may be caused by improper filtration or lack of sanitizers such as chlorine. If these causes have been ruled out, you may be dealing with suspended particulate matter in the water.

Suspended particulate matter is a fancy way of saying:

- Contamination from swimmers or bathers
- Dirt
- Silt
- Organic matter
- Algae
- Suntan oils and lotions
- Bacteria and protozoa
- Minerals and metals

These issues are dealt with through a combination of filtration and chemical treatment.

### **Tip:**

#### **Avoid Organic Buildup**

To prevent an excess of organic waste and oils that can lead to the formation of chloramines, it is important to shock the pool with **SeaKlear Chlorine-Free Shock** and use **SeaKlear Natural Clarifier** weekly to remove as much waste through the filter as possible.

For heavily used pools use **SeaKlear PRS**.

## Chloramines

To disinfect pools, spas and hot tubs, many owners use chlorine. However, chlorine can combine with swimmer waste and form chloramines, which can impede water clarity.

### **Tip:**

#### **Reducing Chlorine Odor**

Heavy chlorine odor is a sign that chloramines are present. Chloramines are chlorine that has combined with by-products from swimmer waste in the water. Treat with **SeaKlear Chlorine-Free Shock**.

High levels of chloramines in pool water can lead to poor disinfection and irritation of swimmers' eyes and skin, as well as cloudy water.

**Solution:** To treat high chloramines, use a chlorine-free shock such as **SeaKlear Chlorine-Free Shock** at a rate of 1 pound per 10,000 gallons in a swimming pool weekly. For spas and hot tubs use 2 ounces of **SeaKlear Spa® Chlorine-Free Shock** per 500 gallons.

## Air Pollution

Water acts as a natural filter against whatever is in the air such as car exhaust, dust, chemicals and bacteria. When air passes through the water, the water traps and filters any pollutants the air is carrying.

**Solution:** Use **SeaKlear Chlorine-Free Shock** and **SeaKlear Natural Clarifier** according to directions to keep water clean and clear. For spas and hot tubs use **SeaKlear Spa Chlorine-Free Shock** and **SeaKlear Spa Natural Clarifier**.

## Environment

Nearby plants, trees, weeds, leaves, grass clippings and fertilizers all contaminate pools, spas and hot tubs and threaten the quality of their water.

**Solution:** Physical removal of materials from water as quickly as possible. Use **SeaKlear Chlorine-Free Shock** and **SeaKlear Natural Clarifier** or **SeaKlear PRS** according to directions to keep water clean and clear. For spas and hot tubs use **SeaKlear Spa Chlorine-Free Shock** and **SeaKlear Spa Natural Clarifier** or **SeaKlear Spa PRS**.

## Humans, Insects and Animals

Every time people enter the water, their bodies shed millions of small particles that affect the clarity of pool water.

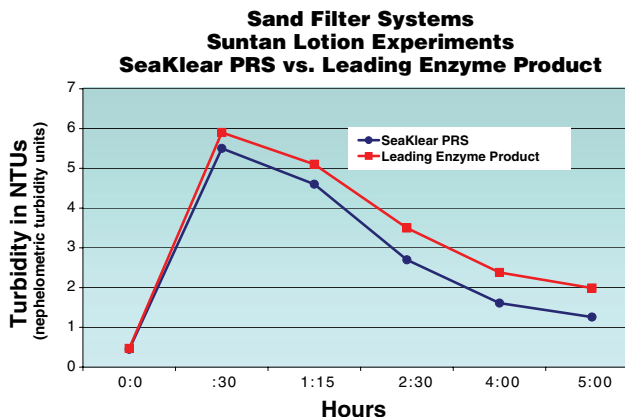
Dogs, ducks, frogs, birds, rats, ants, flying insects and sow bugs can easily get into pools, spas and hot tubs and affect the water clarity. One dog in a pool is equal to the contamination of 50 people (Pool Chlorination Facts, Robert W. Lowry, 2003).

**Solution:** Maintain a residual of a sanitizer approved by the Environmental Protection Agency (EPA). Shock regularly with **SeaKlear Chlorine-Free Shock** and use **SeaKlear Natural Clarifier** weekly. For heavily used pools use **SeaKlear PRS** to trap water contaminants like *Cryptosporidium*, *E. coli*, *Giardia* and algae. For spas and hot tubs shock regularly with **SeaKlear Spa Chlorine-Free Shock** and use **SeaKlear Spa Natural Clarifier** weekly. For heavily used spas and hot tubs use **SeaKlear Spa PRS**.

## Oils

One of the main sources of water contamination is oil. Oil contamination comes primarily from the natural body oils of humans and the residue of sunscreen, tanning oils, lotions and hair gels.

As we all know, oil and water don't mix. An excess of oil can clog filters, create oily scum lines and cause poor-quality, cloudy water.



*SeaKlear PRS outperforms the leading enzyme products.*

**Solution:** For prevention of oil and oily scum lines use **SeaKlear Natural Clarifier** or **SeaKlear Spa Natural Clarifier** weekly or use **SeaKlear PRS** or **SeaKlear Spa PRS**. For existing oil problems and to reduce oily scum buildup use **SeaKlear Enzyme Klear** or **SeaKlear Spa Enzyme Klear** according to label directions.

## Undissolved Solids

These are small particles of dirt, dust, pollen or floating algae in the water that can cause clouding.

**Solution:** Use **SeaKlear Chlorine-Free Shock** and **SeaKlear Natural Clarifier** weekly or use **SeaKlear PRS** as needed. For spas and hot tubs use **SeaKlear Spa Chlorine-Free Shock** and **SeaKlear Spa Natural Clarifier** or **SeaKlear Spa PRS**.

## Dealing with Large Amounts of Waste

Shock the pool weekly using **SeaKlear Chlorine-Free Shock** at a rate of 1 pound per 10,000 gallons. This should be followed by adding **SeaKlear Natural Clarifier** at a rate of 4 ounces per 24,000 gallons of pool water. For best results, this should be done along with the regular treatment of a sanitizer. For spas and hot tubs, shock weekly with **SeaKlear Spa Chlorine-Free Shock** at a rate of 2 ounces per 500 gallons. Use **SeaKlear Spa Natural Clarifier** at a rate of 1–2 ounces per 500 gallons.

### **Tip:** **Size Matters**

Flocculation is the superior process when it comes to water clarity. Therefore, choose a clarifier that is a complete flocculant. Ideally, you will want a clarifier that removes the most particulate matter to the filter in the largest form possible. **SeaKlear Natural Clarifier** or **SeaKlear PRS** will both coagulate and flocculate for complete removal of particulate residues and waste, including oils.

For the most effective clarification of cloudy pool water use **SeaKlear PRS**. For heavily used spas and hot tubs use **SeaKlear Spa PRS**.

## Weather

Believe it or not, rain, wind, flooding and evaporation all affect your water's clarity.

**Solution:** Oxidize weekly using **SeaKlear Chlorine-Free Shock** followed by **SeaKlear Natural Clarifier** or use **SeaKlear PRS**. Maintain proper sanitizer levels and water balance, and clean surfaces and baskets on a regular basis. To oxidize spa or hot tub water, use **SeaKlear Spa Chlorine-Free Shock** followed by **SeaKlear Spa Natural Clarifier**.

# Dealing with Recreational Water Illness

Even in clear water, there can be issues lurking in the water. Without proper maintenance, pool and spa water can be contaminated with bacteria and parasitic pathogens. These are commonly known as recreational water illnesses (RWIs) and are becoming more of a concern. RWIs are caused by pool water contaminated with bacteria or parasitic pathogens that are released by swimmers. In many cases chlorine or bromine are effective at killing most pathogenic bacteria. However, some germs are very resistant to standard sanitizers.

One highly chlorine-resistant parasite that can be present in pool water is *Cryptosporidium*, commonly referred to as Crypto. Crypto is introduced to swimming pool water from swimmers who release fecal material into the water. In its oocyst stage, Crypto is protected by a thick outer shell, so it can remain viable in properly chlorinated water for six to seven days. When swallowed by swimmers, Crypto can cause severe symptoms such as diarrhea, stomach cramps, fever, nausea and vomiting. Crypto cysts are approximately 4–6 microns



## PRS

**SeaKlear PRS and SeaKlear Spa PRS** are advanced, two-stage treatments that keep pool, spa and hot tub water clean and pristine. PRS enhances filtration by trapping *Cryptosporidium*, *E. coli*, *Giardia* and algae in the pool's filter.



- Reduces water's turbidity and recovery time, especially during peak bather load
- Enhances the filter's ability to trap particles down to 0.5 microns
- Removes oil better than the leading enzyme products

Item Code	Item Description	UPC	#/Case
1130001	SK PRS—Stage 1 & 2, 1 quart each	90609	6
1130002	SK PRS—Stage 1 & 2, 1 gallon each	90600	2
1130003	SK PRS—Stage 1 & 2, 5 gallons each	90604	1
1140104	SKS PRS—Stage 1 & 2, 1 pint each	90613	6



Water Quality Association



This product is tested and certified by WQA against NSF/ANSI 60.

in size and can pass through most sand filters. Even in D.E. filters, which pick up material down to 4 microns, Crypto can elongate and pass through the media.

In two separate presentations at the 2004 World Aquatic Health Conference, the Centers for Disease Control (CDC) recommended enhanced filtration using clarifiers as a viable means of reducing the risk of Crypto outbreaks (Recreational Water Outbreaks and Lessons Learned, Dr. Michael Beach; Research Advances on the Inactivation of Chlorine-Resistant Pathogens Like *Cryptosporidium*, Dr. Joan M. Shields). At the 2006 World Aquatic Health Conference, evidence was presented that showed the enhanced filter trapping of Crypto in sand filters using a two-part polymer system (*Cryptosporidium* Removal from Swimming Pools by Sand Filters, James Amburgey, Ph.D.).

**SeaKlear PRS** effectively enhances filtration by trapping algae, *Cryptosporidium*, *E. coli* and *Giardia* in the pool filter. Independent studies indicate that **SeaKlear PRS** reduces *Cryptosporidium* in pool water by 99.9%. **SeaKlear PRS** studies show a 99% reduction in *E. coli* in pool water.

**SeaKlear PRS** has been approved by the EPA for trapping *Cryptosporidium* and is patented for the entrapment of Crypto cysts to the pool filter.

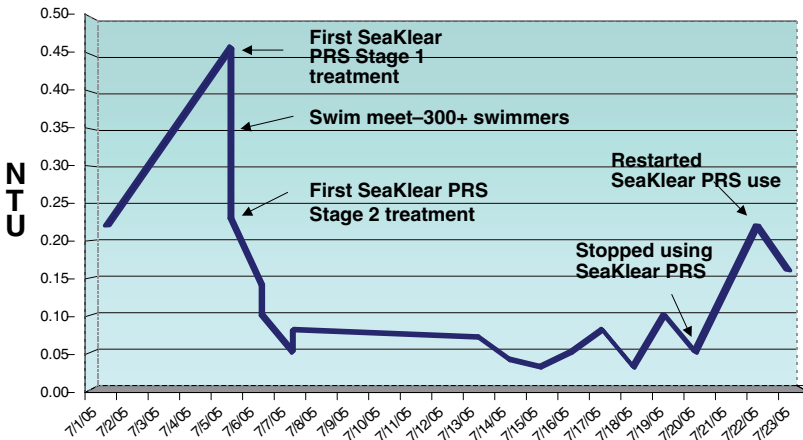
**Note: SeaKlear PRS** and **SeaKlear Spa PRS** are filter enhancement products and are not sanitizers. Regulated levels of an approved sanitizer must be maintained.

In addition to enhancing filtration by trapping *Cryptosporidium*, *E. coli*, *Giardia* and algae in the pool's filter, **SeaKlear PRS** can also be used to turn a swimming pool "swamp" into a clear and clean pool in about 24 hours. Look for more detail on this in the "Algae" section.

## SeaKlear PRS Field Tests & Testimonials

### Fairwood Golf & Country Club

Fairwood Golf & Country Club is located outside Seattle, Wash. The chart below shows turbidity levels in Fairwood's 155,000-gallon pool during a three-week period in July 2005.



Regular dosages of **SeaKlear PRS** lower turbidity and keep it down even during peak bather loads.

First, Fairwood treated its pool with **SeaKlear PRS Stage 1**. A swim meet was held six hours after the initial **SeaKlear PRS Stage 1** treatment. The bather load during the swim meet was approximately 300 swimmers over a three-hour period. After the swim meet, the pool was treated with **SeaKlear PRS Stage 2**.

The pool was treated daily with **SeaKlear PRS** for eight days and then treated twice a week for two weeks.

“We have seen remarkable results with **SeaKlear PRS**. Not only with water clarity, but with the overall function of our sand filters. We are backwashing less, and the pool has never looked so good,” said Aaron Whittecar, Fairwood Golf & Country Club Facility Maintenance Manager.

## **Keller Independent School District Natatorium**

The Keller Independent School District Natatorium (KISDN) started using **SeaKlear PRS** in 2007 as part of a closely monitored field study. During the study, the pool was initially dosed with **SeaKlear PRS Stage 1** and **SeaKlear PRS Stage 2** on a daily basis for a two-week period and then once per week for six months. Data collected from this study showed a particle shift from smaller to larger particles during the initial daily treatment. The shift became more dramatic with long-term use. This shift in particle size demonstrates the capabilities of **SeaKlear PRS** to floc small, submicron-sized particles into larger clumps that can then be removed by the filter.

### **Keller at a Glance**

<b>Facility:</b>	Keller Independent School District Natatorium
<b>Facility Manager:</b>	Lee Feris
<b>Location:</b>	Keller, Texas
<b>Gallons:</b>	860,000
<b>Dosage:</b>	1.34 gallons each of <b>SeaKlear PRS Stage 1</b> and <b>SeaKlear PRS Stage 2</b> per week
<b>Bather Load:</b>	600–800 swimmers daily
<b>Current System:</b>	Chlorine and <b>SeaKlear PRS</b>
<b>Cost to Implement SeaKlear PRS:</b>	\$1,200-\$2,500
<b>Estimated Cost for Alternate UV:</b>	\$50,000-\$100,000
<b>Estimated UV Maintenance Cost:</b>	\$20,000 per 10,000 hours of use
<b>Annual Cost of SeaKlear PRS:</b>	\$5,000-\$6,000

Not only did the scientific findings support the product’s claims of enhanced filtration, but the facility manager, Lee Feris, also noticed the difference. Prior to using **SeaKlear PRS**, the KISDN facility had been on chlorine and filtration. Feris was interested in adding **SeaKlear PRS** to enhance filtration of Crypto and other RWIs. Feris said that **SeaKlear PRS** was appealing because, unlike other options, “**SeaKlear PRS** naturally uses the filter to remove contaminants from the pool instead of circulating them back in.”



Feris's initial concern was the efficiency of chlorine against RWIs, asking, "When does chlorine become ineffective and has it always been this way?"

Feris has continued to use **SeaKlear PRS** at the KISDN facility to trap *Cryptosporidium*, *E. coli* and *Giardia* but notes improved water quality as an added benefit. Since starting the treatment, Feris, along with his patrons, has noticed a difference in water clarity. Feris said he quickly did the math on adding **SeaKlear PRS** to his weekly maintenance and figured with the added drop in clarifier cost, he couldn't afford not to.

"We have had people comment expressly on the cleanliness of the pool and its appearance. Patrons comment on the quality of our water all the time," he said.



*Photo courtesy of Brinkley Sargent Architects/Charles Davis Smith, AIA Photographer*

Although improved water clarity is important to any public pool facility, Feris said his primary concern is always for the health and safety of his swimmers.

"There is always a need for safer, cleaner water. Unfortunately people don't see the big picture in being proactive," he said. "We have to start taking a proactive approach to the running and management of pools. Times are changing, and everyone will be forced to get onboard ... It's not only time, but past time."

There is no doubt that the war against RWIs is far from over, but at least advances in the recreational water industry are being made to combat this ever-elusive enemy. Whether using **SeaKlear PRS** or any other system, the best approach is to incorporate these key elements: prevention, awareness, and layered protection, such as UV, ozone, filtration and enhanced filtration.

As this example shows, **SeaKlear PRS** is best used as an added layer to improve current facility methods. For more information on the results of this study or other testimonials please contact SeaKlear directly.



## Algae Prevention & Remover

SeaKlear Algae Prevention & Remover controls all types of algae in pools. Each treatment will last three months.

- Use against blue-green, black and mustard algae
- Nonstaining formula

Item Code	Item Description	UPC	#/Case
SKA-B-Q	SK Algae Prevention & Remover, quart	90411	12
SKA-B-G	SK Algae Prevention & Remover, gallon	90311	4
1020002	SK Algae Prevention & Remover, 5 gallon	90518	1



## Algae Klear

SeaKlear Algae Klear works to clear green, floating algae and algae on pool surfaces.

- Effective algae prevention

Item Code	Item Description	UPC	#/Case
1020005	SK Algae Klear, quart	90526	12



## Yellow Klear

SeaKlear Yellow Klear works with chlorine to deal with yellow and green algae.

- Effective against yellow and green algae
- Simple and easy to use

Item Code	Item Description	UPC	#/Case
1020007	SK Yellow Klear, 6 oz.	90568	36
1020004	SK Yellow Klear, 2 lb.	90525	12
1020008	SK Yellow Klear, 25 lbs.	90569	1



# Algae

Bacteria is not the only pest that can be lurking in your pool or spa. The most common, and sometimes most frustrating, problem for the average pool owner is algae. Algae is an unsightly problem that can significantly take away from the enjoyment of a swimming pool.

The types of algae found in pools include:

- *Green*: Free floating or on pool walls
- *Yellow (mustard)*: Powderlike algae that cling to walls, steps and corners
- *Blue-green (Cyanobacteria)*: Mistaken for green algae but are actually bacteria that thrive on phosphates
- *Black*: Small to quarter-size algae patches embedded into a surface

Some algae are more resistant to chemical treatment than others. The following sections describe the conditions that algae need to thrive and the chemical treatments used to eradicate them.



## Algae Growth Factors

- Sunlight
- Lack of sanitizer
- Warm water
- Rough surfaces, cracks and crevices
- Poor circulation
- Carbon
- Nutrients: nitrates and phosphates

## Killing Algae

Chlorine is the most common chemical used to fight algae. While chlorine may be sufficient for some algae, residual algae can still remain in places, such as the filter, where the chlorine may not effectively kill it. A good additional choice is to use a good algaecide. **SeaKlear Algae Prevention & Remover** is a broad-spectrum algaecide that kills all types of common pool algae and includes a long-lasting residual to prevent further outbreaks. **SeaKlear Algae Klear** is an effective preventer of green algae. **SeaKlear Yellow Klear** is an effective killer of green and yellow algae.

## Preventing Algae

A good prevention program for algae includes the following:

- Maintain a proper sanitizer level at all times.
- Shock weekly with **SeaKlear Chlorine-Free Shock** or **SeaKlear Spa Chlorine-Free Shock**.
- Regularly add a broad-spectrum, long-lasting copper algaecide such as **SeaKlear Algae Prevention & Remover** or an all-purpose algaecide like **SeaKlear Algae Klear**.
- Test phosphate levels monthly.
- Use a clarifier such as **SeaKlear Natural Clarifier** or **SeaKlear Spa Natural Clarifier** or an enhanced filtration product like **SeaKlear PRS** weekly to effectively remove dead algae and organic waste.

## Extreme Algae Situations

Turning a neglected pool from “swamp” to clear can be a troublesome and time-consuming process that can take days or even weeks to complete. With **SeaKlear PRS**, the process can be completed in about 24 hours and is a quick and easy alternative to the old method of cleaning and clearing a pool. It’s so easy and works so well that pool professionals across the country are using **SeaKlear PRS** to clean and clear pools. The process is not significantly different from what has traditionally been done:

1. Remove as much of the debris from the water as you can.
2. Shock the pool with **SeaKlear Chlorine-Free Shock**. Double the amount of shock used if the pool has been green more than one week.
3. Use 8 ounces of **SeaKlear Yellow Klear** per 10,000 gallons of pool water to kill the algae.
4. Then add 1 quart of **SeaKlear PRS—Stage 1** per 10,000 gallons of pool water.
5. Continue to run the equipment for six hours.
6. After six hours, add 1 quart of **SeaKlear PRS—Stage 2** per 10,000 gallons of pool water.
7. Continue to run the equipment and to clean the filter and baskets as necessary until the pool is clean and clear.
8. After the pool is clear, add 1 quart of **SeaKlear Phosphate Remover** per 20,000 gallons of pool water. After 48 hours, test the phosphate level with

a phosphate test kit approved for swimming pool use. If needed reapply **SeaKlear Phosphate Remover** to achieve a phosphate level of less than 200 parts per billion (ppb).

9. Wait one week and then add 1 pint of **SeaKlear Algae Prevention & Remover** per 10,000 gallons of pool water, per label directions.

This SeaKlear program is guaranteed to reduce occurrences of resistant algae in properly balanced and sanitized pools.

## Phosphates

Phosphate is a growth-limiting nutrient for plants. In addition to the problems phosphates can cause in all pool systems, salt generator manufacturers agree that high levels of phosphates will severely inhibit or stop a chlorine generator from making chlorine.

### Sources of Phosphates in Pools

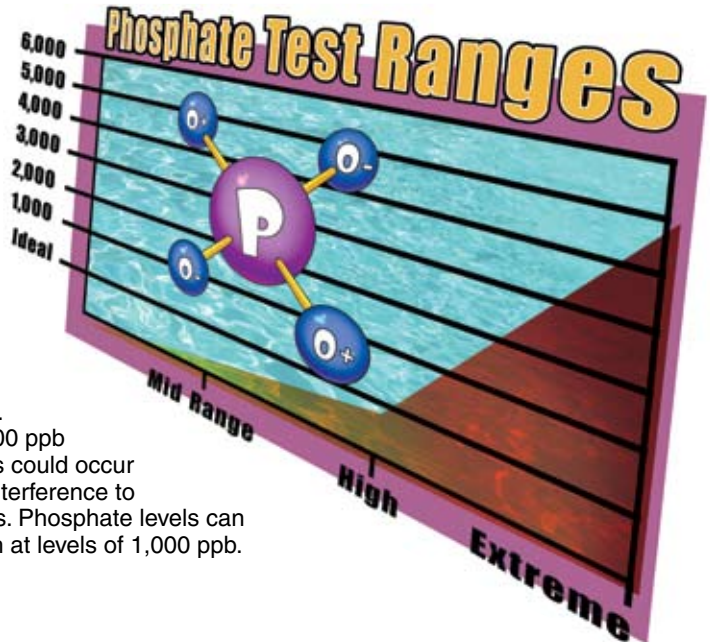
- Swimmer waste
- Dirt and soil
- Fertilizers
- Hair conditioners and shampoos
- Pool chemicals
- Chemicals containing TSP (tri-sodium phosphate) or polyphosphates (many cleaners contain phosphoric and phosphonic acid)

Some signs of high phosphates include:

- Lack of chlorine residual
- Cloudy water

### Testing for Phosphates

Phosphates are measured as parts per billion (ppb) in pool water. Good levels of phosphate are below 200 ppb. When levels are 500 ppb or above, problems could occur and there will be interference to chlorine generators. Phosphate levels can be considered high at levels of 1,000 ppb.



**SeaKlear Phosphate Remover** is the most effective phosphate remover available, removing 3,000 ppb or more of phosphates in a 20,000-gallon pool.

In spas and hot tubs with bromine generators, high levels of phosphates can interfere with the maintenance of proper bromine levels. Use **SeaKlear Spa Phosphate Remover** to keep phosphate levels low and ensure proper operation of chlorine and bromine generators.

Test and treat weekly:

- Once high phosphate levels have been reduced, maintain levels by testing monthly and treating weekly with **SeaKlear Phosphate Remover** or **SeaKlear Spa Phosphate Remover**.
- Minimize the amount of dirt entering the pool, spa or hot tub.
- Remove dead plant leaves and insect matter immediately.
- Minimize the input of phosphate-containing chemicals. Also be aware of pool chemicals that include phosphoric acid and phosphonic acid, which can eventually break down into the free form of orthophosphate.
- Use **SeaKlear Natural Clarifier** or **SeaKlear Spa Natural Clarifier** weekly.



## Phosphate Remover

**SeaKlear Phosphate Remover** and **SeaKlear Spa Phosphate Remover** are easy-to-use treatments for effective and efficient phosphate removal.

- One quart removes 3,000 ppb or more of orthophosphates
- Proven to eliminate phosphates from fertilizers, rainwater, soaps, decaying vegetation and other pollutants
- Alum-free, nontoxic formula—100% safe for your family and the environment
- Enhances the performance of salt generators



Item Code	Item Description	UPC	#/Case
SKZ-U-Q	SK Phosphate Remover, quart	90436	12
SKZ-U-G	SK Phosphate Remover, gallon	90336	4
1040102	SK Phosphate Remover, 5 gallon	90337	1
1140105	SKS Phosphate Remover, pint	90536	12

## Metals, Minerals & Stains

A pool can be a beautiful addition to any backyard environment. There are a variety of pool surface types and a multitude of designs, patterns and features available. Many pools also have decorative tile along the waterline that gives the pool a high-end look. This can all be ruined by the formation of stains on the pool surface or scale on the tile.

Surface stains are typically caused by metals in the pool water or tannins from organic material left in the pool. Metals can come from several sources. In many areas, groundwater contains dissolved metals or minerals. Iron, copper and manganese are the most prevalent metals found in municipal and well water. These metals can be introduced to the pool anytime water is added, and if preventative measures are not taken, the surface can become

### **Tip:** **Identifying Stains**

Stain identification and treatment are simple. You don't need an expensive kit or complicated process to determine the most effective course of treatment.

Use the following techniques to choose a stain removal method targeted to the particular stain.

**Option #1**—Rub or place a vitamin C tablet on the stain. If the stain lifts, proceed with a combination of **SeaKlear Natural Stain Remover** and **SeaKlear Metal Klear** combination.

**Option #2**—Pour a few ounces of **SeaKlear Stain Prevention & Remover—Professional Strength** on a small sponge and place the sponge on the stain, using a telepole and vac head (or net) to hold it in place. If the stain begins to lift, use **SeaKlear Stain Prevention & Remover—Professional Strength** to remove the stain.

# SeaKlear

## Metal Stain Control

**SeaKlear Metal Stain Control** prevents metals from staining surfaces.

- Effectively sequesters metal contaminants
- Metal sequesterant
- Helps prevent metal and mineral stains in new pools
- Controls scale formation
- Stronger formula than the leading competitor

To remove existing stains use **SeaKlear Stain Prevention & Remover—Professional Strength**. For a phosphate-free solution for salt pools, use **SeaKlear Natural Stain Remover** and **SeaKlear Metal Klear**.



Item Code  
1110011

Item Description  
SK Metal Stain Control, quart

UPC  
90575

#/Case  
12

stained. The other primary cause of the introduction of metals into pool water is improper water balance. Low pH or total alkalinity can cause corrosion of metal pieces of equipment on the pool and result in buildup of metals such as copper or iron in the pool water. Most common sources are heaters, ladders and pool lights. Not only will this cause staining, but it can cause serious and expensive damage to the equipment. A stain prevention program is a key part of any regular pool maintenance program.



## Stain Prevention & Remover—Professional Strength

**SeaKlear Stain Prevention & Remover—Professional Strength** effectively removes stains from iron, copper and other metals. Prevents further stains from occurring.

- Used for metallic stain removal and prevention and hard water scaling
- Most effective metal prevention and removal product available
- Prevents and removes stains and scale in vinyl, fiberglass and plaster pools
- Use when starting up a plaster pool
- Controls plaster dust



**SeaKlear Stain Prevention & Remover—Professional Strength** is our best stain removal product.

Item Code	Item Description	UPC	#/Case
1110012	SK Stain Prevention & Remover—Professional Strength, quart	90574	12



## Metal Klear

**SeaKlear Metal Klear** for pools prevents metal staining and helps clear discolored water caused by high metals, especially in salt pools.

- Ideal for pools with salt systems
- Reduces cell fouling in chlorine generators
- Effectively prevents metals from staining surfaces
- Phosphate-free formula



Use with **SeaKlear Natural Stain Remover** and **SeaKlear Stain Klear**.

Item Code	Item Description	UPC	#/Case
1110013	SK Metal Klear, quart	90573	12



The minerals calcium and magnesium can cause hard water in swimming pools, and hard water can lead to the formation of scale on the pool surface and tile. This can be very unsightly and difficult to remove. Again, prevention is the key.

The symptoms of high metal and mineral content include:

- Cloudy water
- Discolored water
- Stains on surfaces
- Scale formation
- Increased use of sanitizer

### Simple Metal Program

Stains, scale and metal problems can be dealt with easily if you adhere to the following simple programs:

- **For prevention of stains in pools:** Use **SeaKlear Metal Stain Control** weekly at the rate of 6-8 ounces per 10,000 gallons.
- **For prevention of stains in pools where there are known metal issues:** Use **SeaKlear Stain Prevention & Remover—Professional Strength** at the rate of 6-8 ounces per 10,000 gallons.
- **For removal of existing stains:** Use **SeaKlear Stain Prevention & Remover—Professional Strength** at the rate of 1 quart per 20,000 gallons.
- **For prevention of stains in pools using a salt generator or where buildup of phosphates is a concern:** Use **SeaKlear Metal Klear** at the rate of 6-8 ounces per 10,000 gallons.
- **For removal of existing organic, cobalt or iron stains:** Use **SeaKlear Natural Stain Remover** (or **SeaKlear Stain Klear**) followed by **SeaKlear Metal Klear**.



### Stain Klear

**SeaKlear Stain Klear** removes unsightly stains from any pool surface. Treat your pool's more difficult and stubborn metal stains with the most effective and powerful metal stain remover.

- Aids in removing brown, gray and black stains
- Effectively lifts and removes metal stains
- Removes iron, copper and manganese stains
- Use with plaster pools



**Item Code**  
1140106

**Item Description**  
SK Stain Klear, quart

**UPC**  
90570

**#/Case**  
12

# Metal Product Comparison Chart

Product & Dosage:	Features & Benefits:
<p><b>SeaKlear Natural Stain Remover:</b> 2 lb. per 20,000 gallons</p>	<ul style="list-style-type: none"> <li>• All-natural citric acid formula</li> <li>• Excellent for vinyl, fiberglass and plaster</li> <li>• Good spot treatment for metal, scale and organic stains</li> <li>• Effectively removes tannin, organic, copper, iron and manganese stains from pool surfaces</li> <li>• Great cleanup prior to using other SeaKlear metal products</li> <li>• Must be used with <b>SeaKlear Metal Klear</b> to sequester the metals</li> </ul>
<p><b>SeaKlear Stain Klear:</b> 2 lb. per 20,000 gallons</p>	<ul style="list-style-type: none"> <li>• Excellent for gunite, plaster and hard surfaces</li> <li>• Can be used as a spot treatment for metal, scale and organic stains</li> <li>• Effectively removes copper, iron and manganese stains from pool surfaces</li> <li>• Must be used with <b>SeaKlear Metal Klear</b> to sequester the metals</li> </ul>
<p><b>SeaKlear Metal Stain Control:</b> <b>Stain Removal:</b> 1 qt. per 10,000 gallons <b>Maintenance:</b> 6-8 oz. per 10,000 gallons</p>	<ul style="list-style-type: none"> <li>• Ideal for stain removal and the metals that cause staining</li> <li>• Use for regular pool maintenance</li> <li>• Controls scale</li> <li>• Prevents staining</li> <li>• Effectively sequesters metal contaminants</li> <li>• Best used for metallic stain prevention and prevention of hard water scaling</li> </ul>
<p><b>SeaKlear Metal Klear:</b> <b>Stain Removal:</b> 2 qt. per 10,000 gallons <b>Maintenance:</b> 6-8 oz. per 10,000 gallons</p>	<ul style="list-style-type: none"> <li>• Prevents metal staining</li> <li>• Helps clear discolored water caused by high metals</li> <li>• Best maintenance product for removing metals in all types of pools</li> <li>• Phosphate-free formula</li> <li>• Ideal for pools with salt systems</li> <li>• Excellent for use in high-phosphate areas</li> </ul>
<p><b>SeaKlear Stain Prevention &amp; Remover—Professional Strength:</b> <b>Stain Removal:</b> 1 qt. per 20,000 gallons <b>Maintenance:</b> 6-8 oz. per 10,000 gallons</p>	<ul style="list-style-type: none"> <li>• Most effective metal prevention and removal product available</li> <li>• Professional-strength, proprietary blend</li> <li>• Superior product for iron and copper removal</li> <li>• Removes and prevents metal stains from iron, copper and other metals</li> <li>• Reduces scale buildup</li> <li>• Controls scale and metals</li> </ul>



## Natural Stain Remover

SeaKlear Natural Stain Remover is an all-natural formula for the removal of metal stains from pool surfaces.

- Nontoxic, all-natural, citric acid formula
- Safe to use in vinyl and fiberglass pools
- Effectively removes tannin, organic, copper, iron and manganese stains from pool surfaces
- Phosphate-free formula

Follow up with **SeaKlear Metal Klear**.



**Item Code**  
1110014

**Item Description**  
SK Natural Stain Remover, 2 lb.

**UPC**  
90572

**#/Case**  
12



## Pool Troubleshooting Chart

Problem	Cause	Solution
Cloudy water	Chloramines	<b>SeaKlear Chlorine-Free Shock, SeaKlear Natural Clarifier, SeaKlear PRS</b>
	Organic waste	Skim, vacuum, <b>SeaKlear Natural Clarifier, SeaKlear PRS, SeaKlear Chlorine-Free Shock</b>
	Mud and silt	<b>SeaKlear PRS</b>
	High alkalinity	Muriatic acid
	High pH	Muriatic acid
	High total hardness	Drain the pool
	High total dissolved solids	Drain or backwash the pool
	Poor filtration	Check filters and clean or backwash per manufacturer's guidelines
	High phosphates	<b>SeaKlear Phosphate Remover</b>
Discolored water	High metal content	For removal and prevention of metal stains use <b>SeaKlear Stain Prevention &amp; Remover—Professional Strength</b> or <b>SeaKlear Natural Stain Remover</b> . For prevention of metal stains use <b>SeaKlear Metal Control</b> . For pools with salt chlorine generators or high phosphate levels use <b>SeaKlear Metal Klear</b> .
	Low pH	Add sodium carbonate to raise pH to 7.2 to 7.6
Green water	High copper	<b>SeaKlear Stain Prevention &amp; Remover—Professional Strength, SeaKlear Metal Control</b> or <b>SeaKlear Metal Klear</b> . Regular use of these products helps keep metals in check.
	Low alkalinity	Raise with baking soda
	Algae	Maintain correct levels of sanitizer and test for phosphates. Treat with <b>SeaKlear Algae Prevention &amp; Remover, SeaKlear Yellow Klear</b> or <b>SeaKlear Algae Klear</b> .
Stains on the pool surfaces	Black (spots) or yellow algae	For existing yellow algae use <b>SeaKlear Yellow Klear</b> with <b>SeaKlear Chlorine-Free Shock</b> . To prevent yellow algae and treat for black algae use <b>SeaKlear Algae Prevention &amp; Remover</b> .
	Brown or blue-green stains that will not brush off on gunite or other hard surfaces	Use <b>SeaKlear Stain Klear</b> with <b>SeaKlear Metal Klear</b> , or use <b>SeaKlear Stain Prevention &amp; Remover—Professional Strength</b> alone
	Brown or blue-green stains that will not brush off on fiberglass, acrylic or vinyl surfaces	Use <b>SeaKlear Natural Stain Remover</b> with <b>SeaKlear Metal Klear</b> , or use <b>SeaKlear Stain Prevention &amp; Remover—Professional Strength</b> alone

Oils and oily scum lines	Body oils and dirt from swimmers	Use <b>SeaKlear Natural Clarifier</b> weekly to remove and prevent oil buildup on the filter and surfaces. For existing oil and visible oily scum on tile and waterlines use <b>SeaKlear Enzyme Klear</b> .
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**For other problems or questions regarding pool water, visit [www.seaklear.com](http://www.seaklear.com).**

## **SeaKlear Spa Product Spotlight**

Family togetherness, relaxation, therapy or a romantic interlude—there are many rewarding reasons to own a spa or hot tub. Whether you want to escape from the pressures of the day, socialize with family and friends in a calm setting, give the kids a place to play, heal an aching body or soothe your emotions, SeaKlear Spa can help to keep your spa or hot tub water clean and inviting.

With the complete line of SeaKlear Spa products, you can spend more time enjoying your spa or hot tub and less time worrying about the chemical treatment. All SeaKlear Spa products are proven reliable and effective and are simple and easy to use.

For more in depth information on treating spas and hot tubs with SeaKlear Spa products, see the SeaKlear Spa Guide or visit [www.seaklearspa.com](http://www.seaklearspa.com). For more information on where to purchase SeaKlear Spa products call 1-866-99-KLEAR.

### **Water Treatments**

#### **SeaKlear Spa Natural Clarifier**

An all-natural clarifier that helps keep water sparkling clear. When used regularly, this effective formula also keeps metals down, removes oils and keeps filters cleaner longer. The **SeaKlear Spa Natural Clarifier** product has been trusted as reliable, safe and effective for more than 15 years.

#### **SeaKlear Spa Metal Control**

For use when first filling or refilling spas and hot tubs in areas that have water with high metal/mineral content. Helps prevent staining from dissolved metals.

#### **SeaKlear Spa Enzyme Klear**

Natural enzymes for use in heavily used spas and hot tubs where oil is a problem. Works very well with **SeaKlear Spa Natural Clarifier**.

#### **SeaKlear Spa PRS**

This unique, patented, dual-polymer system provides superior clarity for even the most heavily used spas and hot tubs. Great for use after parties!

#### **SeaKlear Spa Phosphate Remover**

High phosphates in spas and hot tubs can interfere with the proper operation of bromine generators. **SeaKlear Spa Phosphate Remover** is the most effective and easiest to use.

#### **SeaKlear Spa Stain & Scale Control**

Helps prevent stain and scale buildup on spa and hot tub surfaces and equipment. A must for areas with hard water.

## **Sanitizers**

### **SeaKlear Spa Brominating Tablets**

Effective and popular means of disinfecting spa and hot tub water.

### **SeaKlear Spa Sodium Bromide**

Used to establish a bromine reserve when used with brominating tablets. Can also be used to create a bank of bromide salt for use with bromine generators.

### **SeaKlear Spa Sanitizing Granules**

A balanced and quick-dissolving form of chlorine that provides effective disinfection of water.

## **Shock**

### **SeaKlear Spa Chlorine-Free Shock**

Use weekly to keep water clean, clear and free of chemical and musty odors.

## **Adjusters**

### **SeaKlear Spa pH Reducer**

Fast-acting liquid lowers the pH and total alkalinity for proper water balance.

### **SeaKlear Spa pH Increaser**

Use to raise the pH as needed.

### **SeaKlear Spa Calcium Increaser**

Raises the total hardness of spa and hot tub water. Use in areas with naturally soft water.

### **SeaKlear Spa Alkalinity Up**

Use to raise the total alkalinity.

### **SeaKlear Spa pH Steady**

Great for areas with naturally soft water. A simple way to bring pH into the correct range and hold it in place.

## **Filter Cleaners and Other Products**

### **SeaKlear Spa Filter Cleaner Spray**

Cleans filters easily and effectively. Simple spray formula.

### **SeaKlear Spa Filter Cleaner & Degreaser**

For soaking and deep cleaning all filter types.

### **SeaKlear Spa Self-Floccing Defoamer**

Stops foaming and removes the dirt and oils that cause it.

### **SeaKlear Spa Leak Sealer**

Seals minor leaks in spa and hot tub pipes.

# Available with Qualifying SeaKlear or SeaKlear Spa Purchases



**Ask About our  
SeaKlear Miles Dealer Program**



**SeaKlear**

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866-99-KLEAR

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