What Are Enzymes and How Do They Work in Pools and Spas?

Enzymes are naturally occurring proteins that act as catalysts to speed up the chemical process of breaking down non-living organic materials like the grime and gunk that collects in a pool or spa from wind and rain, dirt, leaves, animal (and human) waste. Enzymes are not alive themselves, they do “eat” organic material by reacting with organic pollutants and turning them into natural byproducts like CO2 or water without changing their own molecular structure.

Enzymes do not eat living bacteria but are specifically attracted to non-living organic pollutants and help make the job easier for sanitizing chemicals like chlorine. Enzymes thrive as outstanding clarifiers, stain removers, and foam preventers. Enzymes cannot eliminate living algae but they will breakdown dead algae after algae treatment.
What Causes Organic Pollutants?

Even with a perfectly functioning filtration system and regular sanitization, pools and spas collect unsavory organic matter from bather loads (no matter how clean a bather or swimmer may be) and also from plants and animals. These are the culprits that create high chlorine demand, hazy water, high phosphate levels or an unsightly ring around your spa or pool waterline.

### Common Non-Living Organic Pollutants

- Bird droppings
- Sunscreen
- Body oils
- Dead leaves
- Dead Insects
- Dead skin
- Pollen
- Human hair
- Cosmetics
- Wind-blown dust
- Pets or wild animals
- Grass or mulch
- Hair products
- Air pollution

Money and Time Saving Benefits of Enzymes

Enzymes reduce demand for sanitizers and shock, while breaking down the oily films that deposit themselves on the tile line and skimmers which eliminates stains. With less oil and greasy build-up, your pool filter can do more while working less, great also for increasing a filter’s lifespan. Most importantly, you will spend less time on water quality and more quality water time in the pool.

Beyond Summertime Use

For those with mesh safety covers, enzyme use over the course of the winter is popular to help combat the pollutants that sift through the cover during the offseason. Applying a quart of enzymes in the fall, or add them early in springtime, a couple of months before you open, as the weather warms-up. Especially for mesh covered pools, using enzymes can make spring clean-up a snap. Used in conjunction with algaecide and chlorine, enzymes can eliminate dead algae from the water, reducing the need for several water-wasting backwashes during spring clean-up.

Natural Chemistry: The Industry Leaders in SmartZyme Technology

Natural Chemistry Enzymes are made from natural sources like botanicals, malt or molasses. Each enzyme product is designed to consume specific organic pollutants and break them down into their most basic form of carbon dioxide or even into water. Natural Chemistry’s SmartZyme technology creates enzymes that are specially formulated for hot water for spas, cold water for pools, or for use in salt water pools.
Natural Chemistry’s Product Line All Share the Following Qualities:

- Designed for specific uses
- Completely biodegradable
- Contain no bacteria
- Environmentally friendly
- Non-toxic for pets and swimmers
- Non-corrosive to pool equipment
- Hypo-allergenic
- Compatible with all sanitizers

Natural Chemistry’s Problem Solving Solutions

Question: What Is the Best Enzyme Product to Clarify Cloudy Water?

Answer: Pool First Aid

Pool First Aid’s SmartZymes team-up with an organic clarifier to clear cloudy pool water fast. Besides being a highly effective clarifier, Pool First Aid can assist your pool’s filtration system and help it run more effectively regardless if you own a cartridge, DE, or sand filter. It helps remove oil and greasy buildup, allergens like pollen, and even the antifreeze you used in your plumbing over the winter.

Pool First Aid helps conserve pool water by consuming the dead algae that collects at the bottom of a swimming pool after an algaecide treatment. Typically, dead algae can be too fine for a filter to effectively remove resulting in the algae to cycle through the filtration system and back into your pool. Pool First Aid can eliminate the need to vacuum to waste or to backwash by consuming these fine particles and turning them into carbon dioxide or even water.

- Improves filtration by consuming pollutants from any type of filter’s surface
- Consumes hard-to-filter dead algae often without having to vacuum to waste or backwash

Question: What Is the Best Way to Eliminate the Black Ring Around a Pool’s Waterline Without Scrubbing?

Answer: Pool Perfect

Pool Perfect is engineered with a high concentration of SmartZymes that specialize in breaking down suntan lotion, make-up, sweat and other non-living organic pollutants that are the top culprits in creating the unsightly black ring around a pool’s waterline. Pool Perfect does all the work for you so you do not have to waste time and effort tediously scrubbing the stain. The SmartZymes are specifically designed to have a ferocious appetite for these stain-causing agents.

Not only is Pool Perfect a stain removing specialist but it too, like Pool First Aid, can make any type of filter work more efficiently by eating up the gunk that hinders a filtration system from working its best.

- Eliminates the black ring around a pool’s waterline
• Makes any type of pool filter media work more efficiently
• Compatible with all water sanitizers

**Question: What Enzyme Product Can Help Prevent an Algae Bloom?**

**Answer:** *Pool Perfect + Phosfree*

**Understanding Phosphates**

Phosphates are the organic nutrients that algae feed on to help them grow. They are found everywhere naturally. While high levels of phosphates do not directly cause algae, they can serve as the food to fuel a full-fledged algae bloom.

Pool Perfect + Phosfree offers the powerful stain removal capabilities of Pool Perfect with the added benefit of Phosfree to help prevent algae growth by reducing a pool or spa’s phosphate levels nearly to zero.

**Question: What Can I Do In the Fall to Ensure a Hassle Free Opening in the Spring?**

**Answer:** *Pool Magic Spring & Fall*

Pool Magic Spring & Fall uses SmartZymes specifically designed to function best in cold water conditions to control non-living organic contamination in pool water throughout the winter to minimize the effort and need for clarifiers, flocculants, sand stain removers when opening in the Spring. Pool Magic is great for pool owners with mesh safety covers because it targets the fine particles that sift through the mesh cover that amass via snow melts and rainwater during the off-season.

• Great for pools with safety covers
• Helps reduce black waterline rings during the off season
• Eliminates need for multiple chemicals in the Spring
• Specifically engineered for cold water temperatures
• Works with all filter media and pool surfaces

**Option #2: Pool Magic + Phosfree**

Pool Magic+Phosfree offers the extra power of Natural Chemistry’s Phosfree. Phosfree is formulated with lanthanum (rare earth) compounds that create a thin coating of Phosfree on any filter media. While pool water flows through the filter, phosphates are reduced to a very low level. Excessively high levels of phosphates can serve as fuel for an algae bloom. Phosfree doesn’t directly kill algae but it does help prevent algae growth resulting in one less chemical you need to spend money on when it comes time to open in the Spring.

• Most effective way to remove phosphates to almost zero levels
• Works in the filter and does not cloud pool water
• Eliminates stains
• Increases filter efficiency
Option #3: Hasslefree Start-Up Kit

Natural Chemistry's Hasslefree Pool Start-up Kit is the best of both worlds as it includes both of the aforementioned products: Pool Magic+Phosfree as well as Metal Free at a discounted price. It’s a great way to cover all your bases and reduce the pool chemicals you need to have a clean pool opening down to just two.

- Cold water SMARTZyme technology works all winter long
- Reduces existing or prevents off season waterline ring
- Cleans and protects during the off season
- Helps prevent algae blooms
- Increases any filter’s efficiency
- Prevents metal staining and non-living organic staining

**Question: How Can I Prevent Waterline Rings, Cloudy Water, Smelly Water, and Ineffective Filtration in a Spa or Hot Tub?**

**Answer: Spa Perfect**

The Natural Chemistry Spa product line mirrors the pool product line only the SmartZymes are engineered to work best in warm or hot water conditions. Just like Pool Perfect, Spa Perfect eliminates unwanted, non-living organic contaminants. Body oils, cosmetics, suntan lotions, hair products and much more are on the menu for these SmartZymes leaving you without a ring around your spa’s waterline, odor free water, and an optimized filtration system.

- Reduces the need to scrub waterline stains
- Specifically formulated for hot water
- Makes water feel soft and silky
- Perpetually cleans any filter media
Question: Are There Spa Enzyme Products Specifically Made For Hot Tubs With High Traffic or Heavy Use?

Answer: Spa Purge

Spa Purge cleans non-living organic waste from inside spa plumbing using a concentrated formula with SmartZymes. It is designed for heavy duty spa cleaning jobs and cleans deep down into a hot tub’s filtration system and plumbing to get where it is otherwise impossible to manually clean.

- Perfect for attacking lotions, cosmetics, oils, hair products, and other non-living organics build-up in a hot tub or spas pipes
- Increases filter media efficiency
- Helps eliminate odors

Question: What Enzyme-based Product Specifically Targets Scale in a Salt Chlorine Generator Cell?

Answer: Cell Protect

Cell Protect defends salt chlorine generators and salt water pools from the damaging effects of scale build-up caused by excessive deposits of minerals and calcium. The SmartZymes found in Cell Protect are specifically designed to work best in salt water conditions. Beyond protecting expensive salt cells, Cell Protect can also protect vinyl pool liners from calcium scale as well as stains created by metals. Many stain and scale prevention products naturally contain high levels of phosphates which could enable algae growth, unlike these products, Cell Protect does not contain phosphates.

- Protects pool liners and finishes from calcium scale and metal staining
- Reduce calcification of salt cells and other pool equipment
- Phosphate free formula does not create phosphate contamination like other stain & scale products

Note: Cell Protect can be used with most sanitizing systems and is compatible with all pool surfaces. Do not use with biguanides (chlorine-free pool sanitizers).
Salt Water Option #2: **Salt Water Magic Monthly Kit**

The Salt Water Magic Monthly Kit consists of Salt Water Magic and Cell Protect. Similar to Spa or Pool Magic, Salt Water Magic’s SmartZymes are salt water smart.

Easy to use, this powerful 1-2 punch will ensure that your salt water pool system is running at peak performance and optimized for longevity. Protect salt cells from the degenerative effects of scale, degrease any type of pool filter, and prevent staining—even on vinyl liners. Treats up to 20,000 gallons.

**Question: Is There An Enzyme Cleaner That Works For Any Kind of Surface?**

**Answer: Clean & Perfect**

Clean & Perfect is an all-purpose cleaner with uses that extend beyond the pool, spa or hot tub. Clean & Perfect’s SmartZymes can be used inside or outside, and is effective on the toughest grease on a bbq grill, dirt and grime, but safe for any surface be it pool, spa or household surface. The enzymes on soot, residue from mildew in a shower, waterline rings, leaf stains, and even to remove dead insects from your vehicles grill and headlights. Clean and Perfect can even be used eliminate stubborn stenches from pet accidents. These SmartZymes are smart enough to be safely used anywhere.

- Extremely powerful all-purpose cleaner
- Perfect cleaner for spa covers, grills, steps, tiles and much more
- Safe for any hard surface

**Question: What Enzyme Product Specializes On Cleaning Pool Or Spa Filters?**

**Answer: Filter Perfect**

Filter Perfect is a natural, highly concentrated filter cleaning solution that removes oils, grease, non-living organics, and more from a filter’s surface. Filter Perfect improves filter efficiency and lengthens cycles between filter cleaning. Filter Perfect is compatible with all sanitizers.

- Highly concentrated cleaner designed to tackle the filthiest filters
- Acid free formula does not produce fumes
- Works for all filter media
**TIPS FROM THE NATURAL CHEMISTRY RESOURCE GUIDE:**

**DO’S**

~ DO use our enzyme products with any sanitizer system including: Chlorine, Bromine, Mineral systems, Ionizers, Biguanides and Chlorine generators
~ DO use our enzymes with any filter media: sand, earth and cartridge
~ DO swim or soak immediately after applying our enzymes: they are always gentle on the skin and the environment
~ DO reduce the use of clarifiers, tile & vinyl and filter cleaners as our enzymes will safely and effectively in most cases reduce these products without putting any unwanted bi-products in your pool and spa water
~ DO enjoy a level of water clarity and softness like never before
~ DO test before shocking or adding additional sanitizer as Natural Chemistry’s controlled breakdown of organics will help eliminate the organic load
~ DO use our natural, non-toxic cleaners everywhere both inside and outside
~ DO clear up problem pools fast with Pool First Aid
~ DO use our enzymes to help in the prevention of water mold
~ DO use our enzymes in lakes and ponds to help reduce organic build-up. They are 100% non-toxic and biodegradable

**DON’TS**

~ DON’T apply enzymes when adding sanitizers or shocks, enzymes hate chlorine over 6ppm. If you do, foaming will appear as the sanitizer is attacking the enzymes.
~ DON’T store enzymes in temperatures over 120 degrees, ie: your trunk, inside your spa cabinet, in direct sunlight, etc. This will cause the enzymes to react to the point of destruction.
~ DON’T use more then the recommended dose (unless you are problem solving) unlike the competition, with our broad spectrum of enzymes “a little goes a long way.”