

Taylor Kits for Algae Control in Pools

INTRODUCTION

Where does algae come from? Everywhere. Algae spores are in the wind and in rain. They can be in the water supply used to fill the pool (or spa). They can leapfrog from one pool to another via a swimsuit or pool brush. Once in the pool, surrounded by all their favorite things—water, light, heat, and nutrients such as carbon, nitrogen, and phosphate—the spores begin to bloom and multiply.

In no time, tinted water progresses to murky. Solid patches float on the water and adhere to the walls of the pool/spa. Surfaces become dangerously slippery.

Bacteria and other potentially harmful microorganisms find shelter in these algae colonies. The pool's chemistry goes totally out of whack and the filter clogs. No one wants to swim.

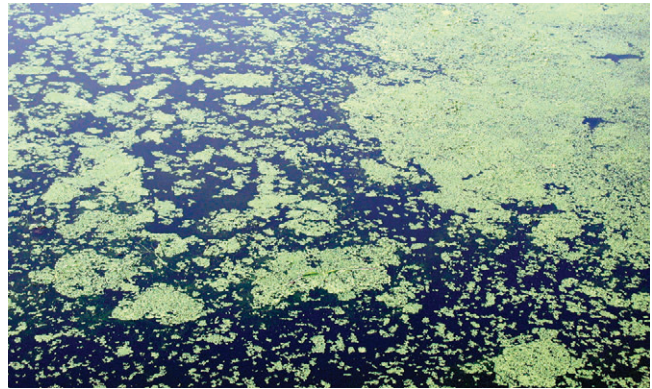
Whether green, yellow, or black algae, three words describe these one-celled invaders: everywhere, opportunistic, and resilient. Their nature destines pool owners, operators, and service professionals to a constant battle that can never be won, only reduced in scale. However, **water that's properly sanitized and chemically balanced** (meaning its pH, total alkalinity, and calcium hardness are acting in harmony to prevent scale and corrosion) **is less hospitable to algae than problem water.**

KITS FOR ALGAE CONTROL

Taylor offers a wide variety of kits for analyzing **sanitizers and oxidizers**, as well as the **elements of water balance**. Please refer to our website for more information on testing chlorine, cyanuric acid (chlorine stabilizer), bromine, biguanide, ozone, monopersulfate, pH, alkalinity, and hardness. The products described in this flier are meant to be used in conjunction with these standard tools for pool water management.

Quats and Polyquats

Quaternary ammonium compounds (commonly referred to as “quats” or abbreviated as QAC) are organic nitrogen substances that kill algae by disrupting the function of their cell membranes. **Quats work best on green algae.** They're the least expensive and best-selling algaecides but they tend to foam, especially in spas. Their structurally longer cousins, the polyquats, are surface-active chemicals too, killing algae by adhering electrostatically to their outer membrane—picture metal filings clinging to a magnet. Although pricier than quats, **polyquats affect all algae types**, particularly when a vigorous brushing precedes their application, and



Green algae: relentless enemy of sparkling clean pool water.

they work very well with chorine and bromine compounds. Polyquats will also act as a floccing agent for other organic matter.

Test quat and polyquat levels with the drop-count test below that most closely corresponds to the range of the algaecide in use:

K-1582

1 drop = 10 or 25 ppm QAC / 1 drop = 3.5 or 9 ppm polyquat

K-9065

1 drop = 1.25 ppm QAC / 1 drop = 0.5 ppm polyquat



A distinct transformation in the color of the treated water sample from light blue to violet pink signals the endpoint of the reaction. K-1582 shown.

Phosphate Removers

Remove phosphate and you remove one of algae's primary food sources. Phosphates enter pool water from the natural environment (lawn runoff, leaves, and seeds are three sources) and from man-made sources (municipal water supply lines treated with an orthophosphate corrosion



inhibitor, from the chemical breakdown of sweat and urine, from bathing suits washed with certain laundry detergents, and even from some pool chemicals like tile cleaner). Manufacturers of phosphate removers claim **algae can begin to thrive above 125 parts per billion of**

For commercial use only: the reagents in the K-1106 are not appropriate for use by homeowners.

orthophosphate, the form of phosphate that results from the breakdown of more complex phosphorous compounds. Taylor's phosphate test kit measures this elementary "free" form. Users match the developed color to a waterproof color chart:

K-1106

Color Card comparator (printed-color standards), 0–6000 ppb PO_4^{3-}

Copper-based Treatment Chemicals

Copper is a proven algacide (killer) and algaestat (preventive). Copper salts deposited on pool walls cause a noticeable blueing. In the presence of a strong oxidizer, like chlorine, they can convert to cupric oxide, leaving a grey-to-black stain. Most formulas on the market today include a chelating agent to keep the metal from precipitating out of



Matching the blue of the treated water sample to one of the eight liquid-color standards in the K-1738's Midget comparator is easy.

solution under normal operating conditions. Care still must be taken to maintain balanced water and to follow dosage directions, keeping the copper at the algacide manufacturer's recommended level (generally below 1 ppm).

To avoid stains, monitor the copper concentration with a simple color-matching test:

K-1738

Midget™ comparator (liquid-color standards), 0.2–3.0 ppm Cu

Copper/Silver Ionization

Ionizers pass a low-voltage current between two electrodes to produce small positively charged particles ("ions") of copper and silver that act as a potent biocide at even trace levels. Reportedly, copper is most effective against yellow (mustard) algae; silver, against black algae.

Ionization systems are designed so that only the copper-ion level needs monitoring; when it is correct, the silver level will be too. Our kit for low-level copper employs a color-matching test:

K-1730

Color Card comparator (printed-color standards), 0.05–1.0 ppm free Cu

When the ionization method is employed, the water's pH should be kept between 7.2 and 7.4 to prevent metal stains. All of Taylor's combination test kits for analyzing pool water contain a pH test in this range. The Myron L ULTRAPEN PT2 (M-6556) that we carry is also handy for testing pH.

Some manufacturers of ionization systems also recommend keeping total dissolved solids (TDS) at 500 ppm or higher to enhance conductivity. TDS can be tested with either a drop test or a handheld meter:

K-1764

Drop test, 1 drop = 50 ppm TDS as CaCO_3

M-6542

Myron L meter 512T5D, 0–5000 ppm TDS; 0–5000 ppm NaCl

M-6555

Myron L ULTRAPEN PT1, 1–10,000 ppm TDS; 0.0010–10,000 ppt salinity

M-6555: Myron L's PT1 pocket tester—easy to use and extremely accurate.



ALSO AVAILABLE

- A wide range of testing products for professional and homeowner use, ranging from simple two-way (pH and sanitizer) liquid test kits, to dip-n-read test strips for multiple parameters, to portable laboratories for comprehensive analysis, to specialty tests such as iron and monopersulfate.
- Replacement reagents and components for all kits.
- Toll-free technical assistance at **800-TEST KIT**.
- Computerized water analysis at www.taylor technologies.com under Resource Center/*sureTREAT*.