

# ***The Importance of PHOSPHATE REMOVAL***

Phosphates are salts of phosphoric acid. Phosphoric Acid (H<sub>3</sub>P<sub>04</sub>) is the acid produced when phosphorus is dissolved in water. Phosphates, which contain phosphorus, are plant nutrients that can also be a pollutant. Phosphates in water contribute to algae blooms in the same way nitrates do. In fact, phosphorus is often the “missing ingredient” limiting the growth of algae. Two other nutrients required by algae for cell division and growth are nitrogen and carbon dioxide, both of which are generally in ready supply. Phosphorus in the soluble orthophosphate form is utilized and taken up by plants for growth. Increasing concentrations of available phosphorus allow plants to assimilate more nitrogen before the phosphorus is depleted. Thus if sufficient phosphorus is available, normal to elevated concentrations of nitrates will lead to an algae bloom.

## Sources of Phosphates in pool water:

- ~ Pool Chemicals containing Phosphoric acid and Phosphonates, including most metal removers, sequestering agents ~
- ~ Plant debris
- ~ Fill water
- ~ Personal hygiene products
- ~ Body fluids & waste
- ~ Fertilizers
- Rainwater
- ~ Soil
- ~ Soaps & Detergents

Studies have proven conclusively that phosphates are the limiting nutrient for algae growth. The greater amount of phosphate present in water, the greater amount of inhibitory product ie: sanitizer and / or algaecide is necessary to prevent algae growth. The amount of phosphate present in a body of water will also determine how much algae can be grown. The greater amount of phosphate, the greater the potential for algae growth and severity of the bloom.

A congressional study in the United States reported that “the soundest preventative and restorative approach to correct the root cause [of algae growth] is to curb the input of one selected nutrient, namely phosphates.” Consequently, governments have banned or limited the use of phosphates in such products as laundry detergents and soaps to prevent un-natural algae growth in lakes and rivers.

PHOSfree can reduce phosphate levels in pool water easily and effectively to near zero without disturbing the appropriate chemical balance in pool water. At these levels, the nutrient-starved algae is easily controlled with normal sanitization.

Phosfree reduces phosphoric levels in pools to near zero. Normal sanitizer levels prevent algae from growing. Guaranteed.

It is important to remember that phosphate remover is not an algaecide or algastat. PHOSfree will not kill algae; proper sanitization with normal chemical levels is absolutely necessary in maintaining a safe algae-free pool.