

how the presence of phosphates affect chlorine demand

Chlorine demand is the consistent inability to establish or maintain a free chlorine residual in a swimming pool or spa due to elements that deplete chlorine.

In a properly maintained pool or spa (one that has a free chlorine residual ranging from 1 to 3 ppm), the presence of phosphates do nothing to add to or eliminate this problem.

Some experts have suggested that removing phosphate will decrease chlorine demand. However, for this to be true, it would also suggest that the addition of phosphate will increase chlorine demand. Scientific evaluation demonstrates that phosphates and chlorine do not react to each other or that any depletion of chlorine occurs.

Why Phosphates Do Not Affect Chlorine Demand

The key to the relation between chlorine (hypochlorous acid) and phosphates is that larger phosphorous-containing materials have been broken down into orthophosphates in the water. Orthophosphate is the final stage of phosphorous breakdown, meaning it cannot oxidize any further. If it cannot oxidize, it cannot react with an oxidizing compound such as chlorine and cause a demand situation.

Compounds other than phosphates that also don't react with chlorine include nitrates, balancing chemicals or any other material that is essentially inert (unreactive).

What Does Cause Chlorine Demand?

Inorganic material, such as ammonia, are fast-reacting with chlorine while organic material, such as the proteins found in urine, sweat, other waste and beauty products, are slow-reacting but all contribute to a demand situation. Algae and bacteria are also known contributors. These contaminants are introduced from rain and source water, fertilizers, swimmers, animals or plants and leaves.

where do phosphates come from?



Phosphates are derived from phosphorous, the 11th most abundant mineral in the earth's crust. It makes its way into pool and spa water from a variety of sources, including fertilizers, industrial discharge, swimmer waste (sweat and urine), detergents and even tap water (which contains compounds used to treat corrosion).

Phosphates attach themselves to larger molecules such as proteins or eventually break down into orthophosphates. Orthophosphates are the only form that will show up on water test kits and the only form that will be affected by current phosphate remover products.

