

AQUATIC SAFETY RESEARCH GROUP, LLC

CONSULTING, TRAINING AND EXPERT WITNESS SERVICES

YOUR SANITATION TEAM: *CHLORINE AND PH*

WHAT YOU NEED TO KNOW ABOUT . . . CHLORINE

Chlorine is the most common pool sanitizer in use around the world, perhaps because of its excellent sanitizing and oxidizing abilities. Not only does chlorine minimize the risk of disease transmission in properly treated pools because of its sanitizing (germ-killing) power, but it also keeps swimming pool water clear by oxidizing organic matter. **CHLORINE SANITIZES AND OXIDIZES.**

CHLORINE: FORMS

- Gas (*Pure/Elemental Form*)
- Liquid (*Sodium Hypochlorite*)
- Dry
 - *Calcium Hypochlorite or*
 - *Lithium Hypochlorite*
- Stabilized Chlorine (*Isocyanurates*)
 - Dichlor
 - Trichlor

TYPE	FORM	% AVAILABLE	PH EFFECT
Gas	Gas	100%	< 1
Sodium Hypochlorite	Liquid	12% - 15%	Increases pH (13)
Calcium Hypochlorite	Granular or Tablet	65% - 70%	Increases pH (11.8)
Lithium Hypochlorite	Granular	35%	Increases pH (10.7)
Dichlor	Granular	56%	Slight Decrease
Trichlor	Solid	90%	Lowers pH (3)

When used within ideal pH limits, chlorine is a very effective oxidizer. However, as pH levels rise, chlorine becomes less effective. **To maintain optimal sanitation and oxidation of swimming pool water, pH should be maintained between 7.4 – 7.6.**

WHAT YOU NEED TO KNOW ABOUT . . . PH

If there is one thing that should be controlled electronically (automated) at swimming pools, it would be pH. *Potens hydrogen* (pH) is, in simple terms, a measure of the acid-base balance of water. In the pH spectrum, 7.0 is considered *neutral*. When water measures below 7.0, it is said to have *acidic* properties. Values above 7.0 indicate *basic* properties of water.

PH AFFECTS HOW WELL CHLORINE IS ABLE TO DO ITS JOB OF SANITIZING AND OXIDIZING.

Sweat, urine, rain and other contaminants that enter the pool will affect the pH.

pH	Water Quality
>8.0	Poor Disinfection Eye Irritation Skin Irritation
7.8	Acceptable
7.6	IDEAL Range for Eye Comfort and
7.4	
7.2	Disinfection
<7.0	Eye Irritation Skin Irritation Pipe Corrosion