# What is the Recreational Water and Air Quality Committee of the Pool and Hot Tub Alliance

Thursday October 20 | 9:30 a.m. – 11:30 a.m.





### **Today's Presenters**





Jody O'Grady, Chair Taylor Water Technologies LLC John Weber Biolab, A Kik Consumer Products Company

#### **2022 RWQC MEMBER COMPANIES**

Axiall, A Westlake Company | BioLab, Inc. – A KIK Consumer Products Company | Fluidra Pool Systems | HASA, Inc. | LaMotte Company | NSF International | Pentair Water Quality Systems | Periodic Products | Pure Swim, Inc. | Solenis | TLS Pool Service | Taylor Technologies, Inc. | Vore and Associates LLC



## Role of the RWAQC

The Recreational Water and Air Quality Committee assists staff in developing and maintaining authoritative information regarding chemical products, processes and devices that affect water quality maintenance and safety of swimming pools, spas and hot tubs.





### Fun Facts about your RWAQC Voting Members

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## Provide Input on the Development of Standards Impacting the Pool & Hot Tub Industry

ANSI/PHTA/ ICC-11 Standard for Water Quality in Public Pools and Spas

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NSF International Standard 50 for Chemicals





# Fact Sheets



## Fact Sheets – The Process

- Peer-reviewed process
- Committee of Experts
- Vetted by the entire RWAQC
- **RWAQC** Ensures that Fact Sheets:
  - Are NOT commercially biased.
  - Typically reference CDC guidelines.
  - Include seeking outside specialty expertise, as needed.



## List of Currently Available PHTA Fact Sheets

PHTA Fact Sheets can be found at https://www.phta.org/standards-and-codes/fact-sheets/water-quality/.

- Abandoned Pools
- Alkalinity

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- Calcium Hypochlorite
- Chloraminated Tap Water
- Common Interferences in Pool and Spa Water Testing
- Copper-Silver Ionizers
- Cyanuric Acid
- Decontamination of Spas and Wading (Kiddie) Pools
- Disposal of Acid Wash Water
- E.coli 0157:H7
- Effects of Wildfires on Pools
- Electrical Interlock Protection
- Electrolytic Chlorine Generators
- EPA Regulation of Pesticides and Pest Control Devices
- Flooded Swimming Pools and Spas
- Legionellosis

- Metals and Metal Staining
- Ozone Generating Systems
- Partial (Soft) Pool Closing
- Pseudomonas Aeruginosa
- Polyhexamethylene Biguanide (PHMB)
- Scary Pool Stories
- Secondary vs. Supplemental Disinfection Systems
- Sodium Dicholor-S-Triazinetrione (Dichlor)
- Sodium Hypochlorite (Liquid Chlorine)
- Source Water
- Swimmer Hygiene
- Total Dissolved Solids
- Trichloro-S-Triazinetrione
- UV Light Pool Systems
- Water Balance Indexes
- West Nile Virus and Its Impact on Pools and Spas
- Winterizing a Pool Inground Pools In Severe Climates (Snowbelt)
- Zoonotic Disease



## Sodium Hypochlorite ("Liquid Chlorine")

Commonly known as "liquid chlorine" or bleach, sodium hypochlorite is widely used in both commercial and residential swimming pools.

- Sodium hypochlorite for swimming pools is usually manufactured at concentrations of 10% or 12.5%
  - Like all chlorine sources Sodium hypochlorite reacts in water to create hypochlorous acid (HOCI) and thus kills microorganisms and oxidizes waste
  - Compared to 1.5-6% for household products

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- One gallon of 12.5% sodium hypochlorite, provides approximately 12.5 ppm of free chlorine per 10,000 gallons of pool water.
- The pH of pool grade sodium hypochlorite is 13
- Sodium hypochlorite is non-flammable, non-combustible, non-explosive and containers under 1.3 gallons are transported as "Limited Quantities" with no transport hazard class



## Sodium Hypochlorite ("Liquid Chlorine")

Sodium hypochlorite loses strength over time in storage as it is converted to sodium chloride and water.

- Large stock quantities should be discouraged
- The rate of decline of sodium hypochlorite's strength is influenced by physical and chemical conditions such as high temperature, exposure to UV light, initial concentration and purity of the product.
- Filtered sodium hypochlorite has a longer shelf life.
- Store in cool dark well-ventilated storage areas when possible



## Sodium Hypochlorite ("Liquid Chlorine")

Application:

Manual

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- Should be done in the deep end of the pool away from any metal parts such as rails, ladders or light rings
- Pour the liquid very slowly while holding the container as close to the water surface as possible
  - Pouring from a high position will lead to undiluted splash back of product on decks and clothing which will cause bleaching
- It is recommended to wear protective gloves and goggles when applying.

#### • Feeder Pumps

- should be set up with the injection point after all equipment to prevent undiluted chemical contact with pumps, filters and heaters
- should be calibrated in accordance with manufacturer's specifications
- should be installed to avoid siphoning.



### AQUA Magazine – TECH NOTES Articles

#### **April**

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TECH NOTES		
	C CHI ORINE	CASLEAKS
By the PHTA Recreational Water Qu	ality Committee	interlock consisting of at least two of
emissions can occur when the electrical interlock between the pool water circulation pump and the chemical feed system is lacking, improperly installed or simply fails. The risk of such a leak can be greatly reduced by designing a	out of service and the chemical needers are operating. When the pool water circulation pump is re-started and proper water circulation is restored, the chicrine gas is pushed through the line into the pool area where swimmers and taid may be emosed	the following: 1. Circuit Breaker Design (Basic Ensure the circulation pump and the chemical feed equipment are on the same electrical circuit. If the circuit
system to include adequate electrical interlock protection and incorporating several best practices for pool staff during pool maintenance.	to hazardous levels. This scenario repeats itself several times each year in various locations, which prompted the American Chemistry Council and a	powering the pump is tripped, power to the chemical feeders is also lost and there will be no injection of chemicals. 2. Pump or Filter Control. This method uses a basic three way pump
system to induste adequise electrical interlock protection and incorporating several best practices for pool several best during pool maintenance. <b>HOW IT HAPPENS</b> When all is functioning correctly behind the scenes at pools with automated chemical control systems, chlorine-based disinfectant and acid are injected into the lines.	to hazardous levels. This scenario repeats itself seveal times each year in various locations, which prompted the American Chemistry Council and a group of public health and swimming pool industry representatives to develop a fer fou Tube training video to help prevent these unfortunate events (www.poolinterlocatafety.com). This article is based on information and guidance offered in the video.	powering the pump is tripped, power to the demical feders is also lost and there will be no injection of demicals. <b>2. Pump or Filter Control.</b> This method uses a basic three way pump control panel with an AUTO/OFF/ HAND conflyguration. Ensure the demical feed equipment is connected to only the AUTO function for pump control. The pump should be badwashed only in HAND mode. (The swatch is in
sprem to induide adequate electrical interlock protection and incorporating several best practices for pool staff during pool maintennee. HOW II that PENE When all is functioning correctly behind the scenes at pools with automated deneral control systems, add are injected into the lines downstream from the filter. If the pool water circulation pump stops due to an unforcem problem or controller continues to add olivorie- based during that and add into the line, the two chemicals may react to firm hazardoox of forme gas.	To hazardous letek. This sommon repeats tist of several lines each year in various locations, which prompted the harvestical features (Council and pool industry representatives to pool industry representatives to events wave pooline to a single council events wave pooline that single and pool industry representatives to the high present these unfortunate events wave pooling that rains wave BLECTRICAL INTERLOCK FROTECTION that the pool pump is databated or loses prime (no how tautaon), or there is any other loss or relation of focus in the council constant, the	powering the pump is tripped, power to the chemical development. The second second second second second second method uses a backs there way pump early parel with an ALTO/OFF, I AMD configuration. Ensure the two second second second second second to second second second second second to second second second second second to second second second second second the ALTO function for pump. In the ALTO function for pump. Second se

#### August



#### **October**

TECH NOTES		
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SCARY POC By the PHTA Recreational Water Qua	DL STORIES	Does aryone want to go for a swim? This is an example of how a range pool can happen when dearwell water with a high inn content fills the pool and is shocked with chlorine.
Event PIDOL SERVICE grad/facilitati has statose for antificipabli. Clean the Hallowern casson, we asked for some samp pool maintennes statisfies from out Committee members. While the and equipment manufactures, retail askes and water testing specialists, and equipmenter have significant they fingthered were the handmend pool service veters in of the Committee. THE CREEPY POOL ON	get the pool dened and get out of three fast. Child day, they are and pool dene fast. Child day, they are and pool dene families and the second second second second and defast. I second the second second defast. I second the second second my taxify all off as second second my taxify all off as second second second second my taxify all off as second second second my taxify all off as second second my taxify all off as second second second my taxify all off as second second second my taxify all o	seven: by agrin and somers (and my bland in and bathed damins (and my bland One last frame lassched my hand in the simmers and gabed for the dobrs. All at once 11 Reitsonwithing big and airway proved like widther down my pisse, and 1 jumped back. I had no bies with a later contained (like) and the simulation of the there was a swithing sound and pugeling and babbles. I bushed wide opes as the biggers task.] I had no ever sen who there gas a swithing sound and pugeling and babbles. I bushed wide my as an in babbles. I bushed wide opes as the biggers task.] I had no ever sen who there gas a swithing sound and pugeling and babbles. I bushed wide opes as
HALLOWEEN By Terry Arko		ONE SCARY ABANDONED POOL
This story literally happened on	itchy as if things were crawling on me	By Roy Vore
Hallsween, I had a route in Southern Gallfornia, and we had just been hit with heavy Santa Aras winds. The pools on my route were a mess with a tor of debris. I had one pool that was way out in a rural area and way off the besting path. It was a very clid rundown house where I never saw the owner. It was a creepy place even on a normal day, I always tried to	whenever I went in there. I stepped in the dark room and cleared a spider web away from my head. Then I opened the pump and emptide the basket of debins, put the pump Id on and went back to clear the skimmer before starting the system up. The skimmer basket was jammed full of leaves, I could'nt even get to the basket without digging out	When the call comes in for service, some pools can quickly present more than a few challenges. This sam pool was in an older and heavily wooded, wealthy neighthorod. The elderly owner decided to sell the house and one item on his list was returning the pool to operating condition. According to the
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## Chlorine Gas Leaks – April 2020

How can swimmers be exposed to chlorine gas?

• Storage tank leak

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• Pump malfunction that leads to chlorine gas being pumped into the pool water



## Chlorine Gas Leaks – April 2020

How can we help prevent this from occurring? Electrical Interlock Protection

• Circuit Breaker Design

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- Pump or Filter Control
- Float or Centrifugal Float Switch
- Flow Switch or Electronic Flow Meter



## Chlorine Gas Leaks – April 2020

Precautions

- Flow switch should be a back-up only
- Install safety switches per manufacturers instruction
- Test the system monthly
- Alarms installed to prevent accidents
- Label all system components



### **PHTA Standards Department**

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#### **Pool & Hot Tub Alliance (PHTA)**

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