

PoolProof[™]

Borate Water Harmonizer[™]

Easy Application Instructions

IMPORTANT: *This product will naturally settle. The bottle must be turned upside-down and shaken vigorously for 10-20 seconds before opening.*

Step 1.

Using a borate test strip available from retail pool stores (or possibly your distributor), test the pool to see if it has any borate and, if so, at what level (most new customers will have none).

Step 2.

Determine the size of the pool. (Most customers will know how many gallons their pool holds).

- Measure the length and width of the pool (use a tape measure).
- Measure the deep end and shallow end of the pool (use a tape measure).
- Average the deep end and shallow end measurements to determine the average depth (e.g., if the deep end is 6 ft. deep and shallow end is 3 ft. deep, the average depth is 4.5 ft.).
- Use the pool chart below to determine the volume of the pool, or use any of the pool calculators available online.

POOL VOLUME DETERMINATION					
POOL SIZE	GALLONS @ 3.5' Avg. Depth	GALLONS @ 4' Avg. Depth	GALLONS @ 4.5' Avg. Depth	GALLONS @ 5' Avg. Depth	GALLONS @ 5.5' Avg. Depth
12' x 24'	7,600	8,600	9,700	10,800	11,900
14' x 28'	10,300	11,800	13,200	14,700	16,200
15' x 30'	11,800	13,500	15,200	16,900	18,600
16' x 32'	13,400	15,400	17,300	19,200	21,100
18' x 36'	17,000	19,400	21,900	24,300	26,700
19' x 38'	19,000	21,700	24,400	27,100	29,800
20' x 40'	21,000	24,000	27,000	30,000	33,000
22' x 44'	25,400	29,000	32,700	36,300	39,900
25' x 45'	29,531	33,750	37,968	42,187	46,406
25' x 50'	32,800	37,500	42,200	46,900	51,600
30' x 50'	39,375	45,000	50,525	56,250	61,875

Step 3.

Following the rule of 1 gallon per 3000 gallons of water (or using the chart on the label), add the correct amount of PoolProof to the pool.

To achieve the very high hexaborate concentration in a liquid form, PoolProof is formulated as a micro-micellar emulsion professional concentrate. This means that there are solid micro particles suspended in the white liquid. It is normal for PoolProof to settle slightly over time.

To add PoolProof to a swimming pool, invert the container and **shake vigorously for 10 seconds**. Open the bottle and pour PoolProof into the pool over the jets while the pool pump is running. Half-fill the container with pool water, shake again and add it to the pool. Rinse the container once more, then place container in recycle bin.

Step 4.

Saving money: Customers should use the NSPI standards below to keep their pool in balance. They will see a reduction in chlorine usage and a “stability in pH” which will further reduce chemical usage needed to adjust pH up or down. Many customers are able to reduce their pump run time. Customers have reported being able to cut their pump times by 50%. Homeowners can adjust their pump time down incrementally and observe the results. Pump time may vary with type of pool, size of pump, geography, temperature and local regulations. Adjust your pump time to find the optimum range of energy efficiency and pool clarity.

NSPI STANDARDS			
Chemical	Minimum	Ideal	Maximum
Free Cl	1 ppm	1 - 3 ppm	3 ppm
Combine Cl	0	0	0.2 ppm
pH	7.2	7.4 - 7.6	7.8*
PoolProof * <small>*(not NSPI yet)</small>	30 ppm B	36 - 50 ppm B	100 ppm B
Stabilizer	10	30 - 50	150 (100 ppm limit)
TDS	300	1000 - 2000	3000
Hardness	150	200 - 400	1000

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Additional Technical Information

Swimming pools use sanitizers to kill harmful bacteria, viruses and algae, and oxidizers to breakdown organic material (skin, urine, pollen etc.) into CO₂. These include:

- Chlorine gas
- Hypochlorite (calcium, sodium, lithium)
- Dichlor (fast dissolving chlorine with cyanuric)
- Trichlor (slow dissolving chlorine with cyanuric)
- Saltwater pools (NaCl + electric)
- UV
- Ozone
- Bromine
- Other non-oxidizing sanitizers such as biguanide, quats, and silver ions
- PoolProof will help improve performance no matter what method is used.

How Chlorine Works

- When you put chlorine in water, it dissolves and forms some **hypochlorous acid** (HOCl) and some hypochlorite. How much of each depends on the pH of the water.
- Hypochlorous acid is what works to kill harmful organisms and break down organic material.
- When water is acidic (low pH), more of the chlorine has converted to hypochlorous acid.
- When water is basic (high pH), more of the chlorine has converted to hypochlorite.
- BUT when water is *too* acidic (below pH 7.2): Chlorine dissipates, causes eye irritation, dissolves plaster, corrodes metals and causes staining.
- But when the water is *too* basic (above pH 8.0): Chlorine works poorly, water gets cloudy, causes eye irritation, causes scale and discoloration, and the pump has to work harder.

So, pH is best between pH 7.4 and pH 7.8.

MANY THINGS CHANGE pH	
Lowers pH	Increases pH
Dichlor	Hypochlorite
Trichlor	Ash
Acid	Soda
Chlorine gas	Hydroxide
Rain and CO ₂	Bicarb
Alum	Urine
Organic	Algae
Some tap water	Some tap water

PoolProof is a Borate Buffer

It has a pH of about 7 in full strength, but when diluted, it is at about 7.6 – ideal for perfect pool water and maintenance of chlorine!

What is special about Pool Proof is that when it is added to water, it can uniquely adsorb acid and base. As a result, when something acidic or basic is added to the water, the pH does not change significantly. When the PoolProof absorbs acid (concentration of protons [H+]), it forms some undissociated boric acid **AND** when it absorbs some base (concentration of hydroxyl groups [OH-]), it forms some disassociated borate as the tetrahydroxy borate anion. This is because PoolProof is a hexaborate and forms polyborate species in solution.

PoolProof is not an algacide. Do not claim that it is. At the concentrations we are using (36 to 50 ppm B), it will prolong the life of the chlorine.

Green Algae – very common, floats in the water and makes it look like pea soup. To control, shock pool and then add PoolProof.

Mustard Algae – slimy yellow sides. To control, shock pool harder, add PoolProof and scrub.

Black Algae – black bumps on bottom. To control, scrub surface of bumps, shock hard and add PoolProof.

Other Technical Terms

- *Hardness* (calcium in water – 250 ppm good))
- *Total Dissolved Solids* (TDS < 450 ppm good)
- *Disinfection* (killing bacteria and viruses)
- *Stabilizer* (cyanuric acid – hold chlorine, causes chlorine lock 30 – 50 ppm good, >100 ppm bad)
- *Total Alkalinity* (TA – buffering capacity 80 – 100 ppm)
- *Total Chlorine* (free chlorine plus combined chlorine [tied up with organics and waste or stabilizer] – not free to work properly)
- *Breakpoint* – Point at which “burn out” occurs during super chlorination to remove combined chlorine such as chloramines.

Warranty Disclaimer

Manufacturer warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent not prohibited by applicable law, **MANUFACTURER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.**

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The directions for use of this product are believed to be adequate and must be carefully followed. It is impossible to eliminate all risks associated with use of this product. Lack of performance or other unintended consequences may result because of such factors as use of the product contrary to label instructions, abnormal conditions, the presence of other materials, climatic conditions or the manner of use/ application, all of which are beyond the control of the Manufacturer. The buyer/user assumes all such risks.

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1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used.

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