

How to Use Pool Shock to Purify Water

 backdoorsurvival.com/how-to-use-pool-shock-to-purify-water/

If I were to ask how many of you store liquid bleach along with your other prepping supplies, I am certain that a good percentage of you would raise your hands. Liquid bleach is a powerful disinfectant and sanitizer but did you know that there is something better? Something with an almost indefinite shelf life that is inexpensive and takes almost no room to store?

That something is the chemical [Calcium Hypochlorite](#) most commonly known as [Pool Shock](#).



I have known about Pool Shock for years but because it is not readily available in my area, I never took the time to search it out so I could stockpile some for my own emergency preps. That has now changed and today I plan to show you how to use Pool Shock the easy way, step by step.

Why Not Bleach?

Before we start, you may be asking “why not use liquid bleach?”. There are a few problems with liquid bleach. It takes a lot of room to store bleach plus the usable shelf life is only six months to a year depending on storage conditions.

The folks at [Clorox](#) say this:

The active ingredient in liquid bleach, sodium hypochlorite, is very sensitive to high heat and freezing,

| but under normal home storage conditions, it should still perform well for nine to twelve months.

In addition to a limited shelf life, there is another problem. I have had reports from [Backdoor Survival](#) readers telling me that in their area, they can only purchase “Clorox Ultra” which is concentrated. When I called Clorox to ask how to use concentrated bleach to purify water, they said that it was not intended to be used in that manner and why would I want to do that anyway. Seriously, their representative actually said that.

Pool Shock – The Boilerplate

When I started doing research for this article, I visited some of the most respected survival and preparedness blogs and forums for background material. After all, pool shock is pool shock and there must be some standards for use, right?

With just one exception, all of the sites I visited included this boilerplate from the EPA:

You can use granular calcium hypochlorite to disinfect water.

Add and dissolve one heaping teaspoon of high-test granular calcium hypochlorite (approximately ¼ ounce) for each two gallons of water, or 5 milliliters (approximately 7 grams) per 7.5 liters of water.

The mixture will produce a stock chlorine solution of approximately 500 milligrams per liter, since the calcium hypochlorite has available chlorine equal to 70 percent of its weight.

To disinfect water, add the chlorine solution in the ratio of one part of chlorine solution to each 100 parts of water to be treated. This is roughly equal to adding 1 pint (16 ounces) of stock chlorine to each 12.5 gallons of water or (approximately ½ liter to 50 liters of water) to be disinfected.

To remove any objectionable chlorine odor, aerate the disinfected water by pouring it back and forth from one clean container to another.

Have your eyes glazed over yet? Mine have. Being an accountant, I like to deal in absolutes so what is this business about “one heaping teaspoon”? Plus, what’s up with the references to “approximately” and “roughly”?

I decided that it was time to do my own testing, and sure enough, each time I measured out a heaping teaspoon, I had different results; they ran the gamut from 1 1/4 teaspoons to 2 teaspoons. This made my head hurt.

Another thing. Over and over I read that you should use pool shock that is a minimum of 78% calcium hypochlorite with the balance being inert ingredients. Fair enough, but there are two problems with this. First, what you find locally may be 68%, it may be 78%, or it may be something else. I sourced mine from [Amazon](#) and it was 73% calcium hypochlorite. Second, the EPA, makes no such recommendation or at least none that I could find. They simply say “high-test”.

Did I mention this made my head hurt?

But there is more. I actually found a couple of sites that said to use one heaping **tablespoon** of Pool Shock for each two gallons of water! You know, just because you find something on the internet does not mean it is true.

My conclusion? The exact amount and the exact percentage does not matter as long as it is within a reasonable range and close to the EPA standard. I do think it is important that the pool shock does not contain other additives that may or may not be safe even when highly diluted. Other than that, however, it is my belief that the precise

percentage of Calcium Hypochlorite to inert ingredients does not matter as long as it is 68% or higher.

For my own use, I settled on 1 teaspoon of pool shock per gallon of water when making up my stock chlorine solution. Then, to disinfect water, I used 3/4 ounce of my pool shock solution to treat a gallon of water. This makes it easy to calculate how much to use, regardless of the size of your container.

Step-by-Step: How to Purify Water Using Pool Shock

The first thing I did was gather my supplies. Notice that I used [eye protection goggles](#) and rubber gloves. Other supplies included an empty bleach bottle, funnel, shot glass, and measuring spoons.



I verified the size of my stock chlorine solution container, namely a repurposed bleach bottle. My bottle held 1.42 gallons and I wrote this on the outside with a Sharpie pen. My intent, however, was to only prepare 1 gallon of stock solution to keep the math simple.



After donning my protection gear, I added water to my stock solution bottle, carefully measuring the quantity. I used exactly one gallon of water.



I then measured out some pool shock; one level teaspoon to be exact. I put the cap back on the bottle and swished it around a bit. I gave it a sniff test and it definitely smelled bleach-like.



The next step was to purify water. I wanted to make drinking water and for me, the smaller the jug the better. I chose a 64 ounce repurposed apple juice jug. Remember the easy math? The EPA says 1 part chlorine solution to 100 parts water so the math is $64/100 = .64$ ounces.

Keeping things easy, that translates into approximately 2/3rd ounce. Remember, the EPA guideline uses the word “approximately” all over the place. That was good enough for me. To easily measure the proper dilution, I used a [mini shot glass](#) that had measurement markings along the side.



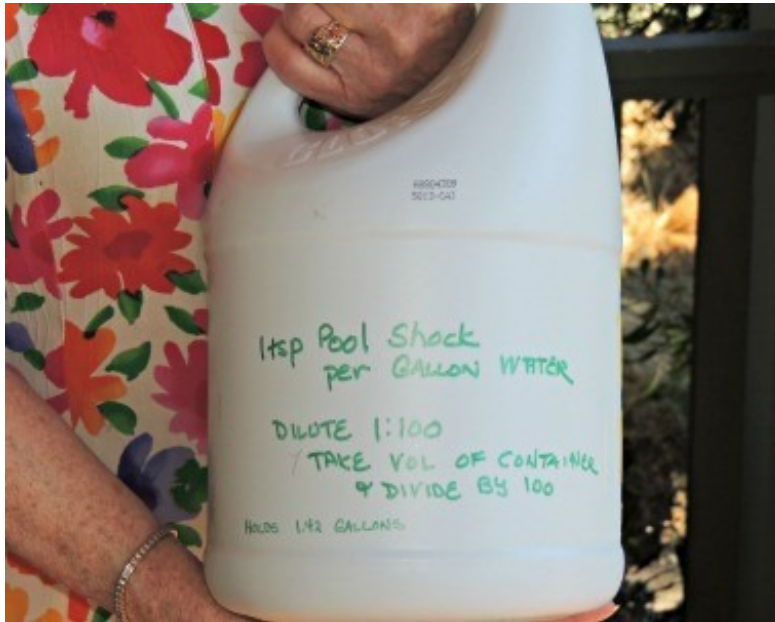
Be sure to pour your pool shock into your water and not the other way around. The last thing you want is to splash the solution on yourself on the surrounding surfaces (although you have probably noticed that I did this outdoors).

After preparing my newly purified water, I drank up. Three things. I did not throw up, I did not get diarrhea and I did not get sick or die.

I am comfortable with the results even though the solution I made may have been slightly stronger than the EPA guidelines. Then again, given the vagueness of the EPA guidelines, perhaps my measurements were spot on.



Note: I did not find that my water had an objectionable smell or taste. True, it was not sweet tasting like the water coming out of my Royal Berkey but it was palatable. If your own purified water has an unpleasant odor, simply aerate it by pouring it back and forth between clean containers. This trick applies to any water, not just water treated with pool shock.



Label your pool shock solution. This is powerful stuff. Get out your Sharpie and label the jug with as much information as you can. Store it in the same manner you store liquid bleach, up high and away from pets and children and in a location that is cool, dark and dry.

Also store your unused pool shock safely. Because it is corrosive, I chose a mason jar with a [plastic lid](#). Plus, rather than empty the pool shock into the jar, I sealed the plastic bag it came in with a clip and stuffed the bag inside of the jar.

Other Handling and Storage Considerations

I contacted the manufacturer of the pool shock I purchased and requested a Material Safety Data Sheet on the product. They promptly responded and here is what it said about handling and storage:

Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

Do not store product where the average daily temperature exceeds 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

Recommendations

Now that I have been through the process and understand the math, I am comfortable using pool shock to purify water for drinking, hygiene, and sanitation purposes. It is not, however, an excuse for not storing water nor an excuse for not having a supply of traditional water purification liquids or tabs that are pre-measured and simple to carry with you in bug-out-bags and emergency kits.

As far as I am concerned, the pool shock I have purchased is reserved for dire emergency use, period. Yes, I feel it is safe, but it is still a powerful chemical solution as is liquid bleach. I will use it as the water purification method of

last resort and if the time comes, I will be thankful I have it on hand.

Disclaimer

I have to say this: I am not a chemist and I am not an expert. My methods are my own and they work for me. That being said, if you have any hesitation at all, visit other resources including the EPA and make the decision to use pool shock your own and not just something someone told you to do. Here is a link: [Emergency Disinfection of Drinking Water](#).

The Final Word

Everywhere you look you will see a recommendation to store bleach for water purification. I have made that recommendation and so have many, if not most, of my blogging peers. What you may not have seen is that liquid bleach has a limited shelf life of 6 to 12 months. I fear that this could be leaving a lot of people ill prepared to produce safe, potable water in an emergency.

This means that a person that began prepping a year ago, and does not know to rotate their bleach, is already living with false security when it comes to water purification. And what about people that have been prepping longer?

As long as pool shock is stored properly, it will have an almost indefinite shelf life plus, a small one pound package will treat many thousands of gallons of water. Ten thousand to be exact. It can be mixed and used as potable water and as a disinfectant, just like bottled liquid bleach.

At the end of the day, do your own research and decide for yourself. All I can say is that for me, the \$13 investment was more than worth it for peace of mind down the road.

Enjoy your next adventure through common sense and thoughtful preparation!
Gaye

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Related Articles:

- [The Five Myths of Water Storage](#)
- [15 Ways to Conserve Water](#)
- [Water the Survival Basic](#)

Bargain Bin: Here are some of the items mentioned in today's article.

[DryTec Calcium Hypochlorite, 1-Pound](#) : This is 68% Calcium Hypochlorite. As of this writing, the price is under \$10 with free shipping. I purchased [Ultima Pool Shock](#) which is 73% Calcium Hypochlorite.

[3M TEKK Protection Chemical Splash/Impact Goggle](#) : I am pleased with these eye protection goggles and the price is reasonable. I have just ordered these [DEWALT Concealer Clear Anti-Fog Dual Mold Safety Goggle](#) so that I can compare the two, especially given the price differential.

[Mini Measure Shot Glass](#): These small shot glasses are useful for lot of measurement tasks and not just for the perfect Appletini! This [5-ounce measuring glass](#) is also useful around the house. Plus, it is only \$2 with free shipping.

[Playtex Rubber Gloves](#): I actually prefer to use rubber gloves rather than nitrile gloves when cleaning and working



with chemicals. Your mileage may vary just be mindful to order the correct size.

[Dynarex Black Nitrile Exam Gloves, Heavy-Duty, Box/100](#) : This brand is the #1 seller on Amazon. Pick your size; both Shelly and I wear a medium.

[Ball Regular & Wide Mouth Jar Storage Caps](#): I must have 30 or 40 of these. I love to use mason jars for pantry storage and for those items I go through quickly, I see no need to use the vacuum seal gizmo that goes with my Foodsaver.

[Sharpie Permanent Markers](#) : Sharpies were invented for preppers! And without question, Amazon is the cheapest place to buy them. Typically, the price on Amazon is less that \$7 for a dozen.

[Katadyn Micropur Tablets](#) : These are the water purification tabs in my bug out bag and emergency kit. There are many other brands, all equally effective.

[LifeStraw Family Water Purifier](#) : The Lifestraw Family contains no chemicals, no batteries and no moving parts to wear out. It features a a high flow rate and is the perfect solution to your portable water purification needs – whether bugging in or bugging out. As of this writing, shipping is free.

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