

## **Water Storage and Filtration**

Storing clean water should be your first step and #1 priority for emergency preparedness. Water is more essential than food in sustaining life! Humans can survive only:

- 3 minutes without air
- 3 hours without shelter (extreme conditions)
- 3 days without water
- 3-8 weeks without food

### **What would I use stored water for?**

If access to your normal water supply was cut off, you would need to store water for drinking/hydration (people and pets), hygiene/sanitation (extremely important to survive a disaster situation), medical/first aid, and food preparation. Foods that require rehydration or reconstitution will need more water. Also, consider that during the summer heat you will require more water as will pregnant women or persons who are sick. Note: Caffeinated drinks and alcohol dehydrate the body, increasing the need for drinking water. Carbonated drinks do not hydrate the body.

### **How much do I need to store?**

The absolute bare minimum suggested is 1 gallon of water per person per day for 2 weeks (14 gallons per person, plus pets) PLUS some type of water filtration. But if you can store more than that- DO IT! Two gallons per person for 30 days is a good goal to shoot for. Get creative and take advantage of unused spaces in closets, under beds, in empty cabinets and if necessary, in the garage. Try to store your water away from light and heat, but if that is not possible just rotate your water every 6 months (especially right after summer) and it will be perfectly fine.

### **What should I store water in?**

1. An easy option is to buy new, plastic food grade containers that seal tightly. Blue plastic is commonly used because it keeps the light away from your water, decreasing the risk of bacterial growth. You can get anywhere from small, stackable containers to gigantic outdoor storage tanks. Three gallon AquaBricks by Sagan Life ([saganlife.com](http://saganlife.com)) are highly recommended and come with a spigot. Five gallon jugs, 30 gallon barrels and 55 gallon barrels (with a pump!) from Baytec Containers ([bayteccontainers.com](http://bayteccontainers.com)) are also recommended and are a little more economical. Having a variety of different sized containers gives you flexibility in case you need to evacuate or move your water supply.
2. If you want to use repurposed containers, you will need to make sure they are food grade, thick plastic (the thicker the plastic the less they degrade) containers such as 2 liter pop bottles, juice bottles or water jugs (in thick plastic). **DO NOT USE PLASTIC MILK JUGS OR DISTILLED WATER JUGS!** They will degrade quickly and leak everywhere. If the container has been used for a non-food item it should not be used for water storage (bleach bottles, etc). You will need to clean your used containers using a solution of regular household bleach (with no filler, additives, colors, scents, thickeners, etc.) and water. 1 tsp. bleach to 1 quart water. Do not forget to clean and sanitize the lid, removing any plastic or cardboard on the inside of lid. After you have sanitized and rinsed your container, allow it to air dry.
3. If you are into canning, you can actually “can” water in your empty canning jars and the water will last forever! Fill clean canning jars with water and put them in a water bath canner. Boil for 20 minutes and let cool. Make sure the lids have sealed.

4. There are some commercial options you can purchase that will last for 5 years or more. Water storage boxes and drinking water pouches will last 5 years. Canned water in aluminum cans have a 50 year shelf life and are not vulnerable to heat. However, they cannot be allowed to freeze.

### **How should I fill my containers?**

If your water is untreated or if you have filtered out the chlorine, you will need to treat your water to keep bacteria from growing while in storage. To treat your water, you can use regular household bleach (no scent, fillers, colors, thickeners, etc.). Add 2 drops bleach per quart, 8 drops bleach per gallon, ½ teaspoon bleach per 5 gallons water to treat. A more natural option is called Biofilm Defender ([dryelement.com](http://dryelement.com)) which is food grade and will keep your water safe for 5 years. Add 1 drop per quart or 4 drops per gallon of Biofilm Defender. If you are filling containers with a hose it should be a lead free, drinking water safe hose that has been protected from contamination. Amazon has these hoses which are often made specifically for RV's.

### **How should I store my filled containers?**

Label your containers and include the date they were filled.

Do not store any plastic containers directly on concrete. Place on cardboard, wood pallets, carpet samples, etc. Keep away from light and heat if possible. Heat will cause plastic containers to leach chemicals from the plastic into your water. If you have water stored in your garage, just rotate it in the fall after the summer heat every year. You can also filter the water stored in hot conditions to remove some of these chemicals before drinking. Freezing may be damaging to some types of water storage containers. If you think your water might freeze, leave some empty air space in the container.

Do not store your water next to gasoline, pesticides, fuels, etc.

Store water in areas where potential leakage would not cause damage to your home. Check your container regularly for leaks.

### **How can water filtration help?**

Water that has been stored in plastic containers for long periods of time, especially in heat, may contain chemicals that leach out of the plastic. Filtering this water before drinking can remove these chemicals, producing better tasting, healthier water. Aerating the water by pouring it back and forth between two containers can also improve the taste of water that has been stored for a long time.

There are many good water filters on the market, but also many that make false claims. Beware of water filters that are not certified by NSF International ([nsf.org](http://nsf.org)), the world-class organization on testing, inspection, and certification of water filtration devices. Any company that is serious about water filtration is NSF/ANSI certified and can be trusted. Check NSF's website for water filters that have a proven record of removing contaminants through their vigorous testing.

PUR Plus water filters are affordable and NSF certified to remove many contaminants. This is what our family would use to filter water stored in plastic containers long term.

Filters remove contaminants but not many biological elements. If your water may have bacteria or microorganisms in it, you can boil it for 3-5 minutes, use purification tablets or treat it with bleach. Usually addressing contaminants and biological elements is the safest route if you are unsure about your water.

When storing water, start with pure or treated water.

If using water from streams, rivers and lakes special care must be taken that they are not contaminate with chemicals. Water with chemical contamination is unsafe. Otherwise, these waters need to be strained, then filtered or treated to remove bacteria and cryptosporidium. For this type of filtration, NSF Certified 53 and Certified 58 filters are required. After straining, boiling is the best method to be sure a non-chemical contaminated outside water source is safe to drink.