

**Water Warehouse**  
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## **Question we have been asked**

**"What is hard water?"** Hard water is defined as having more than 4 GPG (grains per gallon) of dissolved minerals in it (usually calcium, magnesium carbonate, and/or manganese)

**"How is hard water measured?"** Hard water is usually measured in either PPM (parts per million) or GPG (grains per gallon).

17.1 PPM or Mg/L = 1 GPG OR PPM or Mg/L divided by 17.1 = GPG (grains per gallon)

**"How can I tell how hard my water is?"** You can bring in a small sample and we will **test it for free.**

**"Why does the water softener have to add salt to the water?"** The softener works by passing the hard water through resin beads which have soft sodium/potassium ions attached to them. While the water is in contact with the resin beads an ion exchange takes place with the hard mineral ions (typically calcium and/or magnesium) trading places with the soft sodium/potassium ions. After a period of use the sodium ions are depleted being replaced by calcium and magnesium. The resin then needs to be regenerated with the sodium ions so the resin will again be able to exchange the hard for the soft.

**"What is the difference between a water softener, a water filter, a descaler, and a conditioner?"** A water softener is a water treatment system where the calcium and magnesium carbonate (the minerals responsible for the hard water) which are dissolved in the water are replaced with either sodium chloride (salt) or potassium chloride. This is different from a water filter in that filters will generally remove chlorine, pesticides, bacteria (in some cases), and suspended particles (sand, sediment, etc). A filter will not remove dissolved solids (which are responsible for hard water). A descaler, (Salt Free Softener) does not remove dissolved solids, it prevent the solids from being deposited inside pipes, on fixtures, etc. Our conditioners use a silver impregnated carbon to kill all bacteria, remove objectionable tastes and odors and acts as an anti-microbial agent. Our conditioners also act as a water softener - and since it acts as a dual unit, the water is very good to drink.

**"Why would I want to soften my water?"** It greatly reduces the scaling of pipes, faucets, pots, glasses, tubs, etc.

You will use less laundry soap, dishwashing soap, hand soap, etc. The water is more pleasant to wash with, less soap scum.

**"Ok then, why wouldn't I want to soften my water?"** If you're using sodium chloride (salt), then the softener will add a small amount of sodium to the water. For most people this is not a problem. However, if you're on a sodium restricted diet, we would recommend a separate faucet in the kitchen that dispenses un-softened water for drinking.

**"Someone told me that softened water feels 'slimy'."** When you wash your skin with hard water, there is a layer of soap and minerals that is left on your skin. This is what causes the supposed 'squeaky clean' feeling. With soft water, the soap is completely rinsed away leaving just the natural oils your skin produces.

**"I've heard that a water softener adds sodium to my water supply. Is this true?"** Yes. A household water softener removes the hardness minerals - calcium and magnesium - from water and replaces them with sodium.

**"How much sodium is added to the water by the softener?"** That depends on the hardness of the original water. This table shows the additional amount of sodium consumed by drinking **one quart** of softened water.

Initial Hardness	Sodium Added
1.0 grains per gallon	7.5 milligrams/quart
5.0 grains per gallon	37.5 milligrams/quart
10.0 grains per gallon	75.0 milligrams/quart
20.0 grains per gallon	150.0 milligrams/quart
40.0 grains per gallon	300.0 milligrams/quart

As a comparison, one slice of white bread has 161 milligrams of sodium; 3/4 cup of canned baked beans = 1130 milligrams; 1 tablespoon of catsup = 204 milligrams; 1 medium frankfurter = 610 milligrams; and 1 cup of whole milk = 127 milligrams. Even a common Alka Seltzer tablet contains 532 milligrams of sodium.

However, if you suffer from hypertension or are on a sodium restricted diet, you should consult your doctor about the proper water for drinking.

**"Should I worry about corrosion from the salt in the water?"** No. Over a long period of time it may have some effect on exposed **steel** surfaces. Most of the

metal in a home that comes in contact with softened water is coated, painted, or stainless steel. All which would be unaffected.

**"Do I have to use salt?"** Most stores that sell softener salt will also sell a salt substitute (potassium chloride). This is just as effective as the regular salt, but adds potassium instead of sodium. The downside is that potassium chloride costs between 3 and 4 times more than the regular softener salt.

**"What should I look for in a water softener?"** One of the main features you should look for are capacity (measured in grains) and how it determines when to regenerate. Our units vary in size from a 20,000- 1000000 grains capacity and meters how much water has been used to determine when it should regenerate. Some units regenerate after a fixed period of time regardless of how much water you've actually used. Warranty is one of the biggest considerations in buying a water softener/conditioner.

**"What difference does size make?"** The size of the softener (rated in grains) in combination with knowing your hardness level will tell you how often it will regenerate, and consequently how often you will have to add salt. If you have a family of four and your hardness level is 10. Divide the unit grain capacity, **FGA-10-30--30,000** Grain capacity by your hardness (10), giving you 3,000 gallons of treated water. The average person uses about 50 gallons per day so divide the 3,000 by 200 (50 gallons x 4 people). This gives you 15 days between regenerations.

**"Do I have an exact amount of salt in the brine tank for the softener to regenerate properly?"** The amount of salt placed into the brine storage tank has nothing to do with the amount of salt used during the regeneration cycle. Water will dissolve and absorb salt only until it becomes saturated. A given amount of brine (salt saturated water) contains a specific amount of salt. Just make sure that there is at least enough salt for a regeneration cycle (8 lbs in the case of our unit).

**"Why would I want '1" waterways' when I only have a 3/4" main?"** Even if you have a 3/4" main line, having true 1" waterways will significantly reduce the friction loss that any softener produces. Yes, this might be "overkill" for some, but if gallons per minute are important to you, then it would definitely be worth it. No extra charge ever for 1" full flow whole house water softener or filter.

**"With a flow rate of 10 gpm, just how much water is that really? How much water do most fixtures use?"** A toilet will normally use 1.5-3gpf, a shower 1 1/2 - 3, a bathroom or kitchen faucet 2-3, a dishwasher 2-4, a washing machine 3-5. When you start running more than one fixture at a time, they add up quick and those extra gallons from 1" waterways can make a difference.

**"What makes your softener better than others that charge as much as four times the price?"** All softeners, regardless of price, should soften your water

(i.e reduce the hardness to 0 grains). The question is how long will the unit last? How often does it regenerate? How large is the grain capacity? What is the warranty? Does the softener regenerate base on time rather than how much water has been used? How easy is it to change the settings and service the unit? How quickly can you get your questions answered and your problems solved?

**"What's the difference between naturally soft water and the water from a water softener?"** There's a great deal of difference! Naturally soft water is generally acidic and contains very few dissolved minerals. This tends to make the water quite corrosive to pipes and plumbing. The water from a water softener is more like the raw water from which it is made. It is usually alkaline rather than acidic, and contains moderate amounts of dissolved minerals. Thus softening hard water in the home should not significantly affect corrosion.

**"I've read that the softener capacity should be large enough so that it should not regenerate more than every two days. Is there an ideal period between regenerations?"**

**"Do long periods between regenerations (say a month) have any negative effects on the softener?"**

A water softener should be regenerated when the softener has reached its capacity and is unable to keep exchanging the hard ions for the soft ions. How often a water softener regenerates is dependent on how many grains per gallon of hardness are present in your water and the (size) grain capacity of your water softener. If the capacity of the water softener is 40,000 grain, and you have 10 grains per gallon of hardness, then your softener would regenerate after 4,000 gallons of water had passed through it. How quickly you would use 4,000 gallons of water would really depend on your water usage.

**"How easy is it to install your softener?"** If you've done even a little plumbing, we think you'll be able to install our softener.

**"Does the resin tank have to be right next to the brine tank?"** No, they can be up to 10' apart.

**"Is it ok for the water softener drain hose to drain into my septic system?"** Generally most people drain their discharge into their standard drain, which would go into the public drain system or their septic tank. Please follow all local plumbing codes.