

Hardness Fact Sheet

Connecticut Department of Public Health Drinking Water Section • August 2017

What is hardness?

- Hardness is the measure of mineral content in the water. Typically, calcium and magnesium are the primary contributing factors to hardness. Water hardness increases with more calcium and magnesium content.
- Groundwater is usually harder than surface water. Groundwater travels through soil and rock, which in turn deposit minerals into the water. The more minerals, the harder the water.



How is hardness measured?

- Hardness is reported as milligrams per liter (mg/L), which is equivalent to parts per million (ppm). Alternatively, grains per gallon (gpg) can be used.

KEY POINTS:

- Minerals such as magnesium and calcium create hard water.
- Hardness has no known negative health effects and may even benefit you.
- Hardness can affect taste and odor of water and can cause formation of scale inside pipes.
- Use white vinegar to clean hardness residue from appliances and surfaces.

Classification	mg/L (ppm)	gpg
Soft	0 - 17.1	0 - 1.0
Slightly Hard	17.1 - 60	1.0 - 3.5
Moderately Hard	60 - 120	3.5 - 7.0
Hard	120 - 180	7.0 - 10.5
Very Hard	180 and over	10.5 and over

Health effects of hardness



- No known negative health effects.
- Hardness in water may protect you from heart disease.
- Calcium and magnesium are the main minerals that cause hardness. Both minerals are essential to the human body. Calcium helps develop bones and teeth while magnesium facilitates protein growth.
- The amount of magnesium and calcium found in the water system adds a small amount to what is required in a balanced diet.

Potential effects of hardness in your home



- Hard water can include formation of scale inside pipes and fixtures. White particulates may form inside faucet aerators due to this.
- Dishwashers, laundry machines, and coffee makers may be worn down faster due to hard water.
- White residue may be spotted on appliances such as shower walls, dishes and, glasses.
- Hard water can cause difficulty in developing soap lather and cleaning clothes.
- Metallic taste and/or odor may be noticed.

Tips to combat hard water



- Changing water heater temperature to 130° or to a “vacation setting” will help reduce white particulate matter and scum.
- Leave a squeegee inside the shower to wipe down walls after each use. This helps prevent buildup of hard water deposits.
- White vinegar and lemon juice can help clean hard water deposits off glass and plumbing appliances.
- Submerge shower heads and faucets in white vinegar to clean residues.
- Run white vinegar through dishwashers and coffee makers every couple of months to clean out white residue buildup.
- Use white vinegar and lemon juice solution to wipe down hard water residue.
- Consult manufacturer recommendations about the usage of hard water for appliances.

Summary



Hardness is the amount of dissolved minerals such as calcium and magnesium in water. The more minerals dissolved, the harder water becomes. There no known negative health effects, and may prove to benefit your health due to the minerals. However; pipes, faucets, shower heads, and any other appliances that use tap water have a possibility of developing scale that will wear down the appliance faster. To clean the appliances, use white vinegar and wipe down all affected areas to clean and prolong use of the appliance.

