

## Hardness in Water

The presence of calcium and magnesium ions in water constitute hardness. It is usually shown as grains per gallon (gpg). The problems created by hardness are numerous. Even levels as low as 5 to 8 mg/L (0.3 to 0.5 gpg) are too high for many uses.

Hardness enters a water supply when calcium and/or magnesium bearing minerals are dissolved by groundwater. "Carbonate" and "non-carbonate" hardness are terms used to describe the source of calcium and magnesium. "Carbonate" hardness results from dolomitic limestone (calcium and magnesium carbonate) while "non-carbonate" hardness comes from chloride and sulfate salts.

HARDNESS LEVEL		CLASSIFICATION*
mg/L	gpg	
0-17	<1	soft water
17-60	1 to 3.5	slightly hard water
60-120	3.5 to 7.0	moderately hard water
120-180	7.0 to 10.5	hard water
>180	>10.5	very hard water

\*Standards established by the American Agricultural Society of Engineers and the Water Quality Association.

