A woman with long, wavy brown hair is smiling and looking at a small glass jar she is holding up. The jar contains a clear liquid with a thin layer of brown sediment at the bottom. She is wearing a grey long-sleeved shirt under a dark blue and white jacket. The background is a lush green forest with a body of water visible in the lower left.

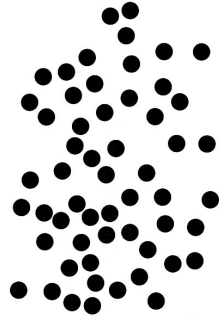
How to Measure Water Quality

There are many water quality factors that can be tested. With these factors, conclusions can be made as to how safe water is and what is possibly causing water contamination.



pH

Acidity



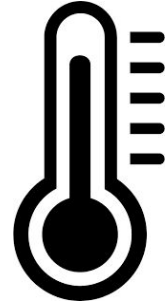
TDS

Total Dissolved Solids



EC

Electrical Conductivity



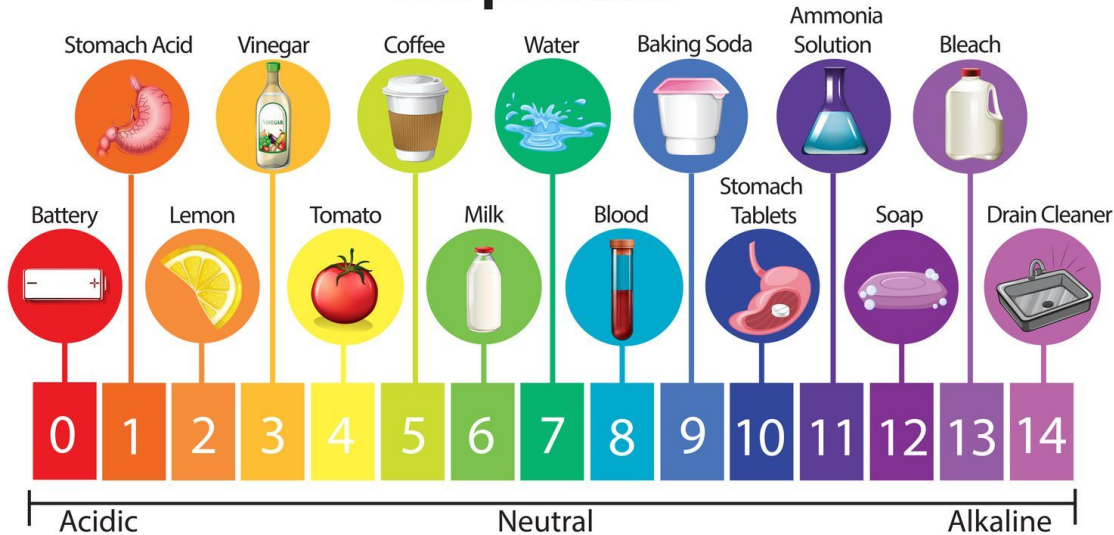
Temp

Temperature

Acidity (pH)

pH is a measure of how acidic/basic water is. The range goes from 0-14, with 7 being neutral. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base.

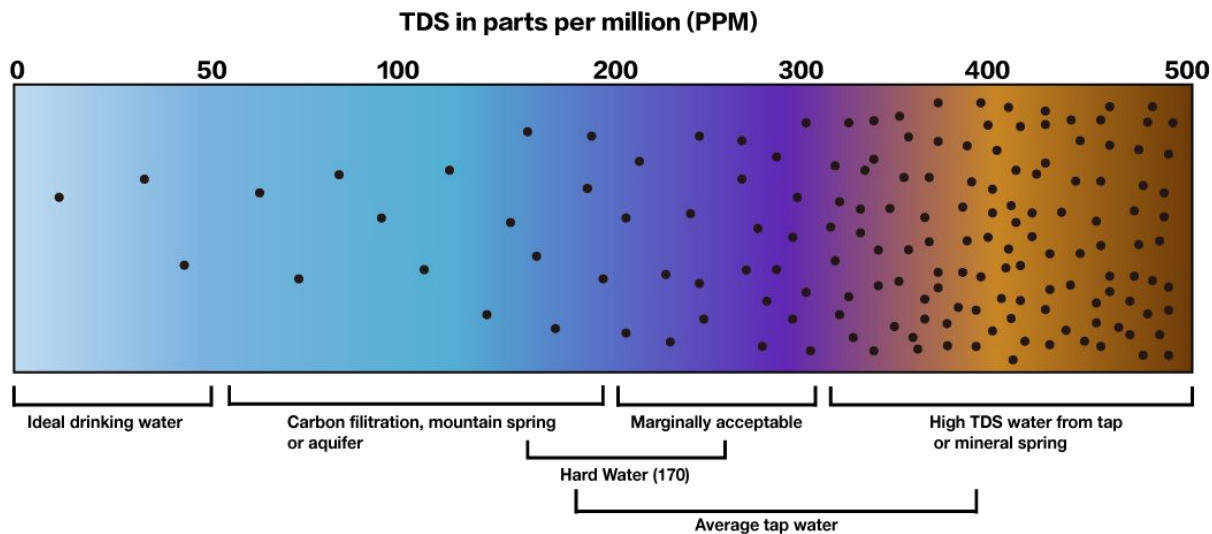
The pH Scale



Total Dissolved Solids

(TDS)

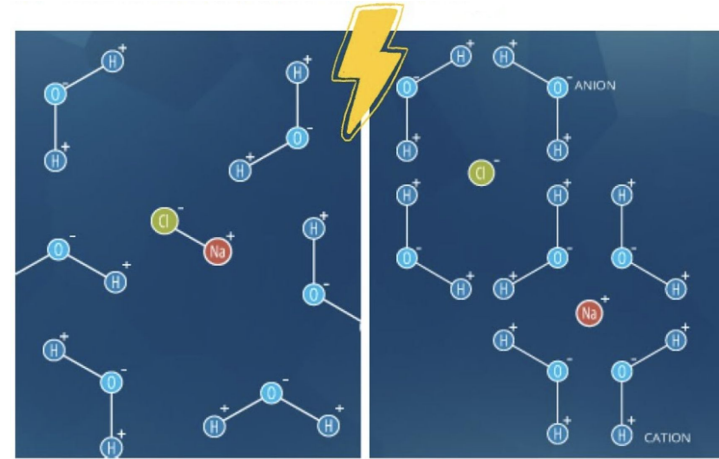
Total dissolved solids, or TDS for short, are dissolved ions, including salts, minerals and metals, that can be found in all non-pure water sources.



Electrical Conductivity (EC)

The conductivity of water is a measure of the capability of water to pass electrical flow. This ability directly depends on the concentration of conductive ions in the water.

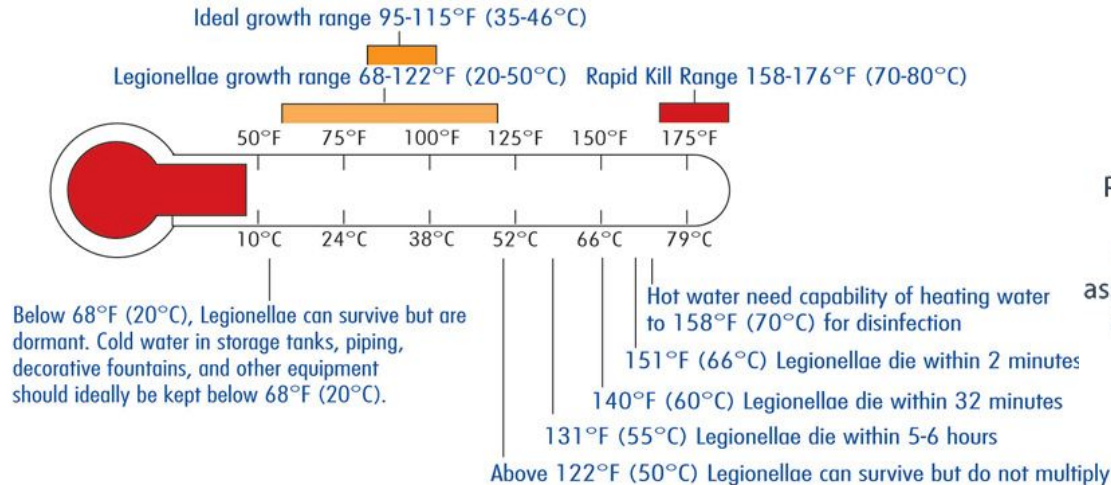
Water type	$\mu\text{S}/\text{cm}$
Distilled Water	0.5 – 3
Melted Snow	2 – 42
Tap Water	50 – 800
Potable Water in the US	30 – 1,500
Freshwater Streams	100 – 2,000
Industrial Wastewater	10,000
Seawater	55,000



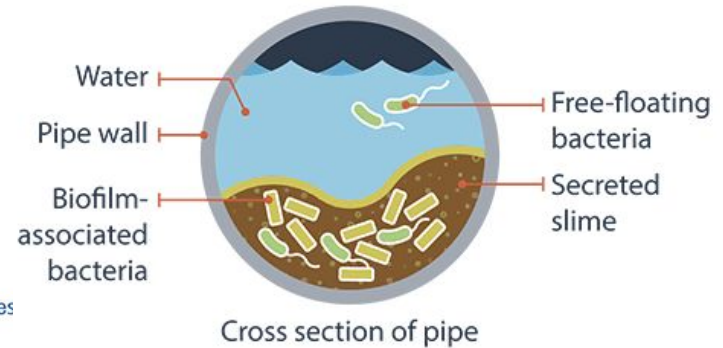
Temperature (°C)

Most people complain about tap water at 19°C or higher. The intensity of taste is greatest for water at room temperature and is significantly reduced by chilling the water. It is also possible that warm water leads to fungi and bacteria (such as legionella) growing inside plumbing systems of buildings, leading to mouldy tastes and odours if the temp. rises above 16°C.

Legionellae Growth Chart



Legionella can live and grow in biofilm



The **testing** of water quality from many different sources can result in interesting comparisons between the testing factors. Make **predictions** and **compare** results after testing and **recording**.

