

Chemical Parameters of Drinking Water

Fact Sheet: pH

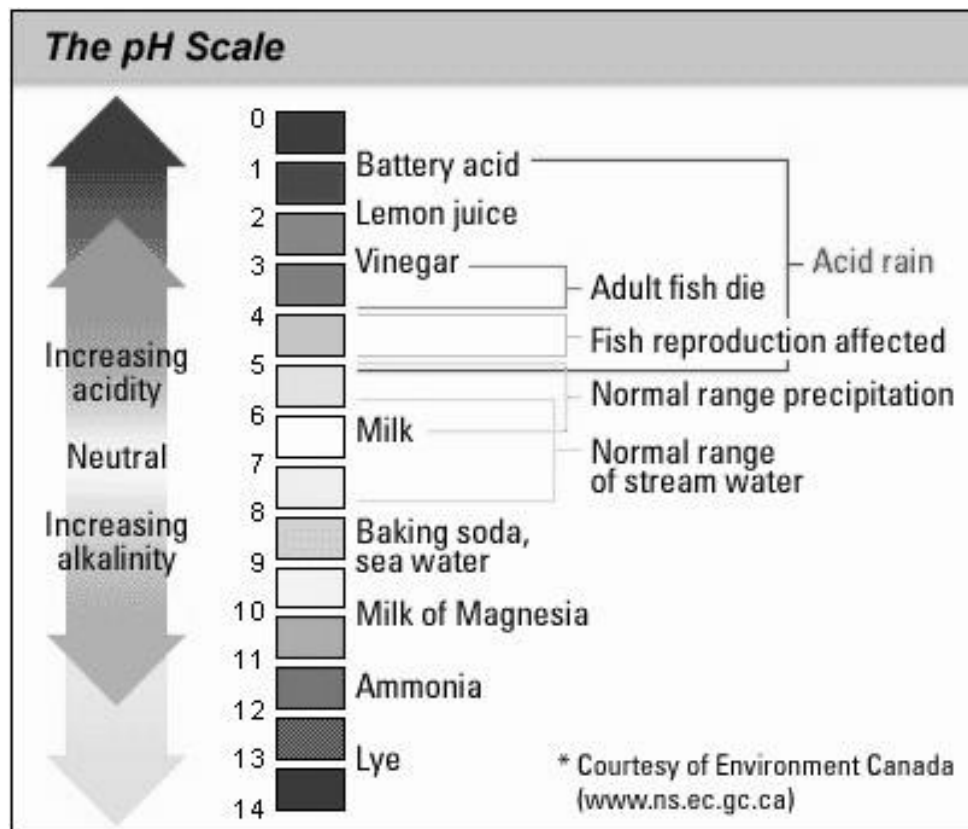
Source

pH is a measure of the acidity or alkalinity of the water. The pH for drinking water generally lies between 6.5 and 8.0. Water at 25°C (80°F) with a pH less than 7.0 is considered acidic, while a pH greater than 7.0 is considered basic (alkaline). When the pH level is 7.0, the water is considered to have a neutral pH.

The pH of the water in a stream, river, lake or underground flow will vary depending on a number of conditions, such as the:

- Source of the water
- Type of soil, bedrock, and vegetation through which water travels
- Types of contaminants the water encounters in its path
- Amount of mixing and aeration of the water due to turbulence in its flow

Extreme values of pH can also result from accidental chemical spills, water treatment breakdowns, and insufficiently cured cement mortar pipe linings or cement mortar linings applied when the pH of the water is low (WHO, 2011).



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Potential Health Effects

There are no direct health concerns for pH at levels normally found in drinking water.

World Health Organization Guidelines

There is no World Health Organization guideline value for pH since it is not a health concern at levels found in drinking water. However, the WHO notes that pH is an important operational water quality parameter (WHO, 2011).

No WHO Guideline for pH of Drinking Water

Water Quality Testing Methods

pH can be tested using a commercial laboratory or portable test kit. pH can be easily tested on-site using a digital pH meter or test strips. Some test strips only indicate whether the water is alkaline or acidic, while other test strips indicate the pH within the full range from 1 to 14. The most suitable range for pH test strips is between 4 to 9 because that is the pH of most natural waters).

Information about commercially available test kits are provided in CAWST's Drinking Water Quality Testing Product Sheets.

Household Water Treatment Options

The best way to deal with too high or low pH is to use a different source of drinking water.

pH is one of the most important parameters for the effectiveness of many water treatment technologies. For example, for effective disinfection with chlorine, the pH should be less than 8.

References

Environment Canada (2004). Canadian Water Quality Guidelines. Available at: www.ec.gc.ca/eau-water/default.asp?lang=En&n=FDF30C16-1

World Health Organization (2011). Guidelines for Drinking-Water Quality, Fourth Edition. WHO, Geneva, Switzerland. Available at: www.who.int/water_sanitation_health/dwq/secondaddendum20081119.pdf



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