What Does pH Stand For?

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Have you ever wondered what pH stands for or where the term originated? Here is the answer to the question and a look at the history of the pH scale.

Key Takeaways: Origin of pH Term

pH stands for "power of hydrogen."
The "H" is capitalized because it is the hydrogen element symbol.

pH is a measure of how acidic or basic an aqueous solution is. It is calculated as the negative logarithm of hydrogen ion concentration.

pH Definition and Origin

pH is the negative log of hydrogen ion concentration in a water-based solution. The term "pH" was first described by Danish biochemist Søren Peter Lauritz Sørensen in 1909. pH is an abbreviation for "power of hydrogen" where "p" is short for the German word for power, *potenz* and H is the element symbol for hydrogen. The H is capitalized because it is standard to capitalize element symbols. The abbreviation also works in French, with *pouvoir hydrogen* translating as "the power of hydrogen".

Logarithmic Scale

The pH scale is a logarithmic scale that usually runs from 1 to 14. Each whole pH value below 7 (the pH of pure water) is ten times more acidic than the higher value and each whole pH value above 7 is ten times less acidic than the one below it. For example, a pH of 3 is ten times more acidic than a pH of 4 and 100 times (10 times 10) more acidic than a pH value of 5. So, a strong acid may have a pH of 1-2, while a strong base may have a pH of 13-14. A pH near 7 is considered to be neutral.

Equation for pH

pH is the logarithm of the hydrogen ion concentration of an aqueous (water-based) solution:

log is the base 10 logarithm and [H+] is hydrogen ion concentration in the units moles per liter

It's important to keep in mind a solution must be aqueous to have a pH. You cannot, for example, calculation pH of vegetable oil or pure ethanol.

What Is the pH of Stomach Acid? | Can You Have Negative pH?

Sources