# What is the pH Value?

The term "pH" is derived from the Latin term "potentia hydrogenii", which means "power of hydrogen".

The pH value is defined as the negative decimal logarithm of the hydrogen ion activity (H^+). In case of diluted solutions the pH value corresponds approximately to the negative decimal logarithm of the numerical value of the concentration of substance of the oxonium ions (H_3O^+) in mol per litre.

Put in highly simplified terms, this means the concentration of hydrogen ions H+, respectively oxonium ions H_3O^+, i.e. the quantity of positively charged hydrogen parts per known quantity of water.

As the particle counts per amount of substance (mol) of a determinate substance (hydrogen) is constant under normal conditions, this is also valid for the sum of positively and negatively charged hydrogen parts: pH (positively charged) + pOH (negatively charged) = 14.

As a result, you have to know just one of the values – the pH value. If it is 7, also the pOH is 7, i.e. in sum the charges compensate each other.

pH Chart

acidic			neutral	alkaline		
4.0	5.0	6.0	7.0	8.0	9.0	10.0
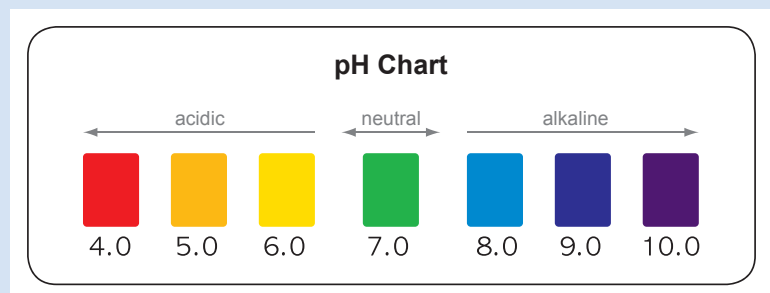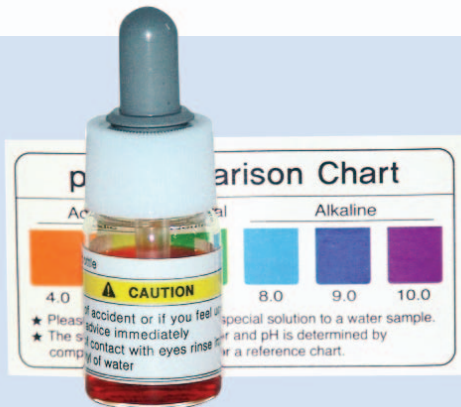
Acids are characterized by the fact that more positively charged hydrogen parts are dissolved in them, whereas in bases more negatively charged parts are dissolved. These charged hydrogen parts cause the chemical reaction of acids and bases.

As the pH value is a negative decimal logarithm, for instance an increase of the pH value from 8 to 9 means that the alkaline reactivity is increased by the factor 10.

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