JOKES

Words of wisdom the chemistry teacher had for his students.

"If you are not part of the solution, you're part of the precipitate."

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Soren Sorensen introduces the pH scale

Any chemistry laboratory is incomplete without the pH scale. A pH scale is very important and is required for almost every chemical procedure that is conducted. Let us now explore how this important thing came into being.

What is pH scale?

A pH scale helps in measuring how acidic or basic a substance is. The pH scale is logarithmic. The meaning of the "p" in "pH" is unknown. Some references indicate that it stands for "power" while some others refer to the German Potenz which means "power". Some others refer to the French puissance which again means "power". This meaning is based on the fact that the Carlsberg Laboratory was French-speaking. There are still others that refer to "potential".

According to the Carlsberg Foundation pH stands for "power of hydrogen". A common definition that is commonly used in schools is "percentage". Other suggestions that have surfaced over the years are that the "p" stands for the Latin terms pondus hydrogenii or potentia hydrogenii.

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It is also suggested that Sorensen used the letters "p" and "q" as they are commonly paired letters in mathematics and simply used to label the test solution as (p) and the reference solution as (q).

How was pH scale invented?

The concept of pH scale was first introduced by Danish chemist Soren Peder Lauritz Sorensen at the Carlsberg Laboratory in the year 1909. The scale was later revised to the modern pH in the year 1924 and later it became apparent that electromotive force in cells depends on activity rather than concentration of hydrogen ions.

Sorensen was born on January 9, 1868, at Havrebjerg, Slagelse, Denmark and belonged to a peasant family. He graduated from the high school in Soro slash in 1886 and entered the University of Copenhagen. In 1889 Sorensen proved his academic worth by winning a gold medal for an essay on chemical radicals. A second gold medal award was given to him in 1896 for his research into strontium compounds. It was during this period of study that Sorensen's interest was turning towards research in analytical chemistry. After receiving his Master of Science degree in 1891, he worked as an assistant at the chemistry laboratory of the Danish Polytechnic Institute and consulted for the Royal Naval Dock Yard. He also found time to assist on a geological survey of Denmark. In 1899 he received his doctorate in chemistry for his work on cobaltic oxalates. Throughout the period of study for his doctorate, Sorensen focused on inorganic chemistry and related questions. In 1901, however, his focus changed with an appointment to the directorship of the prestigious Carlsberg Laboratory in Copenhagen.

Soren Peder Lauritz Sorensen was working at the Carlsberg Laboratory and he studied the effect of ion concentration on proteins. He realized that the concentration of hydrogen ions was particularly important and hence he introduced the pH-scale. According to him, pH scale was a simple way of expressing it. He introduced the scale using the notation pH and described two new methods for measuring the levels of acids in substances. The first method was based on electrodes, while the second involved comparing the colours of the samples and a preselected set of indicators.

Till date, the pH scale has found an indispensable place in almost every chemistry laboratory and is the most important aspect of any chemical procedure.

Tags : pH scale Soren Peder Lauritz Sorensen

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