

If the water be pure, the concentrations of hydrogen and hydroxyl ions are necessarily the same, for water is electrically neutral. A variety of independent methods of estimation have shown that at 25° (centigrade) this concentration amounts almost precisely to 0.0000001N, in the ordinary units.¹ This corresponds to 0.0000001 gram of ionized hydrogen and 0.0000017 gram of ionized hydroxyl in 1000 grams of water. Further, the theory of solution explains acidity in water by the occurrence of hydrogen ions, formed from dissolved electrolytes, in excess of hydroxyl ions; and alkalinity by a similar excess of hydroxyl over hydrogen ions. Neutrality is then the condition when, as in pure water, the two concentrations are equal. In short, expressing the concentration of ionized

¹ Concentrations are expressed in terms of chemical equivalents, gram-molecules, or moles. *N* (normal) is the symbol for this unit. The values of the concentration of ionized hydrogen at neutrality as estimated by different investigators are as follows:—

6. $\times 10^{-7}$	Kohlrausch	1884
1.0 $\times 10^{-7}$	Ostwald	1893
1.1 $\times 10^{-7}$	Arrhenius, Shields	1893
1.2 $\times 10^{-7}$	Wijs	1893
0.9 $\times 10^{-7}$	Kanolt	1907
1.02 $\times 10^{-7}$	Heydweiller	1909
1.02 $\times 10^{-7}$	Lundén	1907