

## pH

**pH** range of numbers is expressing the relative acidity or alkalinity of a solution. In general, *pH* values range from 0 to 14. The *pH* of a neutral solution, i.e., one which is neither acidic nor alkaline, is 7. Acidic solutions have *pH* values below 7; alkaline, or basic, solutions have *pH* values above 7. A *pH* value provides a measure of the hydrogen ion concentration of a solution. In pure water the concentration of hydrogen ions is equal to 0.0000001, or  $10^{-7}$ , moles per liter. (A mole is the amount of a substance, expressed in grams, that is equal to the molecular weight, or formula weight, of the substance.) When an acid is added to pure water, the hydrogen ion concentration increases above this level. When an alkaline substance, or base, is added to pure water, the hydrogen ion concentration decreases below this level. Once the concentration is determined, the *pH* value is found by taking the exponent used in expressing this concentration and reversing its sign. This is expressed as  $pH = -\log_{10} [H^+]$ . For example, if the hydrogen ion concentration of a solution is  $10^{-4}$ , or 0.0001, moles per liter, the *pH* is 4..