**Normality**

**Normality in chemistry is one of the expressions used to measure the concentration of a solution.**

**It is abbreviated as ‘N’ and is sometimes referred to as the equivalent concentration of a solution.**

**It is mainly used as a measure of reactive species in a solution and during titration reactions or particularly in situations involving acid-base chemistry.**

**Normality = Number of gram equivalents/volume of solution in liters**

**Number of gram equivalents = weight of solute/Equivalent weight of solute**

**N = Molarity × Basicity = Molarity × Acidity**

**Normality = Molarity × Acidity**

**Normality = Molarity × Basicity**

**H2SO4=**

**H3PO4=**

**How to Calculate Normality?**

**There are certain tips that students can follow to calculate normality.**

**The first tip that students can follow is to gather information about the equivalent weight of the reacting substance or the solute. Look up the textbook or reference books to learn about the molecular weight and the valence.**

**The second step involves calculating the no. of gram equivalent of solute.**

**Students should remember that the volume is to be calculated in litres.**

**Finally, normality is calculated using the formula and replacing the values.**

Differences Between Normality and Molarity

Here are some key differences between normality and molarity.

|  |  |
| --- | --- |
| **Normality** | **Molarity** |
| Also known as equivalent concentration. | Known as molar concentration. |
| It is defined as the number of gram equivalent per litre of solution. | It is defined as the number of moles per litre of solution. |
| It is used in measuring the gram equivalent in relation to the total volume of the solution. | It is used in measuring the ratio between the number of moles in the total volume of the solution. |
| The units of normality are N or eq L-1 | The unit of molarity is M or Moles L-1 |

**Question 3. What is the normality of the following?**

**0.1381 M NaOH**

**0.0521 M H3PO4**

**Solution:**

**a. N = 0.1381 mol/L × (1 eq/1mol) = 0.1381 eq/L = 0.1381 N**

**b. N = 0.0521 mol/L × (3 eq/1mol) = 0.156 eq/L = 0.156 N**

[**https://physicscatalyst.com/chemistry/normality-formula.php**](https://physicscatalyst.com/chemistry/normality-formula.php)

**Standard solution /stock solution concentrated form**

**Working solution/dilute solution**

**C1V1=C2V2**

[**http://abacus.bates.edu/~ganderso/biology/resources/Calculating\_final\_concentrations\_2012.pdf**](http://abacus.bates.edu/~ganderso/biology/resources/Calculating_final_concentrations_2012.pdf)