**Percent solution**

**Molar Solution (M)= molarity is basically concentration of solution**

**1 Mole mass of substance is different from another**

 **NaOH**

**Na 23 g**

**O 16 g**

**H 1 g**

**1 mole of NaOH is equal to 23+16+1=40 g**

**40g NaOH will be dissolve in 1 liter solution it will be 1 molar**

**80g NaOH =2M**

**120 g NaOH=3M**

**NaCl ==23+35=58 g**

**1 mole of NaCl 58g**

**58g NaCl in one liter of water it will be 1 Molar NaCl**

**4 Molar Glucose**

**C6H12O6== 12(6)+12+16(6)= 72+12+96=180 g**

**180 g dissolve in 1 liter water it will be 1 Mol glucose**

**180x4=720 g will be dissolve in one liter water ===4M glucose solution**

**500 ml water 20 g NaOH== 1 molar NaOH**

**58 g NaCl dissolve 2 liter == 1/2 m**

**180g of glucose dissolve in 4 liter == 0.25 M**

**Percent solution**

**EXAMPLE**

What is the percent by mass of rubbing alcohol in a solution that contains 275 g of rubbing alcohol in 500 g of solution?

**Solution**

Percent by mass = mass of rubbing alcohol/mass of solution×100%=275g/500g × 100 % = 55.0 % (m/m)

**EXAMPLE**

What is the percent by volume in a solution that contains 350 mL of rubbing alcohol 500 mL of solution?

**Solution**

Percent by volume = volume of rubbing alcohol/volume of solution × 100 % = 350mL/500mL × 100 % = 70.0 % (v/v)

**Normality Formula**

Normality (N) = Numberofeq.gramvolumeofthesolutioninlitersNumberofeq.gramvolumeofthesolutioninliters

Where,

Number of gram equivalents = WeightofsoluteEquivalentweightofsoluteWeightofsoluteEquivalentweightofsolute

Thus,

N = WeightofSolute(gram)Equivalentweight×Volume(inliter)WeightofSolute(gram)Equivalentweight×Volume(inliter)

We can also calculate it using Molarity as:

N = Molarity×MolarmassEquivalentmassMolarity×MolarmassEquivalentmass

N = Molarity × Basicity = Molarity × Acidity