Concentration

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- The concentration of a chemical solution refers to the amount of solute that is dissolved in a solvent.
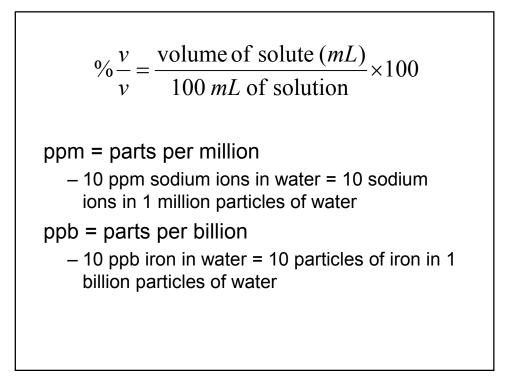
Representations of Concentration

$$\frac{g}{L} = \text{grams of solute in 1 L of solution}$$

$$\% \frac{w}{w} = \frac{\text{mass of solute } (g)}{100 g \text{ of solution}} \times 100$$

$$\% \frac{w}{v} = \frac{\text{mass of solute } (g)}{100 \ mL \text{ of solution}} \times 100$$

$$\% \frac{v}{v} = \frac{\text{volume of solute } (mL)}{100 \ mL \text{ of solution}} \times 100$$

ppm = parts per million
- – 10 ppm sodium ions in water = 10 sodium ions in 1 million particles of water

ppb = parts per billion
- – 10 ppb iron in water = 10 particles of iron in 1 billion particles of water

$$\text{Molarity } (M) = \frac{\text{moles of solute}}{\text{litres of solution}}$$

$$\text{Concentration} = \frac{\text{moles of solute}}{\text{litres of solution}}$$

$$\text{mole/L} = \frac{\text{moles of solute}}{\text{litres of solution}}$$