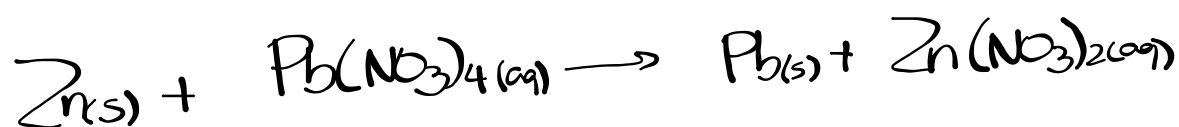


## Check Homework - Worksheet

$Zn^{2+}$        $Pb^{4+}$        $NO_3^-$   
 Zinc and lead(IV) nitrate



COMPLETE IONIC



SPECTATOR IONS



NET IONIC



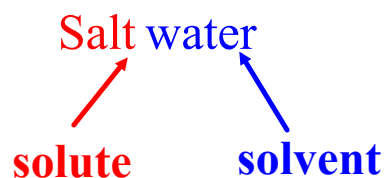
## Solutions

**Solution** - homogeneous (uniform) mixture of a solute and a solvent.

⇒ solute - substance dissolved

⇒ solvent - substance doing dissolving (liquid)

Ex.



## Concentration of a Solution

concentration - a numerical ratio comparing the quantity of solute to the quantity of solution.

molar concentration (molarity) - the amount of moles of solute dissolved in one litre of solvent

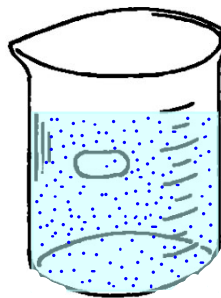
⇒ units: mol/L

dilute - a solution that has a small amount of solute as compared to the amount of solvent



dilution - process of adding more solvent to cause a solution to become more dilute

concentrated - a solution that has a large amount of solute as compared to the amount of solvent



Ex. An intravenous solution contains 0.90 g NaCl in 100.mL of solution. What is the molarity of this solution?

$$m = 0.90 \text{ g}$$

NaCl

$$V = 100. \text{ mL}$$

$$C = ?$$

$$C = \frac{n}{V}$$

$$0.90 \text{ g NaCl} \times \frac{1 \text{ mol NaCl}}{58.44 \text{ g NaCl}} = 0.0154 \text{ mol NaCl}$$

$$C = \frac{n}{V}$$

$$C = \frac{0.0154 \text{ mol}}{0.100 \text{ L}}$$

$$C = 0.15 \text{ mol/L}$$

Ex. What volume of solution is required to dissolve 1.75 mol to make a 0.95 mol/L solution of  $\text{CaCO}_3$  ?

$$V = ?$$

$$n = 1.75 \text{ mol}$$

$$C = 0.95 \text{ mol/L}$$

$$C = \frac{n}{V}$$

$$C \times V = n$$

$$V = \frac{n}{C}$$

$$V = \frac{1.75 \text{ mol}}{0.95 \text{ mol/L}}$$

$$V = 1.8 \text{ L}$$

# Practice Problems

## Worksheet