

5.2 Solution Concentration

diluted - small amount dissolved

Concentrated - lots dissolved

$$\text{Concentration} = \frac{\text{amount of solute}}{\text{amount of solution}}$$

substance being dissolved
solvent → substance being dissolved

mass/volume } mass

% mass/volume

moles/volume

equivalents/volume
↓
charge

} moles

$$m/v \times 100$$

mass/volume (m/v)

1,000,000

mass of solute per liter of blood

p. 155

$$\frac{137 \mu\text{g}}{\text{dL}} \times \frac{1 \text{ g}}{1 \times 10^6 \mu\text{g}} \times \frac{1 \text{ dL}}{100 \text{ mL}} = \frac{1.37 \times 10^{-6} \text{ g Fe}}{\text{mL}}$$

% mass/volume (%m/v) Intravenous (IV)

$$\frac{\text{mass solute}}{\text{volume solution}} \times 100$$

$$\rightarrow \frac{3}{4555}$$

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$$\frac{.15 \text{ g}}{275 \text{ mL}} \times 100 = .055 \%, \text{ NaCl}$$

$$\text{molarity} = \frac{\text{moles solute}}{\text{L of solution}}$$

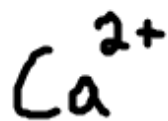
p. 158

$$M = \frac{.018 \text{ mol}}{1.5 \text{ L}} = .012 \text{ M CO}_2$$

equivalents/liter

p. 160

meq
↓
mL



eq = charge PO_4^{3-} (3)



$$2 \text{ meq} = 1 \text{ mmol}$$

$$\frac{9.3 \text{ mmol}}{\text{L}} \times \frac{2 \text{ meq}}{1 \text{ mmol}} = \frac{19 \text{ meq}}{\text{L}}$$

18.6

International Unit (IU)

vary for each substance

Dosage Calculations

Oral suspensions

$$250 \text{ mg} = 5 \text{ mL}$$

p. 161

$$(2) \quad 500 \text{ mg} \times \frac{5 \text{ mL}}{250 \text{ mg}} = 10 \text{ mL every 6 hrs}$$

IV Solutions (flow rate)

$$\frac{\text{mg}}{\text{min}}$$

$$25,000 \text{ units} = 250 \text{ mL}$$

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$$\frac{500 \text{ units}}{\text{hr}} \times \frac{250 \text{ mL}}{25,000 \text{ units}} = 5 \text{ mL/hr}$$

Quit []