

Practice Stoichiometry Part 1

$$1. \quad 8.22 \times 10^{24} \text{ atoms Li} \quad \times \quad \frac{1 \text{ mole Li}}{6.02 \times 10^{23}} \quad = \quad \mathbf{13.7 \text{ moles}}$$

$$2. \quad 120 \text{ g Na}_2\text{CrO}_4 \quad \times \quad \frac{1 \text{ mol Na}_2\text{CrO}_4}{161.97 \text{ g}} \quad \times \quad \frac{6.02 \times 10^{23} \text{ m/c}}{1 \text{ mole}} \quad \times$$

$$2 \text{ atoms Na} \quad = \quad \mathbf{8.9 \times 10^{23} \text{ atoms Na}}$$

$$1 \text{ m/c Na}_2\text{CrO}_4$$

$$3. \quad 325 \text{ g Mg(OH)}_2 \quad \times \quad \frac{1 \text{ mole Mg(OH)}_2}{58.32 \text{ grams}} \quad \times \quad \frac{6.02 \times 10^{23} \text{ m/c}}{1 \text{ mole}}$$

$$= \quad \mathbf{3.35 \times 10^{24} \text{ m/c Mg(OH)}_2}$$

$$4. \quad 44 \text{ g N}_2 \quad \times \quad \frac{1 \text{ mole N}_2}{28.0 \text{ grams}} \quad \times \quad \frac{22.4 \text{ L N}_2}{1 \text{ mole}}$$

$$= \quad \mathbf{35 \text{ L N}_2}$$

$$5. \quad 5.11 \text{ L CO}_2 \quad \times \quad \frac{1 \text{ mole CO}_2}{22.4 \text{ L}} \quad \times \quad \frac{6.02 \times 10^{23} \text{ m/c}}{1 \text{ mole}}$$

$$= \quad \mathbf{1.37 \times 10^{23} \text{ m/c CO}_2}$$

$$6. \quad 100 \text{ g Fe} \quad \times \quad \frac{1 \text{ mole Fe}}{55.8 \text{ grams}} \quad \times \quad \frac{6.02 \times 10^{23} \text{ atoms}}{1 \text{ mole Fe}}$$

$$= \quad \mathbf{1 \times 10^{24} \text{ atoms Fe}}$$

$$7. \quad 5.00 \times 10^{24} \text{ m/c O}_2 \quad \times \quad \frac{1 \text{ mole O}_2}{6.02 \times 10^{23} \text{ m/c O}_2} \quad \times \quad \frac{22.4 \text{ L O}_2}{1 \text{ mole O}_2}$$

$$= \quad \mathbf{186 \text{ L O}_2}$$

$$8. \quad 65.2\text{g NaC}_2\text{H}_3\text{O}_2 \quad \times \quad \frac{1 \text{ mole NaC}_2\text{H}_3\text{O}_2}{82.03 \text{ grams}} \quad = \mathbf{0.795 \text{ mol NaC}_2\text{H}_3\text{O}_2}$$

$$9. \quad 15.1 \text{ L F}_2 \quad \times \quad \frac{1 \text{ mole F}_2}{22.4 \text{ L}} \quad = \mathbf{0.674 \text{ mol F}_2}$$

$$10. \quad 2 \text{ mol S}_8 \quad \times \quad \frac{6.02 \times 10^{23} \text{ m/c S}_8}{1 \text{ mol S}_8} \quad \times \quad \frac{8 \text{ atoms S}}{1 \text{ m/c S}_8}$$

$$= \mathbf{10 \times 10^{24} \text{ atoms S}}$$