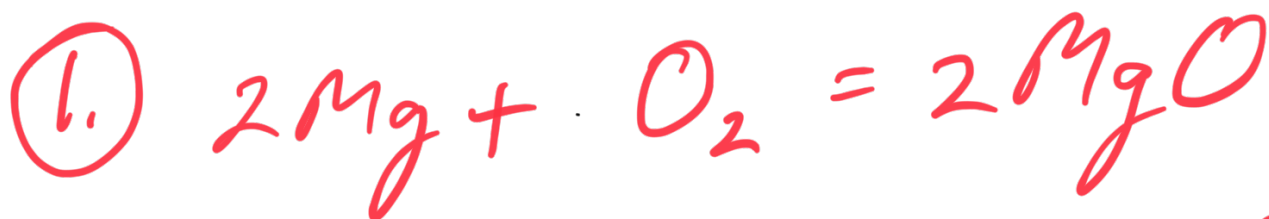


Stoichiometry Practice Key



$$\frac{0.150 \text{ g Mg}}{24.3 \text{ g/mol}} = 0.0309 \text{ mol Mg}$$

$$0.0309 \text{ mol Mg} \left(\frac{1 \text{ O}_2}{2 \text{ Mg}} \right) = 0.0154 \text{ mol O}_2$$

$$0.0154 \text{ mol O}_2 (32.0 \text{ g/mol}) = 0.494 \text{ g O}_2$$



$$\frac{2.00 \text{ g BaO}_2}{169.3 \text{ g/mol}} = 0.0118 \text{ mol BaO}_2$$

$$0.0118 \text{ mol BaO}_2 \left(\frac{1 \text{ H}_2\text{O}_2}{1 \text{ BaO}_2} \right) = 0.0118 \text{ mol H}_2\text{O}_2$$

$$0.0118 \text{ mol H}_2\text{O}_2 (34.0 \text{ g/mol}) = 0.402 \text{ g H}_2\text{O}_2$$



$$\frac{47.3 \text{ g O}_2}{32.0 \text{ g/mol}} = 1.48 \text{ mol O}_2$$

$$1.48 \text{ mol O}_2 \left(\frac{1 \text{ mol C}}{1 \text{ mol O}_2} \right) \left(\frac{12.0 \text{ g C}}{\text{mol}} \right) = 17.9 \text{ g C}$$



$$\frac{47.0 \text{ g H}_2}{2.00 \text{ g/mol}} = 23.5 \text{ mol H}_2$$

$$23.5 \text{ mol H}_2 \left(\frac{3 \text{ Fe}}{4 \text{ H}_2} \right) = 17.6 \text{ g Fe}$$

$$17.6 \text{ g Fe} (55.8 \text{ g/mol}) = 983 \text{ g Fe}$$



$$\frac{20 \text{ g Zn}}{65.4 \text{ g/mol}} = 0.31 \text{ mol Zn}$$

$$0.31 \text{ mol Zn} \left(\frac{1 \text{ Na}_2\text{ZnO}_2}{1 \text{ Zn}} \right) = 0.31 \text{ mol Na}_2\text{ZnO}_2$$

5 cont'd

$$\frac{20g NaOH}{40g/mol} = 0.50 mol NaOH$$

$$0.50 mol NaOH \left(\frac{1 Na_2ZnO_2}{2 NaOH} \right) = 0.25 mol Na_2ZnO_2$$

NaOH is limiting



$$\frac{50.0g Ca(OH)_2}{74.0g/mol} = 0.676 mol Ca(OH)_2$$

$$0.676 mol Ca(OH)_2 \left(\frac{2 H_2O}{1 Ca(OH)_2} \right) \left(\frac{18g}{mol} \right) = 24.3g H_2O$$



$$\frac{14.0g HCl}{36.5g/mol} = 0.384 mol HCl$$

$$0.384 mol HCl \left(\frac{2 Cl_2}{4 HCl} \right) \left(\frac{71.0g}{mol} \right) = 13.6g Cl_2$$

$$0.384 mol HCl \left(\frac{1 O_2}{4 HCl} \right) \left(\frac{32.0g}{mol} \right) = 3.07g O_2$$