

### Stoichiometry Practice

- $\text{Na}_2\text{SiO}_3(\text{s}) + 8 \text{HF}(\text{aq}) \rightarrow \text{H}_2\text{SiF}_6(\text{aq}) + 2 \text{NaF}(\text{aq}) + 3 \text{H}_2\text{O}(\text{l})$ 
  - How many moles of HF are needed to react with 0.300 mol of  $\text{Na}_2\text{SiO}_3$ ?
  - How many grams of NaF form when 0.500 mol of HF reacts with excess  $\text{Na}_2\text{SiO}_3$ ?
  - How many grams of  $\text{Na}_2\text{SiO}_3$  can react with 0.800 g of HF?
- $\text{C}_6\text{H}_{12}\text{O}_6(\text{aq}) \rightarrow 2 \text{C}_2\text{H}_5\text{OH}(\text{aq}) + 2 \text{CO}_2(\text{g})$ 
  - How many moles of  $\text{CO}_2$  are produced when 0.400 mol of  $\text{C}_6\text{H}_{12}\text{O}_6$  reacts in this fashion?
  - How many grams of  $\text{C}_6\text{H}_{12}\text{O}_6$  are needed to form 7.50 g of  $\text{C}_2\text{H}_5\text{OH}$ ?
  - How many Liters of  $\text{CO}_2$  form when 7.50 g of  $\text{C}_2\text{H}_5\text{OH}$  are produced?
- $\text{Fe}_2\text{O}_3(\text{s}) + 3 \text{CO}(\text{g}) \rightarrow 2 \text{Fe}(\text{s}) + 3 \text{CO}_2(\text{g})$ 
  - Calculate the number of grams of CO that can react with 0.150 kg of  $\text{Fe}_2\text{O}_3$
  - Calculate the number of liters of  $\text{CO}_2$  formed when 0.150 kg of  $\text{Fe}_2\text{O}_3$  reacts
- $2 \text{NaOH}(\text{s}) + \text{CO}_2(\text{g}) \rightarrow \text{Na}_2\text{CO}_3(\text{s}) + \text{H}_2\text{O}(\text{l})$ 
  - How many liters of  $\text{CO}_2$  are needed to completely react with 15.2 grams of NaOH
  - How many moles of  $\text{Na}_2\text{CO}_3$  can be produced from 1.85 moles of NaOH?
- $\text{C}_6\text{H}_6 + \text{Br}_2 \rightarrow \text{C}_6\text{H}_5\text{Br} + \text{HBr}$ 
  - How many grams of  $\text{C}_6\text{H}_6$  is needed in this reaction to produce 30.0 g of  $\text{C}_6\text{H}_5\text{Br}$ ?
  - How many liters of  $\text{Br}_2$  is needed to completely react and form 12.5 grams of HBr
- $4 \text{Si}_2\text{H}_3 + 17 \text{O}_2 \rightarrow 8 \text{SiO}_2 + 6 \text{H}_2\text{O}_3$ 
  - How many grams of Silicon dioxide will be formed if  $6 \times 10^{28}$  molecules of oxygen react completely?
  - How many moles of oxygen are equal to  $6.02 \times 10^{25}$  molecules of oxygen?