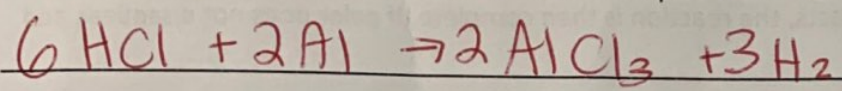


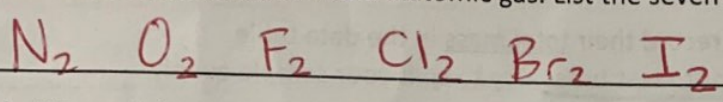
Conversion V Questions

1. The unreacted hydrochloric acid (HCl) from conversion IV was also reacting with the aluminum.
- Write out the balanced reaction of aluminum plus HCl. Predict the products and label the reaction type.



2. What were the fumes coming off of the mixture when it was reacting with the aluminum? (look at the balanced equation above) H₂ gas

3. The fumes from the reaction are a diatomic gas. List the seven diatomic gases. _____



4. Look at the activity series page 286. Describe the placement of aluminum to copper. What does that mean? **You will need to read page 285 and 286!!! (please read before you ask me questions!)**

SKIP

5. How is the aluminum able to replace the copper in this reaction? **You will need to read page 285 and 286!!!**

SKIP

6. List 4 ways to speed up a reaction:

add heat, add a catalyst

9. If you produced 2.5 moles of H₂ gas, what volume would the gas occupy if the room is 27°C and 1.0 atm? **Hint: Ideal Gas Law: PV = nRT (where R is 0.0820 (L•atm)/(K•mol). And temp. is in K.**

$$(1\text{atm})V = (2.5\text{moles})(0.08206)(300) \quad \boxed{V = 61.5\text{L}}$$

10. How would the volume of the gas be affected if the temperature of the room was 30°C instead of 27°C? (show work)

$$\frac{V_1}{T_1} = \frac{V_2}{T_2} \quad \frac{61.5\text{L}}{300\text{K}} = \frac{V_2}{303\text{K}} \quad \boxed{V_2 = 62.1\text{L}}$$

11. What volume would the gas from #10 occupy if the conditions were changed to 270°C and 1.0 atm? (use info. From #14 for P₁, V₁ & T₁) **Hint: use combined gas law and temp is in Kelvin.**

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2} \quad \frac{(1\text{atm})(62.1)}{303\text{K}} = \frac{(1\text{atm})V_2}{543\text{K}} \quad \boxed{V_2 = 111.3\text{L}}$$