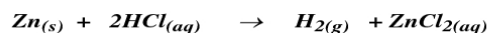


Chemistry 12  
Worksheet 1-1 - Measuring Reaction Rates

1. A chemist wishes to determine the rate of reaction of zinc with hydrochloric acid. The equation for the reaction is:



A piece of zinc is dropped into 1.00 L of 0.100 M HCl and the following data were obtained:

| Time | Mass of Zinc |
|------|--------------|
| 0 s  | 0.016 g      |
| 4 s  | 0.014 g      |
| 8 s  | 0.012 g      |
| 12 s | 0.010 g      |
| 16 s | 0.008 g      |
| 20 s | 0.006 g      |

- a) Calculate the **Rate of Reaction** in grams of Zn consumed per second.

Answer \_\_\_\_\_

- b) Calculate the **Rate of Reaction** in moles of Zn consumed per second.

Answer \_\_\_\_\_

- c) Write out the complete ionic equation for the reaction.

\_\_\_\_\_

- d) What will happen to the  $[\text{H}^+]$  as the reaction proceeds? \_\_\_\_\_

- e) What will happen to the  $[\text{Cl}^-]$  as the reaction proceeds? \_\_\_\_\_

2. When magnesium is reacted with dilute hydrochloric acid (HCl), a reaction occurs in which hydrogen gas and magnesium chloride is formed.

- a) Write a **balanced formula equation** for this reaction.

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