

Name

Date

Period

Grade:

# EXPERIMENT 39

## HYDROLYSIS OF A SALT

### PRELAB QUESTIONS:

1. Define the following terms:

hydrolysis

spectator ions

anions

salt

dissociate

cations

ionization

2. Fill in the preliminary data chart on the conclusions and questions page and predict pH calculations. For your predictions, use  $\text{pH} = 7$  for neutral,  $\text{pH} > 7$  (pH greater than 7) for basic,  $\text{pH} < 7$  (pH less than 7) for acidic.

strong acids:  $\text{HI}$ ,  $\text{HBr}$ ,  $\text{HCl}$ ,  $\text{HNO}_3$ ,  $\text{H}_2\text{SO}_4$

strong bases: Hydroxides composed of a hydroxide ion bonded to a group 1 or 2 element.

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Lab Partners

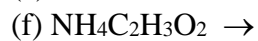
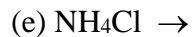
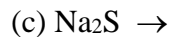
## EXPERIMENT 39 HYDROLYSIS OF A SALT

### PRELIMINARY DATA CHART

| # of Well | salt   | parent acid | Strength of acid | parent base | strength of base | pH |
|-----------|--|-------------|------------------|-------------|------------------|----|
| 1         | NaHCO <sub>3</sub>   |             |                  |             |                  |    |
| 2         | KBr  |             |                  |             |                  |    |
| 3         | Na <sub>2</sub> S  |             |                  |             |                  |    |
| 4         | Na <sub>2</sub> CO <sub>3</sub>                              |             |                  |             |                  |    |
| 5         | NH <sub>4</sub> Cl   |             |                  |             |                  |    |
| 6         | NH <sub>4</sub> C <sub>2</sub> H <sub>3</sub> O <sub>2</sub> |             |                  |             |                  |    |
| 7         | ZnSO <sub>4</sub>  |             |                  |             |                  |    |
| 8         | SrCl <sub>2</sub>  |             |                  |             |                  |    |

### EQUATIONS:

Complete the equations for the dissociation of each salt:



(g)  $\text{ZnSO}_4 \rightarrow$

(h)  $\text{SrCl}_2 \rightarrow$

**DATA TABLE AND OBSERVATIONS:**

| # of well | salt  | effect on indicator | pH |
|-----------|---|---------------------|----|
| 1         | $\text{NaHCO}_3$                            |                     |    |
| 2         | $\text{KBr}$                                |                     |    |
| 3         | $\text{Na}_2\text{S}$                       |                     |    |
| 4         | $\text{Na}_2\text{CO}_3$                    |                     |    |
| 5         | $\text{NH}_4\text{Cl}$                      |                     |    |
| 6         | $\text{NH}_4\text{C}_2\text{H}_3\text{O}_2$ |                     |    |
| 7         | $\text{ZnSO}_4$                             |                     |    |
| 8         | $\text{SrCl}_2$                             |                     |    |

**CONCLUSION QUESTIONS:**

1. How do your observations and pH readings compare with your predictions in the Preliminary Data Chart?
2. A salt formed from a strong acid and a strong base produces a neutral solution. A salt of a weak acid and a weak base may or may not produce a neutral solution. Explain.

**Discussion**

**Conclusion**