Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Mild Neutralization Reaction**

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| --- | --- |
| A ***neutralization*** reaction occurs when an acid reacts with a base.  Example: hydrochloric acid reacts with sodium hydroxide to produce water and sodium chloride. It is a specific type of double replacement reaction.  HCl(aq) + NaOH(aq) 🡪 H2O(l) + NaCl(aq)  This reaction is an example of a double replacement. In this reaction two products are always produced. One is water, H2O. The other is a salt, which is an ionic compound formed. Remember, acids can be found on Table K and bases on Table L.  Every neutralization reaction always produced two products. One is **water**, H2O. The other is a **salt**. A salt is an **ionic compound** formed in a neutralization reaction. NaCl, sodium chloride is the most common salt that we eat, so we call it table salt.  An acid has a pH below 7 and a base has one above 7. A neutralization reaction always brings the pH closer to 7. | 1. What type of chemical reaction is neutralization?  2. Neutralization reactions always produce which two products?  3. What pH do neutralization reactions bring the solution closer to? |

**Neutralization in words:**

* An Acid and Base **Always** yields: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Neutralization in chemical formulas: Fill in the following with the general terms for the products**

* HCl(aq) + NaOH 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

After **neutralization**, the pH is always closer to**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Practice Writing Chemical Reactions:

1) In the reaction below, Which substance is the acid? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the base? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* HCl(aq) + NaOH 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) What is one substance that they will form? Write the chemical formula for one of the products, cross off the components of the reactants that you to form this product.

3) What reactants remain? What salt could you make with these components?

Metal: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Non-Metal: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ionic Compound: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Practice again: \_\_\_ HI + \_\_\_ KOH 🡪 \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_