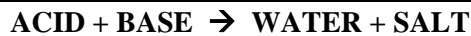


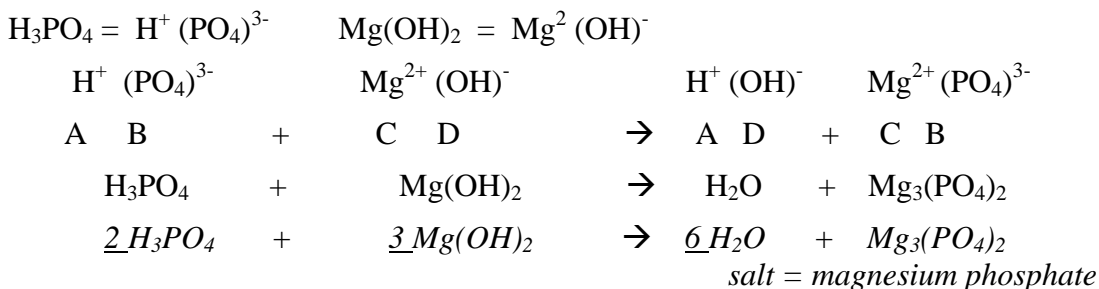
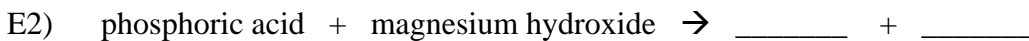
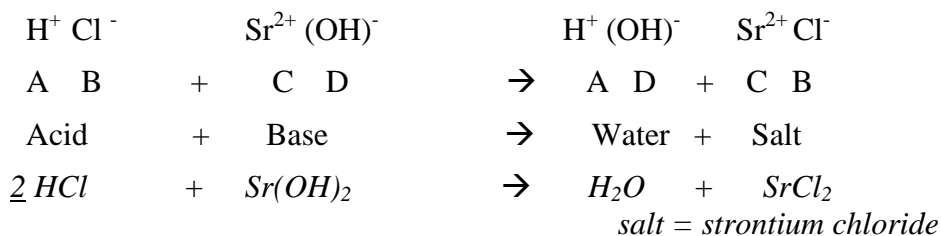
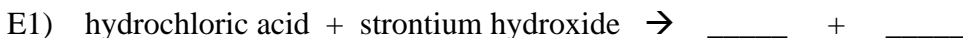
Chem Ch. 15 Overview: NEUTRALIZATION—ACIDS & BASES REACT

NOTE: Vocabulary terms are in **boldface and underlined**. Supporting details are in *italics*.

I. Neutralization reactions

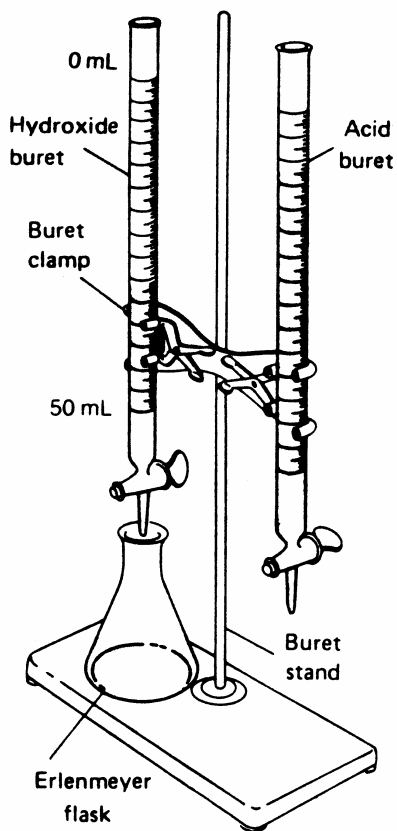


- A. **neutralization**—when acid and base “cancel each other out”
 B. net ionic equation: $\mathbf{H^+ + OH^- \rightarrow H_2O}$
 C. common acids
 1) *hydrochloric acid = HCl*
 2) *acetic acid = HC₂H₃O₂ or CH₃COOH*
 3) *nitric acid = HNO₃*
 4) *sulfuric acid = H₂SO₄*
 5) *phosphoric acid = H₃PO₄*
 6) *carbonic acid = H₂CO₃*
 D. classic *double displacement reactions* **AB + CD → AD + CB**
 1) You will have to write and balance these double displacement reactions.
 2) If the formula is not provided, you must “crisscross” to get it.
 3) Remember, to get the products, you must “un-crisscross” and “re-crisscross” the reactant ions.
 4) If you have trouble balancing, keep water as H(OH) to make it easier.
 5) Practice naming the salt that is formed.



- II. Titration
- A. **titration**—adding a specific amount of a solution of known concentration to a solution of unknown concentration, to calculate the molarity (M) of the unknown solution
 - B. *standard solution*—the solution of known concentration
 - C. End point of the titration: when $[H^+] = [OH^-]$
 - D. **indicators**
 - 1) a *dye* which is a different color in an acid vs. a base
 - 2) phenolphthalein (PHTH) = clear in acid, “funky fuchsia” in base

TITRATION LAB SETUP



WIDE RANGE pH PAPER

