

Unit 5: Ch 10 – Types of Chemical Reactions & Predicting Products

TYPES OF CHEMICAL REACTIONS:

➤ 1. SYNTHESIS →

- **Product:** Binary _____ ; _____ or _____
- **Expression:** _____
 - Ex #1) SIMPLE (1a): _____ Mg + _____ O₂ →
 - Ex #2) COMPLEX (1b): _____ MgO + _____ H₂O →

➤ 2. DECOMPOSITION →

- **Products:** Two _____ or two _____
- **Expression:** _____
 - Ex #1) SIMPLE (2a): _____ HgO →
 - Ex #2) COMPLEX (2b): _____ CaCO₃ →

➤ 3. SINGLE REPLACEMENT →

- **Products:** One _____ **AND** one _____
- **Expression:** _____ OR _____
- What _____ replace versus what _____ replaced:
 - Determined by the _____ chart.
 - _____ used with _____ reactions.
 - _____ element will *replace* any metal _____ it on the activity series.
 - _____ on activity series list = _____ reactivity.

▪ **SINGLE REPLACEMENT EXAMPLES:**

- Ex #1) SIMPLE (3a): $\text{___ Zn} + \text{___ AgNO}_3 \rightarrow$
- Ex #2) COMPLEX (3b): $\text{___ Al} + \text{___ H}_2\text{O} \rightarrow$
- Ex #3) SPECIAL CASE: $\text{___ Br}_2 + \text{___ NaCl} \rightarrow$

➤ **4. DOUBLE REPLACEMENT** →

- **Products:** Two _____
- **Expression:** _____
 - Ex #1) SIMPLE (4a): $\text{___ Na}_2\text{S} + \text{___ Cd(NO}_3)_2 \rightarrow$
 - Ex #2) SPECIAL CASE (4b) : Acid/Base Neutralization Reaction
 - $\text{___ HCl} + \text{___ Ca(OH)}_2 \rightarrow$

➤ **5. COMBUSTION** →

- **Products:** _____
 - Ex #1) $\text{___ CH}_4 + \text{___ O}_2 \rightarrow$
 - Ex #2) $\text{___ CH}_2\text{O} + \text{___ O}_2 \rightarrow$