*1. Classify each reaction as synthesis (S), decomposition (D), single displacement (SD), double displacement (DD) or combustion (C).*

*2. The equations are* ***not*** *balanced – SO BE SURE TO BALANCE THEM, TOO!!!*

*3. If single displacement, check the activity series to be sure that a reaction actually does occur. If not, then write NR for no reaction.*

*4. If double displacement, use the solubility rules to predict the phase of the products. Write the phase of each product in parentheses after the formula.*

**1. \_\_\_\_PbCl2(aq) + \_\_\_\_ AgNO3(aq) \_\_\_\_ Pb(NO3)2 + \_\_\_\_ AgCl**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2. \_\_\_\_NH3(g) + \_\_\_\_HCl(aq)  \_\_\_\_NH4Cl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3. \_\_\_\_AlCl3(aq)  + \_\_\_\_Na2SO4(aq)  \_\_\_\_Al­2(SO4)3 + \_\_\_\_ NaCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**­­­­4. \_\_\_\_Zn(s) + \_\_\_\_ S(s) \_\_\_\_ZnS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**5. \_\_\_\_Al2(SO4)3 (aq) + \_\_\_\_ BaCl2(aq) \_\_\_\_BaSO4 + \_\_\_\_ AlCl3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**6. \_\_\_\_Al2S3(s) \_\_\_\_Al + \_\_\_\_ S \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**7. \_\_\_\_H2SO4(aq)+ \_\_\_\_Fe(s) \_\_\_\_H2 + \_\_\_\_ FeSO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**8. \_\_\_\_C12H22O11(s) + \_\_\_\_O2(g) \_\_\_\_CO2 + \_\_\_\_ H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**9. \_\_\_\_ Mg(OH)2(s) + \_\_\_\_ H2SO4(aq) \_\_\_\_ MgSO4  + \_\_\_\_ H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**­­­10. \_\_\_\_NaOH(aq) + \_\_\_\_ CuSO4(aq) \_\_\_\_Na2SO4 + \_\_\_ Cu(OH)2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**11. \_\_\_\_C4H12(g) + \_\_\_ O2(g)  \_\_\_\_H2O + \_\_\_\_ CO2  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**12. \_\_\_\_Fe(s) + \_\_\_\_O2(g) \_\_\_\_Fe2O3  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**13. \_\_\_\_MgCl2(aq) + \_\_\_\_ H2(g) \_\_\_\_Mg + \_\_\_\_HCl \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**14. \_\_\_\_ NH4NO3(aq) \_\_\_\_ N2O + \_\_\_\_ H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**15. \_\_\_\_Cl2(g) + \_\_\_\_KBr(s) \_\_\_\_KCl + \_\_\_\_Br2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**16. \_\_\_\_HCl(aq) + \_\_\_\_NaOH(aq) \_\_\_\_NaCl + \_\_\_\_H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**17. \_\_\_\_Cu(s) + AgNO3(aq) \_\_\_\_Ag + Cu(NO3)2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**18. \_\_\_\_CaCO3(s) \_\_\_\_\_CaO + \_\_\_\_\_ CO2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**19. \_\_\_\_N2(g) + \_\_\_\_H2(g) \_\_\_\_\_NH3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**20. \_\_\_\_\_Mg(ClO3)2(s) \_\_\_\_MgCl2 + \_\_\_\_O2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**