**Chemistry: *Chemical Word Equations* KEY**

*Directions: Write a balanced chemical equation for each of the word equations below.*

1. aqueous sodium chloride reacts with aqueous lead (II) nitrate to yield a lead (II) chloride precipitate and aqueous sodium nitrate

sodium chloride + lead (II) nitrate lead (II) chloride + sodium nitrate

NaCl + Pb(NO3)2 PbCl2 + NaNO3

2 NaCl (aq) + Pb(NO3)2 (aq)PbCl2 (ppt) + 2 NaNO3 (aq)

2. aqueous barium nitrate reacts with sulfuric acid [H2SO4(aq)] to yield a barium sulfate precipitate and nitric acid [HNO3(aq)]

barium nitrate + sulfuric acid barium sulfate + nitric acid

Ba(NO3)2  + H2SO4 BaSO4  + HNO3

Ba(NO3)2 (aq) + H2SO4(aq) BaSO4 (ppt) + 2 HNO3 (aq)

3. silver nitrate reacts in solution with potassium chromate to yield a silver chromate precipitate and soluble potassium nitrate

silver nitrate + potassium chromate silver chromate + potassium nitrate

2 AgNO3 (s) + K2CrO4(aq) Ag2CrO4 (ppt) + 2 KNO3 (aq)

4. solid calcium carbonate reacts with hydrochloric acid [HCl(aq)] to yield aqueous calcium chloride, carbon dioxide gas, and liquid water

calcium carbonate + hydrochloric acid calcium chloride + carbon dioxide + water

CaCO3 (aq) + 2 HCl(aq) CaCl2 (aq) + H2CO3 (aq)

CO2 (g) + H2O(l)

5. aqueous zinc chloride reacts with dihydrogen monosulfide gas to yield a zinc sulfide precipitate and hydrochloric acid

zinc chloride + dihydrogen monosulfide zinc sulfide + hydrochloric acid

ZnCl2 (aq) + H2S(g) ZnS(ppt) + 2 HCl (aq)

6. magnesium nitrate reacts in solution with potassium hydroxide to yield a magnesium hydroxide precipitate and soluble potassium nitrate

magnesium nitrate + potassium hydroxide magnesium hydroxide + potassium nitrate

Mg(NO3)2 (s) + 2 KOH (aq) Mg(OH)2 (ppt) + 2 KNO3 (aq)

7. solid aluminum hydroxide reacts with nitric acid to yield soluble aluminum nitrate and liquid water

aluminum hydroxide + nitric acid aluminum nitrate + water

Al(OH)3 (s) + 3 HNO3 (aq) Al(NO3)3 (aq) + 3 H2O (l)

8. aqueous lead (IV) nitrate reacts with aqueous sodium sulfate to yield a lead (IV) sulfate precipitate and soluble sodium nitrate

lead (IV) nitrate + sodium sulfate lead(IV) sulfate + sodium nitrate

Pb(NO3)4 (aq) + 2 Na2SO4 (aq) Pb(SO4)2 (ppt) + 4 NaNO3 (aq)

9. aqueous sodium hydroxide reacts with carbon dioxide gas to yield soluble sodium carbonate and liquid water

sodium hydroxide + carbon dioxide sodium carbonate + water

2 NaOH(aq) + CO2 (g) Na2CO3 (aq) + H2O (l)

10. solid magnesium oxide reacts with hydrochloric acid to yield a solution of magnesium chloride and liquid water

magnesium oxide + hydrochloric acid magnesium chloride + water

MgO(s) + 2 HCl(aq) MgCl2 (aq) + H2O (l)

11. solid zinc metal reacts with sulfuric acid to yield aqueous zinc sulfate and hydrogen gas

zinc + sulfuric acid zinc sulfate + hydrogen

Zn(s) + H2SO4 (aq) ZnSO4 (aq) + H2 (g)

12. solid ferric oxide reacts with solid aluminum metal to yield solid aluminum oxide and solid iron metal

ferric oxide + aluminum aluminum oxide + iron

Fe2O3 (s) + 2 Al(s) Al2O3 (s) + 2 Fe (s)