Warm Up

Ca^{2+} Br^- Ag^+

$CaBr_{2(aq)} + 2Ag_{(s)} \longrightarrow Ca_{(s)} + 2AgBr_{(s)}$

metal

Al^{3+} Pb^{2+} NO_3^-

$2Al_{(s)} + 3Pb(NO_3)_{2(aq)} \longrightarrow 3Pb_{(s)} + 2Al(NO_3)_{3(aq)}$

metal

Chemical Reactions

V. Double Replacement Reaction

Reaction that occurs between two ionic compounds in solution. Ions will "change partners".

⇒if one of the products has low solubility, it may form a precipitate (solid). This double replacement reaction is called **precipitation**.

Ca^{2+} Cl^- Na^+ CO_3^{2-}

$CaCl_{2(aq)} + Na_2CO_{3(aq)} \longrightarrow CaCO_{3(s)} + 2NaCl_{(aq)}$

compound + compound ⟶ compound + compound

A second type of double replacement reaction is a **neutralization** reaction, which is a reaction between an acid and a base, to form water and an ionic compound.

H^+ Cl^- K^+ OH^-

$HCl_{(aq)} + KOH_{(aq)} \longrightarrow HOH_{(l)} + KCl_{(aq)}$

acid **base** **water** **ionic compound**

Practice Problems

Ba^{2+} Cl^- Na^+ SO_4^{2-}

$$BaCl_{2(aq)} + Na_2SO_{4(aq)} \rightarrow BaSO_{4(s)} + 2NaCl_{(aq)}$$

Na^+ OH^- Fe^{3+} Br^-

$$3NaOH_{(aq)} + FeBr_{3(aq)} \rightarrow 3NaBr_{(aq)} + Fe(OH)_{3(s)}$$

$$KI_{(aq)} + Pb(NO_3)_{2(aq)} \rightarrow$$

Worksheet