Key

Equations Practice

Write net ionic equations for each of the following. Each of the reactions occurs in aqueous solution unless otherwise indicated. Represent substances in solution as ions if the substance is extensively ionized. Omit formulas for any ions or molecules that are unchanged by the reaction. In all cases a reaction occurs. Balance all equations.

1. Solid magnesium oxide is added to distilled water.

$MgO + H_2O \rightarrow Mg(OH)_2$ (weak base stays together ☺)

2. Solid potassium hydride is added to distilled water.

$2\,KH + 2H_2O \rightarrow 2K^+ + 2OH^- + H_2$

3. Solutions of silver nitrate and sodium phosphate are mixed.

$3\,Ag^+ + PO_4^{3-} \rightarrow Ag_3PO_4$

4. Solid potassium hydrogen carbonate is added to aqueous hydrochloric acid.

$2\,KHCO_3 + H^+ \rightarrow CO_2 + H_2O + 2K^+$

5. Dilute sulfuric acid is added to a solution of barium chloride.

$SO_4^{2-} + Ba^{2+} \rightarrow BaSO_4$

6. Solid lithium chlorate is heated.

$2\,LiClO_3 \rightarrow 2\,LiCl + 3O_2$

7. Solid potassium dichromate is added to an aqueous solution of lead(II) nitrate.

$Cr_2O_7^{2-} + Pb^{2+} \rightarrow PbCr_2O_7$

8. Hydrogen sulfide gas is bubbled through a solution of cadmium nitrate.

$H_2S + Cd^{2+} \rightarrow CdS + 2H^+$ (NO_3^- is a spectator)

9. Solid ammonium acetate is added to a solution of sodium hydroxide.

$NH_4C_2H_3O_2 + OH^- \rightarrow NH_3 + H_2O + C_2H_3O_2^-$ (NH_4OH decomposes!)

10. Sulfur trioxide gas is bubbled through a concentrated solution of sodium hydroxide.

$SO_3 + 2OH^- \rightarrow SO_4^{2-} + H_2O$ (H_2SO_4 via sponge) (Na^+ is a spectator)

11. A small piece of potassium metal is added to distilled water.

$2\,K + 2HOH \rightarrow 2K^+ + 2OH^- + H_2$