

Problem Set 7: Writing Balanced Chemical Equations

1. Write balanced equations to represent the following reactions.
 - a. Aqueous barium chloride and aqueous aluminum sulfate react to form solid barium sulfate and aqueous aluminum chloride.
 - b. Magnesium metal reacts with hydrochloric acid to form aqueous magnesium chloride and hydrogen gas.
 - c. Aqueous sodium hydroxide reacts with nitric acid to form aqueous sodium nitrate and water.
 - d. Methane gas (CH_4) combines with oxygen to form carbon dioxide gas and water vapor.
 - e. Magnesium metal burns in air and combines with oxygen gas to form solid magnesium oxide.
 - f. Aqueous calcium hydroxide reacts with hydrochloric acid to form aqueous calcium chloride and water.
 - g. Butane gas (C_4H_{10}) combines with oxygen to form carbon dioxide and water vapor.