

Worksheet 1: Synthesis, Decomposition & Combustion

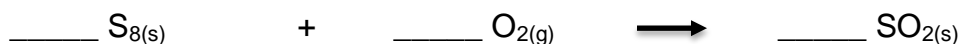
Synthesis: Elements combine to form one compound OR compounds combine to form one large compound.

Decomposition: One compound breaks apart to form elements or smaller compounds.

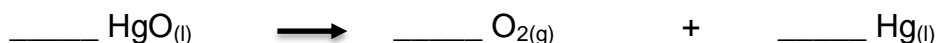
Combustion : A compound "burns" in a reaction with oxygen.

Balance the reactions and state the type of reaction described.

_____ 1. The first step in the production of sulfuric acid is to burn sulfur.



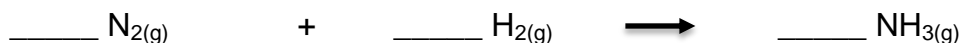
_____ 2. In 1774 Joseph Priestly discovered oxygen by decomposing the oxide of mercury.



_____ 3. Molten table salt is industrially decomposed to produce molten sodium.



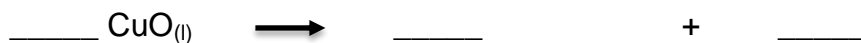
_____ 4. Nitrogen from the air reacts with hydrogen to produce ammonia fertilizer.



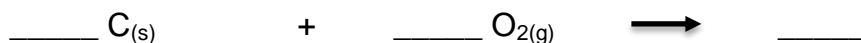
_____ 5. The main engine on the space shuttle is a rocket that burns hydrogen.



_____ 6. Copper ore is decomposed to remove the copper metal.



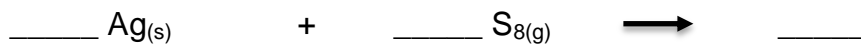
_____ 7. Barbecue charcoal undergoes incomplete combustion that produces deadly carbon monoxide.



_____ 8. Freshly cut lithium reacts with nitrogen from the air.



_____ 9. A silver spoon or coin tarnishes when exposed to sulphur.



_____ 10. Molten lye (sodium hydroxide) is decomposed industrially into sodium oxide and water.



_____ 11. Aluminum dust burns explosively with oxygen to make aluminum oxide.



Worksheet 2: Single and Double Displacement

Balance the reactions and state the type of reaction described.

_____ 1. Sodium metal reacts vigorously with water giving off a gas.



_____ 2. Hydrogen chloride gas is commercially made by reacting table salt with sulfuric acid.



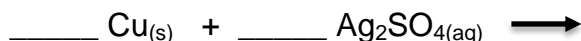
_____ 3. Molten iron produced by the highly exothermic thermite reaction was used to weld railroad rails.



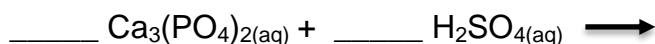
_____ 4. Aluminum was first produced by Hans Oersted in 1825 by this reaction.



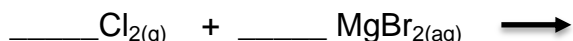
_____ 5. Silver ore can be converted to silver sulfate and then reacted with copper to make silver.



_____ 6. Phosphoric acid is produced by reacting sulfuric acid with bone ash or rock phosphate.



_____ 7. Bromine is commercially produced from magnesium bromide found in sea water.



_____ 8. Hydrogen sulfide (sour gas) found in Alberta's natural gas will react with lead(II) chromate.



_____ 9. Hydrogen sulfide (sour gas) will react with silverware and silver ornaments.



_____ 10. Sodium phosphate will form a precipitate when it reacts with calcium nitrate.



_____ 11. When aluminum reacts with copper(II) sulfate, copper metal forms as one of the products.

