

Worksheet 1: Synthesis, Decomposition & Combustion

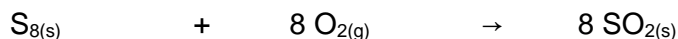
Synthesis: Elements combine to form one compound OR compounds combine to form one large compound.

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.

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



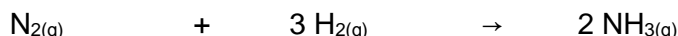
Decomposition 2. In 1774 Joseph Priestly discovered oxygen by decomposing the calx of mercury.



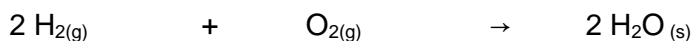
Decomposition 3. Molten table salt is industrially decomposed to produce molten sodium.



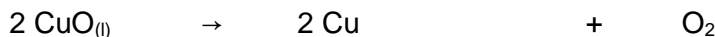
Synthesis 4. Nitrogen from the air reacts with hydrogen to produce ammonia fertilizer.



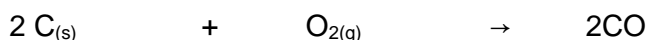
Combustion 5. The main engine on the space shuttle is a rocket that burns hydrogen.



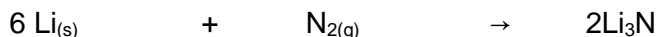
Decomposition 6. Copper ore is decomposed to remove the copper metal.



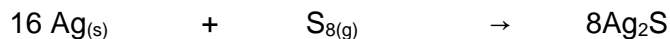
Combustion 7. Barbecue charcoal undergoes incomplete combustion that produces deadly carbon monoxide.



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



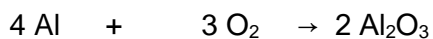
Synthesis 9. A silver spoon or coin tarnishes when exposed to sulphur.



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



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

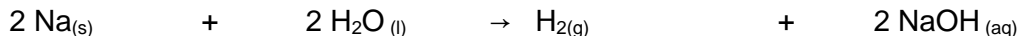


Worksheet 2: Single and Double Displacement

Balance the reactions and state the type of reaction described.

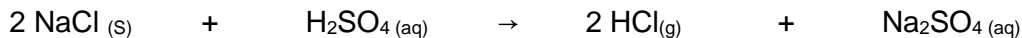
Single

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



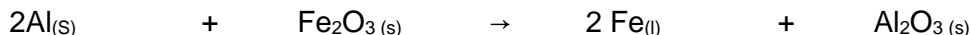
Double

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



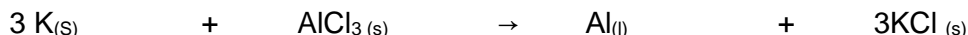
Single

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



Single

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



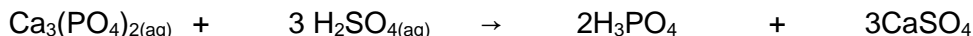
Single

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



Double

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



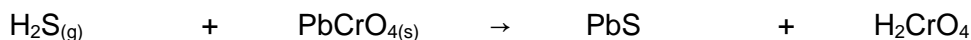
Single

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



Double

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



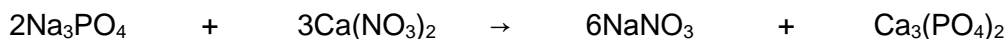
Single

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



Double

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



Single

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

