

Worksheet (ANSWERS): Predicting the Products of Chemical Reactions

Predict the products if the following reactions (if they occur). Write balanced equations including state AND state the type of reaction in each case.

1. When Calcium metal is left exposed to the air, it reacts with oxygen gas. (**synthesis**)



2. Potassium carbonate salt is decomposed. (**decomposition**)



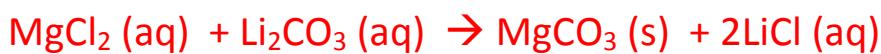
3. Aqueous solutions of copper (II) nitrate and sodium sulphate are mixed together. (**NO RXN**)



4. Aluminum metal is placed in an aqueous solution of stannous chloride. (**single displacement**)



5. Solutions of magnesium chloride and lithium carbonate are combined. (**double displacement**)



6. A butane (C_4H_{10}) lighter is lit. (**combustion**)



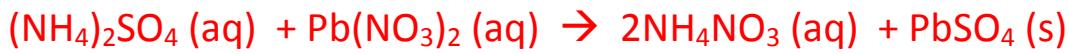
7. Iron (III) nitrate nonahydrate is decomposed under a Bunsen burner flame. (**combustion**)



8. Aluminum carbonate is decomposed. (**decomposition**)



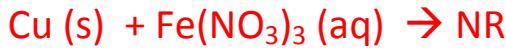
9. Aqueous solutions of ammonium sulphate and plumbous nitrate are combined. (**double displacement**)



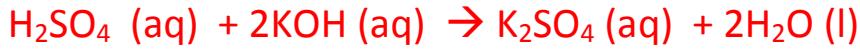
10. Sodium metal is reacted with chlorine gas. (**synthesis**)



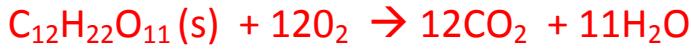
11. Copper wire is placed into an aqueous solution of ferric nitrate. (**single displacement, NR**)



12. A sulphuric acid solution is neutralized by adding an aqueous solution of potassium hydroxide.



13. Sucrose ($\text{C}_{12}\text{H}_{22}\text{O}_{11}$) is burned and undergoes ~~X~~ **complete** combustion.



14. A piece of magnesium ribbon is placed into weak hydrochloric acid. (**single displacement**)



15. Solutions of silver nitrate and sodium sulphate are mixed together. (double displacement)



16. Solid iron is reacted with gaseous oxygen at a high temperature. (synthesis)



17. A piece of tin metal is placed into a solution of lead (II) nitrate. (single displacement)



18. Sodium metal is added to water. (single displacement)



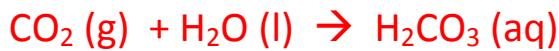
19. Copper (II) sulphate pentahydrate is heated. (decomposition)



20. Calcium nitrate is decomposed. (decomposition)



21. Carbon dioxide gas is bubbled through water. (synthesis)



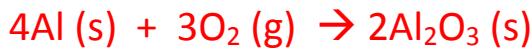
22. Propane (C_3H_8) is burned in a barbecue. (complete combustion)



23. Cuprous nitrate is decomposed. (decomposition)



24. Aluminum metal rusts (reacts with oxygen) when heated. (synthesis)



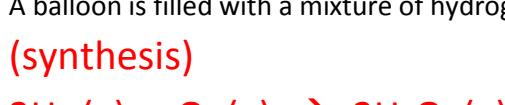
25. Barium Chloride dihydrate is decomposed. (decomposition)



26. Phosphoric acid (aq) is added drop-by-drop to an aqueous solution of magnesium hydroxide. (double displacement/neutralization)



27. A balloon is filled with a mixture of hydrogen gas and oxygen gas and a flame is brought near. (synthesis)



28. Calcium iodide is reacted with chlorine gas. (single displacement)

