

37. Carbon dioxide gas is bubbled through water containing a suspension of calcium carbonate.
38. Excess concentrated sulfuric acid is added to solid calcium phosphate.
39. Hydrogen sulfide gas is bubbled into a solution of mercury(II) chloride.
40. Solutions of zinc sulfate and sodium phosphate are mixed.
41. Solutions of silver nitrate and lithium bromide are mixed.
42. Solutions of manganese(II) sulfate and ammonium sulfide are mixed.
43. Excess hydrochloric acid solution is added to a solution of potassium sulfite.

Single Replacement

1. A piece of aluminum metal is added to a solution of silver nitrate.



2. Aluminum metal is added to a solution of copper(II) chloride.



3. Hydrogen gas is passed over hot copper(II) oxide.



4. Small chunks of solid sodium are added to water.



5. Calcium metal is added to a dilute solution of hydrochloric acid.



6. Magnesium turnings are added to a solution of iron(III) chloride.



7. Chlorine gas is bubbled into a solution of sodium bromide.



8. A strip of magnesium is added to a solution of silver nitrate.



9. Solid calcium is added to warm water.



10. Liquid bromine is added to a solution of potassium iodide.



11. Chlorine gas is bubbled into a solution of potassium iodide.



12. Lead foil is immersed in silver nitrate solution.



13. Solid zinc strips are added to a solution of copper(II) sulfate.



14. Sodium metal is added to water.



15. A bar of zinc metal is immersed in a solution of copper(II) sulfate.



16. A small piece of sodium metal is added to distilled water.



4. A piece of solid bismuth is heated strongly in oxygen.
5. Solid zinc sulfide is heated in an excess of oxygen.
6. Propanol is burned completely in air.
7. Excess oxygen gas is mixed with ammonia gas in the presence of platinum.
8. Gaseous silane, SiH_4 , is burned in oxygen.
9. Ethanol is completely burned in air.
10. Solid copper(II) sulfide is heated strongly in oxygen gas.
11. Ethanol is burned in oxygen.
12. Carbon disulfide vapor is burned in excess oxygen.

Redox

1. Iron(III) ions are reduced by iodide ions.



2. Potassium permanganate solution is added to concentrated hydrochloric acid.



3. Magnesium metal is added to dilute nitric acid, giving as one of the products a compound in which the

oxidation number for nitrogen is -3.

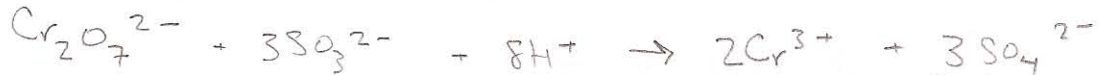


*4. A solution of potassium iodide is electrolyzed.

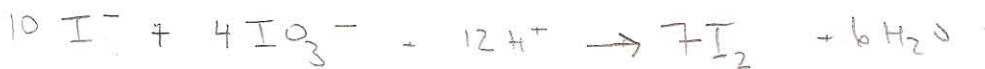


WILL LEARN
WHEN WE DO
ELECTROCHEM

5. Potassium dichromate solution is added to an acidified solution of sodium sulfite.



6. Solutions of potassium iodide, potassium iodate, and dilute sulfuric acid are mixed.



7. A solution of tin(II) sulfate is added to a solution of iron(III) sulfate.



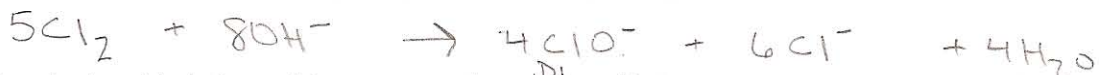
8. Metallic copper is heated with concentrated sulfuric acid.



9. Manganese(IV) oxide is added to warm, concentrated hydrobromic acid.



10. Chlorine gas is bubbled into cold dilute sodium hydroxide.

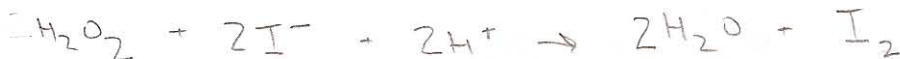


11. Solid iron(III) oxide is heated in excess carbon monoxide.



Synthesis NOT
Reaction

12. Hydrogen peroxide solution is added to acidified potassium iodide solution.



13. Hydrogen peroxide is added to an acidified solution of potassium dichromate.



14. Sulfur dioxide gas is bubbled through an acidified solution of potassium permanganate.



15. A solution containing tin(II) ions is added to an acidified solution of potassium dichromate.



16. Solid silver sulfide is warmed with dilute nitric acid.



17. A dilute solution of sulfuric acid is electrolyzed between platinum electrodes.

18. Pellets of lead are dropped into hot sulfuric acid.



19. Potassium permanganate solution is added to a solution of oxalic acid, $\text{H}_2\text{C}_2\text{O}_4$, acidified with a few drops

of sulfuric acid.

$$2\text{MnO}_4^- + 5\text{H}_2\text{C}_2\text{O}_4 + 6\text{H}^+ \rightarrow 2\text{Mn}^{2+} + 10\text{CO}_2 + 8\text{H}_2\text{O}$$

20. Powdered iron is added to a solution of iron(III) sulfate.



21. A concentrated solution of hydrochloric acid is added to powdered manganese dioxide and gently heated.



22. A strip of copper metal is added to a concentrated solution of sulfuric acid.



23. Copper(II) sulfide is oxidized by dilute nitric acid.



*24. A solution of copper(II) sulfate is electrolyzed using inert electrodes.



ELECTROLYSIS
WILL LEARN
LATER

25. A solution of potassium iodide is added to an acidified solution of potassium dichromate.



26. Hydrogen peroxide solution is added to a solution of iron(II) sulfate.



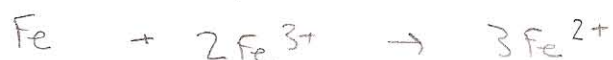
27. Solid silver is added to a dilute nitric acid (6M) solution.



28. A solution of formic acid, HCOOH, is oxidized by an acidified solution of potassium dichromate.



29. A piece of iron is added to a solution of iron(III) sulfate.



30. An acidified solution of potassium permanganate is added to a solution of sodium sulfite.



31. A solution of tin(II) chloride is added to a solution of iron(III) sulfate.



32. Concentrated hydrochloric acid solution is added to solid manganese(IV) oxide and the reactants are



33. A strip of copper is immersed in dilute nitric acid.



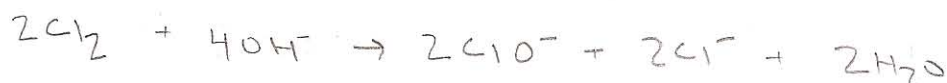
34. Potassium permanganate solution is added to an acidic solution of hydrogen peroxide.



35. Solid copper is added to a dilute nitric acid solution.



36. Chlorine gas is bubbled into a cold solution of dilute sodium hydroxide.



37. A solution of potassium permanganate is mixed with an alkaline solution of sodium sulfite.



Doesn't
Balance.

38. Solid sodium dichromate is added to an acidified solution of sodium iodide.



39. Hydrogen gas is passed over hot iron(III) oxide.



40. Solutions of potassium iodide and potassium iodate are mixed in acid solution.



41. Hydrogen peroxide is added to an acidified solution of sodium bromide.



42. Chlorine gas is bubbled into a cold, dilute solution of potassium hydroxide.



44. A solution of iron(II) nitrate is exposed to air for an extended period of time.



Don't worry
if didn't
get it!!

45. A stream of chlorine gas is passed through a solution of cold, dilute sodium hydroxide.



46. A solution of tin(II) chloride is added to an acidified solution of potassium permanganate.



47. A concentrated solution of hydrochloric acid is added to solid potassium permanganate.



48. A solution of potassium dichromate is added to an acidified solution of iron(II) chloride.

