**Studying Chemical Reactions and Writing Chemical Equations**

1. Reacting Mg with HCl Solution
2. Appearance of Mg:

Shinny malleable solid metal.

1. Appearance of HCl solution:

Clear non heavy liquid

1. Evidence that a chemical reaction occurred:

Gaseous bubbles that had a white appearance. The Magnesium became very shinny and silver.

1. Complete ionic equation:

Mg(s) + 2H+(aq) + 2Cl-(aq) 🡪 Mg+2(aq) + 2Cl-(aq) + H2(g)

1. Net ionic equation:

Mg(s) + 2H+(aq) 🡪 Mg+2(aq) + H2(g)

1. General reaction type:

Single replacement

1. Reacting Pb(NO3)2 solution:
2. Appearance of Pb(NO3)2:

Clear liquid

1. Appearance of KI solution:

Clear liquid

1. Appearance of the reaction mixture:

Once the KI was poured into the test tube we had a precipitation that was yellow in color.

1. Complete ionic equation:

Pb+2(aq) + 2NO3-(aq) + 2K+(aq) + 2I-(aq) 🡪 PbI2(s) + 2K+(aq) + 2NO3-(aq)

1. Net ionic equation:

Pb+2(aq) + 2I-(aq) 🡪 PbI2(s)

1. General reaction type:

Double replacement reaction (metathesis)

1. Heating Steel Wool (Fe) with S8
2. Appearance of steel wool (Fe):

Fine metallic threads with a dull gray color

1. Appearance of the S8:

A fine yellow powder

1. Appearance of the reaction product:

After crushing with the stirring rod, we observed the fine metallic threads turned into a dark black powder.

1. Chemical equation:

8Fe(s) + S8(s) 🡪 8FeS(s)

1. General reaction type:

Combination or synthesis reaction

1. Heating CuSO4\*5H2O
2. Appearance of CuSO4\*5H2O:

Tiny blue crystals

1. Appearance of solid after heating:

After about two minutes of heating we observed that the blue crystals turned to a white color. After extended heating the white product began to turn to a orange copper color.

1. Appearance of the inside wall of the test tube after heating:

The inside wall of the test tube began to condensate as the blue crystals turned white from heating.

1. Net ionic equation:
2. General reaction type:
3. Reacting HCl Solution with NaOH Solution
4. Appearance of Mg:

Shinny malleable solid metal.

1. Appearance of NaOH solution:

Clear light liquid

1. Appearance of the NaOH solution with phenolphthalein:

As we added the phenolphthalein to the sodium hydroxide the liquid immediately began to turn pinkish in color. It did not precipitate though it remained a liquid.

1. Appearance of HCl solution:

Clear liquid.

1. Appearance of the solution in the graduated cylinder:

Clear liquid. Also after adding a drop of phenolphthalein the mixture remained a colorless clear liquid.

1. Evidence that a chemical reaction occurred:

After adding 1 ml of the HCl and phenolphthalein mixture to the NaOH and phenolphthalein mixture the liquid turned pinkish color. Once we added the remaining 2 ml of mixture dropwise we noticed the pink liquid falling to the bottom of the test tube and a clear liquid floating on top.

1. Complete ionic equation:
2. Net ionic equation:
3. General reaction type:
4. Heating Cu with Atmospheric O2
5. Appearance of the unreacted Cu mesh:

Shinny orange bronze color mesh.

1. Appearance of Cu of mesh after heating and cooling:

After heating the Copper mesh turned a dark grey color. After it cooled the dark mesh then had a pink hue.

1. Chemical equation:
2. General reaction type:
3. Reacting CuSO4 Solution with Steel Wool (Fe)
4. Appearance of the steel wool (Fe) before reaction:

The steel wool had an appearance of a dull grey metallic fine mesh.

1. Appearance of CuSO4 solution before reaction:

The CuSO4 solution was a light blue liquid.

1. Appearance of the steel wool (Fe) after the reaction has occurred:

The steel wool after the reaction began to change color and had an appearance of copper.

1. Appearance of CuSO4 solution after the reaction has occurred:

The cupric sulfate, which was once a light blue color changed after reacting with the Fe to become a clear liquid.

1. Complete ionic equation:
2. Net ionic equation:
3. General reaction type:
4. Reacting FeCl3 solution with NaOH Solution
5. Appearance of the FeCl3 solution:

The FeCl3 solution was a yellow liquid.

1. Appearance of NaOH solution:

Clear liquid

1. Appearance of the reaction mixture:

Once we added the NaOH to the yellow FeCl3 liquid we had precipitation of an orange color and gelatin in texture.

1. Complete ionic equation:
2. Net ionic equation:
3. General reaction type:
4. Heating (NH4)2CO3
5. Appearance of (NH4)2CO3:

A white fine powder.

1. Initial appearance of the moist red litmus paper:

After moistening with a drop of distilled water the paper had a darker but still red color while a small part of it was still dry and had a lighter red. The paper also clung to the watch glass.

1. Description of what happened to the solid (NH4)2CO3 upon heating:

Upon heating the solid white (NH4)2CO3 powder we notice it began to simply evaporate. We lost all the powder to fumes after heating for a few minutes.

1. Appearance of the inside wall of the test tube after heating:

Once we began heating the wall of the test tube began to collect condensation.

1. Description of the odor of the fumes from (NH4)2CO3 upon heating:

The fumes had a strong pungent odor that was painful to inhale.

1. Appearance of the moist red litmus paper after exposure to the fumes:

After exposing the red litmus paper to the fumes from the test tube it turned into a true blue color indicating the presence of a base such as ammonia.

1. Complete ionic equation:
2. Net ionic equation:
3. General reaction type: