**Properties of Compounds – Identification Lab**

So far in this class we have covered two different types of compounds, ionic or covalent. In discussing these compounds, we have learned that ionic compounds form bonds by elements giving or taking electrons. Covalent compounds are different in that they share the electrons rather than give them away. One final difference we know is that ionic compounds form between a metal and a non-metal, while covalent compounds form between non-metals only.

In the lab today, we will be experimenting to find the properties of both ionic and covalent compounds. Make sure to read all the procedures and safety reminders carefully before beginning the lab.

**Apparatus and Materials**

Microscope Glass slides

Safety goggles Stand

Aluminum foil Salt

Sugar Ethyl Alcohol Burner

Wire mesh Beakers

2 x Beaker Water

**Safety**

Remember the safety lessons from the previous days. This lab will require proper protective gear, in this case goggles. Anyone with long hair will have to tie back their hair until all burners are turned off. There will be no messing around tolerated. If you are caught messing around in the lab you will be made to sit and wait till the lab is done, not participating and receive a zero in the lab.

**Procedure**

**Part 1:** On the side bench you will find set up microscopes.

1. At this stage you will have to take a small amount of salt (no more than a pinch) and place it on the black surface of the microscope.
2. Observe the salt under the magnification of the microscope and record observations about the salt.
3. Next, take a small amount of sugar (no more than a pinch) and place it on the black surface of the microscope.
4. Observe the sugar under the magnification of the microscope and record observations about the salt.
5. Place used salt or sugar in the sink.

**Part2:** On the back bench you will find small alcohol burners.

1. At this stage you will have to first make a bowl-shaped piece of aluminum foil with the shiny side up.
2. After you have made the bowl you will place it on a wire mesh sheet on a metal stand above one of the burners.
3. Adjust the height of the stand so that the foil is about 4 inches above the burner.
4. Place a small scoop of salt on the foil and observe for melting – record in your observations whether the salt melted. If it did melt, how long did it take?
5. On the rest of the space on your bowl, place a small scoop of sugar and record in your observations whether the sugar melted. If it did melt, how long did it take?
6. Dispose of aluminum foil bowl and melted sugar or salt in the garbage once it is cooled down.

**Part 3:** On the back bench you will find a station set up with beakers.

1. Fill the beaker ¾ full of water.
2. To this beaker you will add about 1 table spoon of salt.
3. Record observations (does it dissolve?
4. Once you have your salt dissolved come get me and we will use a gauge to determine whether the solution conducts electricity. (Record observations)
5. Repeat the steps in this part for sugar as well.

**Questions**

1. What are the properties of ionic compounds (Salt) that you observed?
2. What are the properties of covalent compounds (Sugar) that you observed?
3. Using what you know about how compounds bond, explain why the melting time was different for salt and sugar?

Lab Report Format

On a separate piece of paper, write a lab report by following the format provided below. The lab must be either typed or very neatly written. Each student must hand in a lab report even if the lab was done in groups.

1. Title (/1)
2. Name and date (/1)
3. Purpose of the lab
   1. Identify WHAT YOU ARE TRYING TO EXPLORE with this activity.
4. Materials (/1)
   1. See lab handout
5. Procedure (/1)
   1. See lab handout
6. Observations/ results (/8)
   1. Things you notice **during** the testing process. (like colour change, smell given off, bubbling, change in texture, time, etc.)
   2. Part one observations
   3. Part two observations
   4. Part three observations
7. Questions (/5)
   1. 1, 2, and 3
8. Conclusion (/4)
   1. Written in paragraph format.
   2. Summarizes the findings
   3. At least 2 sources of error (reasons the lab might have gone wrong or failed).