**![C:\Users\kaemigh\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\81RSCJ41\MC900367958[1].wmf]()Oobleck!**

**Background on Non-Newtonian Fluids and Colloids**

Many of the materials we use every day, like starch, are made up of molecules called POLYMERS. POLY means many and MER means unit. Because the units in chains are so long, they interfere with the ability of the solution to flow. ***Viscosity is a physical property of liquids that describes how they flow.*** Honey and corn syrup are described as having high viscosities because they flow more slowly than water, which has a low viscosity. In this lab, it will be useful to know the different types of mixtures.

Solutions and **colloids** are mixtures that are uniform throughout the mixture. The particles in a colloid are larger than those found in a solution, but small enough to remain in suspension permanently and be homogeneous, such as fat globules in milk. A suspension, on the other hand, is a type of mixture that contains particles that are heavy enough to settle to the bottom after being stirred up. Usually **suspensions** are opaque or “smoky” looking and do not transmit light. A good example of a suspension is very fine sand in water.

Though there are three states of matter, solids can be further divided into **crystalline solids** and **amorphous** **solids**. In crystalline solids, the particles are arranged to form a regular, repeating pattern. Salt, sugar, and ice are all examples of crystalline solids. Amorphous solids are solids that are made up of particles that are not arranged in a regular pattern, such as in glass, plastic, and rubber. Amorphous solids, unlike crystalline solids, do not have a distinct melting point, but simply become softer and softer as their temperature increases. Keep these facts in mind while you are observing your Oobleck creation.

**Procedure:**

1. Measure out about ½ cup of cornstarch into a beaker
2. Measure out ¼ cup of water
3. SLOWLY pour the water into the beaker with the cornstarch
4. Stir the mixture slowly with the popsicle stick until it is completely mixed
5. You have the right consistency when the Oobleck is somewhat like the consistency of yogurt and you can grab a handful of the mixture and roll it into a ball in your hands – when you stop rolling it, it should “melt” between your fingers – success!!
6. Follow the “Data Table 2: What Did I Do?” Record data in the table
7. Clean up when you are finished (use a wet rag to wipe the table)

**\*\*DO NOT FLUSH THE OOBLECK DOWN THE DRAIN! PUT IN GARBAGE!\*\***

**Data Table #1: Applying Vocabulary**

|  |  |
| --- | --- |
| Does the Oobleck have a high or low viscosity? |  |
| Do you think the Oobleck is a solution, a colloid or a suspension? |  |
| What are the two substances in this mixture? |  |

**Data Table #2: Which State of Matter?**

|  |  |
| --- | --- |
| **What Did I Do?** | **What Happened?** |
| Try to cut Oobleck |  |
| Slap the top of the Oobleck in the beaker |  |
| Pour some Oobleck into your hands and roll into a ball |  |
| Make an Oobleck snake and pull it apart quickly |  |
| **Fill in your own experiments** \*\*You may not 1) throw the Oobleck 2) put it on someone’s clothes or hair 3) eat the Oobleck |
|  |  |
|  |  |
|  |  |

**Conclusion: (answer in your notebook)**

1. How does Oobleck behave like a solid?
2. How does Oobleck behave like a liquid?