

Fun with Polymers

“GLOOP”

A polymer is any molecule that has many repeating units, “poly” means many and “mer” means unit. If you think of a paperclip as a molecule, a polymer is like a long chain of paperclips. Polymers make up many of the things around us and can be natural or synthetic. For example, all plastics are made of polymers. Other polymers include clothes, shoes, wood, erasers, and biological molecules such as proteins, DNA and complex carbohydrates.

Although there are many polymers around us, some things are not polymers, like metal, water and glass. Many of the materials we use every day, like starch are polymers. Because the units of chains are so long, the movement of polymers is restricted. Viscosity is a physical property of liquids that describes their rate of flow. Honey and corn syrup are described as having high viscosity because they flow more slowly than water.

PROCEDURE:

Choose one of the recipes provided by your teachers and follow the directions.

CLEAN-UP:

- 1. Thoroughly rinse your groups graduated cylinders**
- 2. Dispose of your CUP/SPOON**
- 3. Wipe down your counters, etc.**
- 4. IF you want to keep your GLOOP...place it into a Ziploc bag and write your name on it.**
- 5. Place you bag in the front of the room.**

YOU WILL ONLY BE ALLOWED TO PICK IT UP AFTER SCHOOL

**If you get caught with your GLOOP by myself or another teacher,
you will receive a ZERO!**

POLYMER TESTS

TEST	MY GLOOP
<i>Description:</i> Color, Texture, Odor or Other Observations	
<i>GLOOP Rating:</i> Rate your GLOOP from 1 = not very slimy 5 = very slimy	
<i>Slow Poke Test:</i> Slowly poke your finger into the GLOOP. What happens?	
<i>Quick Poke Test:</i> Quickly poke your finger into the GLOOP. What happens?	
<i>Slow Pull Test:</i> Slowly pull on the ends of a piece of the GLOOP. What happens?	
<i>Quick Pull Test:</i> Quickly pull on the ends of the piece of the GLOOP. What happens?	
<i>Blob Test:</i> Roll your GLOOP into a ball and let it sit in your hand for a minute. What happens?	
<i>Hang Test:</i> How long does it take for the GLOOP to reach the table from a height of 30cm?	
<i>Bounce Test:</i> Roll into a ball and drop on the table. Rate the bounce... 1 = Poor 5 = Great	

Conclusion & Analysis:

1. Would you say GLOOP has a high viscosity or a low viscosity? Why?
2. What is a Polymer? Give an example?
3. Describe at least three changes you observed during this lab and then decide if each change is chemical or physical. Fill in your answers in the table below:

Change Observed	Chemical or Physical