

NAME _____ GROUP _____ DATE _____

SLIME LAB

READ THIS INFORMATION BEFORE PERFORMING THE EXPERIMENT!!!!

BACKGROUND INFORMATION

Slime is a shimmery fluid **polymer** that is 98% water. The water acts as bridge, linking polyvinyl alcohol to the sodium tetraborate through hydrogen bonding. The cross-linked polymer will shear if twisted an endothermic as it flows, getting cold in your hands.

To simplify, there're these two molecules. They're floating in some water and the water says, Hey, you two should be buddies and connects them to each other. They meet some other friends and they hooked together to make a chain of four, then it gets wild with everyone hooking with everyone. Turns out they like each other so much that if you try to get them apart they don't want to separate and you have to literally tear them from each other. As for the endothermic part; that means it is cold and absorbs heat from your hand.

MATERIALS

Polyvinyl alcohol solution
Sodium tetraborate
2 beakers
1 dropper
1 Popsicle stick
Piece of wax paper

DIRECTIONS

1. Pour 25 ml of polyvinyl alcohol solution
2. Draw 1 full dropper of sodium tetraborate by filling it up to the top mark, then shot it into the polyvinyl alcohol solution.
3. Stir vigorously with the popsicle stick until it forms the slime.(If thicker slime desired, repeat step 2)
4. Remove the slime from the beaker put it in your hands. (play with it to examine the properties)

OBSERVATIONS:

Take about 5 minutes for observation and free discovery. Record your observations in the table below.

Describe Smell	
Describe Color	
Describe Texture	
Describe Shape	
Other observations	

PERFORM THE FOLLOWING EXPERIMENTS AND ANSWER THE QUESTIONS IN COMPLETE SENTENCES.

1. Press the slime against your hand. Describe what happens.

2. Pour the slime into another cup. Describe what happens.

3. Try to roll the slime into a ball on the table. Describe what happens.

4. Stretch the slime slowly. Describe what happens.

5. Stretch the slime fast. Describe what happens.

6. Based on the background information, why slime stretches, instead of breaking quickly?

7. Why does slime look so much like water?

8. What is endothermic? _____

9. What are the physical properties that change as a result of the addition of sodium borate to the poly (vinyl alcohol).

10. What would be the effect of adding more sodium borate to your cup (your thoughts only)?

11. After making the observations on the dried PVA, how does the water affect the elasticity of the polymer? What is elasticity?
