

Organic Lab -I've been Slimed!!

Name: _____ Date: _____

Partner: _____

Purpose: To examine the cross-linking action of borax on polyvinyl alcohol.

Apparatus:

- 2 100 mL beakers
- 50 mL graduated cylinder
- glass stirring rod
- dropper pipette
- electronic balance
- hot plate
- baggie/Ziploc bag

Reagents:

- 2 g polyvinyl alcohol (PVA), M.W. 70 000 – 100 000
- 1 g sodium tetraborate (Borax)
- 75 mL water
- food colouring (optional)

Procedure:

4% PVA SOLUTION:

1. Add **2 g PVA** slowly while stirring to **50 mL water**.
2. **Heat** on a hot plate while **stirring constantly**, until the solution is **clear**. Do Not Boil!
3. Allow the solution to **cool** and add **1-2 drops** of **food colouring**, if desired.

4% Borax Solution:

4. Add **1 g Borax** to **25 mL water**.
5. **Heat** and **stir** to help dissolving.

SLIME IT:

6. Using the dropper pipette, slowly add the Borax solution to the PVA solution, while stirring constantly.
7. When the slime has reached a consistency where it can be kneaded, stop adding the Borax.
8. Feel it. Stretch it slowly and quickly. Bounce it. Slap it down on the counter. Let it sit between your fingers. Squeeze it. Test for any other properties that would be considered to be desirable for slime.
9. Place a small piece of your slime in a beaker and add more borax solution to it. Stir. Repeat the tests in step 8.

10. In a table, record the results of your tests on both slime products.

Observations:

Test	Slime #1	Slime #2 with More Borax
TEXTURE		
Slow pull		
Quick pull		
Bounce		
Slap on Counter		
Viscosity		
Squeeze		

Analysis:

1. As the Borax solution was added to the PVA solution, what happened to the consistency of the mixture?
2. What purpose does the Borax serve?
3. What does the term, **cross-linking**, mean?
4. How does cross-linking relate to the Borax?
5. State another cross-linking substance and how it is used.
6. What **type** of *organic reaction* occurred to form the slime?
7. Write out the **chemical equation** that describes this reaction.