September 30, 2018 Chemistry Club

STEM Festival Slime

Materials:

1. 3 tbsp glue
2. 2 tsp detergent
3. 1 popsicle stick (as a stir rod)
4. 1 cup with cap
5. 2 drops of dye
6. Add-ons (i.e. foam)
7. Measurement spoons (tbsp and tsp)

Procedure:

1. Put 3 tablespoons of glue in a cup
2. Put 1 teaspoon of detergent in the cup
3. Stir the mixture (with a popsicle stick) for a couple of seconds until clumpy
4. Add 1 more teaspoon of detergent. Add dye and any add-ons they want (i.e. sparkles, glitter, foam)
5. Stir the mixture until evenly mixed (couple of seconds)
6. Knead out the slime but make sure to add a little bit of water

The Science behind it:

Glue is a polymer, which means it is made of identical molecules and has characteristics of a liquid when you pour it (i.e. it takes the shape of the container).

Glue contains a chemical called polyvinyl acetate, a polymer that is runny when you mix it with water or vinegar. However, if you add detergent (which has borax), a crosslinker, it makes all of the glue molecules stick (or link) together in a big glob.

The sodium tetraborate in Borax laundry detergent is a cross-linking substance that makes glue molecules stick together.

Questions:

1. How can you make the polymer stretch the farthest?

2. Does the amount of Borax added change the slime?

3. What method of storage will make the polymer last the longest?

4. What brand of glue makes the stretchiest polymer?

5. Does the amount of water added to the glue affect the gooeyness of the slime?

More info:

- https://temeculablogs.com/laundry-detergent-slime/
- https://www.wikihow.com/Make-Laundry-Detergent-Slime
- https://www.wrdw.com/content/news/The-Science-Behind-Slime-415314613.html
- https://www.acs.org/content/acs/en/education/whatischemistry/adventures-in-chemistry/experiments/slime.html
- http://kitchenpantryscientist.com/tag/slime/
- https://www.stevespanglerscience.com/lab/experiments/glue-borax-gak/
- https://sciencebob.com/make_slime_with_borax/