



California State University of Bakersfield, Department of Chemistry

No Silly, It's Silly Putty



Standards:

5-PS1-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Introduction:

Have you ever wondered how putty is made? Well in 1943, an engineer named James Wright decided he wanted to make rubber. Well instead of making rubber, he made silly putty! Years later, silly putty became yours and the world's favorite toy! Now we will act as chemists and make silly putty out of soap and glue. We are going to polymerize glue with soap which will make silly putty, just watch and see yourself!

Did you know that silly putty is actually an example of a polymer that is called an elastomer. The reason why it's called an elastomer is because no matter how many times you smash or pull the silly putty with your hands, it will go back to the way you made it. Cool huh?!?!

So as chemists today, we will perform polymerization, keep in mind the reaction that is taking place. Let's get started!

Materials:

- Tide laundry liquid detergent
- All purpose Elmer's white glue
- Plastic bowl
- Food coloring

Safety:

- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments.
- Do not smell the fumes of the glue or any chemical.

Procedure:

1. Pour 1 cup of All Purpose Glue into a bowl and add a couple drops of food coloring.
2. Add ¼ cup of Tide laundry detergent cap of laundry detergent into the bowl with the glue.
3. Mix until hard.
4. Rinse the extra soap off with water. Then enjoy, you have just made silly putty! :D

Data and Observations:

Record your observations of the Silly Putty as it is mixed with a name brand detergent and a generic brand detergent. Is there a difference?

| Silly Putty | Observations |
|------------------------|--------------|
| With Brand Detergent | |
| With Generic Detergent | |

Questions:

1. How did you know that a chemical reaction had taken place when the two liquids were mixed?
2. What type of polymer is silly putty? Why?
3. What type of reaction took place?

References:

1. Answers.com.
[http://wiki.answers.com/Q/How do you make silly putty without liquid starch and borax](http://wiki.answers.com/Q/How_do_you_make_silly_putty_without_liquid_starch_and_borax). (accessed July 17, 2012)