

California State University of Bakersfield, Department of Chemistry

Gel Bead Fun



Standards:

Content Standard 27: Students shall differentiate between aliphatic, cyclic, and aromatic hydrocarbons.

OC27 C.1 - Examine the bonding and structural differences of organic compounds:

- alkanes
 aromatic
 cyclic
- alkenes hydrocarbons hydrocarbons
- alkynes

<u>OC27 C.2</u> - Differentiate between the role and importance of aliphatic, cyclic, and aromatic hydrocarbons.

OC27 C.3 - Compare and contrast isomers.

Introduction:

Hello it's Gell-O, here for some gooey fun! By taking calcium chloride and sodium alginate, you can make a fun and interesting substance that is enjoyable for everyone. A polymer is a long chain of repeating molecules and in this activity the polymer is Sodium Alginate. The Calcium cross links to the Sodium Alginate in order to form the gel like substance.

Materials:

- 2 g sodium alginate
- 2 100 mL beakers of water
- 1 g calcium chloride

- A wide bowl
- Blender
- Pipets
- Strainer

- 2 8 fl oz. water bottles
- Food coloring (optional)
- Ziploc baggies

Safety:

- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments

Procedure:

- 1. Mix 2 grams of sodium alginate with 100 mL of water in a blender until creamy, and then refrigerate in one of the 8 fl. oz. water bottles.
- 2. Then take 1 g of calcium chloride and mix with 100 mL of water in a beaker and pour into the other 8 fl. oz. water bottle.
- 3. Now pour the calcium chloride into the wide bowl.
- 4. Using a pipette, take the sodium alginate solution and drop desirable figures into the bowl.
- 5. Wait 5-10 minutes until the gel beads harden.
- 6. If desired, strain the gel beads until the calcium chloride solution is gone and all that is left is the squishy beads.
- 7. Now put them into the Ziploc bag.

Data and Observations:

1. What happened to the sodium alginate when in contact with the calcium chloride? Why?

2. How can you alter this lab to improve it?

References:

1. Engineering.oregonstate.edu/momentum/KIZ/feb05/M!_GelBeads_final021405.pdf (Date Accessed: July 21, 2014).

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