

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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