

LAB: GEL WORMS

Background:

Sodium alginate is made from a type of brown seaweed called kelp which grows wild in the ocean. It is harvested and processed to make sodium alginate. Alginate is used in food because it is a powerful thickening and gel-forming agent. Some foods that may include alginate are ice cream, fruit snacks, salad dressings, pudding and onion rings.

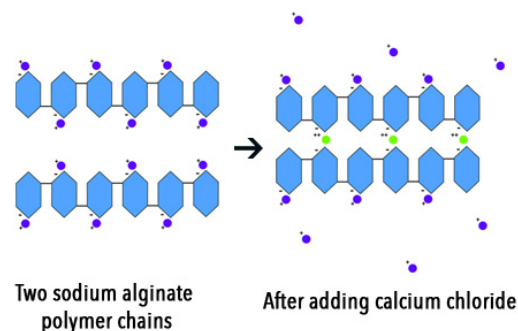


Calcium chloride is made from limestone which is a common rock that is mined. The limestone is reacted with hydrochloric acid or sodium chloride to make the calcium chloride.



In order to form a gel, sodium alginate needs to come in contact with calcium ions. When sodium alginate reacts with calcium chloride, a polymer is formed (which is a long chain molecule). This polymer is a gel.

Materials: plastic container, syringe, sodium alginate solution, calcium chloride solution



Directions:

1. Pour 200 mL calcium chloride solution into the plastic container.
2. Fill the syringe with 25 mL sodium alginate solution.
3. Using the syringe, add the sodium alginate solution to the calcium chloride solution in the plastic container.... Add one drop at a time to get beads or squeeze the solution into the beaker to make strings or worms.

Clean up:

1. Get the “worms” out of the calcium chloride solution and throw in the trash.
2. Save the calcium chloride solution for the next class.
3. Wash the syringe with hot water and leave open to dry.

Questions:

1. Is this experiment a physical or chemical change?
2. What natural substance does sodium alginate come from?
3. Why is sodium alginate used in food?
4. What natural product does calcium chloride come from?
5. What is formed when sodium alginate reacts with calcium chloride?

Notes: Natural/Synthetic

Natural Resources- Found in _____

We have to:

- Dig them out of the _____
- _____ them
- Take them from _____ things

Examples of Natural Resources:

_____		_____	
_____		_____	
_____		_____	
_____		_____	
_____		_____	
_____		_____	
_____		_____	
_____		_____	

Synthetic- _____-Made

Natural substance _____ by man.

Examples of Synthetic Materials: (and the natural resource they are made from)

X _____ is made from _____



X _____ is made from _____



X _____ is made from _____



X _____ is made from _____

