

Sodium Alginate: Algae Beads and Worms!

Sodium alginate is a naturally occurring molecule that can be extracted from algae. In the food industry, sodium alginate is used to thicken sauces and syrups and to stabilize ice creams. It is also commonly used to make caviar. In this experiment, we will make gel beads and strings using sodium alginate.

Materials:

- At least 600 mL distilled water
- Algae
- Scale
- 25g Calcium chloride (CaCl_2)
- 2g Sodium Alginate (also known as Sodium Ascorbate ($\text{C}_6\text{H}_7\text{NaO}_6$))
- 2 beakers
- Pipettes



Procedure:

Make a 2% Sodium Alginate solution

- On scale, weigh out 2g of Sodium Alginate.
- In a clean beaker, pour 100 mL of distilled water.
- Empty the 2g of Sodium Alginate into beaker with water.
- Stir until fully dissolved.
- Add a desired concentration of algae

Make a 5% CaCl_2 solution

- On scale, weigh out 25g of CaCl_2 .
- In a clean beaker, pour 500 mL of distilled water.
- Stir until fully dissolved.

Make gel beads and strings

- Pipet drops of Sodium alginate solution into CaCl_2 solution.
 - Small droplets will result in beads; long strands will result in worm-like gel

** Sodium Alginate can be purchased from Amazon or chemical companies Fisher or VWR, Sigma Aldrich