

Self Introduction

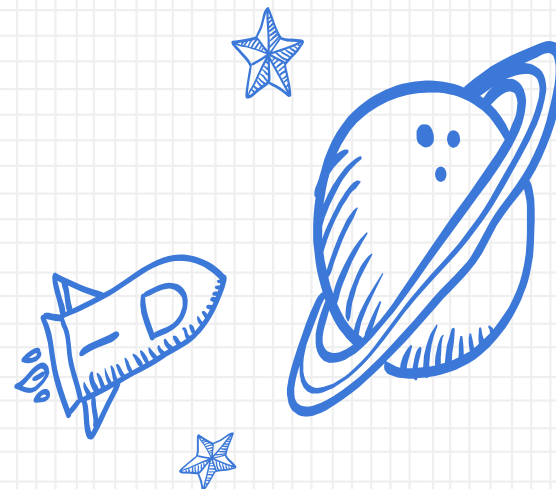
Phoebe

- F5 student
- Studying chemistry, biology
- Enjoys food science



Helia

- F5 student
- Studying physics, chemistry, biology
- Enjoys doing experiments



Video Time!

Ingredients need:
1500ml water
10g sodium alginate
40g calcium lactate

After preparing all the ingredients,
we are ready to make the '
' bubble tea"!! (๑•□•๑) ✨

by PowerDirector

Theme: Food
Age group: 10-12 years old

Ingredients:

- 1500 g of water
- 10g sodium alginate (海藻酸鈉)
 - Use in food additives, cosmetics, pharmaceuticals
- 40 g calcium lactate
 - Calcium supplements



You can also make different fun shapes!



Procedures

1

Mix 500g of water with 10g of sodium alginate until all sodium alginate dissolves



Mix 1000g of water with 40g of calcium lactate until all calcium lactate dissolves

2

3

Mix sodium alginate solution with drink in 1:1 ratio



Procedures

Dip a round spoon into calcium lactate bath

4



5

Put some drink mixture into spoon



Place container into calcium lactate bath

6

7

Gently pour the drink mixture from spoon into calcium lactate bath to form bubble



Remove bubble from calcium lactate bath

8

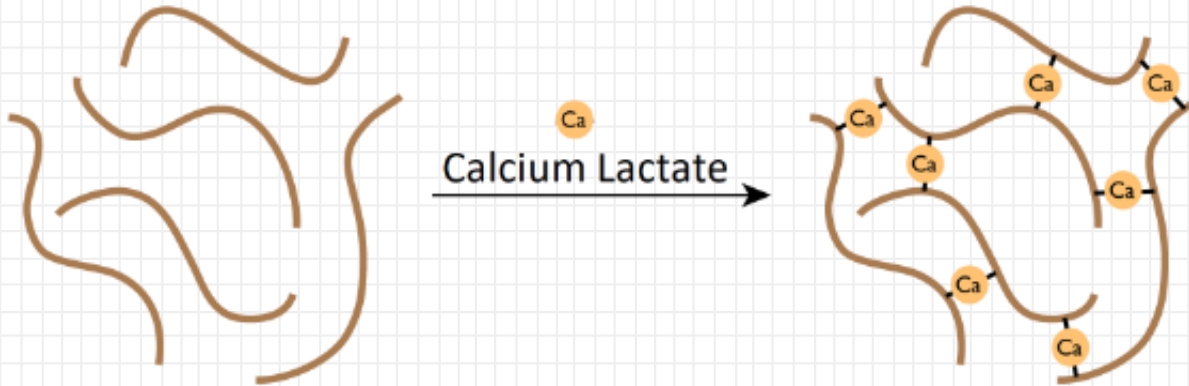
Explanation (1)

Why can the drink mixture become a bubble?

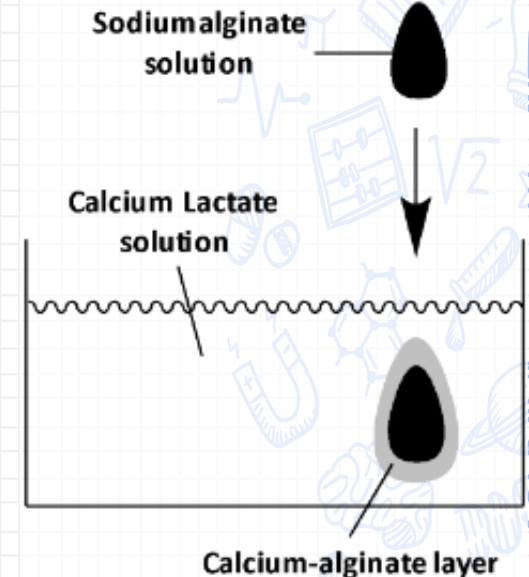


Sodium Alginate

Calcium Alginate



- **Sodium alginate is loosely packed in water**
☺ Like children moving freely in the playground
- **Calcium ions cross-link with alginate**
☺ Like the teacher telling children to line up
- **Sodium alginate packed uniformly**
 - solubility decreases
 - **calcium-alginate jelly-like layer formed !!!**



Explanation (2)

What are the differences if solutions are added reversely?

- **Direct spherification (method we used)**

- a bubble with gel-like centre



- **Reverse spherification (commercial practice)**

- a bubble with liquid-like centre

- **It requires a frozen drink mixture**



😊 The taste and texture is much better!

How We Co-create!

Want to have some special experiment for the children, something unusual

Something children can play with to grab their attention

Think of the bubble tea

Using the technique of spherification to get a drink bubble

reverse spherification
need more preparation time but easier to make the bubble successfully



