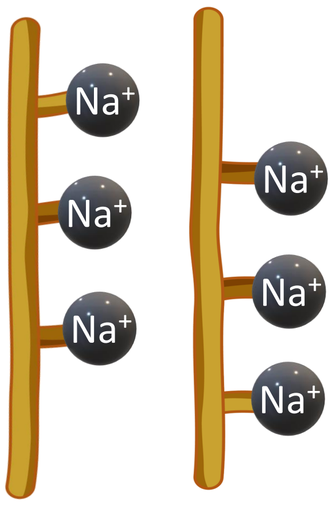
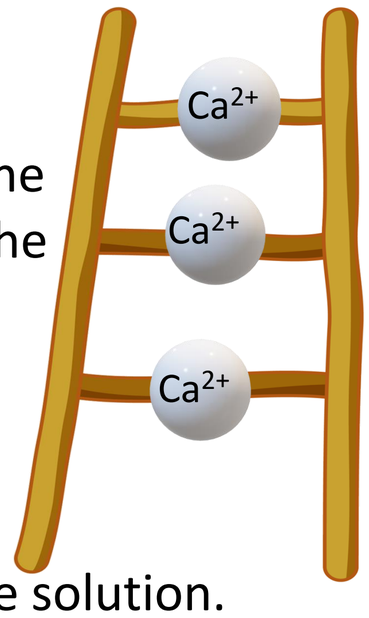
Become a polymer chemist and

MAKE SOME SLIME!

We are using a polymer called sodium alginate; this is a starch which comes from seaweed. It forms a thick sticky paste in water.



When the sodium alginate comes into contact with calcium chloride solution the sodium alginate immediately changes from a liquid to a solid. This is because the calcium (Ca^{2+}) ions replace the (Na^+) ions and link the polymer chains together (like a ladder) the calcium ions link up the two sides.



The slime does not dissolve, the squishy stuff inside the slime is unreacted sodium alginate solution. The longer the slime is left in solution, the more calcium ions react, and you will get a thicker skin (polymer).

How do we make slime?

1. Pick your favourite colour
2. Draw up 10 mL of the sodium alginate into your syringe
3. Push the plunger to add the sodium alginate into the vat of calcium lactate
4. Wait for a few seconds then your slime will be ready!

The ingredients are all completely safe so you can handle your slime straight from the container

Make different shapes with your slime!

You can add the alginate slowly or quickly, in drops or as ‘wiggly worms’.

If you take it out right away it will be quite squishy, but the longer you leave it in the calcium lactate solution the more solid it becomes.

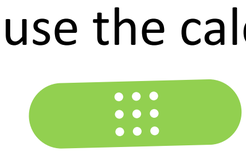
The scientific name for this slime is calcium alginate - it has different properties and uses compared to the sodium alginate. It can be a clear or coloured film, it is safe for our bodies (biosafe), compostable (biodegradable) and comes from a renewable source.

What can we do with calcium alginate?

Some acid reflux medication (e.g. Gaviscon) use calcium alginate to form a protective gel in your tummy.

Bubble tea, is a tea-based drink that also contains fruit jellies, tapioca or alginate spheres, filled with fruit juice or syrup. The alginate spheres have a thin gel-like layer outsides that explode with flavour when you bite into it.

Calcium alginate is used in wound dressings, especially for slow healing injuries. It forms a soft gel in contact with an open wound, then the body can use the calcium to promote healing.



It can also be used to slowly deliver medicines to the body.

Calcium alginate can be formed as films, and have been used as containers for sauce sachets, and even for Lucozade at the London Marathon – they can be eaten or biodegrade so reduces rubbish on the road!