



Make your own...

Seaweed Goo!



Have you ever touched seaweed with your foot while strolling on the beach? Did you notice how it often feels slimy? This is because seaweed is covered in a jelly-like layer that prevents it from being damaged by the waves.

As well as being essential to the survival of many marine creatures, as food and as a habitat, seaweed (and phytoplankton) is also responsible for producing about half of the total oxygen on Earth!

We use it as food, as an anti-inflammatory, as a fertilizer and as a soil conditioner. Scientists have also discovered that seaweed can even be used to thicken just about any liquid, and so, seaweed is used as a binding agent in products such as toothpaste and shampoo.

With this experiment you'll witness this last property of seaweed; you will observe how seaweed acts as a binding/thickening agent in food, by mixing alginate with water.



Set up time: 5 minutes

What do you need?

1. Three small cups
2. Fresh water
3. Stir sticks
4. Measuring spoons
5. Paper towel
6. Powdered seaweed (available in most grocery stores, usually in the Asian food section – often called alginate)

What do you do?

1. First, put about a tablespoon of water in a cup
2. Add a small amount of alginate with the wooden stir stick, approximately $\frac{1}{4}$ teaspoon of powder.
3. Stir vigorously for about 3 or 4 minutes.
4. Repeat these steps with two more cups, using the same amount of water for both - but in one cup use a bit less alginate and in the other cup use a bit more.
5. Observe the differences; what do you see? Do all the mixtures look the same? Feel the mixture. What does it feel like?



Some info on the goo power of seaweed:

1. Alginate is a powdered extract of brown seaweed.
2. Alginate is used in many food and other products we use as an emulsifier (e.g., to keep the ingredients of mayonnaise, salad dressing, and chocolate milk in suspension); thickener (e.g., to thicken pie filling so it does not soften the pastry crust); and stabilizer (e.g., for ice cream, to keep it from forming large ice crystals).
3. These properties are also useful in other products like toothpaste, and in the textile industry to thicken pastes containing dye.
4. In this experiment, the seaweed powder absorbs the water and “holds onto it” in a slime. That slime is what emulsifies, thickens, and stabilizes the ingredients in the products we use.

To find out more about the thickening properties of sodium alginate watch this video:

<https://www.youtube.com/watch?v=Zxa9guEYmus>