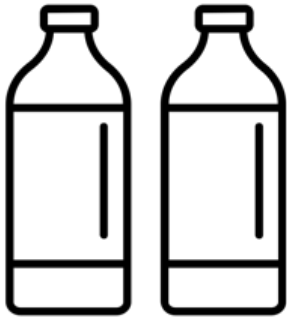


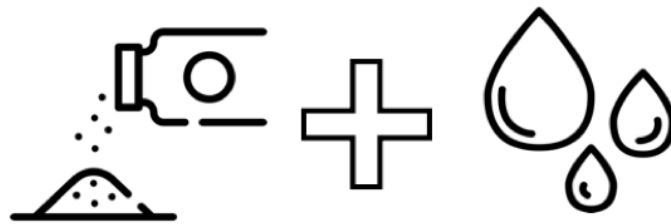
BIODEGRADABLE BOTTLES

WHAT ARE BIODEGRADABLE BOTTLES?



Biodegradable water bottles are eco-friendly alternatives to non-degradable plastic water bottles. Typically, a plastic water bottle could take around 1000 years to completely deteriorate. In this process, various environmental concerns are raised, including harming the natural habitat of wild life animals. However, this alternative works to eliminate such concerns, as the bottles will start to degrade as soon as they are empty. In a recent invention in 2016 by a design student Ari Jonsson, he presented an algae-based biodegradable bottle.

HOW ARE THEY MADE?



The bottle is made with just two materials, red algae powder and water, and the process is very simple with only three steps:

1. Mix agar/algae powder with water. This forms a jelly-like substance
 2. Treat the jelly with heat to melt.
 3. Pour the substance into a mold to shape it into a bottle-like shape.
 4. Freeze the mold so that it retains shape.
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HOW DOES IT WORK?



The precise measurements of the materials have not been presented, but the process is rather simple. Alga is a type of aquatic plant that include seaweed, and a substance called agar is made from red algae. When immersed in water, the agar gel swells and retains its shape. However, once the water is emptied out, the bottle starts to dry and shrivel, causing it to degrade. The mechanism also accounts for why agar gel needs to be covered when baking. The degraded bottle will start to melt like any other food, causing it to be absorbed in soil.

WHY ARE THEY IMPORTANT?

Plastic has been one of the most used materials ever since the early 20th century. From plastic utensils to plastic furniture, possible number of usages is uncountable. However, as much it brings convenience, there are rising environmental concerns, called “plastic pollution”. More than eight million tons of plastic are thrown into the oceans every year, and they stay there for decades. Plastic itself may contain harmful hormones, and even if plastic has less toxic content, they act to attract other toxic materials in the ocean and retain them. As a result, sea creatures will swallow lumps of toxic in the sea, and consequently, human will also consume toxic seafood. Biodegradable bottles are smart alternatives that may mitigate the problem. Even though there are acts to decrease the consumption of plastic, it is not enough. We should continue to strive for finding sustainable, environmentally friendly, and safe alternatives to harmful materials.

