

Experiment – Hydrogen Peroxide Foam

In this experiment you will make oxygen from Hydrogen Peroxide



Make Sure You Have...

Hydrogen Peroxide (H_2O_2)

Detergent solution (this is best watered down or it just sits on top of the H_2O_2)

Potassium Iodide (KI)

Vegetable Pieces (potato and celery are really good!)

2 x 100 ml Measuring cylinders

2 x Plastic Pipettes

Spatula

Tray

Water

What To Do....

1. Pipette 10 ml of hydrogen peroxide into each measuring cylinder on the tray.
2. Add a few drops of detergent solution to each measuring cylinder.
3. Drop a piece of vegetable into the first measuring cylinder.

You should see bubbles of oxygen

4. Add a spatula of potassium iodide to the third measuring cylinder

You should see a big snake of bubbles that comes out the top of the measuring cylinder

5. Wash everything up (solutions can go down the sink)



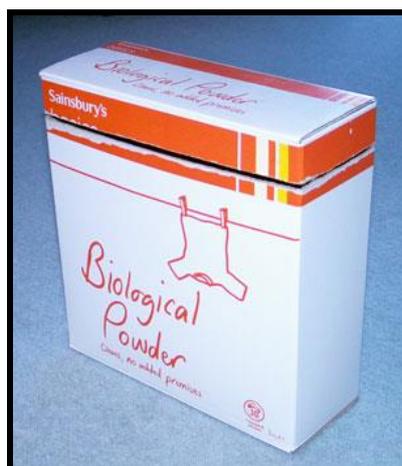
What's Happening?

Hydrogen peroxide (H₂O₂) is commonly used as a hair bleach. It also has an interesting property in that it decomposes over time producing oxygen and water.



The oxygen can be seen here as it is a gas which blows bubbles in the soapy water.

This decomposition is very slow and to watch it would be very boring so we add **catalysts** to speed up the reaction. Vegetables contain biological catalysts called **enzymes**. In particular, celery and potato contain **catalase** which speeds up the decomposition of hydrogen peroxide. Enzymes such as these are often used in washing powders to break up some of the grime on dirty clothes (hence “Biological” washing powder).



Enzymes are often added to washing powder

A far better way to speed up the decomposition of hydrogen peroxide is to react it with potassium iodide (not strictly a catalyst). This speeds up the reaction no end giving the snake of bubbles you've just seen!

