

DIY Lava Lamps

Safety!

- Always have an adult present
- Do not eat or drink any of the ingredients
- When handling food colouring, make sure to not spill it on your clothes, as it stains - ideally wear an apron

Apparatus

- 1 empty glass, flask or bottle
- Cooking oil
- Water
- 1 alka-seltzer or similar tablet
- Food colouring - any colour you want!



Method

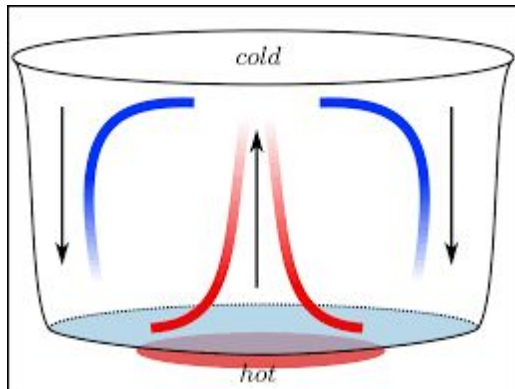
Summary

In this experiment, you will be building a homemade lava lamp, using simple ingredients that can be found at home.

Steps

- Fill up your container most of the way with the cooking oil, around 4/5, and then add water until full.
- Add a few drops of the food colouring, whichever colour you have chosen.
- Finally, break the tablet into small pieces and add them to the container, and watch as the lava lamp comes to life!





Evaluation / Conclusion

- Water is more dense than oil, therefore the water will sink below the oil. Similarly, because the food colouring has a lot of water in it it will sink to the bottom and mix with the water.
- When the tablet is added, it causes a reaction between two chemicals in the tablet, an acid and an alkali, which releases carbon dioxide.

If you want to find out more about that, you can follow this link:
<https://tinyurl.com/y7m6cjyt>

- Carbon dioxide is very light, and will immediately start floating towards the top, bringing bits of the water solution with it. This is what causes the bubbles of water to move around and create that lava lamp effect.

FOLLOW UP SCIENCE

This is effectively the same way a lava lamp is made in real life, except actual lava lamps use more precise densities, and they use heat to cause the liquids to move around. This is known as convection, and you can learn more about it here: <https://tinyurl.com/y7qlakko>

If you wanted to do some extra work, you could research Galileo thermometers and learn about densities.