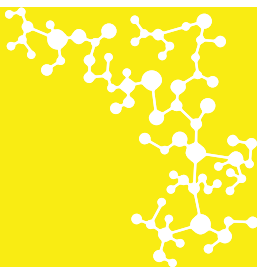




BUBBLING LAVA LAMP

MATERIALS:

- WATER
- A CLEAR PLASTIC BOTTLE WITH CAP
- VEGETABLE OIL
- FOOD COLORING
- EFFERVESCENT ANTACID TABLETS



PROCEDURE:

1. Pour water into the plastic bottle until it is around one quarter full.
2. Pour in vegetable oil until the bottle is nearly full.
3. Wait until the oil and water have separated.
4. Add about 10 drops of food coloring to the bottle (choose any color you like).
5. Cut an effervescent antacid tablet into smaller pieces (around 5 or 6), and drop one of them into the bottle. When the bubbling stops, add another chunk of the tablet. It's just like a lava lamp!
6. When the tablets are used up, and the bubbling has completely stopped, screw on the cap. Tip the bottle back and forth, and watch the wave appear. Enjoy the show!

WHAT THIS MEANS:

The food coloring only colors the water, not the oil. The tiny droplets of liquid join together to make one big lava-like blob.

Oil and water do not mix because of something called "intermolecular polarity." Molecular polarity basically means that water molecules are attracted to other water molecules; oil molecules are attracted to other oil molecules. But the structures of the two molecules do not allow them to bond together.

The oil and water separate from each other in the bottle, with oil on top because it has a lower density than water. The food coloring falls through the oil and mixes with the water at the bottom.

The effervescent antacid tablet is technically both acidic and basic. The tablets contain sodium bicarbonate (a base) and citric acid (an acid) which, when mixed with water, react with each other and produce bubbling carbon dioxide gas. This creates the bubbles within the colored water in the soda bottle. As the gas bubbles rise, they take some of the colored water with them.

GLOSSARY:

Intermolecular: From one molecule to another; between molecules

Sodium Bicarbonate: Baking soda

Acid: An acid is a chemical compound which is soluble in water, tastes sour and turns blue litmus paper pink. Acids neutralize bases. Citric acid, vinegar and battery acid are all examples, as is the gastric acid that breaks down the food we eat.

Base: A base is a chemical compound that has a bitter taste and tends to be slimy or slippery. They can break down dirt and plaque by forming hydroxide bubbles and are, therefore, often used for cleaning. Soaps, dishwashing liquids, detergents, bleaches, hair conditioners and baking soda are all examples.

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