

Introduction

This experiment explores the interaction between perfume, a candle, and water, providing insights into physical and chemical reactions.

Materials Needed

- A transparent glass
- Perfume
- A small candle
- A tray or shallow dish filled with water
- Matches or a lighter

Step 1: Setup

Begin by placing the candle in the center of the tray filled with water. Ensure that the candle is stable and won't tip over. Make sure the water is at a sufficient level to create a reactive environment.

Step 2: Adding the Perfume

Next, pour some perfume into the glass. The glass should be large enough to hold the perfume and inverted over the candle. The different components of the perfume, such as alcohol, will contribute to the experiment.

Step 3: Inversion of the Glass

After adding the perfume to the glass, carefully invert the glass over the candle so that the opening is submerged in the water. This will trap the perfume vapors within the glass.

Step 4: Igniting the Candle

Using matches or a lighter, gently ignite the candle. Ensure that you do this cautiously to avoid any accidents.

Step 5: Observations and Reactions

As the candle burns, it will create heat and produce combustion gases. This warmth will cause the perfume inside the glass to evaporate, and the vapors will begin to fill the glass. The vapors can sometimes create interesting visual effects as they condense and move.

Scientific Explanation

The heat from the candle's flame increases the temperature of the perfume, promoting evaporation. The reaction is characterized by:

- **Evaporation:** The liquid perfume is transformed into vapor due to the heat.
- **Combustion:** The candle consumes oxygen, producing heat and light.
- **Pressure Change:** As vapors accumulate, they increase pressure within the glass until it is released into the surrounding water.

Conclusion

This experiment demonstrates basic principles of thermodynamics, including heat transfer, evaporation, and the behavior of gases. Always remember to conduct experiments safely and follow proper procedures.