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3rd period chemistry
19/09/23

Density Lab #1

Research Questions

- How are Density units determined?
- What is the real-world application of density?

Introduction

Density is defined mathematically as the ratio of a substance's mass and volume:

$$P=mass/volume$$

It uses derived units; in chemistry, the derived units are usually g/mL or g/cm^3

Procedures

First, we measured the mass of the gray plastic PVC sample using an electronic scale. We filled our graduated cylinder with 50.0 mL of water, and then slid the sample into the cylinder. We then measured the new volume of the water, being careful each time to measure at the meniscus. Next, we subtracted these two volumes to obtain the sample's volume. The sample's mass was divided by its volume to obtain density. Each lab group then announced their findings and a comparison of these was made.

Data/observations

- Mass of PVC=19.09g
- Volume of water=50.0mL
- Volume of cylinder+PVC=64.0mL

D=1.36g/mL

Conclusion

The units are determined by the units used for mass and volume and then dividing those units with their respective quantities. These are derived units, renowned by computation.
Density is a physical trait that determines if an object will sink or float in a liquid. If the object's density is greater than the liquid’s density, it sinks, and if its density is less than the liquid’s density, it floats. The PVC had a density greater than h2o and therefore it sank.

- Mass
- Density
- Buoyancy
- Physical Property