

Density Lab Report- #1

Research Question:

How much density does the PVC have in water? Did the PVC sink or float?

Introduction:

Density is defined mathematically as the ratio of a substances mass and volume:

$$P=\text{mass}/\text{volume}$$

It uses derived units; in chemistry, the derived units are usually g/mL or g/cm³. The latter is equivalent to the former because 1 mL= 1 cm³.

Procedures:

First, we measured the mass of the gray plastic PVC sample using an electronic scale. We filled our graduated cylinder with 50 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 comparison of these was made.

Data/Observations:

We weighed the mass of the PVC on the electronic scale. Our PVC weighed 5.30g. We put 50 mL of water and put the PVC in the cylinder. The new volume of the water was at 53.5 mL. We subtracted 53.5 and 50 and got 3.5 we rounded that to 4 mL. After that, we divided 5.30g and 4 mL getting 1.225. We rounded that as well and got 1 g/mL.

Conclusion:

The units of density are determined by the units for mass and volume and then dividing those units with their respective. 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. If the objects density is less than the liquid's density, it floats. The PVC has a greater density than the water, and therefore it sank.