Tabitha Crane

9/19/2023

RESEARCH QUESTION

INTRODUCTION

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

$$p = mass/volume$$

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 50.0 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

PVC mass - 19.10 g

Volume – 50.0 mL

New Volume after placing PVC- 64.0 mL

64.0-50.0 = 14 mL

19.10 g / 14 mL = 1.4 g/mL

Density = 1.4 g/mL

CONCLUSION

Density is a physical property. The units of density are determined by the units used for mass and volume and then dividing those units with their respective quantities. These are derived units. If the objects density is greater than the liquids density, it sinks. If the objects density is less than the liquid's density, it floats, The PVC had a greater density than the H_2O and therefore it sank.

DEFINITIONS

The definition of mass is the measure of the amount of matter in an object.

The definition of density is an object's mass divided by the volume that the object occupies.

The definition of buoyancy is the tendency to sink or float when submerged in fluid.

The definition of physical property is matter that can be observed and measured without changing the chemical identity.