EXERCISE 2

Density

OBJECTIVES:

1. To become familiar with the metric system
2. To determine the density of a substance

Equipment

1. balance
2. unknown solid sample
3. graduated cylinder
4. Veriner caliper

The density ($D = \frac{M}{V}$) of matter is a fundamental physical property which is defined as mass per unit volume.

Procedure

1. Obtain a solid sample from your instructor and weigh it to the nearest 0.01 g.
2. Using a veriner caliper, measure the dimensions of the sample.
3. Calculate the sample's volume in cm^3 (volume of sample = πr^2 1).
4. Calculate the density of your samples in g/cm^3.
5. Repeat the volume measurement using a graduated cylinder.
6. Calculate the density of the sample using volume obtained from water displacement.
7. Obtain the accepted density from your instructor.
8. Calculate the percent error.

$$\text{(Percent error} = \frac{|\text{accepted value - experiment value}| \times 100}{\text{accepted value}}$$

9. Show all calculations.

ANSWER SHEET

EXERCISE 2

NAME_____ SECTION_____ DATE _____

Sample No.# _____

1. Weight of Sample ..... _____
2. a. Length ..... _____

   b. Diameter ..... _____
3. Volume from Dimension ..... _____

4. Density from Dimension ..... _____

5. Volume by Water Displacement ..... _____

   a. initial reading ..... _____

   b. final reading ..... _____
6. Density of the Sample Using the Volume from Water Displacement ..... _____

7. Accepted Density of your Sample ..... _____
8. Percent Error ..... _____