Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_

**Question**

What is the thickness of a sheet of aluminum foil?

**Skills**

* Reading a scale
* Unit conversions
* Significant figures

**Procedure**

1. Obtain two pieces of aluminum foil – one should be labelled “L” for light and one should be labelled “H” for heavy.
2. Measure the length of the light piece of aluminum foil and record the measurement in your data table.
3. Measure the width of the piece of aluminum foil and record the measurement in your data table.
4. Place the aluminum foil on the scale and record the mass in your data table.
5. Repeat with a heavy piece of aluminum foil.

**Results and Discussion**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| # | Length (cm)Step 2 | Width (cm)Step 3 | Mass (g)Step 4 | Density (g/cm3) | Area (cm2)Calculation 1 | Volume (cm3)Calculation 2 | Thickness (cm)Calculation 3 |
| L |  |  |  | 2.702 |  |  |  |
| H |  |  |  | 2.702 |  |  |  |

**Complete the following calculations on a separate piece of paper. Show all work, including units and correct significant figures.**

1. Calculate the area of each piece of foil.
2. Calculate the volume of each piece of foil using the mass and density.
3. Calculate the thickness of each piece of foil.
4. Aluminum atoms have a thickness of 0.286 nm = 1 atom. If aluminum atoms were stacked one on top of the other how many atoms thick would the sheet of foil be?
5. Compare your results for **thickness** to those of other groups. Are they the same? Should the thickness be the same for each type of foil?