

Lab Report: Lab Report on Density

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October 5, y

Objective

The density lab was conducted by weighing different substances and specimens by using rigorously mathematical equations using both direct and indirect measurement to determine which measurement showed the most accurate results.

Introduction

This lab reports focus of the experiment conducted by me and my partner on determining the density of certain substances by the use of mathematical equation, and sophisticated accurate measurement of the substances used. Experiment was performed with the use of distilled deionized water, PVC slug, an amount of an unknown substance, water, graduated cylinder, and different mathematical formulas to calculate our findings, and determined whether indirect or direct measurement was more accurate. Our findings suggested that indirect measurement provided the most accurate result for our substances.

Data

R. ghalak

Baswell R. Price B. 09/21/21

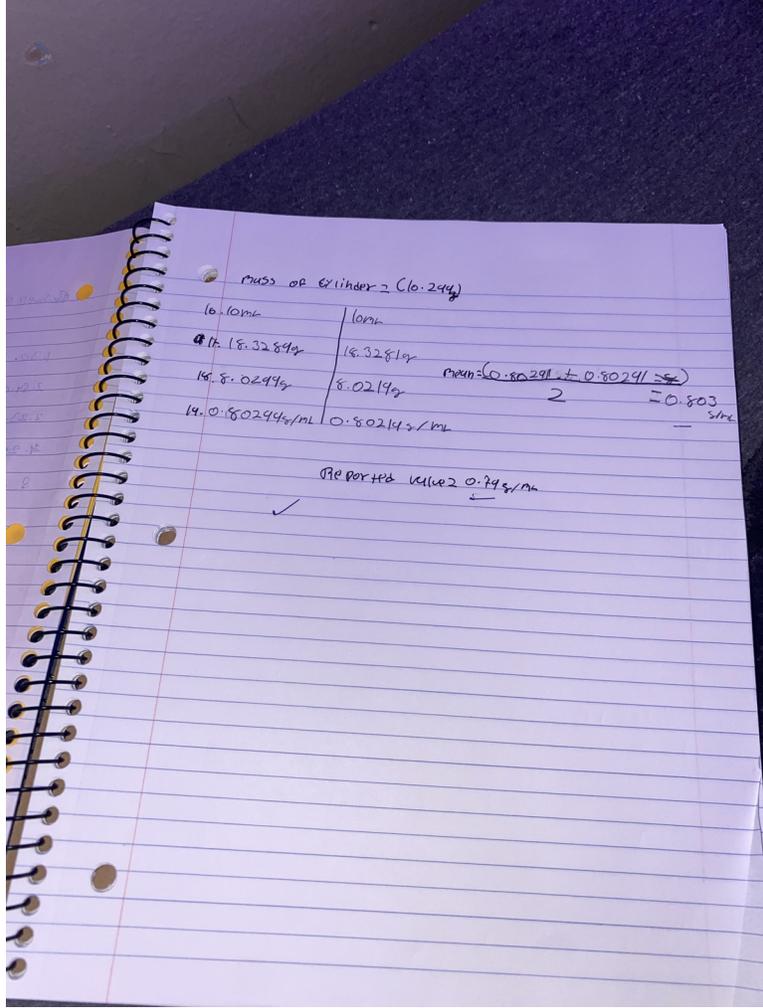
Distilled Deionized water

1. 30.25 ^g	30.25 ^g
2. 54.06 ^g	54.06 ^g
3. 23.806 ^g	23.804 ^g
4. 20.25 mL	20 mL
5. 0.95224 g/mL	0.98276 g/mL
mean $\frac{0.95224 \text{ g/mL} + 0.98276 \text{ g/mL}}{2} = 0.9675 \text{ g/mL}$	

Pvc	Pvc
7. 21.595 ^g	21.6047 ^g
8. 220 mL	217 mL
9. 20 g/mL	175/mL
10. 1.02975 g/mL	1.270564706 g/mL
mean $\frac{1.02975 \text{ g/mL} + 1.270564706 \text{ g/mL}}{2} = 1.17515 \text{ g/mL}$	

Reported value 1.34 - 1.42 g/mL

14. 5.625 cm ³	5.625 cm ³
15. 1.38208 g/mL	1.3827008 g/mL
mean $\frac{1.38208 \text{ g/mL} + 1.3827008 \text{ g/mL}}{2} = 1.38239 \text{ g/mL}$	



Conclusion

After we conducted our experiment with the use of indirect or direct measurement on different

specimens, we concluded that indirect measurement yield the most accurate results. The indirect calculation yield constant and accurate result, while the indirect calculation was a bit more time consuming, its results where right on point with the actual reported value of the sentence that we where utilizing, fulling our conclusion that indirect volume determination yield to us the most accurate answers.

Question

Which method of determine g density of the metal slug is more accurate?

As stated on my conclusion above, when determining the density of the metal slug (PVC for our group) the use of the indirect method was more accurate. We determined that the use of the indirect

method was more accurate because it showed the most precise answer when compared with the actual reported value, while direct measurement did not. When we used direct measurement for our PVC slug we got 1.175 g/ml, and the reported value was 1.39-1.42 g/ml, showing that it was way off, but when we used the indirected on a unknown substance we got 0.803 g/ml and the reported value was 0.79 g/ml, being precise, proving our decision correct.