

Thou Shalt Not Forget

Credit: Dan Reid

Unit 0 – Basics

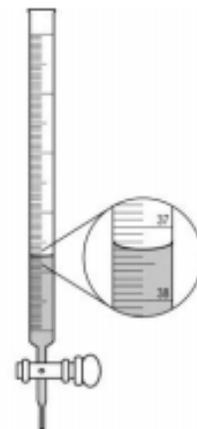
1. Compounds can be separated into elements by chemical changes, and mixtures can be separated by physical changes.
2. Filtering separates mixtures based on differences in particle size...the large particles are trapped on the filter paper while the soluble component goes through the filter paper and stays in the “filtrate”.
3. Distillation separates mixtures based on differences in boiling point.
4. Chromatography separates mixtures based on differences in polarity.
5. In paper chromatography, the component that is most similar in polarity to the “mobile phase” moves up the farthest.
6. Mass is conserved during chemical and physical changes.
7. When reading a volume of a liquid in a container, you can estimate by reading in between the graduated markings. That can give you one more sig. fig. in your volume.

You would read the volume on this buret as 37.30 mL.... NOT 38.70 mL.

8. Ranking measuring devices from least precise to most precise → beaker, graduated cylinder, volumetric flasks, burette

(The volumetric flask only has ONE line on it to measure one specific volume.)

9. Density = mass/volume
10. The % composition by mass for a pure compound does not change.
11. Empirical formula rhyme → % to mass, mass to mole, divide by small, times until whole...Get the simplest whole # ratio of the moles (or atoms) in the compound.
12. The molecular formula for a compound is a whole # multiple of the empirical formula ratio.
13. % yield = (experimental/theoretical)
14. % error = (experimental - theoretical)/theoretical
15. The amount of product for a reaction is determined by the limiting reactant.

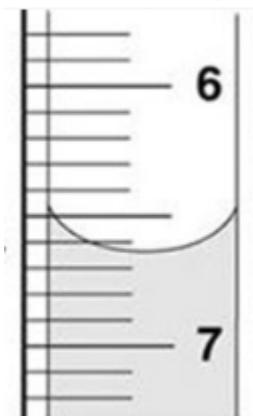


Thou Shalt Not Forget Questions

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Unit 0 – Basics

- What type of change separates a compound into elements?
 - What type of change separates a mixture into its components?
- Filtering separates mixtures based on differences in what property?
- Distillation separates mixtures based on differences in what property?
- Chromatography separates mixtures based on differences what property?
- In paper chromatography, if water is used as the “mobile phase”, what kind of substance will move moves up the farthest: something polar or something nonpolar?
 - In paper chromatography, if a nonpolar substance is used as the “mobile phase”, which component of a mixture will move moves up the farthest: something polar or something nonpolar?
- What type of change conserves mass: chemical, physical, both or neither?
- What is the volume of liquid in the burette?
 - What is the volume of liquid in the burette?



- Which piece of glassware is the most precise: beaker, burette, or graduated cylinder?
 - Which piece of glassware is the least precise: graduated cylinder, beaker, or burette?
 - List these pieces of glassware from most precise to least precise: burette, beaker, graduated cylinder
 - Which piece of glassware only has one line on it to so it can only be used to measure one specific volume?
- What is the equation for calculating the density of a substance?
- The % composition by mass of which substance does not change: heterogeneous mixture, homogeneous mixture or compound?
- The simplest whole # ratio of the atoms in a compound is called the _____ formula.
 - Complete the rhyme for calculating the empirical formula for a compound: “% to mass, mass to mole, _____, times ‘til whole.”
- Give a possible molecular formula for the following compound: $\underline{AB}_3 / \underline{A}_2B$
- What is the formula for calculating % yield?
- What is the formula for calculating % error?
- What is a limiting reactant?