

Unit 6: Ch 11 – Percent Composition

PERCENT COMPOSITION:

➤ **DEFINITION →**

➤ **CALCULATING PERCENT COMPOSITION:**

- Percent by _____ (*in 100g of compound*) of _____ element.
- **Percent (%) Composition:**
- Ex #1: What is the percent composition of each element in $K_2Cr_2O_7$?
- Ex #2: A compound contains 7.20 g C, 2.20 g H, and 17.6 g O. Calculate the percentage composition of the compound.

Percent Composition of Double Bubble

BACKGROUND: Percent composition is a common method of analysis to help identify a substance. To calculate the percent composition of a specific component within a compound, the following formula is used:

$$\text{Percent (\%)} \text{ Composition} = \frac{\text{Mass of Element}}{\text{Mass of Compound}} \times 100\%$$

Double Bubble chewing gum contains several compounds, including sucrose (sugar), C₁₂H₂₂O₁₁. When you chew Double Bubble gum, the sugar is dissolved by your saliva, leaving the other compounds behind. By weighing the gum before and after chewing it, you can determine the mass of the sugar, and using the above calculation, you can also calculate for the percent composition.

PRE-LAB QUESTION: Complete the following question. When you are finished, have your teacher sign off on the question in order to get lab materials.

- **Pre-Lab:** A substance contains 25.2 grams of oxygen and 8.5 grams of carbon. What is the percent composition for each element?

LAB PROCEDURES:

1. Obtain a piece of wrapped bubble gum. Determine the mass of the gum (with the wrapper on).
2. Remove the wrapper and chew the bubble gum until all of the sugar has been dissolved – you will know this has happened because the gum will stop tasting sweet (~4.-5 min).
3. Find the mass of the wrapper while you are chewing, but *don't throw the wrapper away*.
4. Return the chewed gum to the wrapper and find the mass.

DATA & ANALYSIS:

Record all data to the correct number of significant figures **AND** units **AND** show all work for calculations below!

Mass of <i>unchewed</i> gum (<i>WITH</i> wrapper):	
Mass of wrapper:	
Mass of <i>chewed</i> gum (<i>WITH</i> wrapper):	

1. Mass of *unchewed* gum (*WITHOUT* wrapper):
2. Mass of *chewed* gum (*WITHOUT* wrapper):
3. Mass of sugar (sucrose) in gum:
4. Calculate the percent composition of the sugar in the gum: