

Percent Composition and Gum

Interpreting Data Water soluble sweeteners and flavorings are added to chewing gum. Are these chemicals added as an outside coating or are they mixed throughout the gum?

Materials balance, weighing paper, 250-mL beakers (2), pieces of chewing gum (2), stirring rod, paper towels, window screen (10 cm x 10 cm), scissors, clock or timer

Procedure



CAUTION: *Do not taste or eat any items used in the lab.*

1. Unwrap two pieces of chewing gum. Measure the mass of each separately on a piece of weighing paper. Label the weighing papers with the masses to avoid mixing up your data. Record the masses.
2. Add 150 mL of cold tap water to a 250-mL beaker. Place one piece of chewing gum in the water and stir for 2 minutes.
3. Remove the gum from the water and pat dry using paper towels. Measure and record the mass of the dried gum.
4. Use scissors to cut the second piece of gum into small pieces, each about the width of a pea. Repeat step 2 using fresh water. Use the stirring rod to keep the pieces of gum from clumping together.
5. Use the window screen to strain the water from the gum. Pat the gum dry using paper towels. Measure and record the mass of the dried gum.
6. Discard the gum in a waste container.

Analysis

1. For the uncut piece of gum, calculate the mass of sweeteners and flavorings that dissolved in the water. The mass of sweeteners and flavorings is the difference between the original mass of the gum and the mass of the dried gum.
2. For the gum that was in small pieces, calculate the mass of dissolved sweeteners and flavorings.
3. For both pieces of gum, calculate the percent of the original mass that was soluble sweeteners and flavorings.
4. What can you infer from the two percentages? Is the gum sugar-coated or are the sweeteners and flavorings mixed throughout?