

Conservation of Mass Experiment

Objectives:

This experiment will show that in a chemical reaction where a gas is produced, the mass does not change, provided none of the gas is allowed to escape. The gas is then allowed to escape to show that gas does have mass.

Materials Needed:

- Balance or scale
- 1/8 of an Alka-Seltzer tablet
- Small thick-walled bottle with tight cap (a soda bottle test tube work well)
- Safety glasses

Procedure:

- Fill the test tube $\frac{3}{4}$ full with water and cap it.
- Weigh the bottle, water, cap, and Alka-Seltzer piece together
- Drop the Alka-Seltzer piece into the bottle and quickly recap it to prevent any gas from escaping.
- Weigh the filled, capped bottle after the tablet dissolves and compare it to the initial weight.
- Loosen the cap slowly, being careful not to let water bubbles escape while letting the gas escape.
- Tighten the cap and weigh the bottle again, comparing it to the other two weights.