

PRACTICE 9. PROVING LAVOISIER'S LAW OF CONSERVATION OF MASS.

Scientific basis: When a substance reacts chemically with another there is a break of the bonds that connect the atoms of each one of those substances, and then those atoms regroup in a different way, creating molecules that are different from the original ones. But, as the number of atoms doesn't change, **the total mass of the reactants is the same as the total mass of the products.**

Material: Erlenmeyer flask, weighing scales, rubber balloon, vinegar, sodium bicarbonate.

Procedure:

- Pour 5 ml of vinegar in the flask.
- Weigh 5 g of sodium bicarbonate and place them inside the balloon.
- Adjust the balloon to the mouth of the flask being careful not to mix the bicarbonate with the acid, and seal it to avoid leaks.
- Place the ensemble on the scales. Take note of the mass:

Reactants mass:

- Now make the bicarbonate pass from the balloon to the flask. The reaction will take place:



Check if this reaction is adjusted according to the number of atoms of each element present in the reactants and products.

	<u>Reactants</u>	<u>Products</u>
# of atoms of Na:		
# of atoms of H		
# of atoms of C		
# of atoms of O		

- Wait until the effervescence ends. What do you think is that gas?

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- Once the reaction is completed, take note of the mass:

Products mass:

- Did it change? Why?

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- Calculate the molecular mass of each molecule, and verify the Law of Conservation of Mass.