Hong Kong Student Science Project Competition 2023

Template of Extended Abstract (Investigation)
(Word Limit: 1,600 words, Pages: 3 pages only)

Team Number:JBBC119

Project Title: Acids from Coke and Mentos

Project Type: Investigation

***To our best knowledge, there <u>are no</u> * similar works in the field*; (if there are,) related research links are as below:**

The enhancement our project made / the difference with related research are:

Please delete if not applicable. The competition values the originality of works. Students must do enough literature research to ensure that their works are unique and list relevant reference materials before starting research or invention.

I. Background

This experiment is inspired by the explosion of cola and mentos, through this experiment we will test the amount of carbon dioxide after adding candy in cola. Carbon dioxide in cola is released by the candy in this experiment. We want to find the best candy for the making of sparkling water.

II. Objectives

We conducted this experiment to investigate how different brands of candies react with cola and record the production of carbon dioxide.

III. Hypothesis

When the volume of baking soda that reacts with oxalic acid increases, then the carbon dioxide production will increase.

IV. Methodology

Experimental method:

1) Measure 14g of a type of candy and put it in an small plastic dish
2) Measure 10mL of lime water by a measuring cylinder and pour it in a test tube
3) Measure 100mL of coke in a conical flask
4) Put a plastic tube with links to the rubber stopper into the test tube

5) Pour the candy into the conical flask and stuck the opening of conical flask by the rubber stopper then start the timer
6) Repeat 1-5 with different types of candies

V. Results

V. Results

Type of candy	First result	Second result	Third result	average result
Coca cola coke plus zero sugar	20.5 NTU	21.4 NTU	19.6NTU	20.5 NTU
Airwaves	21.1 NTU	50.9 NTU	33.9 NTU	35.3 NTU
Double Mint	55.2 NTU	52.8 NTU	65.1 NTU	57.7 NTU
Polo	383.7 NTU	455.2 NTU	281.4 NTU	373.4 NTU
Morinaga Ramune Candy	455.2 NTU	455.2 NTU	316.4 NTU	408.9 NTU
Mentos(mint flavour)	455.2 NTU	455.2 NTU	444.4 NTU	451.6 NTU
Dextro Energy	455.2 NTU	455.2 NTU	455.2 NTU	455.2 NTU

At first ,we thought that Mentos reacting with coke has the strongest reaction and will release the most carbon dioxide.Until we finished our experiment,we found that there was a new type of candy-Dextro Energy that can react with coke and the amount of carbon dioxide released is close to Mentos.

VI. If your team will compete the Sustainable Development Award, please indicate the specific sustainable development goal the project is related to, and provide justification for competing for this award. ***(Word limit: 300 words)***

VII. If your team will compete the Social Innovation Award, please list the target group or social issue the project focuses on, and provide justification for competing for this award.
(Word limit: 300 words)

VIII. Conclusion

Mentos and Dextro Energy can react with coke. The amount of carbon dioxide released is higher than other types of candies. As the Mentos and Dextro Energy candy sinks in the bottle, the candy causes the production of more and more carbon dioxide bubbles, and the rising bubbles react with carbon dioxide that is still dissolved in the soda to cause more carbon dioxide to be freed and create even more bubbles, resulting in the eruption.

□ **Our project is developed based on previous project and the enhancement is below:**