

Observations of chemical changes essay sample

[Science](#), [Chemistry](#)



**ASSIGN
BUSTER**

A. Suppose a household product label says it contains sodium hydrogen carbonate (sodium bicarbonate). How would you test this material for the presence of sodium bicarbonate? I would add hydrochloric acid (HCl) with carbon dioxide with NaHCO_3 , and it should bubble and form gas.

B. You know what color phenolphthalein and bromothymol blue turn when testing an acid or a base. Use the empty pipet in the Auxiliary Supplies Bag to test several (at least 3) household items including household cleaning products with bromothymol blue. Rinse the pipet well before using it on to the next household chemical. When finished with this experiment rinse the pipet well and return it to the Auxiliary Bag for use in future experiments.

Name the items tested and record their results. What do these results mean?

-Bleach+ Detergent= turns purple color

-Glass Cleaner(Clear Image)+ bromothymol blue= bubbled and turned into dark blue color. -70% alcohol+ bromothymol blue= bubbled and turned into green color. From these results, we could conclude that class cleaner(Clear Image) is basic and 70% alcohol is neutral.

C. You found a sample of a solution that has a faint odor resembling vinegar. You are verifying that it is indeed vinegar and you add a few drops of phenolphthalein. The sample turns pink. What assumption can you make about this sample? I assume that the vinegar is an acid.

D. You decided to investigate if the new wave of Vitamin Water is neutral: neither too acidic not too basic. Using BTB (bromothymol blue), you select five flavors of Vitamin Water to test. Three of the flavor samples turn a murky green, indicating the likelihood of acid/ base balance. Of the

two remaining, one turns slightly yellow, while one remains blue. What can you assume about the acid/base content of these particular flavors of Vitamin Water? Three flavors that a murky green color= neutral.

One flavor that turned slightly yellow= acid

One flavor that turned blue= basic

E. You have read that a new brand of hair tonic is supposed to contain lead (an ingredient in Grecian Formula). Devise a simple test to confirm the presence or absence of lead in that hair tonic. To confirm the presence or absence of lead in that hair tonic, I would mix KI and Pb (NO₃)₂ together , and it should bubble and yellow color should be formed.

Purpose: The purpose of Observation of Chemical Changes experiment is to examine some reactions of common chemicals contained in consumer products and observe the macroscopic changes these chemicals undergo.

Procedure:

1. For the following combinations of chemicals, used a different well of the 96-well plate for each combination, placed 2 pipet drops of the first chemical in one well and then added 2 drops of the second chemical. Next, observed the mixture against white and dark backgrounds by putting white paper underneath the well plate. For each reaction, recorded well number of the mixture. 2. Recorded the observation in Data Table 1.

Data Table 1: Reactions Expected Well #

Chemicals

Reaction

A

NaHCO₃ and HCl-CO₂

It bubbled and formed gas; acid

B

HCl and BTB

Yellow color was formed ; acid

C

NH₃ and BTB

Violent blue color was formed; basic

D

HCl and blue dye

Green color was formed; neutral

E

Blue Dye and NaOCl

No reaction; neutral

F

KI and Pb(NO₃)₂

Bubbled and yellow color was formed; acid

G

NaOH and phenolphthalein

Dark pink color was formed.

H

HCl and phenolphthalein

Clear color with small bubble.

I

NaOH and AgNO₃

Brownish green color was formed; neutral

J

AgNO₃ and NH₃

Clear color; no color changed.

K

NH₃ and CuSO₄

Royal blue to light blue; basic

3. Carefully blot up with paper towels any of the remaining chemicals in the well plates, or poured the chemical mixtures down the sink and flush with a lot of water. Thoroughly rinsed out the 24-well and 96-well plates, used distilled water for a final rinse, and dried them with paper towels.

4. Squeezed out any remaining auxiliary chemicals from the dispensing pipets, and rinsed well by sucking in and squeezing out distilled water several times. Squeezed pipets several times to expel all water and dry and stored them in the auxiliary bag. 5. Washed my hand with soap and water.

Conclusion: The Observation Of Chemical Changes was helpful to know the chemicals and its reaction. It helped to interpret underlying properties of chemicals. This experiment taught a lot about acid and basic. Students learned about household cleaning products and learned how to test if it's acid or basic.