

## Chemical analysis experiment 2

### Education in Chemistry

September 2017

[rsc.li/EiC517-know-your-poison](http://rsc.li/EiC517-know-your-poison)

**This experiment accompanies the above article ‘Know your poison’.**

One of Guy’s initial explorations in analysis was reagent testing; simple chemical tests that can identify the drug present with a colour change.

Read the fourth paragraph of the article.

1. How do the chemical tests that Guy designed work?

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2. Why do these chemical tests need to be simple to interpret?

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In the sample vials you have four samples labelled A–D. The article states a number of substances are used to bulk up drug samples. These are often commonly found chemicals and foodstuffs. The samples you are provided with contain the following combinations of substances.

- Sodium chloride, sodium carbonate, flour
- Sodium chloride, flour
- Potassium iodide, sodium carbonate, glucose
- Sodium chloride, sodium sulfate, flour

### Challenge

A suspected illicit drugs lab is known to have ordered large quantities of sodium chloride, sodium carbonate and flour. The police assume it is for bulking up their drugs. The police have some drug samples they previously seized. You will use some simple chemical tests to find out which samples belongs to the suspect lab.

### Tests to carry out

Test for sulfate ions	Add a few drops of barium chloride solution.	White precipitate if sulfate is present
Test for carbonate ions	Add a few drops of dilute hydrochloric acid.	Bubbles produced if carbonate is present
Test for halide ions	Add a few drops of dilute nitric acid, followed by a few drops of silver nitrate solution. Leave to stand.	Chloride ions = white precipitate Bromide ions = cream precipitate Iodide ions = pale yellow precipitate
Test for starch	Add a few drops of iodine solution.	Blue/black colour if starch is present
Test for glucose	Add a few drops of Benedict’s reagent and leave to stand in a beaker of hot water.	Orange/red precipitate formed if glucose is present

## Results table

Fill in the results table with your observations.

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Sulfate test				
Carbonate test				
Halide test				
Starch test				
Glucose test				

## Conclusion

The aim of this experiment was to identify the mixture that belongs to the illicit drugs lab. With reference to this aim, write a conclusion for the experiment. Remember to refer back to your results when explaining your conclusion.