# Testing for poisons

# Testing for heavy metal poisoning

# Task

A young woman has been found dead at a party. She is young and fit. A pathologist has sent you three samples to test as he suspects heavy metal poisoning Using flame tests you are going to identify the heavy metal found in her system.

**Method**

1. Take splint out of the solution and hold into a blue Bunsen flame. .
2. Make a note of the colour of the flame
3. Put splint into a beaker of water
4. Repeat steps 1-3 and test the other two samples

|  |  |  |
| --- | --- | --- |
| **Sample** | **Colour** | **Heavy Metal** |
| 1 Lithium |  |  |
| 2 Sodium |  |  |
| 3 Potassium |  |  |
| 4 Caesium |  |  |
| 5 Calcium |  |  |
| 6 Strotium |  |  |

Unknown samples obtained from the victim

|  |  |  |
| --- | --- | --- |
| Sample | Colour | Heavy Metal |
| X |  |  |
| Y |  |  |
| Z |  |  |

Once the colour of the flame has been noted try and identify the colour of the flame using the colour chart below

A picture containing food

Description automatically generated

# Testing stomach contents for alcohol and aspirin

## Task

A man in his 20s has been found dead on Angel Gate in Guildford. The Pathologist has sent you a sample of the man’s stomach contents and would like you to determine what substances are present.

1. You will need to first separate out the stomach contents. You have been provided with the following equipment to do this:

* Funnel
* Filter paper
* Conical flask

What precautions will you have to take in order to make sure that you are safe and no contamination of the sample occurs?

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1. You will need to split you stomach contents into 6 test tubes in order to test for different substances.
2. Follow the methods for each test and complete the table

|  |  |  |  |
| --- | --- | --- | --- |
| **Test for:** | **Method** | **Safety precautions** | **Observation and conclusion** |
| **Alcohol** | 1. Add 1 drop of sodium dichromate and 10 drops of sulphuric acid to the test tube 2. Warm test tube in beaker with hot water for 10 minutes 3. If the solution goes brown alcohol is present. | Sodium dichromate:  …………………………………………………………………………………………………………………………………………………………  Sulphuric acid  …………………………………………………………………………………………………………………………………………………………  Hot water bath  ………………………………………………………………………………………………………………………………………………………… |  |
| **Reducing sugars** | 1. Add 5 drops of Benedict’s solution 2. Warm test tube in hot water for 10 minutes 3. If a red/brown solid forms then reducing sugars are present (however if the reducing sugars are in a low concentration the solution will go green) | Benedict’s solution  ………………………………………………………………………………………………………………………………………………………… |  |
| **Protein** | 1. Add 10 drops of Biuret’s solution 2. If protein is present solution will go a darker blue | Biuret’s solution  ………………………………………………………………………………………………………………………………………………………… |  |
| **Aspirin** | 1. Add 1 drop of Iron Chloride 2. If aspirin is present solution will turn purple | Iron Chloride  ………………………………………………………………………………………………………………………………………………………… |  |
| **Starch** | 1. Add 1 drops of iodine solution 2. If starch is present solution will go blue/black | Iodine solution  ………………………………………………………………………………………………………………………………………………………… |  |
| **Acid** | 1. Using the small end of the spatula add a very small amount of sodium carbonate 2. If acid is present it will fizz | Sodium Carbonate  ………………………………………………………………………………………………………………………………………………………… |  |