

NEATH PORT TALBOT COLLEGE COLEG CASTELL NEDD PORT TALBOT

School of Maths & Science Science Practical

Qualitative Organic Analysis A

◆ **Aim**

To identify compound A

◆ **Introduction**

In the following investigations you will attempt to identify an unknown compound by interpreting the observations you make when carrying out a number of chemical tests and also by using the mass spectrum of the compound.

◆ **Safety**



Control Measures

- The wearing of **safety goggles, gloves and a laboratory coat** at all times will be sufficient to take account of most hazards and significant risks.
- Keep stoppers on bottles as much as is possible.
- All waste is to be placed in the labelled container immediately after use.
- You are reminded of the need of good laboratory practise in order to maintain a safe working environment.

Hazards



Corrosive

Sodium Hydroxide, compound A



Harmful/Irritant

Bromine water



Toxic

Compound A

◆ Procedure

Test	Observation	Inference
1. Heat the solid on crucible lid (in a fume cupboard)		
2. Solubility in water. Treat ~ 0.1g of sample in a test-tube with about 2 cm ³ of water. Does it dissolve?		
3. Solubility in sodium hydroxide. Treat approx 0.1g of sample in a test tube with about 2cm ³ of dilute sodium hydroxide. Does it dissolve?		
4. Treat approx 0.1g of sample in a test-tube with about 2cm ³ of dilute sodium hydrogen carbonate.		
5. Add bromine water to a saturated solution of the compound gradually to excess in a test tube.		
6. To a small crystal (or very dilute aqueous solution) of A add one drop iron (III) chloride solution.		
7. Look at the mass spectrum and identify the compound.(you are NOT expected to interpret the spectrum)		

Conclusions regarding the nature of A:

◆ **Questions.**

1. Write suitable equations for the reactions between:

(i) A and bromine

(ii) A and Na_2CO_3

2. How can you distinguish between A and a carboxylic acid by the means of a suitable chemical test, other than using FeCl_3 ?