



Chemistry

CHM6T/P13/task

Unit 6T A2 Investigative Skills Assignment

Task Sheet

An investigation of some organic compounds

Aldehydes are useful starting materials in the synthesis of a wide variety of organic compounds. Aldehydes can be distinguished from ketones and carboxylic acids by test-tube reactions that test for specific functional groups.

You are provided with solutions of four unknown compounds labelled **A**, **B**, **C** and **D**.

- You will carry out tests on these solutions.
- You will record what you **observe** for each test in a table of your own design on the Candidate Results Sheet.
- Where no visible change is observed, write 'no visible change'.

In this task you are **not** required to identify any of the solutions or any of the reaction products.

Procedure

- **Wear eye protection at all times.**
- **Assume that all solutions are toxic, corrosive and flammable.**
- **Use a separate sample in each of the following tests.**

Test 1 Place about 10 drops of solution **A** in a test tube. This test tube should be labelled 'A'. Add about 10 drops of Fehling's solution and shake the mixture.
Do not discard this mixture.

Using test tubes labelled 'B', 'C' and 'D', repeat this procedure with solution **B**, then solution **C** and then solution **D**.

Half fill a 250 cm³ beaker with the freshly boiled water provided.
Allow the four test tubes to stand in the beaker of hot water for about 10 minutes.

While you are waiting, begin **Test 2**.

Test 2 Place about 10 drops of solution **A** in a test tube. This test tube should be labelled 'A'. Add about 10 drops of potassium manganate(VII) solution and shake the mixture.
Do not discard this mixture.

Using test tubes labelled 'B', 'C' and 'D', repeat this procedure with solution **B**, then solution **C** and then solution **D**.

Half fill a second 250 cm³ beaker with the freshly boiled water provided.
Allow the four test tubes to stand in the beaker of hot water for about 10 minutes.

While you are waiting, begin **Tests 3** and **4**.

Test 3 Place about 10 drops of solution **A** in a clean test tube.
Use a spatula to add a small amount of solid sodium hydrogencarbonate.

Using separate test tubes, repeat this procedure with solution **B**, then solution **C** and then solution **D**.

Test 4 Place about 10 drops of solution **A** in a clean test tube.
Add about 20 drops of iodine solution and shake the mixture.
Add sodium hydroxide solution dropwise until the yellow colour of the iodine is no longer visible.

Using separate test tubes, repeat this procedure with solution **B**, then solution **C** and then solution **D**.

ISA CHM6T/P13 Candidate Results SheetCentre Number

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Teacher Group

Candidate Name Candidate Number

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Results

Record your observations in an appropriate table in the space below.

(8 marks)

For Teacher's use only			
R		A	