

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use Total Task 1



General Certificate of Education  
Advanced Level Examination  
June 2010

## Chemistry

## CHM6X/PM1

Unit 6X A2 Externally Marked Practical Assignment  
Task Sheet 1

To be completed before Task Sheet 2.

For submission by 15 May 2010

For this paper you must have:

- a ruler
- a calculator.

## The investigation of a hair bleach

Hydrogen peroxide can act as an oxidising agent and as a reducing agent. Aqueous solutions of hydrogen peroxide are used to bleach human hair. However, hydrogen peroxide is also a skin irritant, so it must only be used in dilute solution.

This practical assessment is in two parts, Task 1 and Task 2.

In Task 1 you will complete a series of observation exercises on a solution of a hair bleach. The results of these exercises will allow you to confirm that this hair bleach contains hydrogen peroxide.

In Task 2 you will determine the concentration of a solution of hydrogen peroxide in this bleach by titration with aqueous potassium manganate(VII) in the presence of dilute sulfuric acid.

### Task 1 Observation exercises

#### Confirmation of the presence of hydrogen peroxide in a hair bleach

You are provided with an aqueous solution, labelled **A**, of the hair bleach.

**Use a separate sample of solution A in each of the following tests.**

Record what you **observe** in a table of your own design on the Candidate Results Sheet for Task 1. Where no visible change is observed, write 'no visible change'.

You are **not** required to identify solution **A** or any of the reaction products in this part of the task.

**Wear eye protection at all times.**

**For the purpose of this task assume that all of the solutions are toxic and corrosive.**

#### Test 1 Test with chromium(III) sulfate solution and sodium hydroxide solution

Place about 20 drops of chromium(III) sulfate solution in a test tube. Add sodium hydroxide solution, dropwise with shaking, until the test tube is about one quarter full. Now add 20 drops of **A** and shake the mixture. Leave the mixture to stand for a few minutes.

**While you are waiting, begin the tests below.**

#### Test 2 Test with universal indicator solution

Place about 10 drops of **A** in a test tube. Add 3 drops of universal indicator solution, and shake the mixture.

#### Test 3 Test with manganese(IV) oxide

Place about 10 drops of **A** in a test tube. Add a small amount of manganese(IV) oxide.

**Candidate Results Sheet for Task 1**

Teacher Group .....

**Results**

Record your observations in a table of your own design in the space below.

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R		A	
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**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**