

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use Total Task 2



General Certificate of Education
Advanced Level Examination
June 2010

Chemistry

CHM6X/PM2

Unit 6X A2 Externally Marked Practical Assignment
Task Sheet 2

To be completed before the EMPA Written Test.

For submission by 15 May 2010

For this paper you must have:

- a ruler
- a calculator.

Task 2 Determination of the concentration of hydrogen peroxide in the bleach

Aqueous solutions of hydrogen peroxide are used to bleach human hair. However, hydrogen peroxide is also a skin irritant so must only be used in dilute solution.

You are provided with a solution of the hair bleach which has been diluted with water. You will titrate this diluted solution with the $0.0200 \text{ mol dm}^{-3}$ solution of potassium manganate(VII) provided. The titration results will allow you to determine the concentration of hydrogen peroxide in the diluted hair bleach.

Wear eye protection at all times.

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

Procedure

1. Rinse the burette with the potassium manganate(VII) solution. Set up the burette and, using a funnel, fill it with the potassium manganate(VII) solution. Record the initial burette reading in a table of your own design on the Candidate Results Sheet for Task 2.
2. Using a pipette filler, rinse the pipette with the hair bleach solution provided for Task 2. Using this pipette, transfer 25.0 cm^3 of the hair bleach solution to a 250 cm^3 conical flask.
3. Using a measuring cylinder, transfer approximately 10 cm^3 of dilute sulfuric acid to the conical flask.
4. Add the potassium manganate(VII) solution from the burette until the mixture in the conical flask just turns pink. Record your final burette reading in your table.
5. Rinse the conical flask with distilled or de-ionised water and repeat the titration until you obtain a minimum of **two** titres which are concordant. (You should do no more than five titrations.)
Have one of your final burette readings checked by your teacher.
6. Calculate and record the average titre on the Candidate Results Sheet for Task 2. Indicate clearly the titres used in calculating this average titre.

Candidate Results Sheet for Task 2

Teacher Group

Results

Record your results from the titration in a table of your own design in the space below.

Average titre / cm³

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R		P	
C		A	

There are no questions printed on this page

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