

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use Total Task 1



General Certificate of Education  
Advanced Subsidiary Examination  
June 2011

# Chemistry

# CHM3X/PM1

Unit CHM3X AS Externally Marked Practical Assignment  
Task Sheet 1

To be completed before Task Sheet 2

For submission by 15 May 2011

For this paper you must have:

- a ruler
- a calculator.

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## The investigation of a food preservative and of a moss killer

Organic acids are used to preserve food.

The salts of these acids are used to prevent the growth of moss on building materials stored outdoors.

This practical assessment is in two parts.

The aim of Task 1 is to identify the organic acid present in a food preservative by titration of a solution of the preservative with a  $0.100 \text{ mol dm}^{-3}$  solution of sodium hydroxide.

The aim of Task 2 is to identify the metal ion in the salt of an organic acid used as a moss killer by a series of observation exercises.

### Task 1          Titration

**Wear eye protection at all times.**

**Assume that all of the solutions are toxic and corrosive.**

#### Procedure

1. Rinse the burette with the preservative solution provided. Set up the burette and use a funnel to fill it with the preservative solution. Record the initial burette reading in a table of your own design on the Candidate Results Sheet for Task 1.
2. Use a pipette filler to rinse the pipette with the sodium hydroxide solution provided. Use this pipette to transfer  $25.0 \text{ cm}^3$  of the sodium hydroxide solution to a  $250 \text{ cm}^3$  conical flask.
3. Add 3 or 4 drops of phenolphthalein indicator to the conical flask.
4. Add the preservative solution from the burette until the mixture in the conical flask just turns colourless. Record your final burette reading in your table.
5. Rinse the conical flask with distilled or deionised water. Repeat the titration until you obtain **two** titres that are within  $0.10 \text{ cm}^3$  of each other. 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 1. Indicate clearly the titres that you used in calculating this average titre.

You are not required to carry out any further calculations on the Candidate Results Sheet for Task 1. You will use your results to identify the organic acid in **Section A** of the Written Test.

**Candidate Results Sheet for Task 1**

Teacher Group .....

**Results**

Record your titration results in an appropriate table in the space below.

Average titre / cm<sup>3</sup> .....

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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**