Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use Step 1

General Certificate of Education
June 2009
Advanced Subsidiary Examination

Chemistry CHM3X/PM1

Unit 3X Externally Marked Practical Assignment

Task Sheet 1

To be completed before Task Sheet 2

For submission by 15 May 2009

You must have
- a ruler

You may use a calculator.

The identification of a magnesium carbonate mineral

Magnesium carbonate, $MgCO_3$, can occur as the anhydrous compound, or as hydrates with 2, 3 or 5 molecules of water of crystallisation. In this practical assessment you will identify the type of magnesium carbonate which is present in a mineral obtained in North Yorkshire. Magnesium carbonate is almost insoluble in water but it does react with hydrochloric acid, forming a solution that contains magnesium ions.

In Task 1 you will complete a series of observation exercises. The results of these exercises will allow you to confirm that the mineral contains magnesium ions.

Task 1 Observation exercises

Confirming that the mineral is a magnesium compound

You are provided with a neutral aqueous solution, labelled **A**, produced by adding hydrochloric acid to the mineral.

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

Perform the tests described below on each sample in turn.
Record what you **observe** in a table of your own design on the Candidate Results Sheet.
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 suitable eye protection at all times.
Assume that all of the reagents are toxic and corrosive.

Test 1 Test with sodium hydroxide solution
Place about 10 drops of **A** in a test tube. Add sodium hydroxide solution, dropwise with shaking, until in excess.

Test 2 Test with dilute sulfuric acid
Place about 10 drops of **A** in a test tube. Add about 10 drops of dilute sulfuric acid and shake the mixture.

Test 3 Test with ammonia solution
Place about 10 drops of **A** in a test tube. Add ammonia solution, dropwise with shaking, until in excess.

Test 4 Test with sodium carbonate solution
Place about 10 drops of **A** in a test tube. Add about 10 drops of sodium carbonate solution and shake the mixture.

Candidate Results Sheet Task 1

Results

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

END OF TASK 1

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There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED