



Chemistry

CHM3T/Q10/task

Unit 3T AS Investigative Skills Assignment

Task Sheet

An investigation of halide ions

Solution **A** has been received at a forensic laboratory with the request that it is analysed for the presence of halide ions. Solution **A** is thought to contain **two** different halide ions.

You must analyse solution **A** for the presence of halide ions.

- You are given four aqueous solutions labelled **P**, **Q**, **R** and **A**.
- **P**, **Q** and **R** each contain only one type of halide ion.
- You will carry out tests on solutions **P**, **Q**, **R** and **A**.
- **Record what you observe** for each test in a table of your own design on the Candidate Results Sheet.
- Where no visible change occurs in any of the tests write 'no visible change'.

In this part of the task you are **not** required to identify **P**, **Q**, **R**, the halide ions present in **A** or any of the reaction products.

Wear eye protection at all times.

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

Procedure

- Test 1** Place about 10 drops of solution **P** in a boiling tube. Add 2–3 drops of silver nitrate solution and shake the mixture. Keep the mixture for use in **Test 2**.
- Test 2** Add about 2 cm³ of **dilute** ammonia solution to the mixture from **Test 1** and shake the new mixture. Keep this mixture for use in **Test 3**.
- Test 3** Add about 2 cm³ of **concentrated** ammonia solution to the mixture from **Test 2** and shake the new mixture. Keep this mixture for use in **Test 4**.
- Test 4** Add about 1 cm³ of dilute nitric acid to the mixture from **Test 3** and shake the new mixture. Continue to add nitric acid until no further change occurs. Dispose of the contents of the boiling tube.

For each of the separate solutions, **Q**, **R** and **A**, repeat **Tests 1, 2, 3 and 4**.

ISA CHM3T/Q10 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 below.

For Teacher's use only			
R		A	