Investigation: Gravimetric analysis.

Background: Gravimetric analysis can be used to determine the salt concentration in a solution.

Variables

The class is supplied with a 0.1 M salt (NaCl) solution.

Add 20 mL to a beaker.

Add 15 mL of silver nitrate solution.

Observe the precipitate formed.

If you measure the conductivity of a solution of unknown concentration, how will you find the concentration from the conductivity reading?

What variables are there to take into account in this experiment?

Your task is to investigate this process to improve the consistency of the results obtained. It should be that each group can take a solution and obtain the same result when testing conductivity.

Possible questions;

* How do you ensure an excess of silver nitrate?
* Is silver chloride completely insoluble?
* Does it matter what temperature the oven is set at?
* Does the precipitate lose mass as it changes colour?
* What impurities will create interference?

Notes

Use of a calibration curve will lead to better results.

The presence of potassium chloride will cause a problem. The presence of sodium nitrate will not cause a problem.

Have different groups measure the electrical conductivity of the salt solution. Use different volumes, different size beakers and ask one group to heat their sample to 40 0C before testing.

What do you observe at the electrodes?

Ask each group to write the conductivity value they obtained on the board.

How do the values compare?

If you measure the conductivity of a solution of unknown concentration, how will you find the concentration from the conductivity reading?

What variables are there to take into account in this experiment?

Your task is to investigate this process to improve the consistency of the results obtained. It should be that each group can take a solution and obtain the same result when testing conductivity.

You need to develop a question and a hypothesis and to outline the course of action you will follow to conduct your investigation.

Note:

To get good results,

* Always use 25 0C
* Keep electrodes fixed depth and separation
* Use calibration curve
* Use AC current and equipment

