

**Carry out an investigation into chemical species present in a sample using qualitative analysis**  
[3 Credits, Internal Assessment]

This achievement standard involves carrying out an investigation into chemical species present in a sample using qualitative analysis.

An identification procedure may include:

- identifying ions based on solubility rules and the formation of complex ions
- identifying organic compounds based on functional group reactions.

Secondary data may include:

- solubility rules and formulae of complex ions
- a functional group reaction map
- relevant scientific literature.

### **Achievement**

Carry out an investigation into chemical species present in a sample using qualitative analysis involves:

- collecting primary data using an identification procedure
- identifying chemical species present by matching primary data to the procedure
- linking the chemical species to the compound present in the sample
- describing the significance of an identified chemical species for people and/or the environment.

### **Achievement with Merit**

Carry out an investigation into chemical species present in a sample using qualitative analysis involves:

- collecting primary data using an identification procedure
- identifying chemical species present by matching primary data to the procedure
- linking the chemical species to the compound present in the sample
- describing the significance of an identified chemical species for people and/or the environment.

### Achievement with Excellence

Carry out a comprehensive investigation into chemical species present in a sample using qualitative analysis involves:

- justifying the identification of chemical species present by linking secondary data and chemical principles to the reactions occurring during the analysis
- discussing the significance of an identified chemical species for people and/or the environment.

