

CHEMISTRY CHO2031Y1

INTERNAL ASSESSMENT ACTIVITY

ACHIEVEMENT STANDARD 91163 (VERSION 2) CHEMISTRY 2.3

Demonstrate understanding of the chemistry used in the development of a current technology

Level 2, Internal assessment

3 credits

STUDENT INSTRUCTIONS

Overview:

In this activity you will be examining your ability to:

- process information from different sources
- apply your understanding of chemistry to explain how chemistry is used in the development of a current technology
- collect together your ideas and produce a report that can be clearly followed by someone else.

Conditions:

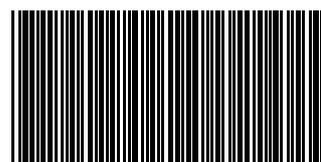
- This is an open book assessment. You must choose only one of the given options.
- Refer to the Topic Resource for a list of sources of information and web links to help you complete this task. If you have not received this Resource booklet, please contact your teacher stating your choice of topic.
- There is **no time limit** for this activity.
- You must complete this activity in your own words. If you copy from other people's work, your task will immediately be given a 'not achieved grade' or may be sent back to you as a resubmission, depending on the circumstances. It is important that **you show your understanding of NCEA Level 2 Chemistry**.
- Plagiarism detection software may be used to check this is your own work.

You will need:

- A pen and paper (for example to write equations or draw chemical structures so that you can take a photo and upload into your report)
- Or type your report using a word processing programme. You may need to draw any chemical structures using a programme like Paint and paste it into your word document.

Supervisor requirements

- Supervision is not required for this assessment.
- Upload your assessment to the CHO2031Y1 OTLE assessment dropbox when you have completed it.



ASSESSMENT CRITERIA

ACHIEVEMENT STANDARD 91163 (VERSION 2) CHEMISTRY 2.3

Demonstrate understanding of the chemistry used in the development of a current technology

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrated understanding of the chemistry used in the development of a current technology.	Demonstrated an in-depth understanding of the chemistry used in the development of a current technology.	Demonstrated a comprehensive understanding of the chemistry used in the development of a current technology.

EXPLANATORY NOTES

Demonstrate understanding involves processing and interpreting information to provide an account of the chemistry used in the development of a current technology. This includes the use of chemistry vocabulary, symbols and conventions. This may also include an account of the historical development of the technology.

Demonstrate in-depth understanding involves making and explaining links between the chemistry and the development of the technology using chemistry vocabulary, symbols and conventions.

Demonstrate comprehensive understanding involves an evaluation of how the chemistry influenced the development of the technology.

This standard requires the use of chemistry vocabulary, symbols and conventions including, where appropriate, names, formulae and equations.

ASSESSMENT ACTIVITY

CHEMISTRY

TASK

Discoveries in chemistry often occur because of a mistake, hunch or intuition. The materials we use today are the result of historical developments, planned research, accident, and economic demand. The chemistry of new materials gives them certain properties; the properties of these materials make them useful to society.

CHOOSE ONE OF THE FOLLOWING THREE TOPICS

A. CATALYTIC CONVERTERS

Catalytic converters are now common in vehicles. A number of developments needed to have happened in order for this to happen. Your task is to describe these developments and explain the chemistry of catalytic converters.

Your report should comprehensively describe and explain:

- the need for catalytic converters
- the historical issues that helped or hindered the development of the catalytic converter
- changes made to the design of catalytic converters and why these changes were made
- the materials used in catalytic converters
- the chemistry of how catalytic converters work
- the reasons behind the shape and structure of catalytic converters
- any issues that have arisen due to the use of catalytic converters.

You should aim for a report that is around 1000 word length (2–4 typed pages).

If you are submitting your work in another format such as a poster or a recording of your presentation, it is recommended that you contact your teacher first to check that we can read your file formats.

Note:

This is not a research standard. Information is provided in the web links given in Resource A. You may also consult other references. You need to list the references you consulted in your report.

More details on how your report is assessed is found in Resource A.

OR

B. POLYMERS AND PTFE

Discoveries in chemistry often occur because of a mistake, hunch or intuition. The materials we use today are the result of historical developments, planned research, accident, and economic demand. The chemistry of new materials gives them certain properties; the properties of these materials make them useful to society.

One of these types of materials used extensively today are polymers. You need to present a report on polymers, polytetrafluoroethene (PTFE) in particular. Your report should comprehensively describe:

- the historical developments in chemistry that led to the discovery of PTFE.
- the discovery of PTFE itself.
- issues that affected the further development of PTFE as a technology
- the chemistry of the polymerisation of tetrafluoroethene to form PTFE
- properties of PTFE that make it valuable
- the chemistry explaining these properties of PTFE.

You should aim for a report that is around 1000 word length (2–4 typed pages).

If you are submitting your work in another format such as a poster or a recording of your presentation, it is recommended that you contact your teacher first to check that we can read your file formats.

Note:

This is not a research standard. Information is provided in the web links given in Resource B. You may also consult other references. You need to list the references you consulted in your report.

More details on how your report is assessed is found in Resource B.

OR

C. SOAPS AND DETERGENTS

Although it seems that soap has always been used in society, it has also been developed as a technology. Processes for making soap have changed over time, with issues arising from soap use leading to the development of modern detergents. These have their own advantages and disadvantages.

Your report should comprehensively describe and explain:

- the need for soaps and modern detergents
- the historical issues that helped or hindered the development of soaps and detergents
- how soaps and modern detergents are made
- physical and chemical properties of soap and detergents
- the chemistry of how soaps and detergents work
- problems associated with, and benefits, of soaps and modern detergents.

You should aim for a report that is around 1000 word length (2–4 typed pages).

If you are submitting your work in another format such as a poster or a recording of your presentation, it is recommended that you contact your teacher first to check that we can read your file formats.

Note:

This is not a research standard. Information is provided in the web links given in Resource C. You may also consult other references. You need to list the references you consulted in your report.

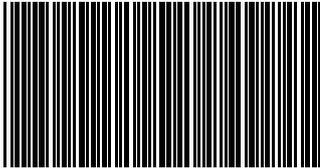
More details on how your report is assessed is found in Resource C.

WHAT TO DO NEXT



Upload your assessment activity to the CHO2031Y1 OTLE assessment dropbox.

CH02031Y1



STUDENTS - PLACE STUDENT ADDRESS LABEL BELOW OR WRITE IN YOUR DETAILS.	
Full Name	_____
ID No.	_____
Address <small>(If changed)</small>	_____