

CHEMISTRY CHO1O21Y1E

TOPIC RESOURCE INFORMATION

ACHIEVEMENT STANDARD 90931 (VERSION 3) CHEMISTRY 1.2

Demonstrate understanding of the chemistry in a technological application

Level 1, Internal

2 credits

E. PRODUCTION OF PETROL

Achievement	Achievement with Merit	Achievement with Excellence
<p>The student submits a report that:</p> <ul style="list-style-type: none"> • Describes terms used in report. • Describes the uses of petrol. • Briefly describes the production of petrol using a fractionating column. • Describes combustion. • Makes some links between the physical and chemical properties and their use. • Describes some of the differences between petrol and diesel. • Includes at least three relevant chemical equations to support their understanding of the chemistry. • Uses typical chemistry vocabulary, symbols, conventions and equations. 	<p>The student submits a report that:</p> <ul style="list-style-type: none"> • Explains terms used in report. • Describes the uses of petrol. • Explains the principles of a fractionating column and how it uses the properties of organic molecules to separate them into fractions. • Explains combustion with supporting balanced equations • Makes links between the structure and bonding of hydrocarbons, and their boiling point. • Explains some of the differences between petrol and diesel. • Uses typical chemistry vocabulary, symbols, conventions and equations. 	<p>The student submits a report that:</p> <ul style="list-style-type: none"> • Uses chemistry terms correctly showing understanding of terms. • Elaborates in detail how the physical and/or chemical properties. • can be used to produce petrol and diesel. • Elaborates on the uses of petrochemicals and how cracking can be used to produce more shorter chained hydrocarbons • Includes relevant symbol chemical equations showing the chemistry of their manufacture and of their use. • Explains the importance of the amount of oxygen present to the type of products produced. • Uses typical chemistry vocabulary, symbols, conventions and equations.

ASSESSMENT TIPS

In order to achieve this standard, your presentation must be in your own words and show your understanding of level 1 chemistry.

TIP 1

If you have difficulty in transforming the text given in the links into your own words, then it is useful to ask yourself questions, such as those listed below. You can get friend or family member to ask you the questions and then record your answers. Transcribe your answers and then weave them into your report.

Please note that these questions are only **some** of the questions you could ask yourself, so don't limit your report to these only!

Terms (CHO1031 and CHO1032 are useful)

1. What is a molecule?
2. What is combustion?
3. What is boiling point?
4. What is fractional distillation?
5. What is an alkane?
6. What is an alkene?
7. Can I name and draw a few alkanes?
8. What is covalent bonding?
9. What chemical equations have I used to support my explanations?

Application: Petrol (CHO1031 and CHO1032 are useful)

1. What is the formula and structure for heptane and octane?
2. Why does octane have a higher boiling point than methane?
3. What properties of petrochemical molecules is used to separate them?
4. What is a fractionation column?
5. What is the difference between petrol and diesel?
6. Why does petrol travel higher up the fractionation column?
7. Does oil from the ground contain enough 'petrol fraction'?
8. How is more petrol made?
9. Can I explain boiling and condensing in terms of the energy involved and the strength of attraction between molecules?
10. Have I written my equations using correct chemical language (e.g. using subscripts)?

TIP 2

When you read through the links or watch the videos given on *My Te Kura* or in the task, make notes using key words or phrases. When you write your report, use these key words rather than the text given in the links.

TOPIC RESOURCES

PRODUCTION OF PETROL

Your first source is the modules you have completed – CHO1031 and CHO1032.

EXTRA SOURCES FOR MORE DETAIL

<https://en.wikipedia.org/wiki/Petroleum>

<https://www.compoundchem.com/2016/05/17/petrol/>

https://www.diffen.com/difference/Diesel_vs_Petrol

https://en.wikipedia.org/wiki/Fractional_distillation

<https://youtu.be/PYMWUz7TC3A>

<https://youtu.be/JZdvsQzOKuk>

Additional sources may be used and must be quoted (full web link) in the bibliography to verify the source.