

CHEMISTRY CH01O21Y1F

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

F. PRODUCTION AND USES OF PLASTIC

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 polyethene and polypropene and makes some links between the physical and chemical properties and their use. • Briefly describes the chemistry of how polyethene and polypropene are made and uses supporting equations. • Describes some of the differences polyethene and polypropene. • 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. • Explains how polyethene and polypropene are made, using supporting equations. • Describes the uses of polyethene and polypropene. • Makes links between the structure and bonding of polymers and their properties. • 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"> • Uses chemistry terms correctly showing understanding of terms. • Elaborates in detail how the physical and/or chemical properties. • make polyethene and polypropene suitable for their use. • Elaborates on how the physical and chemical properties of polymers is linked to the structure and bonding. • Includes relevant symbol chemical equations showing the chemistry of the manufacture polyethene and polypropene. • 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, CHO1032 and CHO1033 are useful)

1. What is a molecule?
2. What is covalent bonding?
3. What is an alkene?
4. What is an alkane?
5. What is a monomer?
6. What is a polymer?
7. What is polymerisation?
8. What chemical equations have I used to support my explanations?

Application: Plastics (CHO1031, CHO1032, and CHO1033 are useful)

1. What is the formula and structure for ethene and propene?
2. What is the formula and structure of polyethene and polypropene?
3. What is the difference between covalent bonding and intermolecular forces of attraction?
4. Can I draw equations showing the different stages of polymerisation?
5. What are the uses of plastics?
6. What makes some plastics hard and some soft?
7. Can I explain the properties of plastics based on the attraction between the molecules?
8. How easy would it be to make polythene from recycled plastics?
9. 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 AND USES OF PLASTICS

Your first source is the modules you have completed – CHO1031, CHO1032 and CHO1033. SCO1051 or CHO1041 is also helpful for background chemistry.

EXTRA SOURCES FOR MORE DETAIL

<https://pslc.ws/macrog/pe.htm>

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

www.britannica.com/science/polyethylene

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

<https://omnexus.specialchem.com/selection-guide/polypropylene-pp-plastic>

<https://youtu.be/rHxxLYzJ8Sw>

<https://youtu.be/nz1ucl6gClg>

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