

Title	Perform organic chemistry functional group analysis		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: carry out one step synthesis of organic compounds; and identify functional groups to allow classification of unknown compounds by observing test tube reactions.
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Classification	Science > Chemistry
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Available grade	Achieved
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Guidance Information

- All work must be carried out in accordance with the quality management system, documented protocol system or Standard Operating Procedures (SOP) typically acceptable in a commercial or research laboratory.
- Health and Safety practices must conform to Australian/New Zealand Standard AS/NZS 2243:2010 Set – *Safety in Laboratories*, available at <http://www.standards.co.nz> and <http://infostore.saiglobal.com/store>.
- Legislation applicable to this unit standard includes:
Health and Safety at Work Act 2015;
Hazardous Substances and New Organisms Act 1996.
- Glossary
Laboratory procedures refer to documented systems or processes of operation, which may be found in a SOP manual, quality management system or protocol system documentation. These procedures are external and/or internal laboratory requirements governing laboratory work.

Outcomes and performance criteria

Outcome 1

Carry out one step synthesis of organic compounds.

Range two of – bromoethane, butyl ethanoate, cyclohexanone, p-bromonitrobenzene, 2-chloro-2-methylpropane.

Performance criteria

- The organic compound is synthesised, purified, and identified as the required product.

- 1.2 The percentage yield is calculated and justified in terms of the synthesis used.

Outcome 2

Identify functional groups to allow classification of unknown compounds by observing test tube reactions.

Range eight of the following functional group compounds – alkanes, alkenes, haloalkanes, alcohols, aromatic alcohols, aldehydes, ketones, carboxylic acids, esters, amides, amines.

Performance criteria

- 2.1 Test tube reactions are selected to allow identification of the sample in accordance with laboratory procedures.
- 2.2 Test tube reaction observation is described and is consistent in terms of the sample characteristics.
- 2.3 Identification and classification of compound is consistent with observations.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	23 November 1999	31 December 2014
Review	2	18 June 2010	31 December 2022
Rollover	3	27 January 2015	31 December 2022
Rollover and Revision	4	15 June 2017	31 December 2022
Revision	5	26 October 2017	31 December 2022
Review	6	22 October 2020	31 December 2022

Consent and Moderation Requirements (CMR) reference	0113
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.