

Title	Describe and use an infrared instrument for analysis in a laboratory in a primary products food processing operation		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: describe the principles of operation of an infrared instrument; use an infrared instrument; and report infrared analysis results, in a laboratory in a primary products food processing operation.
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Classification	Primary Products Food Processing > Primary Products Food Processing - Operational Skills
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Available grade	Achieved
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Guidance Information

- 1 Legislation and references relevant to this unit standard include but are not limited to:
 - Hazardous Substances and New Organisms Act 1996;
 - Health and Safety at Work Act 2015;
 - Health and Safety in Employment Regulations 1995;
 - Resource Management Act 1991;
 - ISO/IEC 17025:2018 *General requirements for the competence of testing and calibration laboratories*, available at <http://www.standards.co.nz>; and any subsequent amendments.
- 2 Definitions

Organisational requirements – instructions to staff on policies and procedures which are documented in memo, electronic or manual format and are available in the workplace.

Primary products food processing operation – covers a meat, dairy, seafood, fruit and vegetable and honey processing, food and beverage manufacturing and other related industries.
- 3 *Instruments* include but are not limited to – near-infrared, mid-infrared; evidence is required of one instrument type.
- 4 All evidence presented in this unit standard must be in accordance with organisational requirements.

Outcomes and performance criteria

Outcome 1

Describe the principles of operation of an infrared instrument used in a laboratory in a primary products food processing operation.

Performance criteria

- 1.1 Describe the underlying principles and theory of operation for an infrared instrument in terms of the technology and the chemical reactions and/processes that take place.
- 1.2 Describe maintenance procedures.
- 1.3 Describe calibration procedure.
- 1.4 Describe quality control checks in terms of the type and cause of typical errors.

Range quality control checks include but are not limited to – blanks, repeatability, reproducibility; evidence of three is required.

Outcome 2

Use an infrared instrument to carry out analysis in a laboratory in a primary products food processing operation.

Performance criteria

- 2.1 Set up instrument.
- 2.2 Conduct tests in accordance with agreed processes and procedures.
- 2.3 Identify any non-conformance and take corrective action.
- 2.4 Use the instrument in a manner that avoids danger to persons, or damage to the instrument or equipment.
- 2.5 Maintain the instrument.

Outcome 3

Report infrared analysis results in a laboratory in a primary products food processing operation.

Performance criteria

- 3.1 Document test results.
- 3.2 Review and confirm results.
- 3.3 Analyse abnormal test results to identify the nature of the problem and reach a valid solution.

Replacement information	This unit standard replaced unit standard 22004.
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Planned review date	31 December 2026
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Last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 September 2015	31 December 2024
Review	2	24 March 2022	N/A

Consent and Moderation Requirements (CMR) reference	0033
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the Hanga-Aro-Rau Manufacturing, Engineering, and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.