Title	**Describe and perform chromatography analyses 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 chromatography analysis performed; perform chromatography analyses; and calculate and report results of chromatography analyses, on food products in a primary products food processing operation.

Classification	Primary Products Food Processing > Primary Products Food Processing - Operational Skills

Available grade	Achieved

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.

Precision requirements - documented policies and procedures set by the organisation carrying out the analysis, and to documented or other directions provided to staff, and applicable to the analysis being carried out. They may include but are not limited to – standard operating procedures, laboratory specific procedures, laboratory safety procedures, equipment operating procedures, quality assurance procedures, product quality specifications, references, approved codes of practice, housekeeping standards, and procedures to comply with legislative and local body requirements relevant to the industry sector.

3 *Chromatography analysis* may include Gas Chromatography (GC), Liquid Chromatography (LG) and High-Performance Liquid Chromatography (HPLC). Chromatography tests may include but are not limited to testing for – preservative, Immunoglobulin G, Immunoglobulin A, vitamins, sucrose, lactose, growth factors, whey protein, contaminants;
evidence of one test is required.

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 chromatography analysis performed on food products in a primary products food processing operation.

Performance criteria

1.1 Describe chromatography analysis in terms of the critical factors which affect it.

Range critical factors may include but are not limited to – preparation of sample, concentration of solutions, chemical reactions that take place, separation, internal standards;
evidence of four is required.

1.2 Describe variables of the analysis in terms of the process of eliminating variables.

Range variables may include but are not limited to – equipment, apparatus, reagents, sample, technique, calibration, environment;
evidence of four is required.

1.3 Describe quality assurance of the test.

Range quality assurance includes but is not limited to – blanks, repeatability, duplicates, reproducibility.

Outcome 2

Perform chromatography analyses on food products in a primary products food processing operation.

Performance criteria

2.1 Prepare samples and equipment.

2.2 Perform chromatography analyses in accordance with agreed processes and procedures.

2.3 Use personal protective equipment and follow safety procedures.

2.4 Confirm results are within precision requirements.

2.5 Clean and store equipment.

Outcome 3

Calculate and report results of chromatography analyses on food products in a primary products food processing operation.

Performance criteria

3.1 Record results and perform calculations.

3.2 Confirm and report calculations in terms of conformance.

3.3 Identify any non-conformance and take corrective action.

3.4 Analyse abnormal test situations to identify the nature of the problem and reach a valid solution.

3.5 Analyse abnormal test results to identify the nature of the problem and reach a valid solution.

Replacement information	This unit standard replaced unit standard 22003.

Planned review date	31 December 2026

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

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.