

Title	Prepare chemical solutions in a laboratory in a primary products food processing operation		
Level	4	Credits	5

Purpose	<p>This unit standard is for experienced people who work in a laboratory, in a primary products food processing operation.</p> <p>People credited with this unit standard are able to: prepare a solution; standardise and use volumetric solutions; and monitor the quality of solutions, in a laboratory in a primary products food processing operation.</p>
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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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Explanatory notes

- 1 Legislation and references relevant to this unit standard includes but is not limited to – Hazardous Substances and New Organisms Act 1996, Health and Safety in Employment Act 1992, Health and Safety in Employment Regulations 1995, Resource Management Act 1991, ISO/IEC 17025:2005/Cor1:2006 *General requirements for the competence of testing and calibration laboratories*, NZS/ISO 15789:2003 *Medical Laboratories – Particular requirements for quality and competence*, available at <http://www.standards.co.nz>.
- 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 processing, dairy processing, seafood or baking yeasts manufacturing operation.
- 3 *Solutions* may include but are not limited to – strong or weak acids and bases, oxidising and reducing agents, solutions used for titrations, stains for cells and tissues, enzymes and buffers;
evidence is required for the preparation of three solutions.

Outcomes and evidence requirements

Outcome 1

Prepare a solution in a laboratory in a primary products food processing operation.

Evidence requirements

- 1.1 The procedure for solution preparation is selected in accordance with organisational requirements.
- 1.2 Equipment, materials and solvent of specified purity are selected in accordance with organisational requirements.
- 1.3 Quantities of reagents for solution preparation are calculated and measured in accordance with organisational requirements.
- 1.4 Specified dilutions are prepared in accordance with organisational requirements.
- 1.5 Solutions are prepared to achieve homogenous mix of specified concentration in accordance with organisational requirements.
- 1.6 Solutions are labelled and stored to maintain identity and stability in accordance with organisational requirements.

Outcome 2

Standardise and use volumetric solutions in a laboratory in a primary products food processing operation.

Evidence requirements

- 2.1 Serial dilutions are performed in accordance with organisational requirements.
- 2.2 Solution is standardised using appropriate procedure in accordance with organisational requirements.
- 2.3 Solutions are labelled and stored to maintain identity and stability in accordance with organisational requirements.
- 2.4 Concentration of unknown solutions is determined using standard volumetric solutions in accordance with organisational requirements.
- 2.5 Concentration of solutions is calculated and recorded in accordance with organisational requirements.

Outcome 3

Monitor the quality of solutions in a laboratory in a primary products food processing operation.

Evidence requirements

- 3.1 Solutions are checked for visual deterioration and expiry date in accordance with organisational requirements.
- 3.2 Dated or deteriorated solutions are re-standardised or disposed of in accordance with organisational requirements.

Replacement information	This unit standard replaced unit 22001.
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Planned review date	31 December 2020
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Last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 September 2015	N/A

Consent and Moderation Requirements (CMR) reference	0022
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMRs). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.