

Title	Carry out a lactose evaporation, crystallisation and decanting process in a dairy processing operation		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: describe the lactose evaporation, crystallisation and decanting process; prepare to operate a lactose evaporation, crystallisation and decanting process for operation; and operate and monitor a lactose evaporation, crystallisation and decanting process, in a dairy processing operation.
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Classification	Dairy Processing > Milk Products
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Available grade	Achieved
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Guidance Information

- 1 Legislation and regulations relevant to this unit standard includes but is not limited to:
 - Health and Safety at Work Act 2015;
 - Animal Products Act 1999;
 - Animal Products (Dairy) Regulations 2005; and any subsequent amendments.
- 2 All evidence presented in this unit standard must be in accordance with:
 - organisational requirements.
- 3 Definitions

Control points refer to those key points in a work process which must be monitored and controlled. This includes food safety (critical), quality and regulatory control points as well as inspection points.

Evaporation, crystallisation and decanting equipment – refers to evaporators, crystallisation tanks, decanting plant, driers, and pumping systems.

Materials – lactose and additives or other agents as required, consistent with the provisions of the Australian and New Zealand Food Standards Code available on www.foodstandards.gov.au.

Organisational requirements – instructions to staff on policies and procedures which are documented in memo, electronic or manual format and are available in the workplace. These include but are not limited to site-specific and company standard operating procedures, food safety and quality management requirements.
- 4 This unit standard must be assessed in a realistic workplace environment. The candidate must be under realistic time pressures and use relevant commercial equipment.

Outcomes and performance criteria

Outcome 1

Describe the lactose evaporation, crystallisation and decanting process in a dairy processing operation.

Performance criteria

- 1.1 Describe the purpose of the evaporation, crystallisation and decanting process in terms of basic principles.
- 1.2 Describe the stages and changes which occur during evaporation, crystallisation and decanting in terms of the effects of process stages on the end product.
- 1.3 Describe materials preparation requirements in terms of the effect on the evaporation, crystallisation and decanting process.
- 1.4 Describe the methods used to evaporate, crystallise, and decant materials in terms of the variables in the process.
- Range variables include but are not limited to – plant specifications, raw materials, product end use.
- 1.5 Describe methods of monitoring control points and maintaining control of the evaporation, crystallisation and decanting process in terms of the causes of variation and corrective action required.
- Range methods include but are not limited to – process specifications, procedures, operating parameters, equipment and instrumentation components, materials and services, sampling and testing, recording requirements.
- 1.6 Describe shutdown, cleaning and sanitation requirements in terms of the changeover process and the different types of shutdowns.
- 1.7 Describe safety issues related to the evaporation, crystallisation and decanting process.
- Range safety issues include but are not limited to – health and safety hazards and controls, lockout and tag procedures, environmental protection and controls.

Outcome 2

Prepare to operate a lactose evaporation, crystallisation and decanting process in a dairy processing operation.

Performance criteria

- 2.1 Identify production requirements for evaporation, crystallisation and decanting.
- 2.2 Confirm materials and services necessary to the evaporation, crystallisation and decanting process are available to meet production requirements.
- 2.3 Check evaporation, crystallisation and decanting equipment to confirm status, condition and readiness.
- 2.4 Set the evaporation, crystallisation and decanting process to meet production outputs.

Outcome 3

Operate and monitor a lactose evaporation, crystallisation and decanting process in a dairy processing operation.

Performance criteria

- 3.1 Start up the evaporation, crystallisation and decanting process.
- 3.2 Monitor evaporation, crystallisation and decanting equipment, product and control points to confirm that they meet production requirements.

Range monitoring may include but is not limited to – monitoring control points and parameters, adjusting operating parameters, plant checks, identifying sampling and testing requirements, taking samples, handling samples, dispatch of samples, conducting tests evidence of three monitoring examples is required.
- 3.3 Identify, rectify and/or report any out-of-specification product, process and equipment performance.
- 3.4 Clean and sanitise evaporation, crystallisation and decanting equipment.
- 3.5 Collect, treat and dispose of or store waste for recycling.
- 3.6 Record workplace information related to operating an evaporation, crystallisation and decanting process.
- 3.7 Shut down evaporation, crystallisation and decanting equipment.

Range shutdown includes but is not limited to – putting plant on standby, routine, emergency situation.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 July 2005	31 December 2016
Review	2	16 July 2015	31 December 2024
Review	3	27 May 2021	N/A
Revision	4	26 January 2023	N/A

Consent and Moderation Requirements (CMR) reference

0022

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.