

Title	Carry out an evaporation process in a dairy processing operation		
Level	4	Credits	5

Purpose	People credited with this unit standard are able to: describe the evaporation process; prepare evaporation equipment for operation; and operate and monitor evaporation equipment, 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 include but are 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.

Materials – refer to product to be dried and additives or drying agents as required, consistent with the provisions of the Joint Australian and New Zealand Food Standards.

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 requirements include but are not limited to – site specific requirements, and company 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 evaporation process in a dairy processing operation.

Performance criteria

- 1.1 Describe the evaporation process in terms of the basic principles of water extraction.
- 1.2 Describe cleaning and sanitation requirements and procedures for an evaporation process.
- 1.3 Describe the functions and basic operating principles components of a falling film evaporator.
- Range components may include but are not limited to – calandria, spreader plate, separator, condenser, thermal vapour recompression, mechanical vapour recompression, direct steam injection, direct heaters, indirect heaters; evidence of three components is required.
- 1.4 Describe how the quality, composition and physical characteristics of raw materials affect the evaporation process in terms of process outcomes.
- 1.5 Describe the main evaporator controls and quality control points in terms of their effect on the quality of the product.
- Range controls and quality control points may include but are not limited to – operating parameters, equipment and instrumentation components, materials and services; evidence of three controls is required; effects may include but are not limited to – physical quality, functional quality, microbiological quality, consistency of quality; evidence of three effects is required.
- 1.6 Describe a critical control point in terms of key operating parameters, monitoring and operational checks.

Outcome 2

Prepare evaporation equipment for operation in a dairy processing operation.

Performance criteria

- 2.1 Identify production requirements for evaporation.
- 2.2 Confirm materials and services necessary to the evaporation process are available to meet production requirements.
- 2.3 Check evaporation equipment in terms of status, condition and readiness for use.

Outcome 3

Operate and monitor evaporation equipment in a dairy processing operation.

Performance criteria

- 3.1 Start up evaporation equipment.
- 3.2 Monitor evaporation 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, dispatching 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 equipment.
- 3.5 Collect, treat, and dispose of or store waste for recycling.
- 3.6 Record workplace information related to operating and monitoring evaporation equipment.
- 3.7 Shut down evaporation 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	30 June 2003	31 December 2013
Rollover and Revision	2	20 June 2006	31 December 2014
Rollover	3	17 July 2009	31 December 2016
Review	4	18 June 2015	31 December 2024
Review	5	27 May 2021	N/A
Revision	6	26 January 2023	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>.

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.