

<b>Title</b>	<b>Carry out an ultra-heat treatment process in a dairy processing operation</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to: describe the ultra-heat treatment (UHT) process; prepare UHT equipment for operation; and operate and monitor UHT equipment, in a dairy processing operation.
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<b>Classification</b>	Dairy Processing > Milk Products
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<b>Available grade</b>	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;
  - Health and Safety in Employment Regulations 1995;
  - 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* – those key points in a work process which must be monitored and controlled. This includes product safety (critical), quality and regulatory control points as well as inspection points.

*Materials* – refers to cans, laminated cartons, flexible pouches, thermoformed containers, blow mould containers, bag in box systems.

*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.

*UHT equipment* – refers to balance tanks, heat exchangers, homogeniser, sterilisers, steam injection systems, vacuum vessels, aseptic filling and packaging systems.
- 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.

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## Outcomes and performance criteria

### Outcome 1

Describe the UHT process in a dairy processing operation.

#### Performance criteria

- 1.1 Describe cleaning and sanitation requirements and procedures for a UHT process.
- 1.2 Describe the functions and operating principles of components of UHT processing equipment.
- Range evidence of three components is required.
- 1.3 Describe raw material quality in terms of possible influences on commercial sterility and final product quality.
- Range product quality includes but is not limited to – microbiological quality, protein stability, and particulate matter.
- 1.4 Describe a method of UHT in terms of heat transfer mechanisms, time-temperature profiles, and advantages of method.
- Range methods may include but are not limited to – direct heating, indirect heating; evidence of one method is required.
- 1.5 Describe process control in terms of the prevention or minimisation of undesirable changes that may occur to the composition and properties of milk during UHT and storage.
- Range changes may include but are not limited to – flavour, colour, protein denaturation, vitamins, enzymes, sediment formation, age gelation; evidence of three changes is required.
- 1.6 Describe quality tests in terms of methods used for checking for commercial sterility, packaging integrity, and chemical residues.
- Range evidence of two different tests is required.

### Outcome 2

Prepare UHT equipment for operation in a dairy processing operation.

#### Performance criteria

- 2.1 Identify production requirements for UHT.

2.2 Confirm materials and services necessary to the UHT process are available to meet production requirements.

2.3 Check UHT equipment terms of status, condition and readiness for use.

**Outcome 3**

Operate and monitor UHT equipment in a dairy processing operation.

**Performance criteria**

3.1 Start up UHT equipment.

3.2 Monitor UHT 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 UHT equipment.

3.5 Collect, treat, and dispose of or store waste for recycling.

3.6 Record workplace information related to the operation and monitoring of UHT equipment.

3.7 Shut down UHT equipment.

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

<b>Planned review date</b>	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	18 June 2015	31 December 2024
Review	2	27 May 2021	N/A
Revision	3	26 January 2023	N/A

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

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**Comments on this unit standard**

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