

Title	Describe the manufacture of frozen milk products in a dairy processing operation		
Level	3	Credits	5

Purpose	People credited with this unit standard are able to describe: the characteristics of, and legislative requirements for, frozen milk products; the manufacturing process, and cleaning and sterilisation of plant for a frozen milk product; packaging, filling and sealing, and storage requirements for a frozen milk product; and process control, control points and quality tests used in the manufacture of frozen milk products, in a dairy processing operation.
----------------	---

Classification	Dairy Processing > Milk Products
-----------------------	----------------------------------

Available grade	Achieved
------------------------	----------

Guidance Information

Legislation and regulations relevant to this unit standard include but are not limited to:

- Animal Products Act 1999;
- Health and Safety at Work Act 2015;
- Animal Products (Dairy) Regulations 2005; and any subsequent amendments.

Outcomes and performance criteria

Outcome 1

Describe the characteristics of, and legislative requirements for, frozen milk products in a dairy processing operation.

Performance criteria

1.1 Describe the characteristics of frozen milk products in terms of typical compositions and physical structures.

Range frozen milk products may include but are not limited to – hard and soft-serve ice cream, frozen cream, water ices, sorbets, frozen yoghurts, frozen diabetic and dietetic products; evidence of three frozen milk products is required.

1.2 Describe the characteristics of frozen milk products in terms of influences imparted by raw materials and additives.

Range materials and additives may include but are not limited to – fat, milk solids not fat, emulsifiers, stabilisers, water, air, flavourings, colourings, bulking agents;
evidence of two material and additives is required.

1.3 Describe legislative requirements for frozen milk products in terms of minimum composition levels and the use of additives.

Outcome 2

Describe the manufacturing process, and cleaning and sterilisation of plant for a frozen milk product in a dairy processing operation.

Range frozen milk products may include but are not limited to – hard and soft-serve ice creams, frozen cream, water ices, sorbets, frozen yoghurt, frozen diabetic and dietetic products;
evidence of one frozen milk product is required.

Performance criteria

2.1 Describe the manufacture of a frozen milk product in terms of purpose and influences of key steps in the process.

Range steps may include but are not limited to – batch processing, continuous processing, formulation, standardisation, blending of ingredients, pasteurisation, homogenisation, ageing, aeration and freezing, filling, hardening;
evidence of four steps is required.

2.2 Describe the manufacturing process for a frozen milk product in terms of factors influencing freezing and hardening properties.

2.3 Describe cleaning and sterilisation of processing and filling plant in terms of methods for achieving and maintaining final product specifications.

Range methods include but are not limited to – heating and cooling temperatures, sterilants, volumes.

Outcome 3

Describe packaging, filling and sealing, and storage requirements for a frozen milk product in a dairy processing operation.

Range frozen milk products may include but are not limited to – hard and soft-serve ice creams, frozen cream, water ices, sorbets, frozen yoghurt, frozen diabetic and dietetic products;
evidence of one frozen milk product is required.

Performance criteria

3.1 Describe the packaging material and form used for a frozen milk product in terms of barrier properties and protection of product from environmental and distribution stresses.

Range materials and forms include but are not limited to – plastics, coated cartons, coated paper; evidence of one packaging material and form is required.

3.2 Describe filling and sealing of product containers in terms of requirements for achieving maximum product shelf-life.

3.3 Describe storage of a frozen milk product in terms of conditions required for achieving maximum product shelf-life.

Range conditions include but are not limited to – temperature, storage area, hygiene, distribution.

Outcome 4

Describe process control, control points and quality tests used in the manufacture of frozen milk products in a dairy processing operation.

Performance criteria

4.1 Describe process control of frozen milk products in terms of the prevention of common product defects.

Range defects include but are not limited to – flavour, texture, consistency.

4.2 Describe quality tests used in the manufacture of frozen milk products in terms of their specific purposes.

Range tests include but are not limited to – microbiological, chemical, physical.

4.3 Describe control points for quality control in terms of the manufacture of a frozen milk product.

Range preparation of materials and ingredients, processing, packaging, storage; evidence of one aspect of manufacture is required.

Planned review date	31 December 2025
----------------------------	------------------

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 April 1995	31 December 2014
Review	2	5 July 1999	31 December 2014
Review	3	26 August 2002	31 December 2014
Revision	4	13 June 2003	31 December 2014
Rollover and Revision	5	17 July 2009	31 December 2016
Review	6	18 June 2015	31 December 2024
Review	7	25 March 2021	N/A
Revision	8	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.