

<b>Title</b>	<b>Monitor and troubleshoot the refrigeration system in a commercial wine cellar operation</b>		
<b>Level</b>	<b>5</b>	<b>Credits</b>	<b>15</b>

<b>Purpose</b>	People credited with this unit standard are able to: explain fundamentals, monitor the performance, and troubleshoot a refrigeration system in a commercial wine cellar operation.
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<b>Classification</b>	Food and Related Products Processing > Wine Production - Cellar Operations
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<b>Available grade</b>	Achieved
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### Explanatory notes

#### 1 References

Enactments and codes relevant to this unit standard include but are not limited to the: Food Act 1981 and Health Act 2014; Health and Safety in Employment Act 1992; Resource Management Act 1991; Food (Safety) Regulations 2002; Food Hygiene Regulations 1974; Australia New Zealand Food Standards Code, available at <http://www.foodstandards.govt.nz/>.

#### 2 Definition

*Workplace procedures* – approved procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, codes of practice, quality assurance procedures, housekeeping standards, and procedures to comply with legislative and local body requirements.

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## Outcomes and evidence requirements

### Outcome 1

Explain the fundamentals of refrigeration systems used in commercial wine cellar operations.

### Evidence requirements

1.1 Design concepts and the operation of refrigeration systems used in commercial wine cellar operations are explained.

Range one of – mechanical absorption, vapour compression.

- 1.2 The purpose and operating principles of components of a refrigeration system are explained.
- Range evaporator, condenser, oil separator, expansion valve, temperature regulating valve, regulator, liquid receiver, compressor, safety device.
- 1.3 Refrigerants used in the wine industry are stated, and their chemical properties, potential hazards, and use relevant to refrigeration, are explained.
- Range refrigerants may include but are not limited to – ammonia, hydrochlorofluorocarbons, hydrocarbons.  
Evidence of two refrigerants.
- 1.4 Safety requirements for operating refrigeration systems are explained.
- 1.5 Operational problems are explained in terms of their potential causes and procedures used to mitigate them.
- Range operational problems may include but are not limited to – refrigerant leakage, freeze up, liquid carryover, blocked strainers, non condensable gas in system, water in system, over charge, undercharge.
- 1.6 Processes used to minimise the operating costs of the refrigeration system are explained in accordance with refrigeration principles and workplace procedures.

## Outcome 2

Monitor the performance of a refrigeration system in a commercial wine cellar operation.

### Evidence requirements

- 2.1 Refrigeration system pressures, temperatures, and running time are monitored and recorded in accordance with workplace procedures.
- 2.2 Performance of protecting cut-outs and emergency shutdowns are tested and verified in accordance with manufacturer's instructions and workplace procedures.

## Outcome 3

Troubleshoot operational faults in a refrigeration system in a commercial wine cellar operation.

Range refrigerant leak, refrigerant contaminants, abnormal operating temperatures and pressures.

### Evidence requirements

- 3.1 Troubleshooting process is consistent with fault and manufacturer's information.

- 3.2 Troubleshooting is undertaken safely and in accordance with workplace procedures.
- 3.3 Advice is sought to assist in the troubleshooting of faults when these are not identified or located, in accordance with workplace procedures.
- 3.4 Corrective actions are taken to address the faults, or the impact of the faults, in accordance with workplace procedures.
- 3.5 Faults and corrective actions are communicated in accordance with workplace procedures.
- 3.6 Reports are completed and processed in accordance with workplace procedures.

<b>Planned review date</b>	31 December 2020
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 November 2015	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0013
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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 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 Competenz at [qualifications@competenz.org.nz](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.