

## Modification history

Release	Comments
Release 1	This version released with FBP Food, Beverage and Pharmaceutical Training Package Version 5.0

FBPOPR3XX8	Operate and monitor a heat treatment process
<b>Application</b>	<p>This unit of competency describes the skills and knowledge required to set up, operate, adjust and shut down a heat treatment process.</p> <p>This unit applies to individuals who work in a food processing environment. It typically applies to the production worker responsible for applying basic operating principles to the operation and monitoring of a heat treatment process and associated equipment.</p> <p>All work must be carried out to comply with workplace procedures, in accordance with State/Territory work health and safety, and food safety regulations, legislation and standards that apply to the workplace.</p> <p>No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.</p>
<b>Prerequisite Unit</b>	Nil
<b>Unit Sector</b>	Operational (OPR)

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for work in heat treatment processing area	1.1 Confirm product is available to meet processing requirements 1.2 Identify and confirm equipment has been cleaned according to health, safety and food safety requirements 1.3 Identify safety requirements and wear appropriate personal protective clothing and equipment and ensure correct fit
2. Prepare the heat treatment process for operation	2.1 Fit and adjust machine components and related attachments and adjust to meet operating requirements 2.2 Enter processing and operating parameters to meet safety and production requirements 2.3 Carry out pre-start checks according to workplace requirements
3. Operate and monitor equipment	3.1 Start up and operate the heat treatment process according to standard operating procedures 3.2 Monitor heat treatment equipment to ensure optimal operations 3.3 Identify, rectify and/or report out-of-specification equipment, product or process outcomes according to workplace requirements 3.4 Follow and apply workplace housekeeping and waste disposal procedures
4. Shut down the heat treatment process	4.1 Identify the appropriate shutdown procedure 4.2 Shut down the process according to safe work procedures 4.3 Identify and report maintenance requirements according to workplace procedures 4.4 Maintain workplace records according to workplace procedures

<b>Foundation Skills</b>	
<i>This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.</i>	
<b>Skill</b>	<b>Description</b>
Reading	<ul style="list-style-type: none"> <li>Interpret standard operating procedures for the heat treatment process</li> <li>Interpret heat treatment requirements</li> </ul>
Writing	<ul style="list-style-type: none"> <li>Complete processing records using electronic, digital and/or paper-based formats</li> </ul>
Numeracy	<ul style="list-style-type: none"> <li>Monitor and interpret production and process control indicators and data, including time, temperature (°C), flow rates, pressure</li> <li>Monitor supply and flow of materials to and from the process</li> </ul>

<b>Unit Mapping Information</b>			
<b>Code and title current version</b>	<b>Code and title previous version</b>	<b>Comments</b>	<b>Equivalence status</b>
FBPOPR3XX8 Operate and monitor a heat treatment process	FBPOPR2040 Operate a heat treatment process	Unit code and title updated to match complexity of task  Minor changes to Performance Criteria to clarify intent  Foundation skills refined  Performance Evidence clarified  Minor changes to Knowledge Evidence and Assessment Conditions	Equivalent unit

<b>Links</b>	Companion Volumes, including Implementation Guides, are available at VETNet: <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4</a>
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<b>TITLE</b>	<b>Assessment requirements for FBPOPR3XX8 Operate and monitor a heat treatment process</b>
<b>Performance Evidence</b>	
<p>An individual demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit.</p> <p>There must be evidence that the individual has operated a heat treatment process to treat at least one batch of product to specification, including:</p> <ul style="list-style-type: none"> <li>• following safe work procedures</li> <li>• starting, operating, monitoring and adjusting equipment to achieve required outcomes, including monitoring control points and conducting inspections to confirm process remains within specification, including: <ul style="list-style-type: none"> <li>• time and temperature</li> <li>• pressure</li> <li>• flow rates</li> <li>• flow diversion</li> </ul> </li> <li>• taking corrective action in response to out-of-specification results.</li> </ul>	
<b>Knowledge Evidence</b>	
<p>An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:</p> <ul style="list-style-type: none"> <li>• purpose and basic principles of heat treatment, including the effect of heat treatment on product and on microbiological characteristics</li> <li>• the relationship between time, temperature and pressure in the heat treatment process, including associated holding and cooling profiles according to product requirements</li> <li>• basic operating principles of equipment used in the heat treatment process, including: <ul style="list-style-type: none"> <li>• main equipment components</li> <li>• types and characteristics of heating mediums used</li> <li>• status and purpose of guards</li> <li>• equipment operating capacities and applications</li> <li>• the purpose and location of sensors and related feedback instrumentation</li> </ul> </li> <li>• the flow of the heat treatment process and the effect of product output on downstream processes</li> <li>• quality characteristics required of the heat-treated product</li> <li>• effect of raw material characteristics on the heat treatment process, including variation in viscosity/texture, microbial load and acidity</li> <li>• heat treatment requirements for food to be treated, including low and/or high acid foods</li> <li>• operating requirements and parameters for the heat treatment process, and corrective action required where operation is outside specified operating parameters</li> <li>• typical equipment faults for the heat treatment process and related causes, including: <ul style="list-style-type: none"> <li>• signs and symptoms of faulty equipment</li> <li>• early warning signs of potential problems</li> </ul> </li> <li>• methods used to monitor the heat treatment process, including inspecting, measuring and testing by the process</li> <li>• good manufacturing practices (GMP) relevant to work task</li> <li>• inspection or test points (control points) in the process and the related procedures and recording requirements</li> <li>• contamination/cross contamination and food safety risks associated with the process and related control measures</li> <li>• common causes of variation in the operation of the heat treatment process and corrective action required</li> <li>• health and safety hazards and controls, including the limitations of protective clothing and equipment relevant to the work process</li> <li>• requirements of different shutdowns as appropriate to the process and workplace production requirements, including emergency and routine shutdowns, and procedures to follow in the event of a power outage</li> </ul>	

<p><b>Knowledge Evidence</b></p> <ul style="list-style-type: none"> <li>• isolation, lock-out and tag-out procedures and responsibilities required for the operation of the heat treatment process</li> <li>• procedures and responsibility for reporting production and performance information</li> <li>• cleaning and sanitation procedures required for heat treatment process, including purpose, water flow</li> <li>• environmental issues and controls relevant to the heat treatment process, including waste/rework collection and handling procedures related to the process</li> <li>• operating principles of process control, where relevant, including the relationship between control panels and systems and the physical equipment</li> <li>• procedures to track traceability of product.</li> </ul>
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<p><b>Assessment Conditions</b></p> <p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> <li>• physical conditions:             <ul style="list-style-type: none"> <li>• a workplace or an environment that accurately represents workplace conditions</li> </ul> </li> <li>• resources, equipment and materials:             <ul style="list-style-type: none"> <li>• personal protective clothing and equipment</li> <li>• heat treatment process and related equipment and services</li> <li>• product to be heat treated</li> <li>• cleaning materials and equipment</li> </ul> </li> <li>• specifications:             <ul style="list-style-type: none"> <li>• work procedures, including advice on safe work practices, food safety, quality and environmental requirements</li> <li>• information on equipment capacity and operating parameters</li> <li>• production schedule/batch specifications, control points and processing parameters</li> <li>• documentation and recording requirements and procedures.</li> </ul> </li> </ul> <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>
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<p><b>Links</b></p>	<p>Companion Volumes, including Implementation Guides, are available at VETNet:  <a href="https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4">https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4</a></p>
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