



Australian Government

FBPOPR2040 Operate a heat treatment process

Release: 1

FBPOPR2040 Operate a heat treatment process

Modification History

Release	Comments
Release 1	This version released with FBP Food, Beverage and Pharmaceutical Training Package Version 1.0

Application

This unit of competency describes the skills and knowledge required to set up, operate, adjust and shut down a heat treatment process.

This unit applies to individuals who work under general supervision and exercise limited autonomy 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.

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.

No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Operational (OPR)

Elements and Performance Criteria

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 materials are available to meet operating requirements 1.2 Identify and confirm cleaning and maintenance requirements and status according to work health and safety and food safety requirements

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Wear appropriate personal protective clothing and ensure correct fit
2. Prepare the heat treatment process for operation	2.1 Fit 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 Check equipment performance and adjust according to production requirements 2.4 Carry out pre-start checks according to work health and safety and operating procedures
3. Operate and monitor the heat treatment process	3.1 Start, operate and monitor the process for variation in operating conditions 3.2 Monitor the process to confirm that temperature specifications are met 3.3 Identify, rectify and report out-of-specification equipment, product or process outcomes according to workplace requirements 3.4 Follow and apply workplace housekeeping and environmental working procedures
4. Shut down the heat treatment process	4.1 Identify the appropriate shutdown procedure 4.2 Shut down the process according to work health and safety and operating procedures 4.3 Identify and report maintenance requirements according to workplace procedures 4.4 Maintain workplace records according to workplace procedures

Foundation Skills

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.

Skill	Description
Reading	Interpret workplace and standard operating procedures relevant to

Skill	Description
	job role Interpret production requirements
Writing	Record operating, routine maintenance and shutdown information on paper-based and electronic media
Numeracy	- Monitor and interpret production and process control indicators and data - Monitor supply and flow of materials to and from the process
Navigate the world of work	- Apply workplace procedures to own role and responsibilities - Identify skills, knowledge and experience required for performing own role in the workplace - Ask questions to clarify understanding or seek further information
Interact with others	- Communicate and report operational and safety information to relevant personnel - Use modes of communication suitable to purpose to confirm understanding when conducting operational start-up and shutdown procedures
Get the work done	- Access and interpret process control panels and system - Maintain a clean and hazard-free work area - Identify out-of-specification standards and maintain quality specifications - Confirm equipment status and condition - Interpret process and equipment information to monitor process and respond to abnormal performance and variations

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPOPR2040 Operate a heat treatment process	FDFOP2040A Operate a heat treatment process	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volumes, including Implementation Guides, are available at VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=78b15323-cd38-483e-aad7-1159b570a5c4>

Assessment Requirements for FBPOPR2040 Operate a heat treatment process

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Performance Evidence

An individual demonstrating competency in this unit must satisfy all of the elements and performance criteria of this unit.

There must be evidence that the individual has operated a heat treatment process on at least one occasion, including:

- accessing workplace information to identify heat treatment requirements
- selecting, fitting and using personal protective clothing and/or equipment
- confirming supply of necessary materials and services
- preparing materials
- conducting pre-start checks, including:
 - inspecting equipment condition to identify any signs of wear
 - selecting appropriate settings and/or related parameters
 - cancelling isolation or lock-outs
 - confirming that equipment is clean and correctly configured for processing requirements
 - positioning sensors and controls correctly
 - ensuring any scheduled maintenance has been carried out
 - confirming that all safety guards are in place and operational
- starting, operating, monitoring and adjusting the heat treatment process and equipment to achieve required outcomes, including monitoring control points and conducting inspections to confirm process remains within specification, including:
 - time and temperature
 - pressure
 - flow rates
 - flow diversion
- monitoring supply and flow of materials to and from the process
- taking corrective action in response to out-of-specification results
- responding to and/or reporting equipment failure within level of responsibility
- locating emergency stop functions on equipment

- following isolation and lock-out/tag-out procedures to take process and related equipment off-line in preparation for cleaning and/or maintenance within level of responsibility
- cleaning and sanitising equipment
- completing workplace records
- maintaining work area to meet housekeeping standards
- controlling related holding and cooling stages according to workplace procedures
- using process control systems according to workplace procedures
- following relevant work health and safety procedures.
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Knowledge Evidence

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:

- purpose and basic principles of heat treatment, including the effect of heat treatment on product and on microbiological characteristics
- the relationship between time, temperature and pressure in the heat treatment process, including associated holding and cooling profiles according to product requirements
- basic operating principles of equipment used in the heat treatment process, including:
 - main equipment components
 - types and characteristics of heating mediums used
 - status and purpose of guards
 - equipment operating capacities and applications
 - the purpose and location of sensors and related feedback instrumentation
- the flow of the heat treatment process and the effect of product output on downstream processes
- quality characteristics required of the heat-treated product
- effect of raw material characteristics on the heat treatment process, including variation in viscosity/texture, microbial load and acidity
- heat treatment requirements for food to be treated, including low and/or high acid foods
- operating requirements and parameters for the heat treatment process, and corrective action required where operation is outside specified operating parameters
- typical equipment faults for the heat treatment process and related causes, including:
 - signs and symptoms of faulty equipment
 - early warning signs of potential problems
- methods used to monitor the heat treatment process, including inspecting, measuring and testing by the process
- inspection or test points (control points) in the process and the related procedures and recording requirements
- contamination/food safety risks associated with the process and related control measures
- common causes of variation in the operation of the heat treatment process and corrective action required

- work health and safety hazards and controls, including the limitations of protective clothing and equipment relevant to the work process
- 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
- isolation, lock-out and tag-out procedures and responsibilities required for the operation of the heat treatment process
- procedures and responsibility for reporting production and performance information
- cleaning and sanitation procedures required for heat treatment process
- environmental issues and controls relevant to the heat treatment process, including waste/rework collection and handling procedures related to the process
- basic operating principles of process control, where relevant, including the relationship between control panels and systems and the physical equipment.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - a workplace or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - personal protective clothing and equipment
 - heat treatment process and related equipment and services
 - materials to be heat treated
 - sampling schedules and test procedures and equipment
 - cleaning procedures, materials and equipment
- specifications:
 - work procedures, including advice on safe work practices, food safety, quality and environmental requirements
 - information on equipment capacity and operating parameters
 - production schedule/batch instructions
 - specifications, control points and processing parameters
 - documentation and recording requirements and procedures.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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