



Australian Government

FBPGPS2006 Operate a hydrogenation process

Release: 1

FBPGPS2006 Operate a hydrogenation 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 hydrogenation process to improve the hardness, viscosity, flavour and shelf-life of oils.

This unit applies to individuals who apply basic operating principles to the operation and monitoring of a hydrogenation process in an edible oils production environment. Processes may be batch or continuous, and apply to single or multiple product types.

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

Grocery and product supplies (GPS)

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 the hydrogenation and related equipment for operation	1.1 Ensure oil stock and emulsion are available according to production requirements 1.2 Identify and confirm cleaning and maintenance requirements have been met

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 Enter processing or operating parameters to meet safety and production requirements 1.4 Check and adjust equipment performance to ensure optimum performance 1.5 Conduct pre-start checks according to operator instructions
2. Operate and monitor the hydrogenation process	2.1 Start up and operate the hydrogenation process according to work health and safety and operating procedures 2.2 Monitor equipment to identify variation in operating conditions 2.3 Identify variation in equipment operation and report maintenance requirements 2.4 Confirm that specifications are met at each stage according to production specifications 2.5 Identify, rectify or report out-of-specification product or process outcomes according to workplace procedures 2.6 Maintain the work area according to workplace guidelines 2.7 Enter workplace records in required format
3. Shut down the hydrogenation process	3.1 Identify the appropriate shutdown procedure 3.2 Shut down the process safely according to operating procedures 3.3 Identify and report maintenance requirements

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	Read and interpret standard operating procedures for the hydrogenation process
Writing	Complete records according to workplace guidelines on paper-based and electronic media
Numeracy	Monitor control points for oil temperature, vacuum pressure, flow

Skill	Description
	rates and hydrogenation quantity and agitation
Navigate the world of work	• Apply workplace procedures to own role and responsibilities • Understand main tasks, responsibilities and boundaries of own role, including use of personal protective clothing and equipment, housekeeping standards and environmental care requirements • Maintain a clean and hazard-free work area • Maintain hygiene standards
Interact with others	• Report operational and safety information to relevant personnel using required communication method
Get the work done	• Solve routine problems according to workplace guidelines and using experience of past solutions

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
FBPGPS2006 Operate a hydrogenation process	FDFGPS2006A Operate a hydrogenation 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 FBPGPS2006 Operate a hydrogenation process

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Performance Evidence

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

There must be evidence that, on at least one occasion, the individual has:

- conducted pre-start checks on machinery used for hydrogenation
- started, operated, monitored and adjusted hydrogenation process equipment to improve the hardness, viscosity, flavour and shelf-life of oils to achieve required quality outcomes
- taken corrective action in response to typical faults and inconsistencies
- completed workplace records in required format
- applied safe work practices and identified work health and safety hazards and controls
- safely shut down equipment
- applied food safety procedures to work practices.

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 the hydrogenation process, including a basic understanding of the chemical structure of oil and the effect of hydrogenation on this structure
- basic operating principles of equipment, including:
 - main equipment components
 - status and purpose of guards
 - equipment operating capacities and applications
 - the purpose and location of sensors and related feedback instrumentation
- services required for a hydrogenation process and action to take if services are not available
- the flow of the hydrogenation process and the effect of outputs on downstream edible oils and fats processes

- quality characteristics to be achieved by the hydrogenation process
- quality requirements of oil, catalyst and filter aid as used, and effect of variation on hydrogenation process performance
- operating requirements and parameters, and corrective action required where operation is outside specified operating parameters
- typical equipment faults and related causes, including:
 - signs and symptoms of faulty equipment
 - early warning signs of potential problems
- methods used to monitor the hydrogenation process, including inspecting, measuring and testing as required by the process
- inspection or test points (control points) in the hydrogenation process, and related procedures and recording requirements
- contamination and food safety risks associated with the hydrogenation process and related control measures
- common causes of variation and corrective action required
- work health and safety hazards and controls, including an understanding of the hazards associated with the use of hydrogen
- requirements of different shutdowns as appropriate to the hydrogenation process and workplace production requirements, including:
 - emergency and routine shutdowns
 - procedures to follow in the event of a power outage
- isolation, lock out and tag out procedures and responsibilities
- procedures and responsibility for reporting production and performance information
- environmental issues and controls relevant to the hydrogenation process, including waste/rework collection and handling procedures related to the process
- routine maintenance procedures for hydrogenation equipment
- cleaning and sanitation procedures for hydrogenation 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
 - hydrogenation process and related equipment and services
 - oil, catalyst and filter aid as required for the hydrogenation process
 - 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
- relationships:
 - interactions with team members and supervisors.

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

Links

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