



Australian Government

Department of Education, Employment and Workplace Relations

FDFOP2021A Operate a fill and seal process

Revision Number: 1

FDFOP2021A Operate a fill and seal process

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the skills and knowledge required to set up, operate, adjust and shut down a fill and seal process.
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Application of the Unit

Application of the unit	This unit has application in a food processing packing environment. It typically targets the worker responsible for applying basic operating principles to the operation and monitoring of a filling and sealing process and associated equipment. This is a primary packaging process to fill product into packaging, such as bottles, boxes, drums, bladders and pails. This unit can apply to both aseptic and non-aseptic filling and sealing processes. When batch or product changeover procedures are part of this work process, the procedures should be used to customise the application of this unit. Where more detailed changeovers are carried out, FDFOP2011A Conduct routine maintenance, should be considered.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare the filling and sealing equipment and process for operation	1.1. Materials and packaging components/consumables are confirmed and available to meet operating requirements 1.2. Cleaning and maintenance requirements and status are identified and confirmed 1.3. Machine components and related attachments are fitted and adjusted to meet operating requirements 1.4. Operating parameters are entered as required to meet safety and production requirements 1.5. Equipment performance is checked and adjusted as required 1.6. Pre-start checks are carried out as required by workplace requirements
2. Operate and monitor the filling and sealing process	2.1. The process is started and operated according to workplace procedures 2.2. Equipment is monitored to identify variation in operating conditions 2.3. Variation in equipment operation is identified and maintenance requirements are reported according to workplace reporting requirements 2.4. Packaging quality and seal integrity are monitored to confirm that specifications are met 2.5. Out-of-specification process outcomes are identified, rectified and/or reported to maintain the process within specification 2.6. The work area is maintained according to housekeeping standards 2.7. Work is conducted in accordance with workplace environmental guidelines 2.8. Workplace records are maintained according to workplace recording requirements
3. Shut down the filling and sealing process	3.1. The appropriate shutdown procedure is identified 3.2. The process is shut down according to workplace procedures 3.3. Maintenance requirements are identified and reported

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Ability to:

- access workplace information to identify filling and packaging requirements
- select, fit and use personal protective clothing and/or equipment
- confirm supply of necessary packaging components/consumables, product and services
- conduct pre-start checks, such as inspecting equipment condition to identify any signs of wear, selecting appropriate settings and/or related parameters, cancelling isolation or lockouts as required, confirming that equipment is clean and correctly configured for packaging requirements, loading packaging components/consumables, positioning sensors and controls correctly, ensuring any scheduled maintenance has been completed, and confirming that all safety guards are in place and operational
- start, operate, monitor and adjust the filling and sealing process equipment to achieve required outcomes, including monitoring control points and conducting inspections as required to confirm process remains within specification, such as:
 - flow rates
 - product weights and volumes
 - fill levels
 - times and temperatures, including product and sealing temperatures
 - supply of packaging components/consumables
 - packaging quality and seal integrity, such as testing seal integrity
- take corrective action in response to out-of-specification results
- respond to and/or report equipment failure within level of responsibility
- locate emergency stop functions on equipment
- follow isolation and lock out/tag out procedures as required to take filling and sealing process and related equipment off-line in preparation for cleaning and/or maintenance within level of responsibility
- prepare filling and sealing equipment for cleaning
- demonstrate product/process changeovers
- complete workplace records as required
- maintain work area to meet housekeeping standards
- use process control systems according to enterprise procedures
- demonstrate aseptic filling and sealing according to enterprise procedures
- collect samples and conduct tests according to enterprise procedures
- clean and sanitise equipment according to enterprise procedures
- use oral communication skills/language competence to fulfil the job role as

REQUIRED SKILLS AND KNOWLEDGE

specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor

- work cooperatively within a culturally diverse workforce

Required knowledge

Knowledge of:

- purpose and basic principles of filling and sealing, including the purpose and characteristics required of packaging materials used and the method used to fill and seal product (where methods involve vacuum or map packaging, it includes an understanding of the effect of modified atmosphere on product shelf-life)
- product and packaging coding requirements and related legal requirements including product weight
- basic operating principles of filling and sealing equipment, such as main equipment components, status and purpose of guards, equipment operating capacities and applications, the purpose and location of sensors and related feedback instrumentation, and services required for operation of filling equipment used in the workplace
- the flow of processes supplying the filling and sealing process and the effect of outputs on downstream processes
- quality characteristics and requirements of filling and sealing, such as quality requirements of product and packaging components/consumables, requirements of filling including fill levels and weights, requirements of seal formation and integrity, and integrity testing procedures, where required
- methods used to monitor the process, such as inspecting, measuring and testing as required by the process
- inspection or test points (control points) in the process and the related procedures and recording requirements
- operating requirements and parameters and corrective action required where operation is outside specified operating parameters, including procedures to clear a breach and restart following a crash or jam up as appropriate
- typical equipment faults and related causes, including signs and symptoms of faulty equipment and early warning signs of potential problems
- common causes of variation and corrective action required, including the effect of variation in both product and packaging components/consumables on filling and sealing performance, such as the effect of temperature variation on the filling process
- food safety hazards and risks associated with filling and sealing and related control measures
- occupational health and safety (OHS) hazards and controls
- requirements of, 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
- product/packaging changeover procedures

REQUIRED SKILLS AND KNOWLEDGE

- procedures and responsibility for reporting production and performance information
- environmental issues and controls relevant to the filling and sealing 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
- aseptic filling and sealing requirements where relevant
- sampling and testing procedures where relevant
- cleaning and sanitation procedures where relevant

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Assessment must be carried out in a manner that recognises the cultural and literacy requirements of the assessee and is appropriate to the work performed. Competence in this unit must be achieved in accordance with food safety standards and regulations.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of ability to:

- conduct pre-start checks on machinery used for filling and sealing
- start, operate, monitor and adjust process equipment to achieve required quality outcomes
- take corrective action in response to typical faults and inconsistencies
- complete workplace records as required
- apply safe work practices and identify OHS hazards and controls
- safely shut down equipment
- apply food safety procedures.

Context of and specific resources for assessment

Assessment must occur in a real or simulated workplace where the assessee has access to:

- personal protective clothing and equipment
- work procedures, including advice on safe work practices, food safety, quality and environmental requirements, stock flow systems and production/packaging schedules
- information on equipment capacity and operating parameters
- specifications, control points and operating parameters
- filling and sealing process and related equipment and services
- materials and packaging components/consumables to be formed and filled
- product
- sampling schedules and test procedures and equipment as required
- documentation and recording requirements and

EVIDENCE GUIDE	
	procedures • cleaning procedures, materials and equipment as required.
Method of assessment	This unit should be assessed together with core units and other units of competency relevant to the function or work role. Examples could be: • FDFOP2003A Clean equipment in place • FDFOP2004A Clean and sanitise equipment • FDFOP2011A Conduct routine maintenance • FDFOP2013A Apply sampling procedures • FDFOP2030A Operate a process control interface • MSL973001A Perform basic tests.
Guidance information for assessment	To ensure consistency in one's performance, competency should be demonstrated on more than one occasion over a period of time in order to cover a variety of circumstances, cases and responsibilities, and where possible, over a number of assessment activities.

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Policies and procedures

Work is carried out according to company policies and procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements

Legislative requirements

Legislative requirements are typically reflected in procedures and specifications. Legislation relevant to this industry includes:

- the Food Standards Code, including labelling, weights and measures legislation
- legislation covering food safety, environmental management, OHS, anti-discrimination and equal opportunity

When applied to the pharmaceutical industry, relevant Good Manufacturing Practice (GMP) codes apply in place of the Australian Food Standards Code and reference to food safety is replaced by GMP

Workplace information

Workplace information may include:

- standard operating procedures (SOPs)
- specifications
- production schedules and instructions
- manufacturers' advice
- standard forms and reports

Filling and sealing equipment

Filling and sealing equipment may include:

- pumps
- fillers, including aseptic bottle fillers
- hermetic sealers
- bag fillers
- aseptic packaging
- seamers
- level detection equipment

RANGE STATEMENT	
	- conveyors Related processes depend on product requirements and may include: - product preparation equipment, such as mixers, blenders, carbonators, heat exchangers, chillers and crystallisers
Operation of equipment and processes	Operation of equipment and processes may require: the use of process control panels and systems
Packaging	Packaging may include: - vacuum packing - modified atmosphere packaging (MAP)
Shutdown procedures	Shutdown procedures may include: cleaning (in some cases cleaning may be carried out by a dedicated cleaning crew)
Services	Services are appropriate to the process to be operated. Typical examples include: - power - steam - water - vacuum - inert gas (where gas flushing is used) - compressed and instrumentation air

Unit Sector(s)

Unit sector	Operational
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		