



Australian Government

Department of Education, Employment and Workplace Relations

FDFOP2037A Operate a filtration process

Revision Number: 1

FDFOP2037A Operate a filtration 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 filtration equipment used to separate coarse particles from solutions.
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Application of the Unit

Application of the unit	This unit has application in a food processing production environment. It typically targets the production worker responsible for applying basic operating principles to the operation and monitoring of a filtration process and associated equipment. 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. When separation of fine particle sizes is required, the following units should be considered: • FDFOP2050A Operate a separation process, and • FDFOP2057A Operate a membrane process.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

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 filtration equipment and process for operation	1.1. Materials 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. Processing/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 filtration 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. Separation of solids from solution meets specifications 2.4. Variation in equipment operation is identified and maintenance requirements are reported according to workplace reporting requirements 2.5. The process is monitored to confirm that specifications are met 2.6. Out-of-specification product/process outcomes are identified, rectified and/or reported to maintain the process within specification 2.7. The work area is maintained according to housekeeping standards 2.8. Work is conducted in accordance with workplace environmental guidelines 2.9. Workplace records are maintained according to workplace recording requirements
3. Shut down the filtration process	3.1. The appropriate shut down procedure is identified 3.2. The process is shutdown according to workplace procedures 3.3. Maintenance requirements are identified and reported according to workplace reporting requirements

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 filtration processing requirements
- select, fit and use personal protective clothing and/or equipment
- confirm supply of necessary materials and services
- conduct pre-start checks, such as inspecting equipment condition to identify any signs of wear, selecting and fitting appropriate screens and equipment components, selecting settings and/or related parameters, cancelling isolation or lockouts as required, positioning sensors and controls correctly, ensuring any scheduled maintenance has been carried out, and confirming that all safety guards are in place and operational
- start, operate, monitor and adjust filtration process and equipment to achieve required outcomes, including:
 - flow rates
 - residence time
 - solids for in-feeds and out-feeds (this is typically done by conducting a spin test)
- monitor supply and flow of materials to and from the filtration process
- take corrective action in response to out-of-specification results, such as identifying and responding to sieve or screen blockages or tears
- identify and correct or report equipment faults, such as confirming condition screens and sieves and replacing damaged components within level of responsibility
- locate emergency stop functions on equipment
- follow isolation and lock out/tag out procedures as required to take filtration and related equipment off-line in preparation for cleaning and/or maintenance within level of responsibility
- clean and sanitise filtration equipment
- conduct product/batch changeover
- complete workplace records as required
- maintain work area to meet housekeeping standards
- use process control systems according to enterprise procedures
- use oral communication skills/language competence to fulfil the job role as 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

REQUIRED SKILLS AND KNOWLEDGE***Knowledge of:***

- purpose and basic principles of filtration, including stages and changes that occur during filtration
- basic operating principles of filtration equipment, such as main equipment components, status and purpose of guards, equipment operating capacities and applications, including relevant screens and sieves as required by filtration equipment, and the purpose and location of sensors and related feedback instrumentation
- services required for operation of filtration equipment used in the workplace
- the flow of the filtration process and the effect of product output on downstream processes
- effect of raw material characteristics on filtration performance
- quality characteristics required of filtration process output
- test methods used to monitor solids in in-feed and out-feed streams
- 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 and early warning signs of potential problems such as screen or sieve damage
- common causes of variation and corrective action required
- spoilage and other food safety risks associated with filtration
- occupation health and safety (OHS) hazards and controls, including the limitations of protective clothing and equipment relevant to the work process
- requirements of different shutdowns as appropriate to the filtration process and workplace production requirements, including emergency and routine shutdowns and procedures to follow in the event of a power outage
- cleaning procedures appropriate for the range of filtration components used
- isolation, lock out and tag out procedures and responsibilities
- product/batch changeover procedures
- cleaning and sanitising methods and procedures
- procedures and responsibility for reporting production and performance information
- environmental issues and controls relevant to filtration, including handling of effluent
- basic operating principles of process control, where relevant, including the relationship between control panels and systems and the physical equipment

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 filtration
- 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, production schedules, and batch/recipe instructions
- information on equipment capacity and operating parameters
- production schedule/batch instructions
- filtration and related equipment and services
- materials required for filtration
- sampling schedules and test procedures and equipment as required
- documentation and recording requirements and procedures
- cleaning procedures, materials and equipment as required.

EVIDENCE GUIDE	
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

Filtration equipment

Filtration equipment may include:

- vibratory and rotary sieves
- screens, and drum filters

The filtration process may consist of multiple in-line filters

Operation of equipment and processes

Operation of equipment and processes may require:

RANGE STATEMENT	
	the use of process control panels and systems
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 - 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		