



Australian Government

Department of Education, Employment and Workplace Relations

FDFSUG210A Operate a juice clarification process

Release: 1

FDFSUG210A Operate a juice clarification process

Modification History

New Unit based on *SUGPJCP2A Operate a juice clarification process*.

Unit Descriptor

This unit describes the outcomes required to operate a juice clarification process from the juice tanks through to the clarifiers.

Application of the Unit

This unit has application in the sugar milling industry.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

There are no pre-requisite units for this competency standard.

Employability Skills Information

This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Prepare the clarification process for operation	1.1 Raw juice is and available to meet production requirements 1.2 Services are confirmed as available and ready for operation 1.3 Equipment is checked to confirm readiness for use 1.4 The clarification process is set to meet production requirements
2 Operate and monitor the clarification process	2.1 The clarification process is started up and operated according to company procedures 2.2 Control points are monitored to confirm performance is maintained within specification 2.3 Clarified product meets specifications 2.4 Equipment is monitored to confirm operating condition 2.5 Out-of-specification product, process and equipment performance is identified, rectified and/or reported according to workplace reporting procedure 2.6 The workplace meets housekeeping standards 2.7 Workplace information is recorded according to workplace recording requirements
3 Handover the clarification process	3.1 Workplace records are maintained in accordance with workplace procedures 3.2 Handover is carried out according to workplace procedure 3.3 Clarification operators are aware of system and related equipment status at completion of handover
4 Shut down the clarification process	4.1 The appropriate shut down procedure is identified 4.2 The clarification system is shut down according to workplace procedures 4.3 The clarification system is prepared for storage in shut down mode 4.4 Maintenance requirements are identified and reported according to workplace reporting procedure

Required Skills and Knowledge

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

Required skills include:

Ability to:

- access workplace information to identify production requirements
- select, fit and use personal protective clothing and/or equipment
- confirm supply of necessary materials and services
- prepare lime, flocculant and saccharate for addition
- liaise with other work areas
- confirm equipment status and condition
- set up and start up the process in both automatic and manual modes
- undertake visual inspections and conducting tests to monitor characteristics such as:
 - juice temperatures
 - steam pressure
 - condensate flow and quality
 - throughput
 - juice pH
 - ESJ turbidity
 - addition rates
 - raw juice quality
 - clarifier mud levels and quality
 - equipment condition
- monitor supply and flow of materials to and from the process
- take corrective action in response to out-of-specification results
- record workplace information
- demonstrate shift handover procedure
- shut down equipment in response to an emergency situation
- demonstrate an operational shut down procedure
- prepare equipment for cleaning/maintenance
- maintain work area to meet housekeeping standards

Required knowledge includes:

Knowledge of:

- purpose and basic principles of clarification including heating, liming, juice degasification and flocculant addition
- the circuit flow of this process and relationship to related processes including the consequences of poor clarification on downstream processes
- the effect of recycle streams on the clarification process
- the purpose and role of materials added

- effect of faulty preparation of materials
- quality characteristics of raw juice and of clarified product
- the impact of dextran on sugar quality
- the function of the incubation tank and starch removal
- the effect of addition rates on the process
- the effect of variation in process parameters
- conditions that can cause deterioration in juice
- significance and method of monitoring control points within the process
- equipment purpose and basic operating principles of juice clarification equipment
- operating requirements and parameters
- services used
- common causes of variation and corrective action required
- hazards and controls
- purpose and limitations of protective clothing and equipment
- lock out and tag out procedures
- procedures and responsibility for reporting problems
- environmental issues and controls
- waste handling requirements and procedures
- recording requirements and procedures

Evidence Guide

<p>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.</p>	
<p>Overview of assessment</p>	<p>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.</p>
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p>	<p>Evidence of ability to:</p> <ul style="list-style-type: none"> • prepare lime, flocculant and saccharate for addition • set up and start up the process in both automatic and manual modes • monitor the process and equipment operation • take corrective action in response to out-of-specification results • record workplace information • demonstrate shift handover procedure • shut down equipment in response to an emergency situation
<p>Context of and specific resources for assessment</p>	<p>Assessment must occur in a real or simulated workplace where the assessee has access to:</p> <ul style="list-style-type: none"> • Operating procedures and related advice on equipment operation including advice on safe work practices and environmental requirements • Personal protective clothing and equipment • Product and process specifications and operating parameters • Juice clarification equipment • Materials including raw juice to be clarified • Services as required • Material Safety Data Sheets where appropriate • Housekeeping standards and procedures • Advice on environmental management issues relevant to work responsibilities • Workplace information recording systems, requirements and procedures <p>They may also require</p> <ul style="list-style-type: none"> • Cleaning procedures, sampling schedule and procedures and maintenance procedures and tools depending on the work requirements.
<p>Method of assessment</p>	<p>Other units of competency relevant to the work role</p>

	<p>should be assessed in conjunction with this unit. This may include:</p> <ul style="list-style-type: none">• SUG202A Collect and prepare samples• SUG213A Perform standard tests• FDFOP2030A Operate a process control interface
Guidance information for assessment	<p>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.</p>

Range Statement

<p>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.</p>	
<p>Policies and procedures</p>	<p>Work is carried out in accordance with company policies and procedures, licensing requirements, manufacturer's recommendations, legislative requirements, codes of practice and industrial awards and agreements.</p>
<p>Codes of practice</p>	<p>Codes of practice include the Sugar Milling Operations Industry Code of Practice.</p>
<p>Workplace information</p>	<p>Workplace information can include:</p> <ul style="list-style-type: none"> • Standard Operating Procedures (SOPs) • specifications • production schedules • manufacturer's specifications.
<p>Clarification equipment</p>	<p>Clarification equipment may include:</p> <ul style="list-style-type: none"> • tanks • juice pumps • juice heaters • flash tank • lime storage and mixing plant • saccharate tank • flocculant addition system • clarifier.
<p>Equipment status</p>	<p>Confirming equipment status involves</p> <ul style="list-style-type: none"> • conducting relevant pre-start checks • confirming that housekeeping standards are met • all safety guards are in place • equipment is operational. <p>It may also involve checking operation/calibration of measuring instrumentation.</p>
<p>Equipment operation and monitoring</p>	<p>Operation and monitoring of equipment and processes typically requires the use of control panels and systems.</p>
<p>Services</p>	<p>Services may include:</p> <ul style="list-style-type: none"> • power

	<ul style="list-style-type: none"> • steam • water • compressed and instrumentation air.
Clarification materials	<p>Materials can include lime</p> <ul style="list-style-type: none"> • flocculants • enzymes • phosphoric acid • saccharate • preservatives.
Tests	Where tests are conducted as part of operation, typical requirements are for pH and thymol testing.
Process monitoring	Monitoring the process may involve the use of production data such as performance control charts.
Control points	Control points refer to those key points in a work process which must be monitored and controlled.
Teamwork	Work may require the ability to work within a team environment.
Information systems	Information systems may be print or screen based.

Unit Sector(s)

Sugar Milling.