



Australian Government

Department of Education, Employment and Workplace Relations

SUGPJCP2A Operate a juice clarification process

Revision Number: 1

SUGPJCP2A Operate a juice clarification process

Modification History

Not applicable.

Unit Descriptor

Unit descriptor

This is a Specialist unit. It covers the operation of the juice clarification process from the juice tanks through to the clarifiers.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

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

Not applicable.

Evidence Guide

Evidence guide

The assessment process must address all of the following items of evidence.

Ability to:

1. Access workplace information to identify production requirements
2. Select, fit and use personal protective clothing and/or equipment
3. Confirm supply of necessary materials and services
4. Prepare lime, flocculant and saccharate for addition
5. Liaise with other work areas
6. Confirm equipment status and condition
7. Set up and start up the process in both automatic and manual modes
8. Monitor the process and equipment operation to maintain the process within the required parameters. This typically involves 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
9. Monitor supply and flow of materials to and from the process
10. Take corrective action in response to out-of-specification results
11. Record workplace information
12. Demonstrate shift handover procedure
13. Shut down equipment in response to an emergency situation
14. Demonstrate an operational shut down procedure
15. Prepare equipment for cleaning/maintenance
16. Maintain work area to meet housekeeping standards

May include the ability to:

17. Use process control systems
18. Clean and sanitise equipment
19. Take samples and conduct tests

Knowledge of:

20. Purpose and basic principles of clarification. This includes heating, liming, juice degasification and flocculant addition
21. The circuit flow of this process and relationship to related processes. This includes the consequences of poor clarification on downstream processes
22. The effect of recycle streams on the clarification process
23. The purpose and role of materials added
24. Effect of faulty preparation of materials
25. Quality characteristics of raw juice and of clarified product

26. The impact of dextran on sugar quality
27. The function of the incubation tank and starch removal
28. The effect of addition rates on the process
29. The effect of variation in process parameters
30. Conditions that can cause deterioration in juice
31. Significance and method of monitoring control points within the process
32. Equipment purpose and basic operating principles of juice clarification equipment
33. Operating requirements and parameters
34. Services used
35. Common causes of variation and corrective action required
36. Hazards and controls
37. Purpose and limitations of protective clothing and equipment
38. Lock out and tag out procedures
39. Procedures and responsibility for reporting problems
40. Environmental issues and controls
41. Waste handling requirements and procedures
42. Recording requirements and procedures

May include knowledge of:

43. Basic operating principles of process control where relevant. This includes the relationship between control panels and systems and the physical equipment
44. Cleaning and sanitation procedures
45. Sampling and testing procedures

Relationship with other standards

Pre-requisite units

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

Co-assessment of related units

Other units of competency relevant to the work role should be assessed in conjunction with this unit. This may include:

- SUGPCPS2A Collect and prepare samples
- SUGPPST2A Conduct standard tests
- SUGZPCI2A Operate a process control interface

Resources required for assessment

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

- 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

They may also require

- Cleaning procedures, sampling schedule and procedures and maintenance procedures and tools depending on the work requirements.

Assessment requirements

For information on how to assess this competency standard and who can assess, refer to the Assessment Guidelines for this Training Package.

Range Statement**Range statement**

The range statement indicates the context for demonstrating competence. This statement is a guide and unless otherwise indicated, items may or may not apply as required by the work context.

- Work is carried out in accordance with company policies and procedures, manufacturer's recommendations, legislative requirements, codes of practice and industrial awards and agreements. Codes of practice include the Sugar Milling Operations Industry Code of Practice
- Workplace information can include Standard Operating Procedures (SOPs), specifications, production schedules and manufacturer's specifications
- Clarification equipment may include tanks, juice pumps, juice heaters, flash tank, lime storage and mixing plant, saccharate tank, flocculant addition system, clarifier
- Confirming equipment status involves conducting relevant pre-start checks, confirming that cleaning standards are met, all safety guards are in place and equipment is operational. It may also involve checking operation/calibration of measuring instrumentation
- Operation and monitoring of equipment and processes typically requires the use of control panels and systems
- Services may include power, steam, water, compressed and instrumentation air
- Materials can include lime, flocculants, enzymes, phosphoric acid, saccharate and preservatives
- Where tests are conducted as part of operation, typical requirements are for pH and thymol testing
- Monitoring the process may involve the use of production data such as performance control charts
- Control points refer to those key points in a work process which must be monitored and controlled
- Work may require the ability to work within a team environment
- Information systems may be print or screen based
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Unit Sector(s)

Not applicable.