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## Overview

This standard covers the skills and knowledge needed for you to control membrane processing in food operations and the associated supply chain.

This standard is about the important activities of controlling and operating membrane processing equipment. Complying with health and safety, regulatory and environmental requirements are essential features of this unit. Membrane plants are complex multi-stage pieces of equipment that represent significant capital expenditure, they operate at high pressure and can include relatively fragile and sensitive components (membranes) that require specialist skill and knowledge to operate. Cleaning is an integral part of the process and cleaning routines must be strictly adhered to in order to ensure optimum performance from the plant and maximise the working life of the membranes. Complying with and understanding health and safety, food safety and organisational requirements are essential features of this standard.

This standard is for you if you work in food manufacture and/or supply operations and are involved in controlling membrane processing in food operations.

## Performance criteria

You must be able to:

### **Prepare to start up and control membrane processing**

1. monitor and adhere to hygiene, health and safety, regulatory and environmental procedures
2. establish and maintain effective spoken and written communication with your managers and colleagues
3. check that all necessary plant, equipment, materials and services are available and fit for use

### **Control membrane processing plant**

4. check that required instrumentation is working and take relevant action in response to any identified faults
5. start up in accordance with organisational procedures
6. check that plant settings are compatible with optimum achievable performance
7. check that permeate flux rates are adequately monitored and recorded
8. make the necessary equipment performance checks in accordance with procedures and regulatory requirements
9. evaluate faults for impact on operations and take prompt relevant action within the limits of your own authority
10. complete and process the necessary documentation

### **Prepare to shut down plant and equipment**

11. check and follow hygiene, health and safety and environmental procedures
12. check that when plant is shut down product losses are minimised whilst avoiding potential product contamination from flushing

### **Implement shut down procedures**

13. shut down chosen plant, equipment and associated services in line with procedures
14. check that plant and equipment are safe, secure and fit for purpose so that operations can continue when necessary or be cleaned as appropriate
15. complete the necessary documentation and process it
16. keep up effective spoken and written communication with your managers and colleagues

### **Implement cleaning operations**

17. wear correct personal protective equipment
18. set up the plant for cleaning
19. use correct cleaning products at correct concentrations and temperatures

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20. check compliance with operating procedures and manufacturers' instructions
21. complete the cleaning operation safely and leave the plant in a suitable condition to receive the next batch of product or complete shut down as appropriate

## Knowledge and understanding

You need to know and understand:

1. what the standards of health and safety and hygiene that you are required to work to are and why it is important that you do so
2. what are the relevant regulatory requirements and mandatory equipment checks that need to be undertaken at start up
3. how to minimise the use of water whilst maintaining adequate equipment performance and minimising the impact of your operation on effluent generation
4. what the limits of your own authority and competence are and why it is important to work within them
5. what the lines and methods of effective communication are and why it is important to use them
6. what the documentation requirements are and why it is important to meet them
7. how to access and interpret the relevant plant, process, equipment, materials specifications
8. the importance of flux (flow rate) measurements
9. the terms permeate and retentate and the differences between them
10. how the process works and what the function of each item of plant is
11. what the main types of equipment malfunction are and their corrective actions
12. what the correct procedures for start up and shut down are and why it is important to follow them
13. how faults can impact on operations
14. why it is important to use correct chemicals and cleaning procedures

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