

## Overview

This standard is about the skills and knowledge of cooling chocolate after enrobing or moulding. Controlled cooling is critical to the final quality of the product and this standard covers why it is so important, the different type of coolers and their merits, as well as understanding about storage conditions after cooling.

This standard is about removing heat to achieve the required change in the condition of the product or to preserve the product state and/or quality. It details the skills required to start up, run and shut down equipment, as well as being able to take action should operating problems occur. It is also about working to product specifications and production schedules. 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 require a basic knowledge of cooling chocolate in the final stage in the process of manufacturing chocolate products.

## Performance criteria

*You must be able to:*

### **Prepare to cool chocolate after processing**

1. prepare for cooling in accordance with the legal or regulatory requirements, the organisational health and safety, hygiene and environmental standards and instructions
2. check product specifications at the right time
3. set up equipment according to specification
4. check that material for temperature reduction is available and fit for use
5. check that services meet requirements
6. start up the plant and check that it is running to specification
7. take action in response to operating problems
8. maintain communication in accordance with organisational requirements

### **Carry out cooling of chocolate after processing**

9. carry out cooling in accordance with the legal or regulatory requirements, the organisational health and safety, hygiene and environmental standards and instructions
10. use equipment and check that it is supplied with materials and services
11. achieve the required output to the correct specification
12. check the product is transferred to the next stage in the manufacturing operation
13. take action in response to operating problems within the limits of your responsibility
14. maintain communication in accordance with organisational requirements

### **Finish cooling of chocolate after processing**

15. finish cooling in accordance with the legal or regulatory requirements, the organisational health and safety, hygiene and environmental standards and instructions
16. check the specifications to time shut down
17. shut down equipment in accordance with organisational procedures
18. deal with items that can be re-cycled or reworked

19. dispose of waste in accordance with organisational requirements
20. make equipment ready for future use after completion of the process
21. maintain communication in accordance with organisational requirements
22. complete all necessary documentation

## Knowledge and understanding

*You need to know and understand:*

1. what the legal or regulatory requirements, the organisational health and safety, hygiene and environmental standards and instructions are and what may happen if they are not followed
2. the potential food safety risks and control procedures associated with chocolate cooling processes
3. the purpose and importance of temperature reduction
4. what the cooling process is and why it is important to control it
5. what the different types of coolers are and their relative merits
6. when and how you would use a temper meter and why
7. why temperature gradients are important in chocolate cooling
8. which systems of heat exchange are used in cooling tunnels
9. what the relevance of dew-point and relative humidity is in storing chocolate
10. what would happen if humidity levels were not controlled and the effects this would have on the product
11. why problems can occur in the cooling system, and what action you could take to rectify those problems
12. how to obtain and interpret the relevant process or ingredient specification
13. what recording, reporting and communication is needed and how to carry this out and the reasons why it is important to do so
14. what action to take when the process specification is not met
15. how to carry out the necessary pre start checks and why it is important to do so
16. how to follow the start up procedures for cooling and why it is important to do so
17. how to obtain the necessary resources for cooling
18. how to follow work instructions and why it is important to do so
19. common sources of contamination during processing, how to avoid these and what might happen if this is not done
20. how to operate, regulate and shut down the relevant equipment
21. when it is necessary to seek assistance and how to seek it
22. how to follow the relevant process control procedures and why it is important to do so
23. what the limits of your own authority and competence are and why it is important to work within them
24. how to deal with items that can be re-cycled or re-worked

- 25. how to dispose of waste
- 26. how to make equipment ready for future use

## Cool chocolate after processing

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| <b>Developed by</b>             | NSAFD   |
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