

## Temper chocolate

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### Overview

This standard is about tempering chocolate before it is used in production. Tempering is a critical stage in chocolate manufacture. This standard covers the understanding of the importance of tempering, and what happens to chocolate if it is not tempered. It also covers different methods of tempering used in manufacturing chocolate products. This standard is about applying heat to bring about a change in the condition of a product in this case tempering chocolate. 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 the tempering process in the manufacture of chocolate products.

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### Performance criteria

#### You must be able to:

##### Prepare for heat treatment

1. prepare for tempering chocolate in accordance with the legal or regulatory requirements, the organisational health and safety, hygiene and environmental standards and instructions when preparing for tempering chocolate
2. check product specifications at the right time
3. set up equipment according to specification
4. check that materials for tempering chocolate 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 heat treatment

9. carry out chocolate tempering in accordance with the legal or regulatory requirements, the organisational health and safety, hygiene and environmental standards and instructions when carrying out chocolate tempering
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 heat treatment
15. finish tempering chocolate 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

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### 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 tempering processes
3. the reason for tempering chocolate and why this is important in the manufacture of chocolate products
4. the difference between tempered and untempered chocolate, and the reason for this difference
5. why it is important to control temperature during tempering and what would happen if this is not controlled adequately
6. why it is important to control the degree of temper and how this is achieved
7. the different methods of tempering chocolate in manufacturing
8. the processes involved in automated tempering and their purpose
9. the effect of using cocoa butter equivalents and substitute fats on the tempering process
10. what equipment and tools to use and their correct condition
11. what materials to use and in what quantity

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 tempering and why it is important to do so
17. how to obtain the necessary resources for tempering
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

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Developed by	Improve
Version Number	2
Date Approved	01 Jan 2019
Indicative Review Date	01 Jan 2023
Validity	Current
Status	Original
Originating Organisation	Improve
Original URN	impsc106
Relevant Occupations	Manufacturing Technologies, Plant and Machine Operatives, Process Operatives, Process, Plant and Machine Operatives
Suite	Sweet Confectionery
Keywords	Chocolate; Tempering; Temper; Heat