

## Overview

This standard is about how sugar dissolves in water, the importance of particle size and the effects of heat on a sugar solution. This standard is about physically combining two or more constituents to produce a whole. 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 process involved in dissolving sugars and the different methods of boiling sugar.

## Performance criteria

*You must be able to:* Prepare for dissolving sugars

1. prepare for dissolving sugars 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 dissolving sugars 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 dissolving sugars

9. carry out dissolving sugars 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 dissolving sugars
15. finish dissolving sugars in accordance with the legal or regulatory requirements, the organisational health and safety, hygiene and environmental standards and instructions
16. check 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 in accordance with organisational procedures

## 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 using sugar solutions in confectionery manufacture
    3. the purpose and importance of controlling sugar solutions and sugar syrups
      4. how sugar dissolves in water
      5. the ways in which the rate of sugar dissolving can be influenced
      6. the importance and uses of particle size, agitation and temperature in producing a sugar solution
        7. the differences between a solution, saturation and super saturation
          8. the different methods used for boiling sugar solutions
          9. what the different boiling temperatures are for low and high boiled sugar
            10. how to measure the solids content of a sugar solution, why this is important and the relation to temperature
              11. the causes and uses of caramelisation
              12. the causes and effects of inversion
              13. the circumstances and reasons for using vacuum boiling

Control sugar solutions in confectionery manufacture

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14. what equipment and tools to use and their correct condition

15. what materials to use and in what quantity

16. how to obtain and interpret the relevant process or ingredient

specification

17. what recording, reporting and communication is needed and how

to carry this out and the reasons why it is important to do so

18. what action to take when the process specification is not met

19. how to carry out the necessary pre start checks and why it is important to do so

20. how to follow the start up procedures for controlling sugar solutions and why it is important to do so

21. how to obtain the necessary resources for boiling sugar solutions

22. how to follow work instructions and why it is important to do so

23. common sources of contamination during processing, how to

avoid these and what might happen if this is not done

24. how to operate, regulate and shut down the relevant equipment

25. when it is necessary to seek assistance and how to seek it

26. how to follow the relevant process control procedures and why it

is important to do so

27. what the limits of your own authority and competence are and why

it is important to work within them

- 28. how to deal with items that can be re-cycled or re-worked
- 29. how to dispose of waste
- 30. how to make equipment ready for future use

## Control sugar solutions in confectionery manufacture

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