



Australian Government

Department of Education, Employment and Workplace Relations

FDFST4035A Implement and review the processing of high and low boil confectionery

Release: 2

FDFST4035A Implement and review the processing of high and low boil confectionery

Modification History

April 2012: Minor typographical corrections.

Unit Descriptor

Unit descriptor	This unit covers the skills and knowledge required to implement and review the standards and procedures for manufacture of high and low boil confectionery.
------------------------	---

Application of the Unit

Application of the unit	This unit applies to food science and technology personnel who have roles in product design, quality assurance and production management. The unit typically applies to staff who have responsibility for maintaining product safety, quality and efficiency in food production in the confectionery sector. This unit includes using knowledge of food science and processes to determine the required food safety, quality and performance required from food production equipment. Depending on the workplace application, liaison may be required with engineering and maintenance specialists.
--------------------------------	---

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
----------------------	--

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Carry out the preparation and manufacture of high and low boil confectionery to meet quality standards	1.1 Equipment and accessories used in the preparation and manufacture of high and low boil confectionery are prepared 1.2 Ingredients are assembled and prepared and product formulations checked 1.3 Standard Operating Procedures are put in place 1.4 A production schedule is implemented to ensure all resources and requirements are available and meet company standards 1.5 Production system is set to operating specifications before and during production 1.6 Data requirements appropriate for food safety, quality and production standards are interpreted 1.7 Data collection points consistent with equipment capabilities and data requirements are determined 1.8 Procedures to deal with non-conformance in relation to process and the final product are developed 1.9 Process control system is implemented and monitored
2. Diagnose, rectify and/or report problem arising from the preparation and manufacture of high and low boil confectionery	2.1 Sensory evaluation and product testing protocols are established to identify defects and maintain organoleptic quality of confectionery 2.2 Identified adjustments to inputs, process & equipment are implemented 2.3 Adjustments to process/equipment as identified are implemented 2.4 Problems are reported to designated person according to company policies and procedures
3. Review production processes	3.1 The critical control points (CCPs) and critical limits for product safety are reviewed 3.2 A sampling plan is developed and implemented 3.3 Sensory analysis is conducted and analysed 3.4 Food tests are undertaken to check product composition and compliance with label information 3.5 Operating procedures and the process control system are reviewed for food safety and quality 3.6 Safe work systems for processing of high and low boil confectionery are reviewed 3.7 Environmental impacts and energy efficiencies are reviewed for processing of high and low boil confectionery

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills includes:

Ability to:

- interpret market specifications for high and low boil confectionery
- select the formulation, method of manufacture, method of forming and packaging of high and low boil confectionery
- implement a production schedule to ensure all resources and requirements are available and meet company requirements
- set the production system to operating specifications before and during production
- implement the production system for the preparation and manufacture of high and low boil confectionery
- identify the potential product defects and their causes which may arise in the preparation and manufacture of high and low boil confectionery
- determine and implement a system used to identify defects in the preparation and manufacture of high and low boil confectionery
- implement adjustments to process/equipment as identified
- report problems to designated person according to company policies and procedures.

Required knowledge includes:

Knowledge of:

- different types of high and low boil confectionery
- formulation of high and low boil confectionery
- purpose of each process used in the preparation and manufacture of high and low boil confectionery
- relationships between the processes used in the preparation and manufacture of high and low boil confectionery
- outputs of each of the processes used in the preparation and manufacture of high and low boil confectionery
- potential product defects and their causes which may arise in the preparation and manufacture of high and low boil confectionery
- the interrelationships between suppliers of products and internal/external customers
- critical factors in the preparation and manufacture of high and low boil confectionery
- solubility and crystallisation properties of ingredients used and their relationship to texture
- relationship of the boiling point of a confectionery syrup to its soluble solids content
- the relationship of pressure and vacuum to the boiling point of a confectionery syrup of a specific soluble solids content and the uses made in production of this relationship
- the concept of equilibrium relative humidity (ERH) or water activity (A_w) of a confectionery product
- resource requirements for the preparation and manufacture of high and low boil confectionery

- testing procedures for raw materials through to manufactured product
- stages of production, CCPs and critical limits
- packaging procedures
- quality and continuous improvement processes
- sensory analysis techniques and analysis
- safe systems of work.

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to review the production of high and low boil confectionery through monitoring inputs and processes
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Critical aspects of assessment must include evidence of the ability to produce high and low boil confectionery including; implementing process control procedures and data collection, diagnosing and reporting problems for manufacturing, carrying out sensory evaluation and product testing, and reviewing the production system for food safety and quality and environmental impact.
Context of and specific resources for assessment	Assessment of performance requirements in this unit should be undertaken within the context of food technology. Competency is demonstrated by performance of all stated criteria, including the critical aspects and knowledge and skills elaborated in the Evidence Guide, and within the scope as defined by the Range Statements applicable to the workplace environment. Assessment must occur in a real or simulated workplace where the assessee has access to: • Production process and related equipment, manufacturers' advice and operating procedures • Methods and related software systems as required for collecting data and calculating yields, efficiencies and material variances appropriate to production environment • Tests used to report relevant product/process information and recorded results
Method of assessment	The following assessment methods are suggested: • Demonstration of product development • Observation of candidate conducting a range of processes and tests • Written and/or oral questioning to assess knowledge and understanding • Analysis of samples produced by the candidate • A report on a review of the production system

EVIDENCE GUIDE

Guidance information for assessment

Evidence should be gathered over a period of time in a range of actual or simulated environments.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Legislation

Legislative requirements are typically reflected in procedures and specifications. Legislation relevant to this industry includes the Food Standards Code including labelling, weights and measures legislation; and legislation covering food safety, environmental management, occupational health and safety, anti-discrimination and equal opportunity.

Policies and procedures

Work is carried out according to company procedures, regulatory and licensing requirements, legislative requirements, and industrial awards and agreements.

OHS requirements

- legislation, regulations, Codes of practice
- safety data sheets (SDSs)
- enterprise and process specific occupational health and safety requirements

High and low boil confectionery

Includes sugar and "sugar free" boiled sweets, drops, brittles, toffees, jellies, caramels, fudges, nougats, pastes, creams and fondants. Can be consumed as is or included as a centre for, say, chocolate enrobing, moulding or panning.

Major ingredients

May include sugar, glucose syrups, "sugar free" analogues of these, fats, and milk products

Minor ingredients

May include colouring and flavouring agents, buffers, intense sweeteners

Unit Sector(s)

Unit sector	Technical
-------------	-----------