

**SINGAPORE STANDARD**

**Hazard analysis and critical control point  
(HACCP) system for the food industry –  
Requirements with guidance for use**

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*Singapore Polytechnic*

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## **Foreword**

This Singapore Standard was prepared by the Working Group on Hazard Analysis and Critical Control Point (HACCP) under the direction of the Food Standards Committee.

It is a revision of SS 444 : 2010 – “Hazard analysis and critical control point (HACCP) system and guidelines for its application”. It is based on the Codex Alimentarius Commission’s “Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for Its Application (Annex to CAC/RCP 1 – 1969, 2003 Edition, Editorial Corrections 2011, General Principles of Food Hygiene)”, and it is adapted and reproduced with permission from Codex.

The main change is the incorporation of the management aspects of operating a HACCP-based food safety system. In order to apply HACCP successfully, a strong management commitment to the HACCP concept is necessary. A firm commitment to HACCP by top management provides company employees with a sense of the importance of producing safe food. The success of a HACCP system also depends on effective personnel training. Understanding the reasons for performing an action or a procedure is an important and integral part of an effective HACCP programme.

Outbreaks of food-borne illnesses continue to be a major and serious health problem globally. One of the most important challenges to the food industry is the widespread occurrence of emerging pathogens such as verocytotoxin producing *Escherichia coli* and those not previously recognised as food-borne agents such as *Listeria monocytogenes* and *Campylobacters*. The increasing public health concerns have highlighted the need for an effective food safety assurance system. The HACCP system has gained national and international endorsement as a cost effective means for ensuring food safety. There is also a growing trend in international trade for worldwide equivalence of food safety based on HACCP principles.

The HACCP concept was first developed in the 1960s at the National Aeronautics and Space Administration (NASA) in the USA to ensure safe food for its astronauts. HACCP is a preventive system of control. It identifies specific hazards and control measures for their control to ensure the safety of food. It is scientific and risk-based. It enables food establishments and regulatory authorities to identify, prevent and reduce food-borne hazards in any segment of the food chain.

In preparing this standard, references were made to the following publications:

1. CP 3 : 1988 Code of practice for food hygiene (general)
2. CAC/RCP 1 – 1969, 2003 Edition, Editorial Corrections 2011, General principles of food hygiene
3. CAC/ GL 69 – 2008 (2013 Edition) Guideline for the validation of food safety control measures
4. FAO/WHO guidance to governments on the application of HACCP in small and/or less-developed food businesses
5. SAC HACCP Document No. 2 Management of food safety based on HACCP (hazard analysis and critical control point) – Requirements for a HACCP based food management system, SAC Accreditation Programme
6. U.S. Food and Drug Administration – Hazard analysis and critical control point principles and application guidelines, adopted August 14, 1997.

Permission has been sought to reproduce materials from the following organisations:

1. Food and Agriculture Organization of the United Nations (FAO) for the reproduction of the Annex to CAC/RCP 1 – 1969, 2003 Edition, Editorial Corrections 2011, General Principles of Food Hygiene “General principles of food hygiene” on the following clauses:
  - a) Definition of “validation” and “verification”
  - b) Diagram 1 and Diagram 2

The views expressed in this standard do not necessarily reflect the views or policies of the FAO.
2. Singapore Accreditation Council for the reproduction of the Clauses 1, 3.1, 3.2, 3.3, 3.4, 3.8, 4, 5, 7, 8 and 9 from “SAC HACCP Document No 2 Management of food safety based on HACCP (hazard analysis and critical control point) – Requirements for a HACCP based food management system”.

Acknowledgement is made for the use of information from the above publications.

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## **Hazard analysis and critical control point (HACCP) system for the food industry – Requirements with guidance for use**

### **0 Introduction**

This standard specifies requirements for a Hazard Analysis and Critical Control Point (HACCP) food safety management system for certification purposes.

This standard also sets out the principles of the HACCP system and provides general guidance for the application of the system<sup>1</sup>. It is recognised that the details of application may vary depending on the circumstances of the food operation.

The HACCP system, which is scientific and systematic, identifies specific hazards and measures for their control to ensure the safety of food. HACCP is a tool to assess hazards and establish control systems that focus on prevention rather than relying mainly on spot checks on production conditions and random testing of end-products. A HACCP system is capable of accommodating changes such as advances in equipment design, processing procedures or technological developments.

HACCP can be applied throughout the food chain, from primary production to final consumption, and its implementation should be guided by scientific evidence of risks to human health. Besides enhancing food safety, the implementation of HACCP has other significant benefits such as better utilisation of resources and a more timely response to production problems. In addition, the application of a HACCP system can aid inspection by regulatory authorities and promote international trade by increasing confidence in food safety.

The successful application of HACCP requires the full commitment and involvement of management and the workforce. It also requires a multi-disciplinary approach, which should include, where appropriate, expertise in agronomy, veterinary health, production, microbiology, medicine, public health, food technology, environmental health, chemistry, and engineering, according to the particular study.

The intent of the HACCP system is to focus control at Critical Control Points (CCPs) rather than dissipating efforts on many different areas that have little impact on food safety. A redesign of the operation should be considered if a hazard that must be controlled is identified but no CCPs are found.

Pre-requisite programmes such as Good Hygienic Practices (GHP) or Good Manufacturing Practices (GMP) are essential for the development and implementation of successful HACCP plans. Pre-requisite programmes provide the basic environmental and operating conditions that are necessary for the production of safe and wholesome food.

The effectiveness of the system relies on management and employees having the relevant HACCP knowledge and skills. Therefore, appropriate training is necessary for all levels of employees and managers.

The application of the HACCP is the responsibility of each individual business. All the seven principles as detailed in Clause 4 shall be applied in the HACCP system. However, some flexibility in the application of the principles appropriate to the business is allowed. This flexibility should take into account the nature and size of the operation, including human and financial resources, infrastructure, processes, knowledge and practical constraints. While the application of HACCP to food safety is considered here, the concept can be applied to other aspects of food quality.

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<sup>1</sup> The principles of HACCP set the basis for the requirements for the application of HACCP, while the guidelines for the application provide general guidance for practical application.

## **1 Scope**

The requirements in this standard have been specified for use in auditing operational HACCP-based systems that ensure the safety of foodstuff during production, preparation, processing, manufacturing, packaging, storage, transportation, distribution, food services, retailing, and any other sector related to the food chain.

The requirements are applicable to all food businesses that wish to design and implement an effective HACCP management system, regardless of type, size and product.

The scope of the business activities to be certified shall be defined by the food businesses and agreed by the certification bodies.

## **2 Normative references**

There are no normative references cited in this Singapore Standard.