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**SANS 10156:2014**

Edition 1.2

## **SOUTH AFRICAN NATIONAL STANDARD**

### **The handling of chilled and frozen foods**

**WARNING**  
This standard references other  
documents normatively.

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### Table of changes

Change No.	Date	Scope
Amdt 1	2007	Amended to change the designation of SABS standards to SANS standards, to delete reference to national legislation and to the SAR specification in the text, and to update applicable publications.
Amdt 2	2014	Amended to update referenced standards.

### Foreword

This South African standard was approved by National Committee SABS/TC 034/SC 17, *Food products –Hygiene practices in the food industry*, in accordance with procedures of the SABS Standards Division, in compliance with annex 3 of the WTO/TBT agreement.

This document was published in March 2014.

This document supersedes SANS 10156:2007 (edition 1.1).

A vertical line in the margin shows where the text has been technically modified by amendment No. 2.

A reference is made in 3.1 to "the relevant national legislation". In South Africa this means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), the Abattoir Hygiene Act, 1992 (Act No. 121 of 1992), the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972), the National Health Act, 2003 (Act No. 61 of 2003), the Livestock Improvement Act, 1977 (Act No. 25 of 1977) and the Marketing of Agricultural Products Act, 1996 (Act No. 47 of 1996).

A reference is made in 3.2(f) and 4.6 to "the relevant national legislation". In South Africa this means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

A reference is made in 3.2(h)(1) to "the relevant national legislation". In South Africa this means the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947).

A reference is made in 3.2(m) to "the relevant national legislation". In South Africa this means the Atmospheric Pollution Prevention Act, 1965 (Act No. 45 of 1965).

A reference is made in 3.4(b) to "the relevant national legislation". In South Africa this means the Abattoir Hygiene Act, 1992 (Act No. 121 of 1992).

A reference is made in 3.4(c) to "the relevant national legislation". In South Africa this means the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972).

A reference is made in 3.5 to "the relevant national legislation". In South Africa this means the Water Act, 1956 (Act No. 54 of 1956).

A reference is made in 5.2.3 to "the relevant national legislation". In South Africa this means the Marketing of Agricultural Products Act, 1996 (Act No. 47 of 1996) and the Standards Act, 2008 (Act No. 8 of 2008).

A reference is made in 6.2 to "the relevant national legislation". In South Africa this means the Trade Metrology Act, 1973 (Act No. 77 of 1973), the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972), the Marketing of Agricultural Products Act, 1996 (Act No. 47 of 1996), the Standards Act, 2008 (Act No. 8 of 2008), and the National Health Act, 2003 (Act No. 61 of 2003).

A reference is made in 6.4 to "the relevant national legislation". In South Africa this means the Regulations R1969 and R1970 (respectively) in Government Gazette No. 4478 of 1 November 1974.

## Introduction

Food is chilled or frozen for two reasons, namely to maintain its fresh quality for as long as possible and to contribute to its safety for human consumption. The first is primarily a matter of good merchandising. The fresher food appears and tastes, the better it will sell. The safety of food, however, is a different matter, for it is possible for food to appear wholesome and to taste and smell reasonably fresh and yet to be highly dangerous.

Food which supports bacterial multiplication at ordinary temperatures, causing deterioration in the process, is called perishable food and all such food, unless sterilized and packed in hermetically sealed containers, contains some bacteria and will be further contaminated by bacteria from its surroundings.

The bacteria that multiply in food can be of the following two types:

- a) pathogenic or disease causing; and
- b) non-pathogenic or harmless from the disease point of view, but destructive from the commercial aspect.

The pathogenic bacteria that multiply in food can cause food poisoning or spread intestinal disease such as typhoid, cholera, and gastro-enteritis, while the non-pathogenic bacteria, although harmless to man, cause food spoilage. Spoilage bacteria and enzymes impart an abnormal odour and taste to food and cause it to become discoloured and also lower its nutritional value. This, however, is not always the case with pathogenic bacteria, which may not cause any discoloration or impart any abnormal taste or odour to food.

For their multiplication bacteria require certain favourable conditions such as moisture, warmth, and the presence or absence of oxygen, as well as food material. Temperature is a very important factor because most bacteria multiply at temperatures between 10-65 °C, the optimum being 37 °C. However, some can still multiply at a retarded rate at temperatures down to -10 °C. Below -10 °C many bacteria and spores remain viable but do not multiply, while above 65 °C vegetative (i.e. growing) bacteria die off while spores can survive at 100 °C.

By depriving bacteria of their required temperature needs through chilling or freezing, we prevent or at least retard their multiplication and the food will remain in an acceptable condition for a longer period and its safety for human consumption is ensured. The lower the temperature at which food is stored, the longer it will keep. Food frozen to a temperature of -18 °C or below and kept at that temperature will not deteriorate bacteriologically although it will slowly lose quality in other ways e.g. as a result of enzymic activity, but food stored at average refrigeration temperatures between 0 °C and -10 °C, even when properly handled, will gradually deteriorate microbiologically, as well as more rapidly in other ways. For this reason it is important that food should be stored and sold in strict rotation and stocks regularly inspected for signs of spoilage.

There are a number of contributory factors responsible for the contamination of food with harmful bacteria. One of the main factors is the incorrect manner in which food is stored. The unhygienic handling of food is another factor contributing to its contamination with harmful bacteria. Incorrect methods of preparation and processing likewise greatly reduce its quality.

This code of practice is designed to contribute to the safety and quality of all chilled and frozen foods, whether manufactured, sold, bought, or stored by the user.

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