

**Ready – to – Eat Foods —Specification**

PUBLIC REVIEW DRAFT

## **KS 2966: 2022**

### **TECHNICAL COMMITTEE REPRESENTATION**

The following organizations were represented on the Technical Committee:

Kenafri Industries LTD  
Tensenses Africa EPZ LTD  
Weetabix EA LTD  
Kenya Nut Company LTD  
University of Nairobi  
Ministry of Health  
Mars Wrigley Confectionery Kenya  
State Department of Industry  
Unilever Kenya Limited  
Kenyatta University  
Kenya Industrial Research and Development Institute (KIRDI)  
Trufoods Limited  
University of Eastern Africa, Baraton  
Glacier Products LTD  
Brookside Dairy Limited  
Jomo Kenyatta University of Agriculture and Technology  
Syncom Food Consultancy LTD.  
Agriculture and Food Authority  
Excel Chemicals LTD  
Inter-Management Africa Limited  
Kenya Bureau of Standards — Secretariat

### **REVISION OF KENYA STANDARDS**

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

© Kenya Bureau of Standards, 2022

*Copyright. Users are reminded that by virtue of Section 25 of the Copyright Act, Cap. 130 of 2001 of the Laws of Kenya, copyright subsists in all Kenya Standards and except as provided under Section 25 of this Act, no Kenya Standard produced by Kenya Bureau of Standards may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from the Managing Director.*

# **Ready – to – Eat Foods —specification**

## **KENYA BUREAU OF STANDARDS (KEBS)**

**Head Office:** P.O. Box 54974, Nairobi-00200, Tel.: (+254 020) 605490, 602350, Fax: (+254 020) 604031  
E-Mail: [info@kebs.org](mailto:info@kebs.org), Web:<http://www.kebs.org>

### **Coast Region**

P.O. Box 99376, Mombasa-80100  
Tel.: (+254 041) 229563, 230939/40  
Fax: (+254 041) 229448

### **Lake Region**

P.O. Box 2949, Kisumu-40100  
Tel.: (+254 057) 23549, 22396  
Fax: (+254 057) 21814

### **Rift Valley Region**

P.O. Box 2138, Nakuru-20100  
Tel.: (+254 051) 210553, 210555

## **KS 2966: 2022**

### **Foreword**

This Kenya Standard was developed by the Technical Committee on Food Hygiene under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

This Kenya standard covers the microbiological limits for ready to eat foods available in the Kenyan market.

During the preparation of this standard, reference was made to the following documents:

The international commission of microbiological specifications for foods (ICMSF)  
CXG 21-1997 Principles and Guidelines for the Establishment and Application of Microbiological Criteria Related to Foods  
Center for Food Safety – Food and Hygiene Department. (2001 & 2007). Microbial guidelines for ready-to-eat foods. Hong Kong: Center for Food Safety.

Acknowledgement is hereby made for assistance derived from these sources.

PUBLIC REVIEW DRAFT

# Ready – to – Eat Foods —Specification

## 1 Scope

This Kenya Standard specifies the requirements, sampling and test methods for pre-packaged ready to eat foods intended for direct consumption.

The standard is not applicable to products already covered in other Kenya standards.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

KS EAS 12, *potable water- Specification*

KS EAS 38, *Labelling of pre-packaged foods*

KS EAS 39, *General principles for food hygiene*

ISO 16649-1, 2 and 3; *Microbiology of the food chain — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 1 to 3: Colony-count technique at 44 degrees C using membranes and 5-bromo-4-chloro-3-indolyl beta-D-glucuronide*

KS ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony count technique*

KS ISO 4833, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30 degrees C by the pour plate technique*

KS ISO 6579-1, *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp*

ISO 6888-1:2021, *Microbiology of the food chain — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Method using Baird-Parker agar medium*

ISO 6888-2:2021, *Microbiology of the food chain — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Method using rabbit plasma fibrinogen agar medium*

KS ISO 6888- 3, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 3: Detection and MPN technique for low numbers*

KS ISO 21527, *Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of yeasts and moulds - Part 1 and 2: Colony count technique in products with water activity less than or equal to 0.95*

KS ISO 21528-2, *Microbiology of the food chain — Horizontal method for the detection and enumeration of Enterobacteriaceae — Part 2: Colony-count technique*

## KS 2966: 2022

KS ISO 21871:2006, *Microbiology of food and animal feeding stuffs - Horizontal method for the determination of low numbers of presumptive Bacillus cereus - Most probable number technique and detection method.*

KS ISO 7932, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of presumptive Bacillus cereus — Colony-count technique at 30 degrees C*

KS ISO 7937, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of Clostridium perfringens — Colony-count technique*

KS ISO 21872, *Microbiology of the food chain — Horizontal method for the determination of Vibrio spp. — Part 1: Detection of potentially enteropathogenic Vibrio parahaemolyticus, Vibrio cholerae and Vibrio vulnificus*

KS ISO 10272-2, *Microbiology of food and animal feeding stuffs — Horizontal method for detection and enumeration of Campylobacter spp. — Part 2: Colony count technique*

KS ISO 21567, *Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Shigella spp.*

### 3 Terms and Definitions

#### 3.1

##### **Ready-to-eat food**

Any food (including beverages) which is normally consumed in its raw state or any food handled, processed, mixed, cooked, or otherwise prepared into a form in which it is normally consumed without further processing.

#### 3.2

##### **Contamination**

The introduction or occurrence of a contaminant in the food or food environment

#### 3.3

##### **Contaminant**

Any biological, chemical or physical agent, foreign matter or other substances not intentionally added to food that may compromise food safety or suitability.

#### 3.4

##### **Foreign matter**

Any agent or other substances not intentionally added to food which may compromise food safety or suitability.

#### 3.5

##### **Potable water**

Water that is safe and suitable for human consumption

## 4 Requirements

### 4.1 General requirements

Ready to eat foods shall meet the following requirements;

- i. Be Prepared and handled in accordance to KS EAS 39.
- ii. Raw materials used in ready to eat foods shall be comply with the relevant Kenya standards.
- iii. Shall be free from foreign matter, objectionable tastes and/or odours.
- iv. Be washed and prepared with potable water complying with KS EAS 12.

- v. Have characteristic taste, smell, texture and colour.

## 4.2 Specific Requirements

The products shall comply with the microbiological limits given in Table 1 when tested in accordance with the test methods specified therein.

**Table 1— Microbiological limits for Ready to eat foods**

S/N	Food Item	Micro-organism	Maximum Limit	Test method
i.	Filled or topped Bakery products/pastries e.g.cakes, pies, tarts, doughnuts and sweet buns etc.	Total viable count, CFU/g	10 <sup>3</sup>	KS ISO 4833-1
		<i>Staphylococcus aureus</i> (coagulase positive), CFU/ g	10 <sup>2</sup>	KS ISO 6888
		<i>Escherichia coli</i> , CFU/g	absent	KS ISO 16649
		<i>Salmonella spp</i> , CFU/25 g	absent	KS ISO 6579
		<i>Bacillus Cereus</i> , CFU/ g	10	KS ISO 7932
ii.	Foods/meals cooked immediately prior for sale or consumption such as Pizza, sausages, lasagna, filled pasta, street foods, burgers kebabs, meat and vegetable nuggets, and frozen doughs with fillings or toppings etc.	Total plate count, CFU/g	10 <sup>3</sup>	KS ISO 4833-1
		<i>Listeria monocytogenes</i> , CFU/25g	absent	KS ISO 11290
		<i>Salmonella spp</i> , CFU/25 g	absent	KS ISO 6579
		<i>Staphylococcus aureus</i> (coagulase positive), CFU/ ml	10 <sup>2</sup>	KS ISO 6888
iii.	Ready to eat cereal based products e.g Puffed, flaked cereal e.tc.	Total plate count, CFU/g	10 <sup>3</sup>	KS ISO 4833-1
		<i>Salmonella spp</i> , CFU/25 g	absent	KS ISO 6579
		<i>Bacillus Cereus</i> , CFU/g	absent	KS ISO 7932
		<i>Clostridium perfringens</i> , CFU/ 25g	absent	KS ISO 7937
		<i>Escherichia coli</i> , CFU/g	absent	KS ISO 16649
		Moulds, CFU/ 25g	absent	KS ISO 21527
iv.	Desserts, cooked sauces, dips, pastes, dressings e.g. Coleslaw, foods mixed with dips and	Total Plate count/ CFU/g	10 <sup>4</sup>	KS ISO 4833-1
		Coliforms, CFU/ g	10	KS ISO 4832
		Coagulase positive staphylococci, CFU/ g	10 <sup>2</sup>	KS ISO 6888

## KS 2966: 2022

	dressings, cream or custard-based sauces etc.	<i>Escherichia coli</i> 0157, CFU/25g	Absent	KS ISO 16649
		<i>Listeria monocytogenes</i> , CFU/25g	Absent	KS ISO 11290
		Yeast and moulds, CFU/g	20	KS ISO 21527
		<i>Salmonella</i> , CFU/25g	absent	KS ISO 6579
v.	Salad from raw vegetables and/ or fruits including mixed salads	Total plate count/ CFU/g	10 <sup>2</sup>	KS ISO 4833-1
		<i>Escherichia coli</i> , CFU/g	10	KS ISO 16649
		<i>Salmonella (non-typhi)</i> , CFU/25g	Absent	KS ISO 6579
		<i>Shigella spp.</i> , CFU/25g	Absent	KS ISO 21567
vi.	Coated nuts and dried foods	Total plate count, CFU/g	40000	KS ISO 4833
		<i>Salmonella</i> , CFU/25g	Absent	KS ISO 6579
		Yeast and moulds/ CFU/g	Absent	KS ISO 21527
		<i>Escherichia coli</i> , CFU/g	Absent	KS ISO 16649
		<i>Shigella</i> , CFU/25g	Absent	KS ISO 21567
vii.	Bakery and confectionery products without cream, fillings or toppings e.g Mandazi	Total plate count, CFU/g	10 <sup>4</sup>	KS ISO 4833
		Coliforms/ CFU/g	10	KS ISO 4832
		<i>Escherichia coli</i> 0157	absent	KS ISO 16649
		<i>Staphylococcus aureus</i> (coagulase positive), CFU/ g	Absent	KS ISO 6888
		<i>Listeria monocytogenes</i> , per 25g	Absent	ISO 11290-1
		<i>Salmonella spp</i> , CFU/25 g	Absent	KS ISO 6579
		<i>Enterobacteriaceae</i> , per g	Absent	KS ISO 21528
		<i>Bacillus Cereus</i> , CFU/ g	Absent	KS ISO 7932
viii.	Raw ready to eat foods; meat and fish such as sushi, oysters, meat salads, steak, tartar, salmon, cold smoked fish, steaks and burgers and desserts made from raw or lightly cooked eggs etc.	Total plate count, CFU/g	10 <sup>6</sup>	KS ISO 4833



		<i>Escherichia coli</i> , CFU/25g	Absent	KS ISO 16649
		<i>S. aureus</i> (Coagulase +ve Staphylococci), CFU/25g	Absent	KS ISO 6888
		<i>Clostridium perfringens</i> , CFU/25g	Absent	KS ISO 7937
		<i>Vibrio cholerae</i> , CFU/25g	Absent	KS ISO 21872
		<i>Salmonella spp</i> , CFU/25g	Absent	KS ISO 6579
		<i>Shigella spp</i> , CFU/25g	Absent	KS ISO 21567
ix.	Cooked foods such as poultry, meats, vegetables, rice dishes, pies, sliced meats, sandwiches without salad, filled rolls, chicken rolls, samosas, sausage rolls, egg rolls, chicken portions, chicken rolls, canned ham, roasted meat, Soups, gravy, stock, stews, curries hot smoked fish (mackerel etc.), molluscs, crustaceans and other shellfish out of shells	Total plate count, CFU/g	10 <sup>5</sup>	KS ISO 4833
		Coliforms, CFU/g	10	KS ISO 4832
		<i>Escherichia coli</i> , CFU/25g	Absent	KS ISO 16649
		<i>S. aureus</i> (Coagulase +ve Staphylococci), CFU/25g	Absent	KS ISO 6888
		<i>Vibrio parahaemolyticus</i> , CFU/25g	Absent	KS ISO 21872
		<i>Salmonella spp</i> , CFU/25g	Absent	KS ISO 6579
		<i>Clostridium perfringens</i> , CFU/25g	<10	KS ISO 7937
x.	Fresh fruit and vegetable juices/drinks, beverages or other related products	Total Plate Count, CFU/ml	50	KS ISO 4833
		Yeast and mould, CFU/ml	20	KS ISO 21527
		Coliform count, CFU/100ml	absent	KS ISO 4832
		<i>S. aureus</i> (Coagulase +ve Staphylococci), CFU/25g	absent	KS ISO 6888
xi.	Other ready to eat foods not specified above	Total plate count, CFU/g	10 <sup>5</sup>	KS ISO 4833 -1
		<i>Enterobacteriaceae</i> , CFU/g	10 <sup>2</sup>	KS ISO 21528-2
		<i>Escherichia coli</i> 0157, CFU/25g	absent	KS ISO 16649
		<i>Escherichia coli</i> , CFU/25g	10 <sup>2</sup>	KS ISO 16649
		<i>S. aureus</i> (Coagulase +ve Staphylococci), CFU/25g	10 <sup>2</sup>	KS ISO 6888
		<i>Campylobacter</i> , CFU/25g	Absent	KS ISO 10272-2
		<i>Clostridium perfringens</i> , CFU/25g	10 <sup>2</sup>	KS ISO 7937

## KS 2966: 2022

	<i>Bacillus cereus</i> and other pathogenic <i>Bacillus</i> spp, CFU/25g	10 <sup>2</sup>	KS ISO 7932
	<i>Vibrio parahaemolyticus</i> , CFU/25g	absent	KS ISO 21872
	<i>Vibrio cholerae</i> CFU/25g	Absent	KS ISO 21872
	<i>Campylobacter</i> spp, CFU/25g	Absent	KS ISO 10272-2
	<i>Shigella</i> spp., CFU/g	Absent	
	<i>Salmonella</i> spp, CFU/25g	Absent	KS ISO 6579
	<i>Listeria monocytogenes</i> , CFU/25g	Absent	KS ISO 11290

### 5 Packaging

Ready to eat food shall be packed in food grade packaging material that safeguards the integrity and safety of the product.

### 6 Labelling

Ready to eat food shall be labelled in compliance with the requirements of KS EAS 38. In addition, the following particulars shall be legibly and indelibly labelled on the container:

- a) Name of the product
- b) list of ingredient in descending order of proportion,
- c) net content in SI units;
- d) name and physical address of manufacturer;
- e) the date of manufacture and expiry date
- f) batch number
- g) instructions on storage and use

### 7 Sampling

Sampling for ready to eat food shall be done in accordance with the test methods specified in table 1.