

DRAFT KENYA STANDARD

DKS [1485:2024]

ICS [67.080.10]

[Fifth]Edition

Water - based fruit flavoured drinks — Specification



**Kenya Bureau of
Standards**

Standards for Quality life

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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.

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Kenya Bureau of Standards, Popo Road, Off Mombasa Road,
P.O. Box 54974 - 00200, Nairobi, Kenya



+254 020 6948000, + 254 722202137, + 254 734600471



info@kebs.org



@KEBS_ke



kenya bureau of standards (kebs)

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Foreword

This Kenya Standard was prepared by the Water-Based Flavoured Drinks and Ices Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards

This standard covers all types of fruit flavoured drinks made from water, permitted sweetening agents either nutritive or non-nutritive sweeteners used singly or in combination and permitted food additives, natural or synthetic colourings, flavouring emulsions, among other permitted ingredients. Water-based fruit flavoured drinks shall be distinguished from fruit squashes, fruit juices, fruit drinks and flavoured water through appropriate labelling.

The standard stipulates the chemical, microbiological and other quality limits for water-based fruit flavoured drinks. (KEVIAN)

Labelling requirements of water-based flavoured drinks have been incorporated in this standard to prevent any misrepresentations of the products through, say, fruit pictorials on the labels.

This fifth edition cancels and replaces the fourth edition (KS 1485:2020), which has been technically revised.

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

KS EAS 77, Fruit drinks — Specification.

KS 224, Fruit drinks and squashes — Specification.

Food, Drugs and Chemical Substances Act – Chapter 254 of the Laws of Kenya.

Acknowledgement is hereby made for the assistance derived from these sources.

PUBLIC REVIEW DRAFT

Water-based fruit flavoured drinks— Specification

1 Scope

This draft Kenya Standard specifies the requirements, sampling and test methods for water-based fruit flavoured drinks.

2 Normative references

The following referenced documents 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.

CXG 50, General Guidelines on sampling

Food, Drugs and Chemical Substances Act, Cap. 254

KS EAS 38, Labelling of pre-packaged foods — General requirements

KS EAS 39, Hygiene in the food and drink manufacturing industry — Code of practice

KS CODEX STAN 192, General Standard for food additives

KS EAS 803, Nutrition labelling — Requirements

KS EAS 804, Claims — General requirements

KS EAS 805, Use of nutrition and health claims — Requirements

KS ISO 2173, Fruit and vegetable products — Determination of soluble solids — Refractometric method

KS ISO 4831, Microbiology of food and animal feeding stuffs — Horizontal method for the detection and enumeration of coliforms — Most probable number techniques

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

KS ISO 6888-1, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)

KS ISO 7251, Microbiology of food and animal feeds — Horizontal method for the detection and enumeration of presumptive Escherichia coli — Most probable number technique

KS ISO 17239, Fruits, vegetables and derived products — Determination of arsenic content — Method using hydride generation atomic absorption spectrometric

KS ISO 17240, Fruits and vegetable products — Determination of tin content — Method using flame atomic absorption spectrometric

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

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

KS ISO 21872-1, 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 26482, Hard metals —Determination of lead and cadmium content

Public Health Act, Cap. 242

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

water-based fruit flavoured drinks

concentrated or ready-to-drink products prepared from water, sweetening agents, natural, nature identical or permitted artificial fruit flavourings, permitted colourings and other optional permitted ingredients

3.2

INS

International Numbering System used in identifying the approved food additive

3.3

potable water

water either in its original state or after treatment, intended for human drinking, cooking, food preparation, or other domestic purposes, food production, regardless of its origin whether it is supplied from a distribution network, from a tanker or in bottles

3.4

food additive

any substance not normally consumed as a food by itself and not normally used as a typical ingredient of the food, whether or not it has nutritive value, the intentional addition of which to food for a technological (including organoleptic) purpose in the manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food results, or may be reasonably expected to result (directly or indirectly), in it or its byproducts becoming a component of or otherwise affecting the characteristics of such foods. The term does not include contaminants or substances added to food for maintaining or improving nutritional qualities. (see KS CODEX STAN 192)

3.5

concentrated product

fruit flavoured beverage presented in a state in which it does not contain the majority of its base solvent, water and requires dilution before consumption

3.6

ready-to-drink

are packaged beverages that are sold in a prepared form, ready for consumption

3.7

uniform

not changing in form or character; remaining the same in all cases and at all time

3.8

sugar free water-based fruit flavoured drinks

water -based fruit flavoured drinks sweetened exclusively with permitted non-nutritive sweeteners

3.9

sweetening agents

sucrose, glucose or fructose, natural sweeteners and any other permitted nutritive and non-nutritive sweeteners used in sweetening water-based fruit flavoured drinks

3.10

carbonated water-based fruit flavoured drinks

water-based fruit flavoured drinks which, after processing, has been made effervescent by the addition of carbon dioxide

3.11

1 gas (carbonation) volume

amount of carbon dioxide the water volume absorbs at the standard atmospheric pressure at 15.6 °C

3.12

food grade packaging material

packaging material, made of substances which are safe and suitable for the intended use, and which will not impart any toxic substance or undesirable odour or flavour to the product.

4 Requirements

4.1 General requirements

4.1.1 The product shall:

- a) have a uniform colour;
- b) possess a good body;
- c) be free from defects;
- d) possess normal characteristic taste and flavour; and
- e) not contain any substances harmful or injurious to health.

4.1.2 Sugar free water-based fruit flavoured drinks shall contain no more than 0.25 % glycogenic carbohydrates.

4.2 Specific requirements

4.2.1 Water-based fruit flavoured drinks shall comply with the specific requirements given in Table 1, when tested in accordance with the test methods specified therein.

Table 1 — Specific requirements for water-based fruit flavoured drinks

S/N	Characteristic	Requirement	Test method
i.	Degree Brix (oB) at 20 °C ^a Concentrated products, min. Ready-to-drink products, min.	30.0 10.0	KS ISO 2173
ii.	Carbon dioxide ^b , gas volume, min.	1	Annex A
iii.	Sugar free (glycogenic carbohydrates) ^c Degree Brix (oB) max.	0.25	KS ISO 2173
<p>a. Does not apply to sugar free or reduced sugar water-based fruit flavoured drinks b. Applies to the carbonated water-based fruit flavoured drinks. c. Applies to sugar free water-based fruit flavoured drinks.</p> <p>NOTE 1 Reduced calorie water-based fruit flavoured drinks shall comply with the requirements of the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya.</p> <p>NOTE 2 1 Gas volume eqv to 1.966 g/l of CO₂.</p>			

5 Food Additives

Only permitted food additives permitted under KS CODEX STAN 192 shall be used.

6 Contaminants

6.1 Heavy metal contaminants

Water-based fruit flavoured drinks shall not contain heavy metal contaminants in excess of the limits given in Table 2 when tested in accordance with the methods provided therein

Table 2 — Limits for heavy metal contaminants for water-based fruit flavoured drinks

S/N	Contaminant	Maximum level	Test method
i.	Arsenic (As)	0.2 mg/kg	KS ISO 17239
ii.	Lead (Pb)	0.3 mg/kg	KS ISO 26482
iii.	Tin (Sn)*	250 mg/kg	KS ISO 17240

* Applies only for canned products

6.2 Other contaminants

The products covered by the provisions of this standard shall comply with those maximum levels for contaminants established by the Codex Alimentarius Commission for these products.

7 Hygiene

7.1 Manufacturing premises

Water-based fruit flavoured drinks shall be processed, packaged, stored and distributed under hygienic conditions in accordance with KS EAS 39, the Public Health Act, Cap. 242 and the Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya

7.2 Microbiological limits

Water-based fruit flavoured drinks shall be free from pathogenic organisms and shall comply with the microbiological limits stipulated in Table 3 when tested in accordance with the methods provided therein:

Table 3 — Microbiological limits for water-based fruit flavoured drinks

S/N	Micro-organism	Limit	Test method
i.	Coliforms, per 100 ml	Not detected	KS ISO 4831 or KS ISO 4832
ii.	Escherichia coli, per 25 g, (cfu/g),	Not detected	KS ISO 7251
iii.	Yeast and moulds (cfu/g), max.	10	KS ISO 21527-2
iv.	Staphylococcus aureas, per 25 g	Not detected	KS ISO 6881-1
v.	Shigella, per 25 g	Not detected	KS ISO 21567
vi.	Salmonella, per 25 g	Not detected	KS ISO 6579-1
vii.	Vibrio cholera, per 25 g	Not detected	KS ISO 21872-1

8 Packaging

Water-based fruit flavoured drinks shall be packaged in food grade material that ensures the integrity and safety of the product.

9 Labelling

9.1 Labelling of water-based fruit flavoured drinks shall comply with KS EAS 38, KS EAS 803, KS EAS 804 and KS EAS 805. In addition, the information given in 8.2 shall be legibly and indelibly marked on the container. These requirements shall also apply to bulk packages.

9.2 Pre-packaged water-based fruit flavoured drinks shall not be described or presented on any label or in any labelling in a manner that is false, misleading or deceptive or is likely to create an erroneous impression regarding its character in any respect and shall include the following:

- a) name of product shall be "X flavoured drink" (such as "Orange flavoured drink", "Lemon flavoured drink"; "Mango flavoured drink" or "Pineapple flavoured drink") where X is the name of the flavour in the drink.
- b) in the case of water-based fruit flavoured drink products manufactured from two or more fruit flavours, the product name shall include the names of the fruit flavours comprising the mixture or the words "fruit flavoured drink blend", "a fruit flavoured drink mixture", "mixed fruit flavoured drink" or other similar wording.
- c) list of all ingredients shall be listed in descending order of ingoing weight (m/m) and it shall include specific names of additives and/or the INS number at the time of the manufacture of the food;
- d) for concentrated products, directions of use stating the recommended amount of the product that should be applied in a stated volume of potable water.
- e) where applicable the storage conditions and duration of use after opening the product

9.3 Pictorial representations

Use of pictorial representations and the use of the words "contains fruit juice" on water-based fruit flavoured drink label is prohibited except where the species of fruits or fruit juices present, in the water-based fruit flavoured drink is in amounts constituting 5% and not exceeding 10%, provided that where two or more fruits or fruit juices are used, the combination of the fruits or fruit juices whose content individually constitutes 5 % and not exceeding 10%.

9.4 Additional labelling requirements

The following designations shall be used where applicable:

- a) When non-nutritive sweeteners are employed as substitutes for sugars in water-based fruit flavoured drinks, the statement, "contains non-nutritive sweetener(s)," shall be included in conjunction with or in close proximity to the product name; and
- b) The name of non-nutritive sweeteners used shall be indicated in the label.

10 Sampling

The products covered by the provisions of this standard shall be sampled in accordance with CXG 50 and tested using appropriate standard methods declared in this standard

Annex A (normative)

Method of measuring gas volume

A.1 Principle

A.1.1 The method involves sniffing of the top gas. The pressure reading should drop to 2 psi, to remove the air before testing for carbon dioxide volume. In so doing correction of altitude as per table should be considered as pressure is affected by altitude.

A.1.2 The apparatus consists of pressure gauge having a hollow spike with holes in its side. The bottle is inserted from the side into the slot provided in the neck of the carbon dioxide tester and is secured in place by tightening with a threaded system. The pressure gauge is inserted until the needle point touches the crown cork. There is a sniff valve on the gauge stem which is kept closed until the needle point of the pressure gauge is forced through the crown cork. The reading is noted on the gauge.

A.2 Procedure

Clamp the bottle in the frame of the gas volume tester. Pierce the crown cork/cap but do not shake the bottle. Sniff off the top gas quickly until the gauge reading drops to zero. Make certain to close the valve instantly the needle touches zero in the pressure gauge. Shake the bottle vigorously until the gauge gives the reading that additional shaking does not change. Record the pressure. Note the temperature and record. Obtain the volume of gas from pressure-temperature chart (carbon dioxide chart).

PUBLIC REVIEW DRAFT