

**Fruit (Water-based) flavoured drinks —
Specification**

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Aquamist Ltd.

PATCO Industries Ltd.

Kevian Kenya Ltd.

Coca-Cola Central East and West Africa Ltd.

Victoria Juice Ltd.

Excel Chemicals Ltd.

Kenya Industrial Research and Development Institute (KIRDI)

Government Chemist's Department

Consumer Information Network

Jomo Kenyatta University of Agriculture and Technology — Department of Food Science and Technology

Agriculture and Food Authority

Ministry of Health — Food Safety Unit

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Fruit (Water-based) flavoured drinks — Specification

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Foreword

This Kenya Standard was developed by the Technical Committee on Water-based flavoured drinks — Specification 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 nonnutritive sweeteners used singly or in combination and permitted food additives, natural or synthetic colourings, flavouring emulsions, among other permitted ingredients. Fruit (water based) flavoured drinks shall be distinguished from carbonated soft drinks, fruit squashes, fruit juices fruit-based soft drinks and flavoured water through appropriate labelling.

The standard stipulates the chemical, microbiological and other quality limits for flavoured soft drinks. 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.

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This standard cancels and replaces the second edition KS 1485:2018, Fruit flavoured drink — Specification which has been technically revised.

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

KS EAS 77 Fruit drinks — Specification.

224, Fruit drinks and squashes — Specification.

Food Drugs and Chemical Substances Acts – Chapter 254.

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

Fruit (Water-based) flavoured drinks — Specification

1 Scope

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

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 224, *Fruit drinks and squashes — Specification*

KS 77, *Soft fruit juice — Specification*

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

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

CODEX STAN 1, *General standard for the labeling of prepackaged foods*

KS CODEX STAN 192, *General Standard for food additives*

KS EAS 29, *Carbonated (beverages) soft drinks — Specification*

KS EAS 12, *Potable Water — Specification*

KS EAS 770, *Fortified sugar — Specification*

KS 660, *Guide to the safe use of food additives*

KS 1701, *Refined white sugar — Specification*

KS EAS 803, *Nutrition labelling — Requirements*

KS EAS 804, *Claims — General requirements*

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

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

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 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part 1: Colony count at 30°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.*

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 12193, *Animal and vegetable fats and oils — Determination of lead by direct graphite furnace atomic absorption spectroscopy.*

3 Terms and definitions

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

3.1

fruit (water-based) flavoured drinks

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

3.2

INS

International Numbering System used in identifying the approved food additive

3.3

portable water

product complying with KS EAS 12

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 by-products 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 general standard for food additives Codex STAN 192)

3.5

concentrated products

a concentrate is a form of substance which does not have the majority of its base solvent, water

3.6

ready to drink

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

3.7

hermetically sealed

a hermetic seal is the quality of a container or structure that is airtight (excluding passage of air, oxygen, or other gases)

3.8

uniform

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

3.9

nature identical flavouring

substances chemically isolated from aromatic raw materials or obtained synthetically; they are chemically identical to substances present in natural products intended for human consumption, either processed or not

3.10

sugar free fruit (water based) flavoured drinks
sweetened exclusively with permitted non-nutritive sweeteners

3.11

Sweetening agents

Sucrose, glucose or fructose, natural sweeteners and any other permitted nutritive and nutritive sweeteners used in sweetening fruit (water based) flavoured drinks.

3.12

carbonated fruit (water based) flavoured drinks

fruit (water based) flavored drinks which, after processing, has been made effervescent by the addition of carbon dioxide from another origin

3.13

one gas (carbonation) volume

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

4 Requirements

4.1 General requirements

The product shall;

- have a uniform colour;
- possess a good body;
- be free from defects; and
- possess normal characteristic taste and flavour.
- Fruit (Water-based) flavoured drink shall not contain any substances harmful or injurious to health.

4.2 Specific requirements

4.2.1 Fruit (Water Based) flavored 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 ready-to-drink energy drinks

S/N	Characteristic	Requirement	Test method
i.	Degree brix (°B) at 20 °C ^a Concentrated products min	30.0	KS ISO 2173
	Ready to drink products min	10.0	
ii.	Carbon dioxide ^b , gas volume min.	1	Annex A

S/N	Characteristic	Requirement	Test method
iii.	Sugar free (glycogenic carbohydrates) ^c Brix max.	0.25	KS ISO 2173
^a Does not apply to sugar free or reduced sugar fruit (water based) drinks. ^b Applies to the carbonated fruit (water based) drinks. ^c Applies to sugar free fruit (water based) drinks. NOTE 1 Reduced calorie energy drinks, shall comply with the requirements of Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya. NOTE 2 1 Gas volume eqv to 1.966 g/l of CO ₂ .			

5 Contaminants

5.1 Limits for heavy metals contaminants

Water-based flavoured drink 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 — Heavy metal contaminants limits for water-based flavoured drink

S/N	Contaminant	Maximum level	Test method
i)	Arsenic (As)	0.2 mg/kg	ISO 17239
ii)	Lead (Pb)	0.3 mg/kg	KS ISO 9526
iii)	Tin (Sn)	250 mg/kg	KS ISO 17240

5.2 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.

6 Hygiene

6.1 Manufacturing premises

Fruit (water based) 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.

6.2 Microbiological limits

The product 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 flavoured drink

S/N	Micro-organism	Limit	Test method
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i)	<i>Coliforms</i> , per 100 ml	Not detected	KS ISO 4831 or KS ISO 4832
ii)	<i>Escherichia coli</i> , per 25 g, (cfu/g), max.	Not detected	KS ISO 7251
iii)	Yeast and moulds (cfu/g), max.	10	KS ISO 6881-1
iv)	<i>Staphylococcus aureus</i> , per 25 g	Not detected	KS ISO 6881-1
v)	<i>Shigella</i> per 25 g	Not detected	KS ISO 4833-1
vi)	<i>Salmonella</i> , per 25 g	Not detected	KS ISO 6579-1
vii)	<i>Vibrio cholera</i> , per 25 g	Not detected	KS ISO 6579-1

7.0 Packaging

Fruit (water based) flavored drinks shall be packaged in food grade material that ensures the integrity and safety of the product.

8.0 Weights and measures

Fruit (water based) flavored drinks shall be packaged in volumes in accordance with the Weights and Measures Regulations.

Labelling

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

8.2 Prepackaged fruit (water based) flavored 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:

- i) name of product shall be X flavored drink (such as “Orange flavoured drink” , “Lemon flavoured drink”; “mango flavoured drink” or pineapple flavoured drink) where X is the name of the flavor in the drink
- ii) In the case of fruit (water based) flavoured drink products manufactured from two or more fruit flavours, the product name shall include the names of the fruit flavours comprising the mixture in descending order of proportion by weight (m/m) or the words "fruit flavoured drink blend", " a fruit flavoured drink mixture", "mixed fruit flavoured drink" or other similar wording.
- iii) 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;
- iv) name, physical location and address of manufacturer;
- v) net volume in ml or L;
- vi) batch number;
- vii) expiry date including day, month and year;
- viii) country of manufacture or “Made in Kenya” for locally manufactured products;

ix) storage conditions;

- x) directions of use stating the recommended amount of the product that should be applied in a stated volume of potable water;
- xi) cautionary statement that “upon opening a can of the product, contents should be consumed within a stated time period”; and
- xii) manufacturing date including day, month and year.

8.3 Pictorial representations

No fruit (water based) flavored drink may be represented pictorially on the label except the species of fruits or fruit juices present, in the fruit drink in amounts constituting 5 % or more, 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 % or more may be used in the pictorial.

8.4 Additional labelling requirements

8.4.1 The following designations shall be used where applicable:

- a) If non-nutritive sweetener is used, the following words “contains non-nutritive sweetener for special dietary use” shall be declared on the label in close proximity; and
- b) The name and type of non-nutritive sweeteners used shall be indicated in the label.

9 Sampling

9.1 The products covered by the provisions of this standard shall be sampled 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 sniffting 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 snift 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 but do not shake the bottle. Snift 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).

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