

KENYA STANDARD

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**Packaged flavoured drinking water —
Specification**

DKS 2756: 2017

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Coca-Cola Central East and West Africa
Consumer Information Network (CIN)
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Coast Bottled Water Manufacturers.
National Water Conservation and Pipeline Cooperation
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Packaged flavoured drinking water — Specification

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Foreword

This Kenya Standard has been developed by the Technical Committee on Drinking Water under the guidance of Standards Projects Committee, and it is in accordance with the procedures of Kenya Bureau of Standards.

This standard has been developed because the importation, local production and consumption of flavored drinking water by Kenyans is high and continues to rise, and thus there is need to regulate the industry and ensure quality and safety of the product so as to guarantee health and safety of the consumers. This standard covers requirements for sweetened flavored water, unsweetened flavored water, sparkled sweetened flavored water and sparkled unsweetened flavoured water meant for drinking.

This standard lays down the minimum requirements which should be complied with in order to render the flavoured water fit for drinking. Definitions and labelling requirements for flavoured water have been incorporated in this standard. It is important that the consumer be protected from substandard flavoured water and that the industry's good name is maintained.

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

WHO Guidelines for drinking water quality, 2004, Third Edition.

Codex Alimentarius, Volume XII, Natural mineral waters, Codex start 108, 2001.

Official journal of the European communities, L 229, Natural mineral waters 777 and 778.

British Statutory Instruments, No.71, The natural mineral waters regulations, 1999.

Pakistan Standard, PS 2102; Bottled natural mineral waters, Second Revision 2003.

SANS 1657:2003, South Africa National Standard for bottled natural water.

Codex Stan 227:2001, General Standard for bottled/packageged drinking water (other than natural mineral water).

Codex Stan.108 1981, Rev.1-1997 Standard for drinking water purposes, Natural mineral water.

Codex Stan.192-1995, Rev.1-1997 Codex General Standard for food additives.

World Health Organization Guidelines for drinking water, Third edition 2004.

British statutory instruments No. 743 – The drinking water in containers regulations, 1994.

European Economic Community Council Directive 80/778 relating to quality of water intended for human consumption, 1980.

Kenya Standard Specification for Packaged drinking Water, KSEAS 153

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

Packaged flavoured drinking water — Specification

1 Scope

This Kenya Standard specifies requirements, methods of test and sampling of ready- to-drink flavored drinking water.

2 Field of application

This standard applies to flavoured drinking water with extracts of herbs, fruits or extracts parts of plant origin and permitted flavours.

3 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.

ASTM D 5907, *Standard test methods for filterable matter (total dissolved solids) and non-filterable matter (total suspended solids) in water*

EAS 38, *Labelling of prepackaged foods — Specification*

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

ISO 10304, *Water quality -- Determination of dissolved anions by liquid chromatography of ions*

ISO 10359, *Water quality -- Determination of fluoride*

ISO 10523, *Water quality -- Determination of pH*

ISO 10530, *Water quality -- Determination of dissolved sulfide -- Photometric method using methylene blue*

ISO 10566, *Water quality -- Determination of aluminium -- Spectrometric method using pyrocatechol violet*

ISO 11423, *Water quality -- Determination of benzene and some derivatives*

ISO 11732, *Water quality -- Determination of ammonium nitrogen -- Method by flow analysis (CFA and FIA) and spectrometric detection*

ISO 11885, *Water quality -- Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)*

ISO 11969, *Water quality -- Determination of arsenic -- Atomic absorption spectrometric method (hydride technique)*

ISO 12020, *Water quality -- Determination of aluminium — Atomic absorption spectrometric method*

ISO 12846, *Water quality -- Determination of mercury -- Method using atomic absorption spectrometry (AAS) with and without enrichment*

ISO 13877, *Soil quality -- Determination of polynuclear aromatic hydrocarbons -- Method using high - performance liquid chromatography*

ISO 15089, *Water quality -- Guidelines for selective immunoassays for the determination of plant treatment and pesticide agents*

ISO 16265, *Water quality -- Determination of the methylene blue active substances (MBAS) index -- Method using continuous flow analysis (CFA)*

ISO 16266, *Water quality — Detection and enumeration of Pseudomonas aeruginosa — Method by membrane filtration*

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

ISO 24153, *Random sampling and randomization procedures*

ISO 28540, *Water quality -- Determination of 16 polycyclic aromatic hydrocarbons (PAH) in water -- Method using gas chromatography with mass spectrometric detection (GC-MS)*

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

ISO 5961, *Water quality -- Determination of cadmium by atomic absorption spectrometry*

ISO 6059, *Water quality -- Determination of the sum of calcium and magnesium - EDTA titrimetric method*

ISO 6222, *Water quality — Enumeration of culturable microorganisms — Colony count by inoculation in nutrient agar culture media*

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ISO 6332, *Water quality -- Determination of the chemical oxygen demand*
ISO 6333, *Water quality -- Determination of manganese -- Formaldoxime spectrometric method*
ISO 6461-1, *Water quality -- Detection and enumeration of the spores of sulphite reducing anaerobes (clostridia) — Part 1: Method by enrichment in a liquid medium*
ISO 6461-2, *Water quality -- Detection and enumeration of the spores of sulphite-reducing anaerobes (clostridia) — Part 2: Method by membrane filtration*
ISO 6703, *Water quality -- Determination of cyanide*
ISO 6777, *Water quality -- Determination of nitrite -- Molecular absorption spectrometric method*
ISO 6785, *Milk and milk products -- Detection of Salmonella spp.*
ISO 6888-1, *Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 1: Technique using Baird-Parker agar medium*
ISO 7027, *Water quality -- Determination of turbidity*
ISO 7393, *Water quality -- Determination of free chlorine and total chlorine*
ISO 7875, *Water quality -- Determination of surfactants*
ISO 7887, *Water quality -- Determination of colour*
ISO 7888, *Water quality -- Determination of electrical conductivity*
ISO 7890, *Water quality -- Determination of nitrate -- Part 3: Spectrometric method using sulfosalicylic acid*
ISO 7899-2, *Water quality -- Detection and enumeration of intestinal enterococci — Part 2: Membrane filtration method*
ISO 7980, *Water quality -- Determination of calcium and magnesium -- Atomic absorption spectrometric method*
ISO 8165, *Water quality -- Determination of selected monovalent phenols*
ISO 8245, *Water quality -- Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)*
ISO 8288, *Water quality -- Determination of cobalt, nickel, copper, zinc, cadmium and lead -- Flame atomic absorption spectrometric methods*
ISO 9174, *Water quality -- Determination of chromium -- Atomic absorption spectrometric methods*
ISO 9297, *Water quality -- Determination of chloride — Silver nitrate titration with chromate indicator (Mohr's method)*
ISO 9308-1, *Water quality -- Detection and enumeration of Escherichia coli and coliform bacteria Part 1: Membrane filtration method*
ISO 9696, *Water quality -- Measurement of gross alpha activity in non-saline water -- Thick source method*
ISO 9697, *Water quality -- Measurement of gross beta activity in non-saline water -- Thick source method*
ISO 9964-1, *Water quality -- Determination of sodium and potassium — Part 1: Determination of sodium by atomic absorption spectrometry*
ISO 9965, *Water quality -- Determination of selenium -- Atomic absorption spectrometric method (hydride technique)*

4 Terms and definitions

For the purposes of this standard, the following terms and definitions apply:

4.1

flavored drinking water

purified water containing extracts of herbs, fruits or parts of plant origin, permitted flavor /concentrates in minute traces, singly or in combination, intended for sale as a ready to drink for human consumption.

4.2

sweetened flavored water

purified water containing extracts of herbs, fruits or extracts parts of plant origin, flavor /concentrate in minute traces with added permitted artificial nonnutritive sweeteners or sugars, singly or in combination, intended for sale as a ready to drink for human consumption.

4.3

artificial nonnutritive sweeteners

substances that are used instead of sugars (i.e., sucrose, corn syrup, honey, agave nectar) to sweeten foods, beverages and other products, such as oral care products and certain medications and are having very low or zero calories or nutrients.

4.3**carbonated flavored drinking water****4.3.1****naturally carbonated flavored drinking water**

is a natural flavoured drinking water, which is naturally carbonated from source of the raw water without artificial carbonation

4.3.2**non-carbonated flavored drinking water**

is flavoured water, which by nature; and after possible treatment as provide for in this standard, and after packaging, does not contain free carbon dioxide in excess of the amount necessary to keep the hydrogen carbonate salts present in the water dissolved

4.3.3**artificially carbonated flavored drinking water**

is flavoured water, and after possible treatment as provide for in this standard and before packaging has been made more effervescent by addition of carbon dioxide. This includes sparkling, carbon dioxide fortified and fizzling flavored water

4.4**purified water**

water which conforms to standards prescribed for any drinking water standard

4.5**flavor / concentrate/ extract**

any permitted extracts of herbs, fruits or extracts parts of plant origin

4.6**natural flavours**

are flavour preparations and single substance respectively, acceptable for human consumption, obtained exclusively by physical processes from essential oil, oleoresin, essence or extractive, protein hydrolysate, distillate, or any product of roasting, heating or enzymolysis, which contains the flavoring constituents derived from a spice, fruit or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf or similar plant material, meat, seafood, poultry, eggs, dairy products, or fermentation products thereof, whose significant function in food is flavoring rather than nutritional and fit for human consumption.

4.7**nature-identical flavouring substances**

are 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.

4.8**packaging material**

any food grade containers such as cans, bottles, cartons, boxes, cases or wrapping and covering material such as foil, film, metal paper and wax paper

4.9**ready-to-drink flavored water**

water-based beverage (Flavored Water) drink for direct human consumption.

4.10**flavored water beverage plant**

any licensed place, premise or establishment, or any part thereof, where flavored water is processed, manufactured, bottled or converted into a form for distribution or sale and such rooms or premises where beverage product manufacturing equipment and containers are washed, sanitized and stored conforming to KSEAS 39 and KS 05 :459 part 9.

5 Requirements for flavored drinking water

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5.1 General requirements

5.1.1 Types of flavored water

- Carbonated sweetened, carbonated non sweetened
- Non Carbonate Sweetened, Non-carbonated non sweetened

5.2 Requirements for flavored drinking water

5.2.1 Hygienic conditions

Flavored drinking water processed in premises maintained in accordance with KS 459-9 and KS EAS 39 and any conditions stipulated by other relevant authorities.

5.2.2 Source of water

Source of water shall be free from any other contamination, approved by the relevant water regulatory Authorities and conforms to the specific requirements of KS 459-9.

5.2.3 Flavor s/concentrates/ extracts

5.2.3.1 Flavors /extracts are processed under the GMP conditions

5.2.3.2 Flavors /extracts should be procured with Certificate of analysis.

5.2.3.3 Flavor /extracts should be with batch no, date of manufacture and expiry and storage conditions.

5.2.3.4 Flavor/extracts shall comply with the requirements of Food and Drugs Chemicals Substances Act, Cap. 254 of the Laws of Kenya.

5.2.4 Flavored drinking water

5.2.4.1 Contents should be safe for human consumption and health.

5.2.4.2 The product should be free from abnormal odour, foreign matters, insects and part of them.

5.2.4.3 Preservatives used for concentrates, extracts shall be of food grade.

5.3 Preservatives

Preservatives may be added for one or more of the following purposes:

5.3.1 Carry over food additives (preservative) approved by JEFCA and or Codex.

5.3.2 To retain the flavor, concentrate and extract properties in good condition.

5.3.4 To retain quality, stability and to enhance shelf life.

5.3.5 To add or enhance taste to flavored drinking water.

5.3.6 To process flavored water, to retain properties during manufacture, packaging and transport.

5.3.7 To provide essential constituents of flavored drinking water; which complies with applicable standards of purity or quality in respect of flavor used.

5.3.8 Preservative shall not be directly added to flavored drinking water

5.4 Purified water process

Water used for flavored water may be produced by one or more of following process, reverse osmosis; activated alumina, multilevel sand filtration; activated carbon filtration; nano filtration; micron filtration; ozoneizer; and ultraviolet processing; source protection and monitoring, advanced water purifying technology may be used conforming to any drinking water standard.

5.5 Pollution

Flavored water industry shall not release pollution.

Chemical used in flavored water process shall not release any hazardous waste out from plant.

5.6 Carry over food additives

For the purpose of this standard the "Carry Over" principle applies to the presence of additives such as colours, flavouring agents, anti-oxidants, emulsifying and stabilizing agents and preservatives in food, as a result of the use of raw material or other ingredients in which these additives were used. The presence of contaminants is not covered by this purpose.

The presence of an additive in food through the application of the carry over principle is admissible in general unless otherwise specifically prohibited in the rules or in table 1 provided the total additive including the carry over through the raw material or other ingredients does not exceed the maximum amount so permitted.

5.7 Source of natural flavor concentrate or extract

Flavors may be obtained from botanical plants fruits which are internationally acceptable and are approved by relevant national authorities for use in processing flavored drinking water.

5.8 Herbs, fruits or extracts parts of plant origin

Shall be of botanical name conforming to the glossary of Kenyan medicinal plant, or similar publication of KEMRI and Registered for use in food processing by Drugs & Poisons board or certified by KEPHIS If the plant is imported as a whole or part of plant for use in food processing.

5.9 Basic ingredients

Basic ingredients for flavored drinking water shall be as given in Table 1.

Table 1 — Basic ingredients/requirements for flavored drinking water

S/No	Substance	Types of flavored drinking water limits				Test method
		Carbonated sweetened	carbonated non sweetened	Non Carbonate Sweetened	Non-carbonated non sweetened	
i)	Colour, max.	15 true colour units	15 true colour units	15 true colour units	15 true colour units	ISO 7887
ii)	Turbidity, max.	2 NTU.	2 NTU.	2 NTU.	2 NTU.	ISO 7027
iii)	Flavors, sweeteners, concentrates, extracts, essential oils %, max.	1.0 max.	1.0 max.	1.0 max.	1.0 max.	
iv)	pH	3.0-5.0	3.0-5.0	6.0 - 8.5	6.0 - 8.5	ISO 10523
v)	Protein	ND	ND	ND	ND	
vi)	Sugars, max.	12 mg/L	ND	12 mg/L	ND	
vii)	Total dissolved solids, max.	500 mg/L	500 mg/L	500 mg/L	500 mg/L	ASTM D 5907

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5.10 Specific requirements

5.10.1 Physical requirements

Packaged flavored water shall not have objectionable taste or odour to the consumers and shall be free from any foreign matter as stipulated in Table 1.

5.10.2 Chemical requirements

Packaged flavored water shall comply with the general chemical requirements as stipulated in Table 2 when tested in accordance to the test methods prescribed therein.

Table 2 — General physio-chemical requirements of flavored drinking water

S/N	Substance	Limit	Test method
i.	Aluminium as Al ³⁺ , max.	0.2 mg/L	ISO 10566
ii.	Calcium as Ca ²⁺ , max.	150 mg/L	ISO 5961
iii.	Chloride as Cl ⁻ , max.	250 mg/L	ISO 9297
iv.	Fluoride as F ⁻ , max.	1.5 mg/L (See Note 1 and 2)	ISO 10359
v.	Iron as Fe ²⁺ , max.	0.3 mg/L	ISO 6332
vi.	Magnesium as Mg ²⁺ , max.	100 mg/L	ISO 7980
vii.	Nitrate as NO ₃ ⁻ max.	45 mg/L	ISO 7890
viii.	Potassium as K ⁺ , max.	50 mg/L	ISO 9964
ix.	Sodium as Na ⁺ , max.	200 mg/L	ISO 9964
x.	Sulphate as SO ₄ ²⁻ max.	400 (See Note 3)	ISO 10304
xi.	Sulphide as H ₂ S max.	0.05 mg/L	ISO 10530
xii.	Total dissolved solids max	500mg/L	ASTM D 5907
xiii.	Total Alkalinity (as HCO ₃ ⁻)	250mg/L	Provide test method

NOTE 1 Packaged flavored drinking water containing between 1.5 and 4 mg/L fluoride shall have a labelling declaration flavored water contains Fluoride included.
 NOTE 2 If the product contains more than 1.5 mg/L "the product not suitable for infants and children under the age of seven years" shall be declared on the label.
 NOTE 3 Packaged flavored water containing between 200 and 400 mg/L sulphate shall have a labelling declaration 'flavored water contains Sulphate' included.

5.10.3 Limits of contaminants

Packaged flavored water shall not contain inorganic contaminants in excess of limits indicated in Table 2 when tested in accordance to the test methods prescribed therein.

Table 3 — Requirements for limits of inorganic contaminants in flavored drinking water

S/N	Substance	Limit, mg/L, max.	Test method
i)	Ammonia as NH ₃ ,	0.5	ISO 11732
ii)	Arsenic as As,	0.01	ISO 11969
iii)	Barium as Ba ⁺⁺ ,	1.0	ISO 11885
iv)	Borate as B,	5.0	ISO11885
v)	Cadmium as Cd,	0.01	ISO 5961
vi)	Chromium as total Cr,	0.05	ISO 9174
vii)	Copper as Cu ⁺⁺ ,	2	ISO 8288
viii)	Cyanide as CN ⁻ ,	Absent	ISO6703
ix)	Free Chlorine as Cl ₂ ,	0.2	ISO 7393
x)	Iodine as I ⁻ ,	1.0	Get test method-
xi)	Lead as Pb,	0.01	ISO 8288
xii)	Manganese as Mn ⁺⁺ ,	0.1	ISO 6333
xiii)	Mercury as Hg,	0.001	ISO 12846

xiv)	Nitrite as NO ₂ ⁻ ,	0.5	ISO 6777
xv)	Selenium as Se,	0.01	ISO 9965
xvi)	Silver as Ag,	0.01	Get the test method-
xvii)	Zinc as Zn ⁺⁺ ,	5	ISO 8288
xviii)	Bromate as BrO ₃	0.01	ISO 15061
xviii)	Antimony as Sb,	0.02	ISO 11885
xix)	Nickel as Ni,	0.02	ISO 8288

5.10.4 Packaged flavored water shall comply with the requirements for organic contaminants indicated in Table 4 when tested in accordance to the test methods prescribed therein.

Table 4 — Requirements for limits of organic contaminants in packaged flavored water

S/N	Substance (arrange alphabetical order)	Limit µg/L max.	Test method
i)	Aromatics		
	Benzene	10	ISO 11423
	Toluene	700	-
	Xylene	500	-
	Polynuclear aromatic hydrocarbon	0.7	ISO 13877
ii)	Chlorinated alkanes and alkenes		
	Carbon tetrachloride	2	-
	1,2-Dichloroethane	30	-
	1,1-Dichloroethylene	0.3	-
	1,1-Dichloroethene	30	-
iii)	Phenolic substances		
	Phenols	2	ISO 8165
	2,4,6-Trichlorophenol	200	ISO 14402
iv)	Trihalomethanes		
	Chloroform	30	-
v)	Pesticides		
	Aldrin/Dieldrin	0.03	ISO 15089
	Chlordane (total)	0.3	
	2,4- Dichlorophenoxyacetic acid	30	
	DDT (total)	1	
	Heptachlor and Heptachlor Epoxide	0.03	
	Hexachlorobenzene	1	
	Lindane BHC	2	
Methoxychlor	20		
vi)	Surfactants (reacting with methylene Blue)	200	ISO 16265
vii)	Mineral oil	0.01	-
viii)	Organic matter	3	-

5.10.5 Packaged flavored water shall comply with the requirements of radioactive matter indicated in Table 4.

Table 5 — Requirements of radioactive matter in flavored water

S/N	Radioactive material	Limit in Bq/L	Test method
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i)	Gross alpha activity	0.5	ISO 9696
ii)	Gross beta activity	1.0	ISO 9697

5.10.6 Packaged flavored water shall not have any sediment or suspended matter during its shelf life.

5.10.8 Packaged flavored water shall not contain any organic or inorganic substances at a level injurious to health.

6 Hygiene

6.1 Packaged flavored water shall be collected, processed, packaged, and marketed under hygienic Conditions complying with the Code of hygiene and KS 459 part

6.2 Packaged flavored water shall comply with the microbiological requirements given in Table 6 when tested in accordance to the test methods prescribed therein.

Table 6 — Microbiological requirements for packaged flavored water

S/N	Type of micro-organism	Limit	Test method
i)	Total viable counts at 22 °C in mL max. ^a	100	ISO 6222
	Total viable counts at 37 °C, in mL, max. ^a	50	
ii)	Total Coliforms in 100 mL	Absent	ISO 4832
iii)	<i>E. Coli</i> in 100 mL	Absent	ISO 9308-1
iv)	<i>Staphylococcus aureus</i> in 100 mL	Absent	ISO 6888-1
v)	Sulphite reducing anaerobes in 100 mL	Absent	ISO 6461-2
vi)	<i>Pseudomonas aeruginosa</i> fluorescence in 100 mL	Absent	ISO 16266
vii)	<i>Streptococcus faecalis</i> in 100 mL	Absent	ISO 7899-2
viii)	<i>Shigella</i> in 100 mL	Absent	ISO 21567
ix)	<i>Salmonella</i> in 100 mL	Absent	ISO 6785
x)	<i>Vibrio cholera</i> 100 mL	Absent	
xi)	<i>V.parahaemolyticus</i> 100 mL	Absent	

^a This parameter is for monitoring the system at source. Total time before analysis should be not more than 6 h at 4°C. Determination of total viable counts shall start within 12 h after collection of the packaged drinking water sample.

7 Packaging and labelling

7.1 Product durability

Product durability shall be declared on package. Product durability should be declared considering shelf life, laboratory results and other examinations. Quality and analysis checks needs to be done on batch basis and records should be maintained.

7.2 Packing

7.2.1 Containers

7.2.1.1 The flavored water shall be properly packed in clean glass bottles, transparent colored bottles, food grade plastic containers PET /PC / HDPE/ LDPE, aluminum cans.

7.2.1.2 All flavored water refills shall be cleaned and sanitized using latest technology and Good Manufacturing Practice (GMP).

7.2.1.3 The containers shall be filled in hygienic atmosphere. GMP needs to be followed

7.2.2 Inspection of empty and filled containers

Containers shall be inspected thoroughly before and after filling. Bright light can be used in back ground to check containers and product. Magnification boxes may be used if necessary. Defective containers and product contained should be rejected.

7.3 Weights and measures

Standard of weights and measures (packaged commodities) shall be as prescribes by the weights and measures regulations.

7.4 Labelling

The labels shall be legible and indelible. In addition to the requirements of KS EAS 38 and Foods, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya, the following provisions shall apply:

- a) Name of the product as per clause 5.1.1;
- b) Brand Name;
- c) Ingredients; (purified water; Herbs; Fruits or parts of Plant origin extracts; Flavor name shall be used);
- d) Name and address of Manufacturer;
- e) Physical location of the manufacturer;
- f) Date of manufacture;
- g) Batch number;
- h) Net volume of content;
- i) Condition for storage;
- j) Expiry date;
- k) Processing method; (optional)
- l) country of origin;
- m) Crush the bottle after use; (if its one time use container);
- n) Preservatives; carry over food additives added;
- o) Any other markings required under the Standards of Weights and Measures; and
- p) If non-nutritive artificial Sweetener is used, the for following words : "Contains Artificial Sweetener for Special Dietary use only" shall be declared on the label.

7.5 Labelling prohibitions

7.5.1 No claims concerning medical (preventative, alleviative or curative) or other beneficial effects relating to the health of the consumer shall be made in respect of the properties of the product covered in this Kenya Standard.

7.5.2 The name of the locality, hamlet, or specified place shall not form part of the trade name unless it refers to flavoured drinking water collected at the place designated by that trade name.

7.5.3 The use of any statement or of any pictorial device which may create confusion in the mind of the public or in any way mislead the public about the nature, origin composition and properties of a containerized flavoured drinking water offered for sale is prohibited.

7.5.4 The use of more than one brand name for similar products exploited from the same water source is prohibited.

7.5.5 The use of one brand name for products exploited from different water source is prohibited.

8 Sampling requirements

8.1 Sampling for testing

Samples to be collected test microbiological/chemical/quality tests when production is done in batches constituting lots, samples of each lot needs to be maintained with details of production batch details.

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Samples from each lot will be tested to confirm standard. Samples need to be collected on random basis. Samples should be suitably numbered.

8.2 Testing

Internationally accepted testing methods should be followed. However standards for purified drinking water shall apply since major ingredient is water. Other tests to confirm property of Herbs, Fruits or parts of Plant origin extracts value needs to be done, ingredient property testing should be done using HPLC, TLC,. Uv Visible Spectrometer, Titration Method and colour test New food safety standard Act may also be applied.

8.3 Qualities of testing reagents

Only pure chemical, which does not contain impurities, pure should be used for testing since quality of chemicals used influence test results largely. Double distilled water should be used when required.

A formal sampling programme shall be established and implemented. In the absence of a formally established sampling programme, the minimum sampling frequency given in Table 7 shall be used as an interim measure.

Table 7 — Minimum frequency of sampling of water for surveillance

Population served	Frequency ^a (minimum) of sampling
> 100 000	10 samples every month per 100 000 of population served
25 001 – 100 000	10 samples every month
10 001 – 25 000	3 samples every month
2 500 – 10 000	2 samples every month
< 2 500	1 sample every month

^a During the rainy season, sampling should be carried out more frequently.

9 Parameters required for minimum monitoring

It is recognized that, in many instances, the cost of performing a full analysis against Table 1, Table 2, Table 3, Table 4, Table 5 and Table 6 can be prohibitive.

Analysis of the parameters in Table 8 may be deemed acceptable for the purpose of indicating on going levels of operational efficiency in a water treatment plant. However, a relevant authority may require additional tests.

Table 8 — Physico-chemical and microbiological parameters required for minimum monitoring

Property	Test method
Physicochemical: Conductivity, or dissolved solids Colour Turbidity; Taste Odour Flavors, sweeteners, Concentrates, Extracts, Essential oils %, max.	See Table 1
Microbiological: Faecal coliform bacteria or <i>E. coli</i> ; Shigella spp Salmonella spp	See Table 6
Chemical: Fluoride as F ⁻ Nitrate Nitrite pH value Aluminum Iron(total) Ammonia Residual chlorine	See Table 3

If abnormal results are encountered in any of these analyses, sampling frequency shall be increased and/or additional analyses carried out.

NOTE A consumer complaints register for the aesthetic qualities of the flavoured water should be maintained.

10 Sampling plan for packaged flavored water

10.1 In drawing, preparing, storing and handling samples, the following precautions and directions shall be observed as far as possible:

- a) Sample shall be drawn in original sealed bottle/container and kept in protected place not exposed to damp air, dust or soot;
- b) Each bottle/container in original shall be sealed and marked with full details of sampling;

10.2 The quantity of packed water of the same type belonging to the same batch of manufacture and packed in a day shall constitute a lot.

10.3 For ascertaining the conformity of the material to the requirements of the specification, samples shall be tested from each lot separately.

10.4 The number of containers to be selected from a lot shall depend on the size of the lot and shall be according to Table 9.

Table 9 — Sampling plan

No. of containers in the lot (L)	Sample size (number of containers)
$L \leq 5000$	3
$5000 < L \leq 10000$	5
$10000 < L \leq 15000$	7
$L > 15000$	9