



DEAS 29-2:2026

ICS 67.080.10

DRAFT EAST AFRICAN STANDARD

Water-based flavoured drinks — Specification — Part 2: Energy drinks

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 034, *Water-based non-alcoholic beverages*

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Water-based flavoured drinks — Specification — Part 2: Energy drinks

1 Scope

This East African draft Standard specifies the requirements, sampling and test methods for energy 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.

AOAC 979.08, *Benzoate, Caffeine and Saccharin in Soda Beverages — Liquid Chromatographic Method*

AOAC 999.10 Lead, Cadmium, Zinc, Copper, and Iron in Foods — Atomic Absorption Spectrophotometry after Microwave Digestion

AOAC 994.11, *Benzoic Acid in Orange Juice — Liquid Chromatographic Method*

BS EN 1132, *Method determination of the pH-value of fruit and vegetable juices*

CXG 66, *Guidelines for safe use of Flavourings*

CODEX STAN 192, *General standard for food additives*

EAS 35, *Fortified food grade salt-Specification*

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

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

EAS 149, *Carbon dioxide for beverage industry-Specification*

EAS 803, *Nutrition labelling — Requirements*

EAS 804, *Claims — General requirements*

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

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

ISO 2447, *Fruit, and vegetable products — Determination of tin content*

ISO 4833-1, *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*

ISO 4833-2, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms Part 2: Colony count at 30 °C by the surface plating technique*

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

ISO 6633, *Fruits, vegetables, and derived products — Determination of lead content — Flameless atomic absorption spectrometric method*

ISO 6634, *Fruits, vegetables, and derived products — Determination of arsenic content — Silver diethyldithiocarbamate spectrophotometric method*

ISO 20481, *Coffee, and coffee products — Determination of the caffeine content using high performance liquid chromatography (HPLC) — Reference method.*

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

3 Terms and definitions

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

3.1 energy drink

non-alcoholic, carbonated, or non-carbonated water-based drink containing caffeine and/or other permitted stimulants with permitted food additives and are formulated for the purpose of enhancing energy and mental alertness.

3.2 Low calorie energy drink

Energy drink with reduced sugar content

3.3 Sugar free energy drink energy drink that does not contain sugars.

[3.4 caffeine

all caffeine present from whatever source in a formulated caffeinated beverage]

3.5 caffeinated energy drink

energy drink which contains caffeine and may contain amino acids, vitamins, sugars, other sweeteners and other substances, including other foods for the purpose of enhancing energy and mental alertness.

3.6 food grade packaging

packaging which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product and shall not impart any toxic substance or undesirable odour or flavour to the product.

3.7 Nutrient Reference Values (NRVs)

are a set of numerical values that are based on scientific data for purposes of nutrition labelling and relevant claims. They comprise the following two types of NRVs:

Nutrient Reference Values - Requirements (NRVs-R) refer to NRVs that are based on levels of nutrients associated with nutrient requirements

Nutrient Reference Values – Non-communicable Disease (NRVs-NCD) refer to NRVs that are based on levels of nutrients associated with the reduction in the risk of diet-related noncommunicable diseases not including nutrient deficiency diseases or disorders.

4 Requirements

4.1 Ingredients

4.1.1 Optional ingredients specified in Table 1 may be used in energy drinks provided that the maximum amounts stipulated shall not be exceeded when tested in accordance with the methods specified therein.

Table 1 — Optional ingredients for energy drinks

S/N	Substance	Amount/100 ml,	Test method
i.	Thiamine (NRV), mg	1.2	

ii.	Riboflavin (NRV), mg	1.2	Relevant AOAC ^a method
iii.	Niacin (mg-NE) (NRV), mg	15.0	
iv.	Pyridoxine (Vitamin B ₆), mg	1.3	
v.	cobalamin (Vitamin B ₁₂) (NRV), µg	2.4	
vi.	Pantothenic acid (NRV) mg	5.0	
vii.	Taurine, max., mg	400.0	
viii.	Glucuronolactone, max., mg	240.0	
ix.	Inositol, max. mg	20.0	
^a Recent Association of Official Analytical Chemists.			

4.1.2 Energy drinks may be prepared with the following ingredients, complying with relevant standards. They include but not limited to.

4.1.2.1 Carbon dioxide complying with the requirements of EAS 149.

4.1.2.2 Water complying with the requirements of EAS 12;

4.1.2.3 edible salt.

Edible salt if used in the manufacture of energy drinks shall comply with the requirements of EAS 35.

4.1.2.4 essential nutrients such as vitamins and minerals may be added to energy drinks.

4.1.2.5 Permitted amino acids.

Taurine including but not limited to any of the following permitted amino acids may be added in energy drinks: lysine, threonine, phenylalanine, tryptophan, valine, methionine, leucine, isoleucine, L-Carnitine L-Tartarate

4.1.2.6 Permitted Phosphatides.

As growth factor, permitted phosphatides may be added in energy drinks including to but not limited to choline, inositol or serine.

4.1.2.7 fruit or vegetable juice, fruit pulp, fruit puree, vegetable extracts, herbal extracts or extracts from other plant parts or their blends complying with relevant standards;

4.1.2.8 Flavourings

Flavouring agents, when used in energy drinks, shall be in accordance with CXG 66.

4.2 General requirements

Energy drinks shall:

- a) be free from extraneous or suspended matter.
- b) have characteristic flavour and odour; and
- c) be free from rancid taste.

4.3 Specific requirements

Energy drinks shall comply with the specific requirements given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Specific requirements for energy drinks

S/N	Characteristic	Requirement	Test method
i.	Total soluble solids, degree Brix (°Brix) at 20 °C. a) Sugar containing energy drink. b) Low calorie drink, max c) sugar free drink, max	5.1- 20 5 0.5	ISO 2173
ii.	pH, min	2.5	ISO 1842
iii.	Carbon dioxide ^a , gas volume, min.	1	Annex A
iv.	Caffeine mg/l ^b	200-320	ISO 20481
^a Applies to the carbonated energy drinks. NOTE 2 1 Gas volume eqv to 1.966 g/l of CO ₂ .			

5 Food additives

Food additives when used in the manufacture of energy drinks shall comply with CXS 192.

6 Hygiene

6.1 Energy drinks shall be produced and handled under hygienic conditions in accordance with EAS 39.

6.2 Energy drinks shall comply with the microbiological limits given in Table 3 when tested in accordance with the methods specified therein.

Table 3 — Microbiological limits for Energy drinks

S/N	Microorganism	Limit	Test method
i.	Total plate count, cfu/per ml, max.	100	ISO 4833-1 ISO 4833-2
ii.	Coliform count, cfu/ml,	Absent	ISO 4832
iii.	Yeast and mould count, cfu/ml, max.	30	ISO 21527-1

7 contaminants

Energy drinks shall comply with the maximum limits established by Codex Stan 193-1995

7.1 Heavy metal contaminants

Energy drinks shall comply with the heavy metal limits specified in Table 4 when tested in accordance with the test methods specified therein.

Table 4 — Heavy metal limits for energy drinks

S/N	Heavy metal	Maximum limit	Method of test
i.	Arsenic (As), mg/kg	0.1	ISO 6634
ii.	Lead (Pb), mg/kg	0.1	ISO 6633
iii.	Tin (Sn), mg/kg (for canned products) mg/kg	150	ISO 2447
iv.	Cadmium (Cd) mg/kg	0.003	AOAC 999.10

8 Packaging

Energy drinks shall be packaged in food grade packaging that safeguards the integrity, quality and safety of the product

9 Labelling

9.1 In addition to the requirements of EAS 38 the following specific labelling requirements shall apply and shall be legibly and indelibly marked on each container, cap or label.

- a) name of the product
- b) name and physical address of the manufacturer, packer, distributor, importer, exporter or vendor;
- c) country of origin.
- d) List of ingredients in descending order of proportions.
- e) declaration of the nutritional information.
- f) date of manufacture in code or in clear.
- g) Expiry, Use-by or best before date
- h) batch/ lot number.
- i) storage condition.
- j) net volume
- k) recommended servings per day:

[recommended servings per day: not recommended to drink more than 500ml per day]

[recommended servings per day: The manufacturer shall indicate on the label the number of units to be consumed in accordance with the RDA of 400mg per day]

9.2 Additional labelling requirement

- a) Caffeinated energy drinks shall bear a warning statement 'not recommended for consumption by children, pregnant/expectant and breast-feeding mothers; and individuals sensitive to caffeine
- b) in the case the product is carbonated, the word "carbonated" shall appear near the name of the product.

9.3 Nutrition labelling and claims

9.3.1 Nutrition labelling shall be done in accordance with EAS 803.

9.3.2 Nutrition and health claims, if used, shall be in accordance with EAS 804 and EAS 805 as appropriate

10 Sampling

Sampling of energy drink shall be done in accordance with CXG 50.

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Annex A

(normative)

Method of measuring gas volume

A.1 Principle

A.1.1 The method involves snifting 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).