

Substitute vinegar — Specification

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Technical University of Kenya— Department of Food and Beverage Production and Service

Consumer Information Network (CIN)

Ministry of Health — Department of Public Health

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KENYA STANDARD

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ICS 67.220.20

Substitute vinegar — Specification

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Foreword

This Kenya Standard was prepared by the Technical Committee on Spices and Condiments under the guidance of the Standards Projects Committee and it is in accordance with the procedures of the Kenya Bureau of Standards

Substitute vinegar is a dilute solution of glacial (food grade) acetic acid with or without added colouring matter (caramel).

It is largely confined to food flavouring and preservation. Substitute vinegar is a food which is designed to resemble vinegar in appearance, texture and flavour. It is intended to be used as a complete or partial replacement for the natural vinegar it resembles.

This standard emphasizes that the quality of substitute vinegar must be such that it is safe for human consumption as food.

Substitute non-brewed vinegars usually contain about 4.5 % m/v of synthetic acetic acid and are coloured with caramel. The minimum of 4 % acetic acid applies to non-brewed condiment as well as to brewed vinegar.

This fourth edition of the standard incorporates reviewed microbiological limits, heavy metal contaminant limits and reviewed test methods and incorporates an environmental management clause. This Edition also uses normative references that are Reviewed to current EAS and ISO test method Standards. These will ensure better trade facilitation.

During the preparation of this standard references were made to the following documents:

The Food, Drugs and Chemical Substances Act, Cap. 254 of the Laws of Kenya

The Public Health Act, Cap. 242 of the Laws of Kenya.

Codex Stan 192 - Codex General Standard for food additives

Codex Stan 193 - Codex General Standard for contaminants in Foods and feeds

Srilanka Standard 625 VDC 661. 731 Specification for artificial vinegar

[KS 400- Specification for Acetic Acid](#)

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

Substitute vinegar — Specification

1 Scope

This Kenya Standard specifies the quality requirements and methods of sampling and test for substitute vinegar

2 Normative references

The following referenced documents are indispensable for the application 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 38, *Labelling of pre-packaged foods*

KS ISO 7954:1 Microbiology of food and animal feeding stuffs — General guidance for enumeration of yeasts and moulds — Part 8: Colony count technique at 25 degrees C

KS ISO 21527-1:2008 Kenya Standard — 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, **First Edition.**

KS ISO 6579, Microbiology of food and animal feeding stuffs — Part 6: Horizontal method for the 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) Part 1: Technique using Baird-Parker agar medium.

KS ISO 21528-2, Microbiology of the food chain—Method for the detection of *enterobacterium aerogenes*.

KS ISO 793, Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of *Clostridium perfringens* -- Colony-count technique.

KS ISO 6633, Fruits ,Vegetables and derived products- Determination of lead content- Flameless atomic absorption Spectrometric Method.

KS ISO 6634, Fruits ,Vegetables and derived products- Determination of Arsenic Content - Silver diethyldithiocarbamate spectrophotometric Method.

ISO 6636- Pt ,2 – Fruits & Vegetables and derived Products- Determination of Zinc.
EAS 35, fortified *Edible salt* – *Specification*.

KS EAS 39---*Code of hygienic practice for food and drink manufacturing companies*

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KS ISO 948 –*Spices and condiments -- Sampling*

KS ISO 16050, *Foodstuffs — Determination of Aflatoxin B₁, and the total contents of Aflatoxins B₁, B₂, G₁ and G₂ in cereals, nuts and derived products — High performance liquid chromatographic method*

Codex Stan 193 --Codex Standard for Contaminants in food and feeds-

Codex Stan 192- Codex Standard for Food Additives.

KS EAS 147-1 EAS -Standard for Vinegar Pt.1- Vinegar From Natural Sources

3 Definitions

For the purposes of this standard, the following definitions shall apply:

3.1

substitute vinegar

is a product prepared from [food grade glacial acetic acid complying with KS 03-400](#) by diluting it with potable drinking water complying with [KS 05-459](#) and may contain caramel.

4 Requirements

4.1 Composition

4.1.1 Substitute vinegar shall consist of a dilute solution of food grade acetic acid with or without added colouring matter (caramel)

4.1.2 Substitute vinegar shall have the characteristic taste and odour of dilute acetic acid.

4.1.3 Substitute vinegar shall be free from added colouring matter other than caramel.

4.1.4 Substitute vinegar shall contain total acidity not less than 4 % (m/v) and not more than 13 % (m/v) when tested as per KS 400.

4.1.5 Substitute vinegar shall be free from any harmful ingredient, injurious to health.

4.1.6 Substitute vinegar shall be free from sedimentation such as vinegar eel, mycordermal suspensions and suspended matter.

4.1.7 Substitute vinegar shall have 10.5 g/L. max total soluble solids.

4.2 Heavy metal contaminant limits

Substitute vinegar shall comply with the heavy metal contaminant limits stipulated in Table 1.

Table 1 — Heavy metal contaminant limits

SI No.	Contaminants	Contaminants limits, max.	Test methods
i)	Arsenic (As)	1mg/kg (0.5)	KS ISO 6634
ii)	Lead (Pb)	1 mg/kg (2)	KS ISO 6633

4.3 Microbiological limits

The substitute vinegar shall comply with the microbiological limits stipulated in Table 2.

Table 3 — Microbiological limits for substitute vinegar

i)	Yeast and mould counts, cfu/g	< 10	KS ISO 7954:1
ii)	Enterobacter aero genes cfu/g	Absent ?	KS ISO 21528-2
iii)	Proteus mirabilis cfu/g	absent?	KS ISO 21528-2
****iv)	<i>Clostridium perfringens</i>	< 10	KS ISO 793?
v)	<i>Salmonella</i> , cfu /25 g	Absent	KS ISO 6579
vi)	<i>Staphylococcus aureus</i> cfu/ g	< 10	KS ISO 6888

*** -- unless canned

5 Hygiene

Substitute vinegar shall be produced, processed and handled in premises complying with KS EAS 39, Public Health Act, Cap. 242; Food, Drugs and Chemical Substances Act, Cap. 254; and Factories and Other Places of Work Act, Cap. 514 of the Laws of Kenya.

6 Environmental management

The disposal of used package and condemned substitute vinegar shall be done in compliance with the Environmental Management and Co-ordination (EMCA) Act No.8 of 1999 of the Laws of Kenya on disposal of solid and liquid wastes.

7 Packaging

7.1 The minimum fill of the container shall comply with the weights and measures Act, Cap. 513 Laws of Kenya.

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7.2 Substitute vinegar shall occupy not less than 90 % v/v of the water capacity of the container. The water capacity of the container is the volume of distilled water at 20 °C which the sealed container will hold when completely filled.

7.3 Substitute vinegar shall be packed in food grade materials that secure the integrity and safety of the product.

8 Labelling

Substitute vinegar shall be labelled in accordance with the requirements of KS EAS 38, and shall include the following information legibly and indelibly marked:

- i) name of the product as substitute vinegar;
- ii) name and physical address of the manufacturer /importer;
- iii) the total acid content shall be declared;
- iv) the net content shall be declared in metric units;
- v) batch code/lot number;
- vi) date of manufacture;
- vii) expiry date;
- viii) instructions for use;
- ix) storage instructions,
- x) instructions for disposal of used package;
- xi) where caramel has been added, it shall be declared;
- xii) country of origin.