



DRAFT EAST AFRICAN STANDARD

Liquid glucose (glucose syrup) — Specification

EAST AFRICAN COMMUNITY

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Public Review for Comments

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.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. 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 procedures of the Community.

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.

DEAS 349:2024 was prepared by Technical Committee EASC/TC 19, *Sugar and sugar confectionary*.

This third edition cancels and replaces the second edition (EAS 349: 2015), which has been technically revised.

Liquid glucose (glucose syrup) — Specification

1 Scope

This Draft East Africa Standard specifies the requirements, sampling and methods of test for liquid glucose (glucose syrup) for direct human consumption or further processing.

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.

CXS 192, *General standard for food additives*

CXS 193 *General Standard for Contaminants and Toxins in Food and Feed*

EAS 38 - *labelling of pre-packaged foods- General requirements*

EAS 39 *Code of practice for hygiene in the food and drink manufacturing industry*

ICUMSA GS 3-11(2000) *Determination of sulphated ash in brown sugars, juice, syrups and molasses*

ICUMSA GS 1-23 (2009) *Determination of pH by a Direct Method – in Raw Sugar, Molasses, Juices and Syrups*

ISO 1743, *Glucose syrup, Determination of dry matter content — Refractive index method*

ISO 4833-1, *Microbiology food chain — Horizontal method for enumeration for microorganism — Part 1, colony count at 30 degrees C by the pour plate technique*

ISO 5377, *Starch hydrolysis products — Determination of reducing power and dextrose equivalent — Lane and Eynon constant titre method*

ISO 5379, *Starches and derived product — Determination of sulphur dioxide content — Acidimetric method and nephelometric method*

ISO 6579 - 1, *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella Part 1: Detection of Salmonella spp.*

ISO 7251, *Microbiology of food and animal feeding stuffs — Horizontal method for detection and enumeration of presumptive Escherichia coli — Most probable number technique*

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*

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 16649-2: Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of beta-glucuronidase-positive *Escherichia coli*

3 Term and definition

For the purposes of this standard, the following term and definition shall apply.

liquid glucose (glucose syrup)

purified and concentrated aqueous solution of nutritive saccharose obtained from starch

4 Requirements

4.1 General requirements

The product shall be:

- a) in the form of odourless and viscous syrup with characteristic sweet taste;
- b) clear, free from fermentation, mould growth, sediment, dirt or other suspended and extraneous matter;
- c) free from objectionable matter;
- d) free from added sweetening and flavouring agents; and
- e) free from added colouring material.

4.2 Specific requirements

Liquid glucose shall comply with the specific requirements given in Table 1.

Table 1 — Specific requirements for liquid glucose

S/N	Characteristic	Requirement	Test Methods
i.	Dextrose Equivalent (DE) value, % m/m drybasis, min.	20	ISO 5377
ii.	Total solids, % m/m, min.	70	ISO 1743
iii.	Sulphated ash, % m/m, max.	1.0	ICUMSA GS 311(2000)

iv.	pH	4.5 - 5.5	Annex A
v.	Sulphur dioxide, mg/kg, max.	400	ISO 5379

5 Food additives

Only the food additives permitted in CXS 192 shall be used

6 Contaminants

6.1 Pesticide residues

Liquid glucose shall comply with the maximum pesticide residues limits established by the Codex Alimentarius Commission.

6.2 Heavy metals

Liquid glucose shall comply with the maximum levels for heavy metals in accordance to CXS 193

7. Hygiene

Liquid glucose shall be prepared and handled in accordance with EAS 39 and shall comply with microbiological limits stipulated in Table 2.

Table 2 — Microbiological limits for liquid glucose

S/N	Microorganisms	Limit	Test methods
i.	Total aerobic count, cfu/g, max.	100	ISO 4833-1
ii.	Yeast and moulds, cfu/g, max.	10	ISO 21527-1
iii.	Escherichia coli, cfu/g	Absent	ISO 16649 - 2
iv.	Salmonella, spp in 25 g	Absent	ISO 6579 - 1
v	Staphylococcus aureus	Absent	ISO 6888 - 1

8. Packaging

Liquid glucose shall be packaged in leak-proof containers that are food grade and ensure product safety and integrity.

9. Weights and measures

The volume and the fill of liquid glucose shall comply with weights and measures regulations of Partner States or equivalent legislation.

10. Labelling

Liquid glucose shall be labelled in accordance with requirements specified in EAS 38. In addition, the followingshall be legibly and indelibly marked on each package:

- a) name and physical address of manufacturer/importer/distributor/ packer;
- b) product name as "Liquid glucose" or "Glucose syrup";
- c) date of manufacture;
- d) expiry date;
- e) list of ingredients in descending order;
- f) storage instructions;
- g) country of origin;
- h) batch/lot number;
- i) net content in SI units;
- j) instructions for disposal of the used package; and
- k) declaration of dextrose equivalent value.

11 Sampling

Glucose syrup shall be sampled in accordance with CXG 50

Annex A

(normative)

Determination of pH of 10% liquid glucose

1. Purpose

To outline the procedure for accurately measuring the pH of a 10% Liquid glucose.

2. Scope

This applies to pH measurements of molasses solutions

3. Materials and Equipment

- Molasses
- Distilled water
- pH meter (calibrated)
- Beaker (100 mL)
- Stirring rod or magnetic stirrer
- Graduated cylinder or pipette

4. Procedure

4.1 Preparation of 10% Molasses Solution

- Using a graduated cylinder or pipette, measure 10 grams of molasses.
- Transfer the molasses into a beaker.
- Add distilled water to the beaker until the total volume reaches 100 mL.
- Stir the solution thoroughly using a stirring rod or magnetic stirrer until the molasses is fully dissolved.

4.2 pH Measurement

1. Calibration of pH Meter:

- Ensure the pH meter is calibrated using standard buffer solutions (typically pH 4.00, 7.00, and 10.00) according to the manufacturer's instructions.

2. Measurement:

- Rinse the pH electrode with distilled water and gently blot dry with a clean tissue.
- Immerse the pH electrode in the prepared 10% molasses solution.
- Wait for the pH meter to stabilize and record the pH value.

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