



**DRAFT EAST AFRICAN STANDARD**

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**Hard-boiled sweets — Specification**

**EAST AFRICAN COMMUNITY**

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Public Review for Comments

**DEAS 350: 2024**

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Tel: 255 27 2504253/8  
Fax: 255 27 2504481/2504255  
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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.

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 350 was prepared by Technical Committee EAS/TC 019, *Sugar and sugar confectionery*.

This third edition cancels and replaces the second edition (EAS 350:2015), which has been technically revised.

## Hard-boiled sweets — Specification

### 1 Scope

This draft East African Standard specifies requirements, sampling and methods of test for hard-boiled sweets for direct human consumption.

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

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

EAS 12 Potable water — Specification

EAS 803 Nutritional labelling – Requirements

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

ISO 5809, Starches and derived products — Determination of sulphated ash

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 21527-2, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2 — Colony count technique in products with water activity less than or equal to 0.95

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 21527-2, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds Part 2: Colony count technique in products with water activity less than or equal to 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. Terms and definition

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

#### 3.1.

##### **Hard boiled sweets**

super cooled non-crystalline liquids, which are so far below their melting point or softening point that they have assumed solid properties without crystallizing. They are a combination of sucrose and glucose syrup or sucrose and invert sugar with or without addition of optional ingredients given under 5.1.3

#### 3.2.

##### **Plain hard boiled sweets**

simple, hard confection products made primarily from sugar and glucose syrup. They are characterized by their clear appearance, hard texture, and straightforward sweet taste, making them a classic, long-lasting treat characterised by clear or pulled to incorporate air to cause opaqueness and shine, or the composition adjusted so as to grain in a desired length of time

#### 3.3

##### **Modified hard boiled sweets**

a versatile and enhanced version of traditional hard candies, featuring variations in ingredients, textures, flavors, and potential functional benefits. These modifications allow for a more diverse range of products that cater to different consumer preferences and needs.

### 4. Requirements

#### 4.1. Ingredients

##### 4.1.1 General

All ingredients shall be food grade complying with the requirements of the relevant East African standards.

##### 4.1.2. Essential ingredients

The following essential ingredients shall be used in the manufacture of hard boiled sweets:

- a) sugar; and
- b) liquid glucose (.glucose syrup)

#### 4.4.3 Optional Ingredients

In addition to the essential ingredients specified in 5.1.2, the product may also contain but not limited to any of the following optional ingredients singly or in combination.

- a) fruits, fresh or dried and fruit products;
- b) edible oils and fats;
- c) milk and milk products;
- d) chocolate, cocoa powder, cocoa butter, coffee and tea;
- e) edible nuts and nut products;
- f) edible common salt;
- g) edible flours and starches;
- h) edible oilseed flours and protein isolates;
- i) spices;
- j) vitamins and vitamin concentrates;
- k) enzymes; and
- l) lubricants such as glycerine, stearic acid, talc powder.
- m) Gum base

2.2

#### 4.2 General requirements

Hard-boiled sweets shall:

- a) be in any desired shape, size or colour with pleasant taste and flavour;
- b) be safe and suitable for human consumption;
- c) neither stick to each other nor to the wrappers;
- d) not show caramelization;
- e) be free from abnormal taste and flavours; and
- f) be practically free from dirt.

#### 4.3. Specific requirements

The hard-boiled sugar confectionery shall comply with the specific quality requirements given in Table 1.

**Table 1 — Specific requirements for hard boiled sweets**

S/N	Characteristics	Requirement	Test method
i)	Moisture content, % by mass, max.	2.5	Annex A
ii)	Sulphated ash, % by mass, max.	1.5	ISO 5809
iii)	Acid insoluble ash, % by mass, max.	0.2	Annex B
iv)	Sulphur dioxide, ppm, max.	350	ISO 5379

**5. Food additives**

Only the food additives permitted in CXS 192 shall be used

**6. Contaminants****6.1. Pesticide residues**

Hard boiled sweets shall comply with maximum pesticide residues limits established by the Codex Alimentarius Commission.

**6.2. Heavy metals**

Hard boiled sweets shall comply with the maximum limits for heavy metals given in CXS 193

**7. Hygiene**

Hard boiled sweets shall be prepared and handled in accordance with EAS 39 and shall comply with microbiological limits specified in Table 2.

**Table 2 — Microbiological limits for hard boiled sweets**

S/N	Characteristic	Requirement	Test method
i.	Yeast and moulds, cfu per g, max	10	ISO 21527-2
ii.	<i>E. coli</i> , cfu per g	Absent	ISO 16649 -2
iii.	<i>S. aureus</i> , cfu per g	Absent	ISO 6888 – 1
iv.	<i>Salmonella</i> , spp in 25 g,	Absent	ISO 6579 - 1

**8. Packaging**

Hard boiled sweets shall be packaged in food grade material which ensures the safety

and integrity of the product.

## 9. Weights and measures

The fill of hard boiled sweets shall comply with Weights and Measures regulations of Partner States or equivalent legislation.

## 10. Labelling

Hard boiled sweets shall be labelled in accordance with requirements specified in EAS 38 and EAS 803. In addition, the following shall be legibly and indelibly marked on each outer package:

- a) name and physical address of manufacturer/importer/distributor/packer;
- b) product name as "Hard Boiled Sweets" or Hard Boiled sugar confectionaries;
- c) date of manufacture;
- d) expiry date;
- e) list of ingredients in descending order;
- f) storage instructions (for bags/cartons);
- g) country of origin;
- h) batch/lot number;
- i) net content or number of pieces in the package; and
- j) instructions for disposal of the used package.

## 11. Sampling

hard boiled sweets shall be sampled in accordance with CXG 50



**Annex A**  
(normative)

**Determination of moisture content**

**A.1 Procedure**

**A.1.1 Preparation of samples**

Crush or grind as quickly as possible in a dry pestle and mortar 150 g of the sample on a clean porcelain slab. Crush thoroughly to secure a uniform sample. Store the crushed sample immediately in an airtight glass container and use this wherever the use of prepared sample is indicated.

**A.1.2 Procedure**

Weigh accurately about 5 g of the prepared sample (see A.1.1) in a tared moisturizing dish. Distribute the material as evenly as practicable over the bottom of the dish by gentle sidewise movements. Place the dish in a vacuum oven, remove the cover of the dish and dry the material for six hours at 80 °C ± 1 °C at a pressure not exceeding 140 mm Hg. Allow the dish to cool to room temperature in a desiccator and weigh.

**A.2 Calculation**

A.2.1 The moisture content shall be expressed as follows;

$$\text{Moisture, \% by mass} = \frac{m - m_1}{m} \times 100$$

where

$m$  is the mass, in grams, of the prepared sample taken for the experiment; and

$m_1$  is the mass, in grams, of the material after drying for six hours.

## Annex B (normative)

### Determination of acid insoluble ash

#### B.1 Reagent

**Dilute hydrochloric acid**, approximately 5 N (prepared from concentrated hydrochloric acid)

#### B.2 Procedure

**B.2.1** Weigh accurately 20 g of the prepared sample (see A.1.1) in a tared, clean and dry porcelain dish.

Ignite the material in the dish on hotplate for about one hour. Complete the ignition by keeping in the sample material in a muffle furnace at  $600\text{ }^{\circ}\text{C} \pm 20\text{ }^{\circ}\text{C}$  until grey ash results.

**B.2.2** Cool in a desiccator. Add 25 mL of this dilute hydrochloric acid to the ash, cover with a watch-glass and heat on a water bath for 10 min. Allow to cool and filter the content of the dish through a ashless filter paper until the washings are free from chlorides. Return the filter and the residue to the dish. Keep it in an air-oven maintained at  $105\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$  for 3 h. Ignite in the muffle furnace at  $600\text{ }^{\circ}\text{C} \pm 20\text{ }^{\circ}\text{C}$  for 30 min in the muffle furnace, cool and weigh. Repeat this process of heating for 30 min, cooling and weighing till the difference between two successive weighing is less than one milligram. Record the lowest mass.

#### B.3 Calculation

Acid insoluble ash content shall be expressed as follows:

Acid insoluble ash, percent by mass =  $100 (m_2 - m) / m_1 - m$

where,

$m_2$  is the mass, in grams, of the porcelain dish with the acid insoluble ash;

$m$  is the mass, in grams, of the empty porcelain dish;

$m_1$  is the mass, in grams, of the porcelain dish with the prepared sample taken for the test.

**Annex C**  
(informative)

**Product types**

1.1 The hard boiled sweets may be of two types:

- a) plain hard boiled sweets; and
- b) modified hard boiled sweets.

1.2. Plain hard boiled sweets should be clear or pulled to incorporate air to cause opaqueness and shine, or the composition adjusted so as to grain in a desired length of time. These shall include the following:

- c) clear sweets should be formed into desired shapes without introducing sufficient air to cause opacity and not kneaded for sufficient time to produce graining;
- d) pulled sweets should be the clear high boiled sweets which have been pulled by hand or mechanically to incorporate air to produce opacity and subsequent crystallization; and
- e) grained sweets, should be the hard-boiled sweet whose composition has been so adjusted that a delayed action graining occurs over a period of time.

1.3. Modified hard boiled sweets should include the following:

- a) filled confection should be composed of a clear, pulled or grained casing enclosing an acceptable centre filling;
- b) butter scotch should be a plain hard boiled sweet containing dairy butter;
- c) brittle should be a plain hard boiled sweet containing edible fat and/or nut products;
- d) glace should be a plain hard boiled sweet casing enclosing a filling of fruits or nut products; and
- e) taffy should be a pulled hard boiled sweet that contains an edible fat and/or a milk product.

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