EDICT SO OF GOVERNMENT

EAST AFRICAN COMMUNITY

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EAS 749 (2010) (English): Brown sugar -Specification

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EAST AFRICAN STANDARD

Brown sugars — Specification

EAST AFRICAN COMMUNITY

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EAS 749:2010

Foreword

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

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. 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.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

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.

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Brown sugars — Specification

1 Scope

This East African Standard specifies the requirements, methods of sampling and testing for light brown and brown sugar intended for human consumption.

This standard does not apply to soft brown sugars.

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.

EAS 38, Labelling of pre-packaged foods - Specification

EAS 39, Code of practice for hygiene in the food and drink manufacturing industries

EAS 217-2, Methods for the microbiological examination of foods — Part 2: General Guidance for the enumeration of micro-organisms-colony count technique at 30 °C

EAS 217-6, Methods for microbiological examination of foods — Part 6: Examination for Salmonella spp

EAS 217-8, Methods for the microbiological examination of foods — Part 8: Enumeration of yeast and moulds in foods

ICUMSA Method GS 1/2/3/9-1, The Determination of the Polarisation of Raw Sugar by Polarimetry

ICUMSA Method GS 1/3/4/7/8-13, The Determination of Conductivity Ash in Raw Sugar, Brown Sugar, Juice, Syrup and Molasses

ICUMSA Method GS 2/1/3-27, The Determination of Lead in Sugar Products by a Colorimetric Method

ICUMSA Method GS 2/1/3/9-15, The Determination of Sugar Moisture by Loss on Drying

ICUMSA Method GS 2/3-24, The Determination of Lead in Sugars and Syrups by a GFAAS Method

ICUMSA Method GS 2/3-29, The Determination of Copper in Refined Sugar Products by a Colorimetric Method

ICUMSA GS 2/3-35, The Determination of Sulphite in Brown Sugars

ICUMSA Method GS 2/3/9-5, The Determination of Reducing Sugars in Purified Sugars by the Knight and Allen EDTA Method

ICUMSA Method GS 2/3/9-19, The Determination of Insoluble Matter in White Sugar by Membrane Filtration

ICUMSA Method GS 2/3/9-25, The Determination of Arsenic in Refined Sugar Products by a Colorimetric Method

ICUMSA Method GS 2/9-6, The Determination of Reducing Sugars in White Sugar and Plantation White Sugar by the Modified Ofner Titrimetric Method

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ICUMSA Method GS 3/4/7/8-11, The Determination of Sulphated Ash in Brown Sugar, Juice, Syrup and Molasses

ICUMSA Method GS 9/1/2/3-8, The Determination of Sugar Solution Colour at pH 7.0 by the MOPS Method

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

3 Terms and definitions

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

3.1

brown sugars

Shall be the sugar derived from sugar cane or sugar beet by partial purification of raw sugar or spraying of refined sugar with sugar syrup or molasses followed by subsequent drying and intended for direct human consumption.

3.2

ICUMSA unit

An international unit developed by International Commission for Universal Methods of Sugar Analysis (ICUMSA) for expressing the purity of sugar and is directly related to the colour of sugar.

3.3

polarisation

An estimate of the sucrose content of sugar expressed as degrees of polarization

3.4

lot

collection of packages of the same size, type and style which have been manufactured and packaged under essentially the same conditions

4 Requirements

4.1 General requirements

Brown sugars shall be:

- a) brownish in colour
- b) Free flowing crystals;
- c) practically free from dirt, foreign and extraneous matter; and
- d) Free from fermented, musty or undesirable odours.

4.2 Compositional requirements

Brown sugars shall conform to the compositional requirements provided in Table 1.

S No	Characteristic	Requirement/limits		Methods of test
i.		Light brown	brown	
ii.	Polarisation, °Z, min.	99.2	99.0	ICUMSA Method GS 1/2/3/9-1
	Invert sugar content, % m/m,	0.2	0.2	ICUMSA Method GS 2/3/9-5
	max.			ICUMSA Method GS 2/9-6,
iii.	Conductivity ashes, % m/m, max.	0.3	0.3	ICUMSA Method GS 1/3/4/7/8-13
iv.	Moisture content (loss on drying	0.15	0.2	ICUMSA Method GS 2/1/3/9-15
	for 3 h at 105 °C ± 2 °C), max.			
V.	Colour, in ICUMSA units, max	700	1300	ICUMSA Method GS 9/1/2/3-8
vi	Sulphur dioxide, mg/kg, max.	20	20	ICUMSA GS 2/3-35
Vii	Water insoluble matter, mg/kg,	250	250	ICUMSA Method GS 2/3/9-19
	max.			

Table 1 — Composition requirements for Brown sugars

5 Food additives

Brown sugars may contain only those food additives permitted by Codex Alimentarius Commission.

6 Contaminants

6.1 **Pesticide residues**

Brown sugar shall conform to with those maximum pesticide residue limits established by the Codex Alimentarius Commission.

6.2 Heavy metals

Brown sugar shall conform to with those maximum heavy metal contaminant limits established by the Codex Alimentarius Commission.

6.3 Environment

Brown sugar shall be produced, processed and handled under conditions complying with the stipulations of relevant environmental regulations and therefore conform to cleaner production technological practices.

7 Hygiene

7.1 Production of Brown sugar shall be done in accordance with the provisions of EAS 39 Code of practice for food and drink manufacturing industries

7.2 When tested using appropriate methods of sampling and examination listed in Clause 2, the products:

- shall be free from microorganisms in amounts which may represent a hazard to health and shall not exceed the limits stipulated in Table 2;
- shall be free from parasites which may represent a hazard to health; and
- shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

Microbiological parameter	Limits	Method of test
Total Plate Count (mesophylic), cfu/10g ,	103	EAS 217-2:
Yeast and moulds, cfu/10 g, max	50	EAS 217-8
Escherichia coli, cfu,/g	<1	ISO 7251
Salmonella, per 25 g	Absent	EAS 217-6

Table 2 — Microbiological limits for brown sugars

8 Packaging

8.1 Brown sugars shall be packaged in food grade materials that ensure product safety and integrity.

NOTE Packaging materials may be required to meet different regulations in the different destination countries.

8.2 The package fill shall conform to the requirements of the legal metrology of the Partner States.

9 Labelling

In addition to the requirements of EAS 38, the following specific provisions shall apply:

- a) The name of the product as light brown sugar, brown sugar and any other name from country of origin reflecting nature of the product.
- b) The net contents shall be declared by weight in the metric units ('Systeme International');
- c) The name, address and physical location of the manufacturer and/or the packer, distributor, importer, exporter or vendor of the product shall be declared; and
- d) The country of origin of the product shall be declared.
- e) Batch or Lot number
- f) Date of manufacture, in the form 'month and year'
- g) Expiry date in the form 'month and year'

10 Method of sampling

10.1 General requirements for sampling

In drawing, preparing, storing and handling of samples, the following precautions and directions shall be observed.

- a) Samples shall be taken in a protected place not exposed to damp air, dust or soot.
- b) The sampling instruments shall be clean and dry when used.
- c) When sampling for microbiological purposes, the sampling instruments and containers for samples shall be sterilized preferably by dry heat at 170 °C for 1 h before use.
- d) Precautions shall be taken to protect the samples, the material being sampled, the sampling instruments and the containers for samples from adventitious contamination.
- e) The samples shall be placed in clean, dry, and moisture-proof containers.

- f) The sample containers shall be sealed air-tight after filling and marked with name of material, date of sampling, name of the manufacturer, name of the person sampling and such other particulars of the consignments.
- g) Samples shall be protected from light as far as practicable and shall be stored in a cool, dry place.

10.2 Scale of sampling

10.2.1 All the packages of the same size, type and style which have been manufactured and packaged under essentially the same conditions in a single consignment shall constitute a lot. Samples shall be tested separately for each lot for ascertaining the conformity of the sugar.

10.2.2 The number of bags to be selected (n) from the lot shall depend on the size (N) of the lot and shall be in accordance with the formula:

n = √N

These bags shall be selected at random from the lot; to ensure the randomness of selection a random number table, as agreed to between the purchaser and the supplier shall be used. In case such a table is not available, the following procedure shall be used:

Starting from any bag, count them as 1,2,3,... up to *r* and so on in one order, where *r* is equal to the integral part of N/n, N being the total number of bags in the lot and *n* the number of bags to be selected. Every r^{th} bag thus counted shall be separated until the requisite number of bags is obtained from the lot to give samples for test.

In case of bags stacked in a pyramidal shape, approximately equal number of bags shall be selected from all exposed sides of the lot, so as to give the required number of sample bags.

10.3 Preparation of sample

10.3.1 Procedure

From the top, middle and bottom portions of each of the selected bags (see 10.2), approximately equal quantity of sugar shall be taken with the help of a suitable sampling instrument. The sample collected from each of the bags shall be thoroughly mixed so as to give a composite sample of 600 g. The composite sample thus prepared shall be divided approximately into three equal parts; one for the purchaser, one for the supplier, and the third for the referee and sealed air tight with particulars as given in 10.1.(f).

10.3.2 Number of tests

The composite sample prepared as under 10.3.1 shall be tested for the characteristics as prescribed in Table 1.

10.3.3 Criteria for conformity

The lot shall be declared as conforming to this specification, when the test results on various characteristics obtained on the composite sample satisfy the corresponding requirements.

11 Methods of test — Determination of pesticide residues

The pesticide residues shall be determined according to AOAC methods of analysis for pesticides. (970.52, 985.22, and 970.53 of 1990).