DRAFT UGANDA STANDARD

DUS DEAS 5

First Edition
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Refined white sugar — Specification

Reference number
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National foreword

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The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Uganda Standard, US EAS 5:2019, *Refined white sugar — Specification,* is identical with and has been reproduced from an International Standard, EAS 5:2019, *Refined white sugar — Specification,* and adopted as a Uganda Standard.

The committee responsible for this document is Technical Committee UNBS/TC 2, *Food and agriculture*, Subcommittee SC 11, *Sugars, edible starches and related confectionery products.*

This second edition cancels and replaces the first edition (US EAS 5:2009) which has been technically revised.

Wherever the words, “East African Standard " appear, they should be replaced by "Uganda Standard."

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DEAS 5:2019
ICS 67.180.10

DRAFT EAST AFRICAN STANDARD

Refined white sugar — Specification

Public Review Draft 2019

EAST AFRICAN COMMUNITY

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Third Edition 2019

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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 and other regulatory bodies in the 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.

This draft is the third edition and once approved will cancel and replace the second edition, EAS 5:2009, which has being technically revised.

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Refined white sugar — Specification

1 Scope

This Draft East African standard specifies requirements, sampling and test methods for refined white sugar intended for industrial use and/or human consumption.

2 Normative reference

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

EAS 38, Labelling of pre-packaged foods — Specification
EAS 348, Glossary of terms used in confectionery trade

ISO 4833-1:2013
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 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 - Colony count technique in products with water activity less than or equal to 0,95

ICUMSA Method GS 2/1/3-27 (1994): 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 2/3-1,The Braunschweig Method for the Polarisation of White Sugar by Polarimetry

ICUMSA Method GS 2/3-10, The Determination of White Sugar Solution Colour

ICUMSA Method GS 2/3-17, The Determination of Conductivity Ash in Refined Sugar Products

ICUMSA Method GS 2/3-23, Arsenic and Lead in White Sugar, Atom. Adsorp. Spectroscopy

ICUMSA Method GS 2/3-29 (1994): 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 (2007): The Determination of Arsenic in Refined Sugar Products by a Colorimetric Method

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ICUMSA Method GS 2/9-6, The Determination of Reducing Sugars in White Sugar by Modified Ofner 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, EAS 348 shall apply in addition to the following terms and definitions:

3.1
lot
collection of packages of the same size, type and style which have been manufactured and packaged under essentially the same conditions

3.2
refined white sugar
purified and granulated sugar, manufactured from any raw sugar by the process of purification consisting broadly of affination, melting, chemical treatment, filtration, decolourisation and re-crystallisation

3.3
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

3.4
polarization

estimate of the sucrose content of sugar expressed as degrees of

.

4 Requirements

4.1 General requirement

Refined white sugar shall be;

a) in the form of uniform and free-flowing crystals;

b) free from dirt, foreign and extraneous matter.

c) free from fermented, musty or undesirable odours.

4.2 Specific requirements

Refined white sugar shall conform to the specific requirements specified in Table 1 when tested in accordance with the methods specified therein.

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Table 1 — Specific requirements for refined white sugar

S No	Characteristic	Requirement/Limit	Method of test
i.	Polarisation, ^{o}Z, min.	99.8	ICUMSA Method GS 2/3-1
ii.	Invert Sugar content, % m/m, max.	0.04	ICUMSA Method GS 2/3/9-5 ICUMSA Method GS 2/9-6
iii.	Conductivity ash, % m/m, max.	0.04	ICUMSA Method GS 2/3-17
iv.	Moisture content (loss on drying for 3 h at 105 ^{o}C± 2 ^{o}C), max.	0.1	ICUMSA Method GS 2/1/3/9-15
v.	Colour, in ICUMSA units at 420 nm, max.	60	ICUMSA Method GS 2/3-10
vi	Sulphur dioxide, mg/kg, max.	10	ICUMSA GS 2/3-35
vii	Water insoluble matter, mg/kg. max.	60	ICUMSA Method GS 2/3-19
ii.	Copper (Cu), mg/kg, max.	2	ICUMSA Method GS 2/3-29

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5. Food additives

Food additives when used shall comply with CODEX STAN 192”

6. Contaminant

6.1 Metal contaminants

The maximum permitted levels for metals are set out in Table 2.

Table 2 — Maximum permissible levels of metal contaminants

S No	Parameter	Maximum limit	Method of test
i.	Arsenic (As), mg/kg, max.	1	ICUMSA Method GS 2/3/9-25 ICUMSA Method GS 2/3-23
ii	Lead (Pb), mg/kg, max.	0.5	ICUMSA Method GS 2/1/3-27 ICUMSA Method GS 2/3-23

6.2 Pesticide residues

Refined white sugar shall conform to the maximum residue limits established by the Codex Alimentarius Commission for this commodity.

7. Hygiene

Refined white sugar shall be prepared and handled in a hygienic manner in accordance with EAS 39 and shall comply with the microbiological limits stipulated in Table 3 when tested in accordance with the methods specified therein”.

Table 3 — Microbiological limits for refined white sugar

Microbiological parameter	Limit	Method of test
Total Plate Count (mesophylic), CFU/g , max	10^3	ISO 4833
Yeast and moulds, CFU/ g, max	50	ISO 21527 -2
Escherichia coli, MPN,/g	Absent	ISO 7251
Salmonella, per 25 g	Absent	ISO 6579 -1

8. Packaging

Plantation white sugar shall be packaged in food grade materials that ensure product safety and integrity.

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The material used shall be new, clean and shall protect the sugar from contamination and wetting.

9. Labelling

In addition to the mandatory sections of the East African Standard for the labelling of pre-packaged Foods EAS 38; the following specific provisions shall apply

a) the name of the product as "**refined white sugar**"

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) Manufacturing date
f) Best before date
g) storage conditions

10. Method of sampling

a. General requirements for sampling

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

i. Samples shall be taken in a protected place not exposed to damp air, dust or soot.

ii. The sampling instruments shall be clean and dry when used.

iii. When sampling for microbiological purposes, the sampling instruments and containers for samples shall be sterilized preferably by dry heat at 170 ^{o}C for 1 h before use.

iv. Precautions shall be taken to protect the samples, the material being sampled, the sampling instruments and the containers for samples from adventitious contamination.

v. The samples shall be placed in clean, dry, and moisture-proof containers.

vi. 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.

vii. Samples shall be protected from light as far as practicable and shall be stored in a cool, dry place.

b. Scale of sampling

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.

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:

$n\sqrt{N}$

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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.

c. Preparation of sample

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).

Number of tests

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

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.

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