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DRAFT TANZANIA STANDARD

Icing sugar — Specification

TANZANIA BUREAU OF STANDARDS

Icing sugar — Specification

0 Foreword

Icing sugar is manufactured by pulverizing plantation white sugar or refined sugar in a ball mill or other disintegrator with or without the addition of anticaking agents. It is widely used in food industry, like in making confectioneries, dressing cakes, pastries and other bakery products.

This Tanzania standard has been developed in order to ensure wholesomeness, safety and quality of the product traded in the country.

This second edition replaces and repeals the first edition (TZS 2083:2017).

In the preparation of this Tanzania Standard, considerable assistance was derived from:

Codex stan 212:1999 (Amended in 2019), *Codex Standard for sugars*
IS 1152:2003 (Amended 2011), *Icing sugar — Specification published* by the India Bureau of Standards

In reporting the results of a test or analysis made in accordance with this Tanzania Standard, if the final value, observed or calculated is to be rounded off, it shall be done in accordance with TZS 4 (see clause 2).

1 Scope

This Tanzania Standard prescribes the requirements, sampling and the methods of testing for icing sugar.

2 Normative reference

The following referenced documents are indispensable for the application of this Tanzania Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

CODEX STAN 192, *General standard for food additives*

ICUMSA GS 2/3-35, The Determination of Sulphite in Refined Sugar Products excepting Brown Sugars by an Enzymatic Method – Official The Determination of Sulphite in Brown Sugars – Tentative

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

ICUMSA Method GS 1-16, The Determination of Starch in Raw Sugar by a Modified BSES Method – Official

ICUMSA Method GS 2/3-1, The Braunschweig Method for the Polarisation of White Sugar by Polarimetry

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

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

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

ICUMSA Method GS 2/3-17, The Determination of Conductivity Ash in Refined Sugar products and in Plantation White Sugar – Official

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

ICUMSA Method GS 2/3-29 The Determination of Copper 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 – Official

TZS 100, Plantation white sugar — Specification TZS 101, Refined sugar — Specification

TZS 109, Food processing units — Code of hygiene

TZS 118, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of microorganisms – Colony-count technique at 30^{o}C

TZS 122, Microbiology of food and feeding stuffs – Horizontal method for the detection of salmonella spp

TZS 2426-1, 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

TZS 4, Rounding off numerical values

TZS 538 Labelling of pre-packaged foods — General requirements

TZS 730-2, Microbiology of the food chain — Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli — Part 1: Colony-count technique at 44 degrees C using membranes and 5-bromo-4-chloro-3-indolyl beta-D-glucuronide

3 Terms and definitions

For the purpose of this Tanzania Standard, the following terms and definitions shall apply:

3.1 icing sugar

finely pulverized plantation white sugar or refined sugar with or without the addition of an anticaking agent

3.2 plantation white sugar

white sugar commonly manufactured by vacuum-pan-process from sugar cane

3.3 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

4 Requirements

4.1 General requirements

4.1.1 *Description*

Icing sugar shall be pulverized vacuum pan or refined sugar with or without edible starch not exceeding 5 % by mass. Edible starch if added shall be uniformly extended in the sugar. The material shall be in the form of white powder free from dust, or impurities, or any other extraneous matter.

It shall be manufactured from plantation white sugar conforming to TZS 100 or from refined sugar conforming to TZS 101

4.2 Specific requirement

The product shall also comply with the requirements prescribed in Table 1.

Table 1 – Specific requirements for icing sugars

S No	Characteristic	Requirement	Test method (see clause 2)
i	Loss on drying, % by mass, *Max*.	0.1	ICUMSA Method GS 2/1/3/9-15
ii	Polarization, ^{O}Z, min.	99.7	ICUMSA Method GS 2/3-1
iii	Reducing sugar, % by mass, *Max*.	0.4	ICUMSA Method GS 2/9-6
iv	Colour in ICUMSA units, *Max.*	60	ICUMSA Method GS 2/3-10
v	Conductivity ash, % by mass, *Max*.	0.04	ICUMSA Method GS 2/3-17
vi	Starch (moisture free), % by mass, *Max.*	5	ICUMSA Method GS 1-16
vii	Sulphur dioxide, mg/kg, *Max.*	0.5	ICUMSA GS 2/3-35

5 Food additive

Icing sugar may contain only those food additives permitted by Codex Stan 192 .

6 Contaminants

6.1 Pesticide residues

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

6.2 Heavy metals

The maximum permitted levels for metals are specified in Table 2.

Table 2 – Requirements for metal contaminants

S No	Parameter	limits	Test method
i	Arsenic (As), mg/kg, *max*.	1	ICUMSA Method GS 2/3/9-25 ICUMSA Method GS 2/3-23
ii	Copper (Cu), mg/kg, *max*.	2	ICUMSA Method GS 2/3-29
iii	Lead (Pb), mg/kg, *max*.	0.5	ICUMSA Method GS 2/1/3-27 ICUMSA Method GS 2/3-23

7 . Hygiene

Icing sugar shall be manufactured, handled, stored and transported in with the requirements given in TZS 109, Also shall comply with the requirements specified in Table 3

Table 3 – Microbiological requirements for Icing sugar

S/No	Microbiological parameter	limits	Test method
i	Total Plate Count, cfu/g, *max*.	10^3	TZS 118
ii	Yeast and moulds, cfu/ g, *max.*	50	TZS 2426-1
iii	*E.coli*, cfu/g	<1	TZS 730-2
iv	Salmonella, per 25 g	absent	TZS 122

8 Sampling and test

8.1 Sampling

Representative sample of the product shall be drawn as prescribed in Annex A.

8.2 Tests

Tests shall be carried out in accordance with the methods prescribed in Table 1, Table 2 and Table 3.

9 Packing, marking and labelling

9.1 Packing

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

9.2 Marking and Labelling

In addition to the labeling requirements given in TZS 538, each package shall be legibly and indelibly marked with the following information:

a) name of the product;

b) net contents by mass;

c) name and address of the manufacturer of the product and/or the packer, distributor, importer, exporter or vendor of the product, if any, shall be declared;

d) country of origin;

e) batch number;

f) manufacturer's registered trade mark, if any; and

g) date of manufacture, and best before.

h) storage conditions

Annex A
(normative)

Sampling of icing sugar

A.1 Sampling

In drawing, preparing, storing and handling samples, the precautions and directions given in A.1.1 to A.1.7 shall be observed.

A.1.1 Samples shall be taken in such a manner so as to avoid extraneous contamination.

A.1.2 The sampling instrument shall be clean and dry when used.

A.1.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

A.1.4 The samples shall be placed in clean and dry glass containers. The sample containers shall be of such a size that they are almost completely filled by the sample.

A.1.5 Each container shall be sealed air-tight after tilling and marked with full details of sampling, such as date of sampling, date of manufacture, batch number, name of manufacturer, name of the person carrying out the sampling, and other particulars as considered necessary.

A.1.6 Samples shall be stored in such a manner that the conditions of storage do not unduly affect the quality of the materials.

A.1.7 Sampling shall be done by a person agreed to between the purchaser and the vendor and in the presence of the purchaser and the vendor or their representatives.

A.2 Scale of sampling

A.2.1 Lot

All the containers in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If the consignment is declared to consist of different batches of manufacture, the batches shall be marked separately and the groups of containers in each batch shall constitute separate lots.

A.2.2 For ascertaining the conformity of the material to the requirements of the specification, samples shall be tested from each lot separately.

A.2.3 The number of containers to be selected from a lot shall depend on the size and shall be in accordance with Table 4. These containers shall be selected at random from the lot

Table 4 – Number of containers to be selected for sampling from various sizes of lots

S/No	Lot size	Sample size
i	Up to 25	3
ii	26 – 50	4
iii	51 – 100	5
iv	101 – 300	6
v	301 – 500	7
vi	501 – 800	8
vii	801 – 1300	9
viii	1301 and above	10

A.3 Test samples and referee samples

A.3.1. Mix thoroughly the contents of each container selected according to A.2.3, to ensure the homogeneity of the contents. Draw from each container so selected, portions of material with an appropriate sampling instrument. Mix thoroughly the portions of materials so drawn from all the containers from a lot so as to form a composite sample of not less than 1 kg. In case a lot consists of containers of 0.5 kg capacity or less, thoroughly mixed entire quantity of material from all the containers selected so as to form the composite sample, the minimum quantity in the composite sample being 1 kg. The composite sample shall be divided into three equal pans, one for the purchaser, another for the supplier and the third for use as a referee sample.

A.3.2.The parts of composite sample shall constitute test samples and shall be transferred immediately into thoroughly cleaned and dried bottles which shall be sealed and air-tight preferably with glass stoppers. These shall be labelled with the particulars given in A.1.5. One test sample shall be sent to the purchaser and another to the supplier.

A.3.3The third test sample, bearing the seals of the purchaser and supplier shall constitute the referee sample to be used in case of dispute between the two. It shall be kept at a place agreed to between the purchaser and the supplier.

A.4. Number of tests

Tests for all the characteristics given in this specification shall be conducted on the composite sample.

A.5. Criteria for conformity

The Iot shall be declared to have satisfied the requirements of this specification, if all the test results in all the composite sample meet the corresponding requirements.