



AFDC04 (4721) P3 (REV TZS 272: 2010)

DRAFT TANZANIA STANDARD

Hardened vegetable fat – Specification

DRAFT FOR STAKEHOLDER'S COMMENTS ONLY

TANZANIA BUREAU OF STANDARDS

Hardened vegetable fat – Specification

0 FOREWORD

The standard covers all the essential requirements and other characteristics of hardened vegetable fats. This Tanzania Standard will guide producers, exporters and importer in achieving the edible fat safety and quality fit for human consumption.

In reporting the results of a test or analysis made in accordance with this 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).

1.0 SCOPE

This Tanzania Standard prescribes the requirements and methods of sampling and test for hardened vegetable fats for direct human consumption.

2.0 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.

TZS 4 *Rounding off numerical values*

TZS 54 *Animal and Vegetable fats and oils – Sampling*

TZS 76 *Methods for determination of arsenic*

TZS 268 *General atomic absorption – Spectro – Photometric method for determination of lead in food stuffs*

TZS 538 *Packaging and labeling of foods*

TZS 1324 *Animal and vegetable fats and oils – Determination of peroxide value – Iodometric (visual) end point determination*

TZS 1326 *Animal and vegetable fats and oils – Determination of moisture and volatile matter*

TZS 1331 *Animal and vegetable fats and oils – Determination of acid value and acidity*

TZS 1332 *Animal and vegetable fats and oils – Determination of unsaponifiable matter-method using diethyl ether extraction*

TZS 1333 *Animal and vegetable fats and oils – Determination of melting point in open capillary tubes (slip point)*

TZS 1335 *Animal and vegetable fats and oils – Determination of copper, iron and nickel content-graphite furnace atomic absorption*

TZS 115 *Permissible food additives and levels of use – Schedule*

TZS 1336 *Animal and vegetable fats and oils – Determination of insoluble impurities content*

TZS 637 *General method for determination of Vitamin E (tocopherol) in food and foodstuffs*

TZS 1313: *Fortified edible fats and oils – Specification*

TZS 59 *Water – Distilled quality – Specification*

TZS 109-

3.0 TERMS AND DEFINITIONS

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

3.1 edible vegetable fat

Are foodstuffs which are composed primarily of glycerides of fatty acids being obtained only from vegetable sources and may contain small amounts of other lipids such as phosphatides, unsaponifiable constituents and of free fatty acids naturally present in the oil

3.2 hardened vegetable fats

Are Vegetable fats which are results of hydrogenation where the unsaturated fats are made into saturated fats by reacting the unsaturated vegetable fats with hydrogen gas at about 60°C

4.0 REQUIREMENTS

4.1 General requirements

Hardened vegetable fats are foodstuffs composed mainly of glycerides of fatty acids. The fat may contain small amounts of other liquids such as phosphatides, unsaponifiable matter and or free fatty acids naturally present in the fat. Hardened vegetable fats are derived from vegetable sources in the form of fat or oil that have been subjected to modification by processes of hydrogenation, fractionation or interesterification to make it appear in form of granular solid fat crystals dispersed in an oil phase to a smooth finely crystalline texture.

Hardened vegetable fats shall contain not less than 99 % m/m fat content (determined by difference of the characteristics in the tables, 1, 2, and 3.

Hardened vegetable fats shall be creamy white to yellow colour; free from rancidity, foreign odour and tastes, water, adulterants, pathogenic micro-organisms and mycotoxins such as aflatoxin.

4.2 Specific requirements

Hardened vegetable fats shall conform to the requirements prescribed in table 1

Table 1 – Chemical requirements for hardened vegetable fat

Characteristic	Requirement	Method of test (see clause 2)
Moisture and volatile matter at 105°C per cent (max.)	0.3	TZS 1326
Unsaponifiable matter per cent,	1.5	TZS 1332
Acid value mg KOH /g fat (max)	0.5	TZS 1331
Peroxide value (milliequivalents/kg) (max).	10	TZS 1324
Melting point °C	36 - 40	TZS 1333

Table 2 – Level of vitamins in hardened vegetable fats

Characteristic	Level of use	Method of test (see clause 2)
Vitamin A and its esters, m/m mg/kg	16 – 28	TZS 1313 Annex A
Vitamin E and its esters mg/kg	65 - 190	TZS 637

NOTE: Addition of vitamin E shall be optional

4.3 Food additives

Hardened vegetable fats may contain additives which are prescribed in TZS 115 (see clause 2).

NOTE – As there are no suitable and easily workable methods for determining the contents in table 4, in the product, under good manufacturing practice the manufacturer would be required to maintain a record showing the quantities added to each batch

5 CONTAMINANTS

Table 3– metal requirements

Characteristic	Maximum level	Method of test (see clause 2)
Insoluble impurities per cent (<i>mlm</i>)	0.05	TZS 1336: 2010
Soap content per cent (m/m)	0.005	TZS 1322: 2010 Clause 16
Iron (Fe). mg/kg	1.5	TZS 1335: 2010
Copper {Cu},mg/kg	0.1	TZS 1335: 2010
Lead (Pb). mg/kg	0.1	TZS 268: 1986
Arsenic (As). mg/kg	0.1	TZS 76: 1980

6.0 HYGIENE

6.1 Hardened vegetable fats shall be produced, processed, and handled in accordance with TZS 109 (see clause 2).

6.2 Hardened vegetable fats shall conform to microbiological requirements in Table 4.

Table 4 — Microbiological requirements

Micro-organism	Requirements	Method of test
Yeast and Moulds cfu/g, max	1×10^2	TZS 131
E. coli MPN/g,	Shall be absent	TZS 731
Salmonella per 25g,	Shall be absent	TZS 122
Total plate count cfu/g max	1×10^3	TZS 118
<i>S.aureus</i> cfu/g	Shall be absent	TZS 125

7.0 SAMPLING AND TESTS

7.1 Sampling

Representative samples of hardened vegetable fat, each measuring not less than 400 g shall be taken in triplicate, preferable from original containers or from the bulk for the purpose of examination. The samples shall be placed in a clear, non-absorbent containers, upon which the sample has no action. The container shall be of such size that they are nearly filled by the sample. Each container so filled by the sample shall be marked with full details and date of sampling as prescribed in TZS 54 (see clause 2)

7.2 Tests

Quality of reagents

For the purpose of this standard only analytical grade reagents and distilled water shall be used.

8.0 PACKAGING, MARKING AND LABELING

8.1 Hardened vegetable fats shall be supplied in safe, sound, clean, dry, new and non-absorbent containers which have been stored in a clean and sanitary manner and upon which the fat has no action. Containers shall be free from other products that may lead to contamination and alter the quality, composition, odour and taste of the fat. Containers shall be airtight and shall be provided with tamper -proof seals and closures. Containers shall protect fat from light, prevent loss of moisture and shall preclude contamination and proliferation of micro-organisms during storage and transport. Containers shall be free of pinholes in order to avoid corrosion and rust

8.2 Containers of hardened vegetable fat shall be legibly and indelibly marked with the following information:

- a) Name of the product (Hardened vegetable fat)
- b) Physical and postal address of the manufacturer and/or packer
- c) Date of manufacture and expiry date
- d) Labeled in Swahili with addition of second language depending on the designated market
- e) A complete list of ingredients in descending order of proportion
- f) Net content
- g) Batch number
- h) Manufacturers registered brand or trade name and/or packer if any
- i) Country of origin

8.3 The containers shall also be marked with the TBS Standards Mark of Quality.

NOTE – The TBS Standards Mark of Quality may be used by the manufacturers only under licence from TBS. Particulars of conditions under which the licences are granted, may be obtained from TBS.

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