DRAFT TANZANIA STANDARD

Meat extract (beef) – Specification

TANZANIA BUREAU OF STANDARDS

Meat extract (beef) – specifications

0 FOREWORDS

Meat extract is a highly concentrated meat stock, usually made from beef and is widely used as a food item. It is usually prepared as a concentrated product by the evaporation, under vacuum, of aqueous extract, produced by cooking cattle or buffalo meat in water.

This draft Tanzania standard has been prepared to ensure that Meat extract (beef) manufactured or imported in the country meet the safety and quality requirements acceptable to the consumers and feasible for the manufacturers.

In the preparation of this Tanzania standard assistance was drawn from IS 11748:1986 Meat extract (beef), food grade — Specification published by the Indian Standards Institution.

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 draft Tanzania standard prescribes the requirements, sampling and test methods for Meat extract (beef), food grade.

2 NORMATIVE REFERENCES

TZS 4, Rounding off numerical values.
TZS 109, Food processing units - Code of hygiene.
TZS 118 / ISO 4833, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of microorganisms – Colony-count technique at 30 ^{o}C.
TZS 122/ISO 6579-1, Microbiology of food and feeding staffs – Horizontal method for detection of *Salmonella spp*.
TZS 123/ISO 7937, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of *Clostridium perfringens* – Colony-count technique.
TZS 125 – 1/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 – Amendment 1: Inclusion of precision data
TZS 538, Labelling of pre-packaged foods — General requirements
TZS 731/ISO 7251, Microbiology of food and feeding-stuffs – Horizontal method for the detection and enumeration of presumptive *Escherichia Coli* – Most Probable Number Technique

TZS 852-1/ISO 11290-1, Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of Listeria monocytogenes – Part 1 – Detection method
TZS 1761/ISO 1443 Meat and meat products – Determination of total fat content
ISO 17604 Microbiology of the food chain – Carcass sampling for microbiology analysis
ISO 10272-1:2006 Microbiology of food and animal feeding stuffs – Horizontal method for detection and enumeration of *Campylobacter spp*. – Part 1: Detection method
Codex Stan 193 – Codex general standard for contaminants and toxins in food and feed.
TZS 2841/ISO 2917, Meat and meat products – measurement of pH – preference
TZS 1761/ISO 1443 Meat and meat products – Determination of total fat content

3 Terms and definitions

For the purpose of this draft Tanzania standard, the following references shall apply. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

3.1 meat extract
highly concentrated meat stock, usually made from beef

4 Requirements

4.1 General requirements

4.1.1 raw materials

The meat used shall be fresh, (warm, chilled to below 4 ^{o}C or frozen at a temperature below -18 ^{o}C).

4.1.2 Meat extract;
4.1.2.1 texture shall be short that is not stringy.
4.1.2.2 consistency shall be firm.

4.2 Specific requirements

Meat extract (beef) shall comply with specific requirements stipulated in the Table 1.

Table 1: Specific Requirements for meat extract (beef)

S/N	Characteristics	Requirements	Method of tests
1	Total solids, % m/m, Min	80.0	Appendix A
2	Matter insoluble in water and ether, % m/m, Max	2.0	Appendix B
3	Protein content, % m/m, Min	8.0	TZS 1760

4	Chloride (as NaCl) content, % m/m, Max	5.0	AFDC 22 (703) CD1
5	Fat, % m/m, Max	0.5	TZS 1761

4.3 Solubility

When 3g of material is dissolved in 300ml of boiling water in white porcelain beaker and allowed to cool to 55 – 60 ^{o}C shall;

a) be clear;
b) be light brown to brown in colour;
c) have a characteristic beefy taste, free from bitterness, scorching, acidity, gluyness, astringency and off-flavours.

6 Food additives

No preservative, additives, artificial colouring or flavouring matter shall be used.

5 Hygiene

5.1 Meat extract (beef) shall be prepared and handled under strict hygienic conditions according to TZS 109 (see clause 2).

5.2 Meat extract (beef) shall not contain microbiological count more than the requirements prescribed in Table 2.

Table 2: Microbiological limits for meat extract

S/N	Characteristics	limits	Test methods
1	Total plate count, cfu/g, max.	1 x 10^5	TZS 118
2	*Escherichia coli*	absent	TZS 731
3	*Staphylococcus aureus, cfu/g, Max*	1 x 10^2	TZS 125-1
4	*Salmonella spp per 25g*	absent	TZS 122,
5	*Clostridium perfringens per 25g*	absent	TZS 123
6	*Campylobacter spp per 25g*	absent	ISO 10272-1
7	*Listeria monocytogenes per 25g*	absent	TZS 852-1
8	*Yeast and mould, g,max*	50	test

6 Contaminants

6.1 Heavy metal

Meat extract (beef) shall not contain heavy metal in excess than limits specified in Codex Stan 193 and Table 3;

Table 3: Maximum limits of heavy metals contaminants for Meat extract (beef)

S/N	Heavy metals	Maximum limits ppm	Test method
I	Arsenic (As)	0.1	TZS 76
Ii	Lead (Pb)	0.1	TZS 268
iii	Cadmium (Cd)	0.03	AOAC 973:34
Iv	Mercury (Hg)	0.01	AOAC 971:21

6.2 Pesticides and veterinary drug residues

The maximum residual limits (MRLs) for pesticides and veterinary drug residues in meat extract (beef) shall be as prescribed by CAC/MRLs.

7 Sampling and method of tests

7.1 Sampling

Sampling of Meat extract (beef) shall be done in accordance with ISO 17604.

7.2 Test

Testing of Meat extract (beef) shall be done in accordance with test methods prescribed in Table 1, 2 and 3.

8 Packaging, marking and labeling

8.1 Packing

Meat extract (beef) shall be securely packed in wide mouthed containers with tightly fitting lids. Any further packing of these containers in protective outer wrappings shall be subject to agreement between the purchaser and the packer.

8.2 Marking and labeling

Each container shall be marked and labeled in accordance with TZS 538. In addition, Meat extract (beef) container shall be legibly and indelibly marked with the following information:

a) Name of the product shall be Meat extract (beef);
b) Name and address of the manufacturer/packer;
c) Batch or code number;
d) Net weight;
e) Date of production;
f) Expiry date;

g) Storage conditions;
h) Country of origin;
i) Cooking instruction.
j) List of ingredients in ascending order.

8.3 The container may also be marked with TBS Certification Quality Mark.

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

APPENDIX A
(Normative)
DETERMINATION OF TOTAL SOLIDS

A-1. APPARATUS

A-1.1 Flat – Bottom Dishes – of nickel or other suitable material and with cover. Dishes should not be affected by boiling water. They may be 7 to 8 cm in diameter and not more than 2.5 cm deep. They should be provided with short glass stirring rods having a widening flat end.

A-1.2 Well-Ventilated Oven – maintained at 100 ^{o}C ±2 ^{o}C.

A-2 PROCEDURE

A-2.1 Weigh accurately about 5g of the sample into a flat-bottom glass or aluminum dish (with a cover) previously dried and weighed. Heat the dish containing the material after uncovering in an oven maintained at 100 ^{o}C±2 ^{o}C for about 5 hours. Cool in a desiccator and weigh with the cover on. Repeat the process of drying, cooling and weighing at half-hourly intervals, until the difference between two consecutive weighings is less than 2 mg. Record the lowest weight.

A-3 CALCULATION

A-3.1 Total solids, percent by weight **=** $\frac{\mathbf{100}(\boldsymbol{W2}-\boldsymbol{W})}{(\boldsymbol{W1}-\boldsymbol{W})}$

Where

W2 =Weight in g of dried sample with the dish,
W = Weight in g of empty dish, and
W1= Weight in g of sample with the dish.

APPENDIX B
(Normative)
METHOD FOR DETERMINATION OF MATTER INSOLUBLE IN WATER AND ETHER

B-1. Weigh about 2.0g of sample into a 250 ml beaker. Add 125 ml of hot distilled water. Dissolve the sample completely and keep for boiling on a hot plate. Continue boiling for one minute. Filter through dried, weighed filter paper No. 54. Give 2-3 washings with hot water. Dry the filter paper in an oven at a temperature 105 ^{o}C for 2 hours. Transfer the dried paper into a desiccator, cool and weigh.

B-2. Calculation

Matter insoluble in water and ether, percent by mass = $\frac{Mass\ of\ residue}{Mass\ of\ sample} * (100 - percentage\ of\ fat)$