



DRAFT EAST AFRICAN STANDARD

Tomato products — Specification — Part 4: Tomato paste and puree

EAST AFRICAN COMMUNITY

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East African Community
P.O.Box 1096
Arusha
Tanzania
Tel: 255 27 2504253/8
Fax: 255 27 2504481/2504255
E-mail: eac@eachq.org
Web: www.eac-quality.net

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DEAS 66-4:2016

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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East African Community

P O Box 1096

Arusha

Tanzania

Tel: 255 27 2504253/8

Fax: 255-27-2504481/2504255

E-Mail: eac@eachq.org

Web: www.each.org

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Table of contents

1	Scope	3
2	Normative references.....	3
3	Description and definitions.....	3
3.1	Product description	Error! Bookmark not defined.
3.2	Product designation	Error! Bookmark not defined.
3.3	Concentration.....	Error! Bookmark not defined.
3.4	Definitions	Error! Bookmark not defined.
4	Essential composition and quality factors.....	3
4.1	Composition	Error! Bookmark not defined.
4.2	Quality criteria	Error! Bookmark not defined.
4.3	Classification of “Defectives”	Error! Bookmark not defined.
4.4	Lot acceptance.....	Error! Bookmark not defined.
5	Food additives.....	Error! Bookmark not defined.
5.1	Acidity regulators	Error! Bookmark not defined.
6	Contaminants.....	5
6.1	Pesticide residues.....	5
6.2	Other contaminants.....	5
7	Hygiene.....	5
8	Weights and measures	6
8.1	Fill of container.....	Error! Bookmark not defined.
9	Packaging and labelling	Error! Bookmark not defined.
9.1	Packaging	6
9.2	General	6
9.3	Name of the product	Error! Bookmark not defined.
9.4	Declaration of the percentage of natural total soluble solids	Error! Bookmark not defined.
9.5	Labelling of non-retail containers.....	6
9.6	Other labelling details	Error! Bookmark not defined.
10	Methods of analysis and sampling.....	6
	Annex A (normative) Determination of water capacity of containers.....	8
	Annex B (normative) Sampling and compliance.....	9

Tomato products — Specification — Part 4: Tomato paste and puree

1 Scope

This Part 4 of EAS 66 specifies the requirements and methods of sampling and test for tomato paste and puree.

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.

ISO 1842, Fruit and vegetable products -- Determination of pH

EAS 12, Potable water - Specification

ISO 2173, *Fruit and vegetable products — Determination of soluble solids – Refractometric methods*

AOAC 971.27, Sodium chloride in canned vegetables. Method I

CAC/RCP 53, *Code of Hygienic Practice for Fresh Fruits and Vegetables*

EAS 35, *Edible salts — Specification*

EAS 38, *Labelling of prepackaged foods — Specification*

ISO 762:2003, *Fruit and vegetable products — Determination of mineral impurities content*

EN 2631:1999, *Lactic acid — Enzymatic determination*

3 Terms and definitions

For the purpose of this standard the following definitions shall apply:

3.1

tomato concentrates

products prepared by concentrating the liquid obtained from sound, ripe tomatoes (*Lycopersicum esculentum P. Mill.*).

3.2

sound

Not overripe, not soft and free from diseases or insect damage, or bruising or physical injuries affecting keeping quality of the fruit.

3.3

Food grade packaging material

Any material which when it comes in contact with food or if the area near food is unlikely to contaminate food with harmful materials

4 Requirements

4.1 General requirements

4.1.1 Description

Tomato paste and puree shall be products obtained by concentrating tomato juice derived from sound tomatoes, with or without addition of salt, and preserved by physical means only. The products shall be practically free from insect or fragments, fungal or any other blemish affecting the quality and

safety of the product. The products shall possess good body and consistency, and uniform colour; be practically free from defects

4.1.2 Ingredients

Tomato concentrate as defined in 3.1. One or any combination of two or more of the following safe and suitable ingredients may be used in the foods:

- (a) Salt in accordance with EAS 35 (sodium chloride formed during acid neutralization shall be considered added salt);
- (b) spices and aromatic herbs (such as basil leaf, etc.) and their natural extracts;
- (c) Lemon juice (single strength or concentrated) used as an acidulant or organic acids; and
- (d) water complying with EAS 12;
- (e) Sodium bicarbonate.
- (f) Flavouring.

4.1.3 Defects

4.1.3.1 The products shall be practically free from the following defects:

- (a) tomato peel;
- (b) seeds or particles of seeds;
- (c) any extraneous plant material; and
- (d) dark specks or scale-like particles.

4.1.3.2 The mineral impurity content shall not exceed 0.1% of the natural total soluble solids content when tested in accordance with ISO 762.

4.1.3.3 The content of lactic acid (total) shall not exceed 1% of the natural total soluble solids content when tested in accordance with EN 2631.

4.1.4 Additives

Food additives shall be used as per CODEX STAN 192.

4.1.5 Organoleptic properties

The finished products shall have the characteristic taste and flavor of tomato sauce and ketchup and shall be free from burnt or any other objectionable flavours. It shall be of good keeping quality and shall show no sign of fermentation.

4.1.6 Fillers and stabilizers

The products may contain artificial fillers such as cereal products or other permitted stabilizers.

4.2 Specific requirements

The products shall comply with the compositional requirements indicated in Table 1.

Table 1 — Compositional requirements for tomato concentrates

S/N	Characteristic	Requirement	Method of test
i	Natural tomato soluble solids content percent by mass,		
	Puree	8.5 - 23	ISO 2173
	Paste, min.	24	
ii	Sodium chloride per cent by mass, max.	2	AOAC 971.27
iii	pH, max.	4.5	ISO 1842

6 Contaminants

6.1 Pesticide residues

The products shall conform to the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity.

6.2 Other contaminants

The products shall not exceed the limits for heavy metal indicated in Table 2.

Table 2 — Requirements for heavy metal in tomato concentrates

SL NO	Heavy metal	Maximum limits (ppm)	Test method
i)	Arsenic (As)	0.5	ISO 17239
ii)	Lead (Pb)	1.5	ISO 6633
iii)	Copper (Cu)	10	ISO 6636-2
iv)	Zinc (Zn)	50	ISO 6636-2
v)	Tin (Sn)	250	ISO 7952

7 Hygiene

7.1 The products shall be prepared under hygienic conditions in accordance with EAS 39

7.2 7.3.1 The products shall be free from pathogenic organisms and shall comply with the microbiological limits indicated in Table 3.

Table 3 — Microbiological limits for tomato concentrates

Type of micro-organism	Maximum limits	Test method
Total viable counts, cfu/g	10	ISO 4833 (all parts)
Yeast/moulds cfu/g	shall be absent	ISO 21527-1
Escherichia coli MPN/g	shall be absent	ISO 7251
Salmonella sp. per 25 g	shall be absent	ISO 6579
Mould filament, max.	40 % positive fields	AOAC 965.41

8 Minimum fill

The products shall occupy a minimum fill of not less than 90 % of the water holding capacity of the container which shall be determined in accordance with Annex A.

9 Packaging

The products shall be packed in suitable food grade containers having no action on the products. The containers shall be free from other products that may lead to contamination and alter the quality, composition, flavour, odour and taste of the products. Containers shall be air tight and shall be provided with tamper- proof seals and closures. Containers shall preclude contamination with or proliferation of microorganisms in the products during storage and transport.

10 Labelling

10.1 In addition to the requirements of EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked :

- a) Name of product including the type shall be "Tomato paste" or "Tomato puree";
- b) Name, physical and postal address of manufacturer/importer
- c) Country of origin
- d) Date of manufacture and expiry date
- e) List of ingredients
- f) Net content
- g) Storage condition
- h) Batch number in code or in clear.

10.2 Labelling of non-retail containers

Information for non-retail containers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer, packer, distributor or importer, as well as storage instructions, shall appear on the container. However, lot identification, and the name and address of the manufacturer, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

10 Sampling

Sampling shall be done in accordance with Annex B.

DEAS 66-4:2016

Annex A (normative)

Determination of the fill of the container

A.1 Scope

This method applies to glass containers.

A.2 Definition

The water capacity of a container is the volume of distilled water at 20 °C which the sealed container will hold when completely filled.

A.3 Procedure

A.3.1 Select a container which is undamaged in all respects.

A.3.2 Weigh the filled container, (W1)

A.3.3 Empty, Wash, dry and weigh the empty container (W2).

A.3.4 Fill the container with distilled water at 20 °C to the level of the top thereof, and weigh the container thus filled (W3).

A.3.5 Calculate the water capacity of a container

$$\text{WCC (Water Capacity of the Container)} = W3 - W2$$

A.4 Calculation and expression of results

Subtract the weight (W2) found in A.3.3 from the weight (W1) found in A.3.2 and divide the result by WCC found in A.3.5 and multiply by 100 fill the container. Results are expressed as percentage.

$$\begin{aligned}\text{Fill of the container} &= (W1 - W2) / \text{WCC} * 100 \\ &= (W1 - W2) / (W3 - W2) * 100\end{aligned}$$

Annex B (normative)

Sampling

B.1.1 Quality

The quality of a lot shall be considered acceptable when the number of defectives does not exceed the acceptance number (*c*) in the sampling plans.

B.1.2 Fill of container

A lot shall be deemed to be in compliance for fill of container (packing medium and vegetable ingredient) when the number of defectives does not exceed the acceptance number (*c*) in the sampling plans.

B.1.3 Drained weight

A lot shall be deemed to be in compliance for drained weight based on the average value of all samples analyzed according to the sampling plans.

B.2 Sampling and acceptance procedure

B.2.1 Definitions

(i) Lot

A collection of primary containers or units of the same size, type, and style manufactured or packed under similar conditions and handled as a single unit of trade.

(ii) Lot size

The number of primary containers or units in the lot.

(iii) Sample size

The total number of sample units drawn for examination from a lot.

(iv) Sample unit

A container, a portion of the contents of a container, or a composite mixture of product from small containers that is sufficient for the examination or testing as a single unit. For fill of container, the sample unit shall be the entire contents of the container.

(v) Defective

Any sample unit shall be regarded as defective when the sample unit does not meet the criteria set forth in the standards.

(vi) Acceptance number (*c*)

The maximum number of defective sample units permitted in the sample in order to consider the lot as meeting the specified requirements.

(vii) Acceptable quality level (AQL)

The maximum percent of defective sample units permitted in a lot that will be accepted approximately 95 percent of the time.

B.2.2 Sampling plans

Lot size (primary containers)	Size of container	
	<i>n</i> ¹	

net weight equal to or less than 1 kg (2.2 lb)		
4,800 or less	13	
4,801 to 24,000	21	
24,001 to 48,000	29	
48,001 to 84,000	48	
84,001 to 144,000	84	
144,001 to 240,000	126	
Over 240,000	200	
net weight greater than 1 kg (2.2 lb) but not more than 4.5 kg (10 lb)		
2,400 or less	13	
2,401 to 15,000	21	
15,001 to 24,000	29	
24,001 to 42,000	48	
42,001 to 72,000	84	
72,001 to 120,000	126	
Over 120,000	200	
net weight greater than 4.5 kg (10 lb)		
600 or less	13	
601 to 2,000	21	
2,001 to 7,200	29	
7,201 to 15,000	48	
15,001 to 24,000	84	
24,001 to 42,000	126	
Over 42,000	200	
¹ <i>n</i> = number of primary containers in sample. ² <i>c</i> = acceptance number.		

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