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## DRAFT EAST AFRICAN STANDARD

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**Tomato products — Specification— Part 4: Tomato concentrates (paste and puree)**

## EAST AFRICAN COMMUNITY

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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.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. 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 Principles and procedures for development of East African Standards.

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.

The committee responsible for this document is Technical Committee EASC/TC 025, *Processed fruits, vegetable and tubers*.

This second edition cancels and replaces the first edition (EAS 66-4:2017), which has been technically revised.

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

# Tomato products — Specification— Part 4: Tomato concentrates (paste and puree)

## 1 Scope

This standard specifies the requirements, sampling and test methods for tomato concentrates (paste and puree).

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

AOAC 971.27, *Sodium chloride in canned vegetables. Method*

EAS 12, *Potable water — Specification*

EAS 35, *Edible salts — Specification*

EAS 38, *Labelling of pre-packaged foods — Specification*

EN 12631, *Fruit and vegetable juices. Enzymatic determination of D- and L-lactic acid (lactate) content. NAD spectrometric method*

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

ISO 1842, *Fruit and vegetable products — Determination of pH*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **tomato concentrates (paste and puree)**

Prepared by concentrating the juice or pulp obtained from substantially sound, mature tomatoes (*Solanum lycopersicum* L) strained or otherwise prepared to exclude the majority of skins, seeds and other coarse or hard substances in the finished product may or may not contain added ingredients as indicated in the clause 4.1.1”

### 3.2

#### **sound**

mature, firm and wholesome and free from diseases or insect damage, or bruising or physical damages affecting keeping quality of the fruit.

## **4 Requirements**

### **4.1 General requirements**

#### **4.1.1 Ingredients**

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; and
- f) flavouring.

#### **4.1.2 Quality requirements**

**4.1.2.1** Tomato paste and puree shall be products obtained by concentrating tomato juice derived from sound tomatoes, with or without addition of salt

**4.1.2.2** The products shall:

- a) be practically free from insect or fragments, fungal or any other blemish affecting the quality and safety of the product;
- b) have the characteristic taste and flavour of tomato concentrate;
- c) be free from burnt or any other objectionable flavours;
- d) be of good keeping quality and shall show no sign of fermentation;
- e) possess good body and consistency, and uniform characteristic colour;
- f) be practically free from defects including the following:
  - i) tomato peel;
  - ii) seeds or particles of seeds;
- g) any extraneous matter material; and
- h) dark specks or scale-like particles.

**4.1.2.3** The acid insoluble ash shall not exceed 0.1% of the natural total soluble solids content when tested in accordance with ISO 762.

**4.1.2.4** The content of lactic acid (total) shall not exceed 1 % of the natural total soluble solids content when tested in accordance with EN 12631.

## 4.2 Specific requirements

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

**Table 1 — Specific requirements for tomato concentrates**

S/N	Characteristic	Requirement	Test method
i)	Natural total soluble solids content percent by mass		AOAC 920.151
	Puree	≥7 - <24	
	Paste, min.	24	
ii)	Sodium chloride percent by mass, max	2	AOAC 971.27
iii)	pH, max.	4.5	ISO 1842

## 6 Additives

Food additives when used in tomato concentrate shall be in accordance with CODEX STAN 192.

## 7 Contaminants

### 7.1 Pesticide residues

Tomato concentrate shall comply with the pesticide residue limits prescribed by the Codex Alimentarius Commission of the respective commodity

### 7.2 Heavy metal contaminants

When tested in accordance with ISO 6633, the lead content in tomato concentrate shall not exceed 0.05 mg/kg.

## 8 Hygiene

**8.1** Tomato concentrate shall be produced and handled under hygienic conditions in accordance with EAS 39.

**8.2** Tomato concentrate shall comply with microbiological limits given in Table 2 when tested in accordance with the methods specified therein.



**Table 2 — Microbiological limits for tomato concentrates**

S/No	Type of micro-organism	Maximum limit	Test method
i)	Total viable counts, cfu/g	10	ISO 4833 (all parts)
ii)	Yeasts and moulds cfu/g	Absent	ISO 21527-1
iii)	<i>Escherichia coli</i> cfu/g	Absent	ISO 16649-2
iv)	<i>Salmonella</i> sp. per 25 g	Absent	ISO 6579

## 9 Minimum fill

The products should 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.

## 10 Packaging

Tomato concentrate shall be packaged in food grade material that ensures the integrity and safety of the product.

## 11 Labelling

**10.1** In addition to the requirements of EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly labelled on each container:

- a) name of product including the type shall be “Tomato paste” or “Tomato puree”;
- b) name and physical address of manufacturer/importer;
- c) country of origin;
- d) date of manufacture and expiry date;
- e) list of ingredients in descending order;
- f) net content declared in SI units (metric system);
- g) storage instructions;
- h) instructions for use; and
- i) batch number in code or in clear.

**10.2** 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.

## **11 Sampling**

Sampling shall be done in accordance with Annex B.

## 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, ( $W_1$ ).

**A.3.3** Empty, Wash, dry and weigh the empty container ( $W_2$ ).

**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 ( $W_3$ ).

**A.3.5** Calculate the water capacity of a container

$$\text{WCC (Water Capacity of the Container)} = W_3 - W_2$$

#### A.4 Calculation and expression of results

Subtract the weight ( $W_2$ ) found in A.3.3 from the weight ( $W_1$ ) found in A.3.2 and divide the result by WCC found in A.3.5 and multiply by 100. Results are expressed as percentage.

$$\begin{aligned} \text{Fill of the container} &= \frac{W_1 - W_2}{\text{WCC}} \times 100 \\ &= \frac{W_1 - W_2}{W_3 - W_2} \times 100 \end{aligned}$$

## Annex B (normative)

### Sampling

#### B.1 Definitions

##### B.1.1 Lot

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

##### B.1.2 Lot size

Number of primary containers or units in the lot

##### B.1.3 Sample size

Total number of sample units drawn for examination from a lot

##### B.1.4 Sample unit

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

#### B.2 Sampling plans

Lot size (primary containers)	Size of container, $n^1$
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
<sup>1</sup> $n$ = number of primary containers in sample.	

## Bibliography

- [1] United States Standards for Grades of Canned Tomato Paste, Effective date September 19, 1977
- [2] Codex Alimentarius website: [http://www.codexalimentarius.net/mrls/pestdes/jsp/pest\\_q-e.jsp](http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp)
- [3] USDA Foreign Agricultural Service website: <http://www.mrlatabase.com>
- [4] USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSV1.0/Standards>
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- [6] European Union: [http://ec.europa.eu/sanco\\_pesticides/public](http://ec.europa.eu/sanco_pesticides/public)

