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EAST AFRICAN STANDARD

Instant (soluble) coffee — Specification

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. XXXXXX.

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 002, *Coffee, tea, cocoa and related products*.

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Instant (soluble) coffee — Specification

1 Scope

This Draft East African Standard specifies requirements and methods of sampling and test for Instant (soluble) coffee. This standard applies to decaffeinated instant coffee

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 2000.09, *Ochratoxin A in Roasted Coffee Immunoaffinity Column HPLC Method*

EAS 38, *General Standard for the Labelling of Pre-packaged Foods*

EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

EAS 105, *Roasted coffee beans and roasted ground coffee—Specification*

ISO 3509, *Coffee and coffee products — Vocabulary*

ISO 4832, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coliforms — Colony-count technique*

ISO 4833-1, *Microbiology of the food chain — Horizontal method for the enumeration of microorganisms — Part1: Colony count at 30 degrees C by the pour plate technique*

ISO 6579-1, *Microbiology of the food chain — Horizontal method for the detection, enumeration and serotyping of Salmonella — Part 1: Detection of Salmonella spp.*

ISO 21527-2, *Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of yeasts and moulds — Part 2: Colony count technique in products with water activity less than or equal to 0.95*

ISO 3726, *Instant coffee — Determination of loss in mass at 70 degrees C under reduced pressure*

ISO 6670, *Instant coffee — Sampling method for bulk units with liners*

ISO 20481, *Coffee and coffee products — determination of the caffeine content using HPLC — Reference method*

ISO 11292, *Instant coffee — Determination of free and total carbohydrate contents — Method using high-performance anion-exchange chromatography*

ISO 24114, *Instant coffee — Criteria for authenticity*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3509 and the following apply.

3.1 instant (soluble) coffee
dried, water-soluble product, obtained exclusively from roasted coffee by physical methods using water as the only carrying agent that is not derived from coffee

3.2 decaffeinated coffee
coffee from which caffeine has been removed by extraction

4 Requirements

4.1 General requirements

Instant coffee shall:

- a) be made from coffee complying with DEAS 105;
- b) be free flowing;
- c) have the colour and flavour characteristic of coffee when evaluated in accordance with Annex A;
- d) be free from foreign and extraneous matter;
- e) not contain chicory or any other added substances; and
- f) comply with criteria of authenticity prescribed in ISO 24114.

4.2 Specific requirements

Instant coffee shall comply with specific requirements given in table 1 when tested in accordance with test methods specified therein.

Table 1 — Specific requirements

S/No	Characteristic	Requirements	Method of test
(i)	Moisture, percent by mass, max.	4 ^a	ISO 3726
(ii)	Total ash (only dry basis), percent by mass max.	15.0	Annex B
(iii)	Caffeine content (on dry basis), percent by mass, min.	2.8 ^b	ISO 20481
(iv)	Solubility in boiling water	Dissolves readily in 30 seconds with moderate stirring	Annex C
(v)	Solubility in cold water at 16 °C ± 2 °C, min.	Soluble with moderate stirring in 3 minutes	

^{a)} For granulated coffee the maximum moisture content shall be 5 % by mass.

^{b)} For decaffeinated instant coffee the maximum limit shall be 0,3% by mass

5 Hygiene

5.1 Instant coffee shall be processed, packaged, stored and distributed under hygienic conditions in accordance with EAS 39.

5.2 Instant coffee shall not exceed the microbiological limits in Table 2

Table 2 — Microbiological limits for instant coffee

S/N	Microorganism	Limit	Test method
i.	Total plate count , cfu/ g, max	10 ³	ISO 4833-1
ii.	Coliforms cfu/ g max.	<10	ISO 4832
iii.	<i>Salmonella spp</i> per 25 g max.	Absent	ISO 6579-1
iv.	Yeast and moulds cfu/ g, max	10 ²	ISO 21527-2

6 Contaminants

6.1 Mycotoxin

When tested in accordance with AOAC 2000.09, the level of Ochratoxin A in instant coffee shall not exceed 10 µg/kg.

6.2 Pesticide residues

Instant coffee shall not contain levels of pesticide residues, in excess of limits established by Codex Alimentarius Commission

6.3 Heavy metal

Instant coffee shall not exceed the maximum limits of heavy metals in table 3

Table 3 — Heavy metal limits in instant coffee

S/N	Heavy metal	Limits (mg/kg) max	Test method
i.	Lead	0.5	AOAC 999.10
ii.	Cadmium	0.1	

7 Packaging

Instant coffee shall be packaged in air tight food grade containers which safeguard the quality of the product.

8 Labelling

In addition to information stipulated in EAS 38, the following labelling requirements shall be marked legibly and indelibly on the label:

- name of the product as Instant/ soluble coffee;
- name and physical address of the manufacturer;
- net content;

- d) form of the product;
- e) date of manufacture;
- f) expiry date;
- g) storage instructions;
- h) instructions for use;
- i) batch/lot number; and
- j) country of origin.

9 Sampling

Sampling of instant coffee shall be done in accordance with ISO 6670.

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Annex A **(normative)**

Cup test

A.1 Evaluation for solubility

Weigh 2.5 g of instant coffee powder into a 500-mL beaker. Then pour 150 mL of freshly boiled water and examine. The solubility will be considered as 'good' if the material dissolves within 30 sec; 'fair' if between 30 - 40 sec, and 'poor' if over 40 sec. For 'good, fair and poor solubility', assign 5.3 and 1 mark respectively. If solubility is poor and lumps are found floating on the surface, no mark should be assigned

A.2 Preparation of sample for cup test

A.2.1 Weigh 2.5 g of soluble coffee powder in a clean, non-smelling watch glass;

A.2.2 Observe the colour and granularity;

A.2.3 Transfer the material (in A.2.1) to a 150 mL porcelain bowl;

A.2.4 Take one part of previous boiled hot milk and add to it two parts of freshly boiled water and pour 150 mL of this mixture over the instant coffee powder in the porcelain bowl. The temperature of the mixture should not be less than 90 °C at the time of pouring over the coffee;

A.2.5 Add 2 g - 3 g of sugar, stir and smell; and

A.2.6 Allow to cool to about 60 °C and evaluate

NOTE Evaluation should be completed before the brew gets cold.

A.3 Precaution

A.3.1 The cup test should preferably be conducted an hour after breakfast and an hour before lunch.

A.3.2 The panelists should record their reactions in the proforma immediately after evaluating an attribute.

A.3.3 In one session not more than 4 samples should be tested

A.4 Evaluation

Evaluate the soluble coffee powder and the liquor qualities according to the score card given in A.4.4. If more than one sample is required to evaluate at one time the score card may be modified accordingly.

A.4.1 Powder

Depending on the degree of the defects classified under suspicion, slight or pronounced, deduct 1, 2 or 3 marks respectively. If the powder is caked, no marks assigned.

A.4.2 Liquor

Depending on the degree of the defects, the marks deducted should be: 5 for suspicion, 10 for slight and 15 for pronounced.

A.4.3 Assignment of the total score

A.4.3.1 On the basis of the combined score (of powder and liquor qualities), the final evaluation shall be categorized as follows:

Table A.1 — Final evaluation scores

Excellent	Good	Fair	Poor	Unacceptable
31-35	21-30	16-20	10-15	Below 10

A.4.3.2 The soluble coffee powder shall be deemed to have passed the test if the net score is above 20.

A.4.4 Score card

The details are given below:

SCORE CARD

Name:..... Date:.....

Batch/Code No..... Time.....

Assign scores for each quality attribute

Quality attribute	Max score	Score
Powder		
Test for solubility	5
Colour appeal	5
Granular structure – whether even or uneven	5
NOTE If the powder is specks (containing black particles), and/or uneven with powder , dusty appearance the degree of each defect may be indicated as suspicion, slight or pronounced.		
Liquor		
Colour (body)	5
Strength (overall feeling of thickness (body), bite and acidity)	9

Flavour	10
Indicate, if any, the degree of defects, such as the following by denoting suspicion, slight or pronounced.		
Oily:		
Burnt:		
Bland:		
Stale:		
Harsh:		
Sour:		
Cheesy:		
Sediment:		

_____ (Signature)

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Annex B (normative)

Determination of total ash

B.1 Procedure

Weigh accurately 5 g of the material in dry tarred porcelain dish. Heat slowly over a flame until swelling ceases. Ignite in a muffle furnace at $550\text{ °C} \pm 10\text{ °C}$ till grey ash results. Cool the dish in a desiccator and weigh. Repeat this process of heating for 30 min cooling and weighing till the difference in weight between two successive weightings is less than one milligram. Note the lowest weight

B.2 Calculation

Total ash (on dry basis) percent by weight

$$\frac{10\ 000(W_2 - W)}{(W_1 - W)(100 - M)}$$

Where;

W weight in g of the empty dish,

W₁ weight in g of the dish with the material taken for the test,

M percentage moisture as determined in ISO 3726; and

W₂ weight in g of the dish with the ash.

Annex C (normative)

Determination of solubility in water

C.1 Procedure

C.1.1 Solubility in Hot Water

Add 150 mL of freshly boiling water to 2.5 g of sample placed in a 500-mL beaker. The coffee powder shall be readily soluble with moderate stirring within 30 sec, leaving no appreciable sediment.

C.1.2 Solubility in cold water

Place 2.5 g of the sample in a 500-mL beaker and add 50 mL of water at $16\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ the powder shall be soluble with moderate stirring in 3 min, leaving no appreciable sediment.

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