FINAL DRAFT UGANDA STANDARD

FDUS 907

First Edition

2011-mm-dd

Instant coffee — Specification

Reference number
FDUS 907:2011

Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application

The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: 256 414 222367
Fax: 256 414 286 123
E-mail: unbs@infocom.co.ug

Contents

Page

Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Tourism, Trade and Industry established by the Act of Parliament of 1983, of the Laws of Uganda. UNBS is mandated to co-ordinate the elaboration of standards and is

(a) a member of International Organisation for Standardisation (ISO) and

(b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and

(c) the National Enquiry Point on TBT/SPS Agreements of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

This Final Draft Uganda Standard (DUS 907:2010) was developed by the subcommittee on Coffee, Tea and Cocoa and related products (SC 17) under supervision of the technical committee on Food and Agriculture standards (UNBS/TC 2). This Draft Uganda Standard has been proposed as a result of a need to provide guidance to industry in production and regulation of Instant coffee.

Instant coffee — Specification

1 Scope

This Final Draft Uganda Standard specifies requirements and methods of sampling and test for instant coffee.

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.

EAS 478-3:2008, *Microbiology of food and animal feeding stuffs —Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) —Part 3: Detection and MPN technique for low numbers*

US 7, *General standard for the labelling of pre-packaged foods*

US 28, *Code of practice for hygiene in the food and drink manufacturing industries*

US 45, *General standard for food additives*

US 201, *Drinking (Potable) water — Specification*

US 500, *General requirements for nutrition labelling*

US 508, *General requirements for nutrition and health claims*

US 566, *Use of nutrition terms — Requirements*

US 217-4/EAS 217-4, *Methods for the microbiological examination of foods — Part 4: General guidance for the enumeration of coliforms — Most Probable Number Technique at 30 °C*

US 217-8/EAS 217-8, *Methods for microbiological examination of foods —Part 8: Enumeration of yeasts and moulds*

FDUS EAS 105, *Roasted coffee beans and roasted ground coffee – Specification*

FDUS EAS 106, *Coffee and its products – Glossary and terms*

FDUS ISO 20481:2008*, Coffee and its products – Determination of caffeine content using High Performance Liquid Chromatography (HPLC) – Reference method*

FDUS ISO 20938:2008*, Instant coffee – Determination of moisture content – Karl Fisher method (Reference method)*

3 Terms and definitions

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

3.1
coffee
general term for the fruits and seeds of plants of the genus *Coffea,* generally the cultivated species, as well as products from these fruits and seeds in different stages of processing and use which are intended for consumption

NOTE This term applies to products such as cherry, cherry buni, parchment coffee, green coffee, monsooned coffee, polished coffee, decaffeinated coffee, roasted coffee as beans or ground coffee, coffee extract, instant coffee and coffee brew.

3.2
freshly roasted and ground coffee
coffee obtained by roasting green coffee and grinding the roasted coffee

3.3
instant coffee
soluble product in the form of free flowing powder or agglomerates (granules) derived from aqueous extracts of freshly roasted and ground coffee, having the colour, taste and flavor characteristics of coffee

3.3.1
instant coffee; soluble coffee; dried coffee extract
the dried, water-soluble product, obtained exclusively from roasted coffee by physical methods using water as the only carrying agent which is not derived from coffee

3.3.2
spray-dried instant coffee
instant coffee which has been obtained by a process in which the coffee extract in the liquid state is sprayed into a hot atmosphere and formed into dried particles by evaporation of the water

3.3.3
agglomerated instant coffee
instant coffee which has been obtained by a process in which the dried particles of instant coffee are fused together to form large particles

3.3.4
freeze-dried coffee; freeze-dried coffee extract; freeze-dried instant coffee; freeze-dried soluble coffee
instant coffee which has been obtained by a process in which the product in the liquid state is frozen and the ice removed by sublimation

3.3.5
decaffeinated coffee
coffee from which caffeine has been extracted

NOTE: A maximum residual caffeine content would usually be stated in a specification for decaffeinated coffee.

3.3.6
coffee brew
the beverage obtained either by treatment of ground roasted coffee with water or by the addition of water to a coffee extract, an instant coffee or freeze-dried coffee

4 Requirements for raw materials

4.1 General quality factors

The freshly roasted and ground coffee used in the production of the instant coffee shall be clean and sound and in every way fit for use in the preparation of a product for human consumption.

4.2 Essential ingredients

The following ingredients shall be used in the preparation of instant coffee:

- freshly roasted and ground coffee complying with FDUS EAS 105; and
- potable water complying with US 201.

5 Requirements for the product

5.1 General quality factors

The instant coffee shall be practically free from off-odours and off-flavours when judged using the normal sensory tests.

The instant coffee shall be practically free from impurities and shall not contain chicory.

The instant coffee shall be evaluated for cup test in accordance with the procedure prescribed in Annex A and the instant coffee solution thus made shall be free from objectionable taste or smell.

5.2 Essential composition factors

The instant coffee shall conform to the compositional requirements in Table 1.

Table 1 — Compositional requirements for instant coffee

Characteristic	Requirement	Method of Test
Moisture, % by mass, max.	3.5	FDUS ISO 20938
Total ash (on dry basis), % by mass, max	15	Annex B
Caffeine content (on dry basis), % by mass, min	2.8	FDUS ISO 20481
Solubility in boiling water	Dissolves readily in 30 s with moderate stirring	Annex C
Solubility in cold water at 16 °C ± 2 °C	Soluble with moderate stirring in 3 min	Annex C

5.3 Nutrients

Nutrients including vitamins, minerals and specific amino acids may be added to instant coffee in conformity with the requirements stipulated in national legislation.

6 Food additives

The instant coffee may contain food additives in accordance with US 45.

7 Contaminants

7.1 Heavy metals

Instant coffee shall be free from heavy metals in amounts which may represent a hazard to human health.

7.2 Pesticide residues

Instant coffee shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity.

7.3 Mycotoxins

Instant coffee shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity.

8 Hygiene

The instant coffee shall be produced and handled in a hygienic manner in accordance with US 28.

The instant coffee shall conform to the limits for microbiological contaminants in Table 2.

Table 2 – Microbiological limits for instant coffee

Microorganisms	Maximum limit	Method of Test
Coliforms per 10 g	Not detected	US 217-4/EAS 217-4
Staphylococcus aureus per 30 g	Not detected	EAS 478-3
Yeast and mould per g	< 100	US 217-8/EAS 217-8

9 Packaging

Instant coffee shall be packaged in food grade containers which will safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product.

The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They shall not impart any toxic substance or undesirable odour or flavour to the product.

If packages are packed crates or other outer containers, the crates or outer containers shall be clean, neat and in good repair, and shall be capable of protecting the packages from damage during normal handling and transportation. Only packages bearing the same date of manufacture or the same batch identification (as relevant) and containing product of the same kind shall be packed together in an outer container.

10 Weights and Measures

Instant coffee shall be packaged in accordance with the Weights and Measures legislation.

11 Labelling

In addition to the requirements of US 7, the following specific labelling requirements shall apply and shall be legibly and indelibly marked on the container:

a) the name of the product shall be “instant coffee”;

b) list of ingredients;

c) lot identification number;

d) date of minimum durability (expiry date);

e) name and physical address of manufacturer;

f) net content; and

g) country of origin

Nutritional labelling, nutrition and health claims may be made in accordance with US 500, US 508 and US 566.

12 Sampling

12.1 Scale of sampling

12.1.1 Lot

All containers in a consignment belonging to the same batch of manufacture shall constitute a lot. If the consignment is declared to consist of different batches of manufacture, containers of the same batch shall be grouped together and each group so formed shall constitute a separate lot.

Samples shall be tested from each lot for ascertaining conformity to the requirements of this standard.

12.1.2 Sample size

The number of containers to be selected from a lot for testing for microbiological and other requirements shall depend on the size of the lot and shall be in accordance with Table 3.

Table 3 – Number of containers to be selected for sampling

Number of containers in the lot	Number of containers to be selected (n)	
	Microbiological	Other tests
up to 1300	12	18
1301 to 3200	18	24
3201 and above	24	30

12.1.3 Sampling method

The containers to be selected for testing shall be chosen at random from the lot by the following procedure. Starting from any container, count them as 1,2,3….. up to r. Every r^{th} containers thus counted shall be withdrawn, r being the integral part of N/n, where N is the total number of containers in the lot and n is the total number of container to be chosen (Table 3).

12.2 Test samples and reference samples

12.2.1 Samples for microbiological tests

The sample containers selected for microbiological tests (see col. 2 of Table 3) shall be divided at random into three equal sets and labelled with all particulars of sampling. One of these sets of sample containers shall be for the buyer; another for the supplier and the third set is the reference.

12.2.2 Samples for other tests

The sample containers selected for other tests (see col. 3 of Table 3) shall be divided at random into three equal sets and labelled with all the particulars of the sample. One of these sets of sample containers shall be for the buyer, another for the supplier and third is the reference.

12.2.3 Reference samples

Referee samples shall consist of a set of sample containers for microbiological tests (see 12.2.1) and a set of sample containers for other tests (see 12.2.2) and shall bear the seals of the buyer and supplier or as agreed to between the two.

Annex A
(normative)

Cup test method

A.1 Procedure

A.1.1 Note the colour, appearance and aroma of the material.

A.1.2 For the cup-test, take 10 g of sample in a 250-mL cup and add 200 mL of water just brought to the boil. Mix well and allow it to brew for 6 min. Study the acidity, body, and flavour of the liquor by taste.

Serve the coffee in porcelain or glass containers in at least 50 mL portions at a temperature of 60 °C ± 2 °C.

A.2 Evaluation of the liquor

A.2.1 Evaluate the cup quality as per the details given below in the scorecard. If more than one sample is required to be evaluated at one time, the scorecard may be modified.

A.2.2 For defects, deduct 1, 2 or 3 marks depending upon the classification of the defect under suspicion, slight or pronounced.

A.2.3 Evaluation is on the basis of the net score, and the final evaluation shall be under the following categories.

Fine	Good	Fair	Failing of	Poor
16 - 20	12 - 15	9 - 11	7 - 8	0 - 6

A.2.4 The roasted and ground coffee shall be deemed to have passed the test, if the net score is above 11.

SCORECARD

Name_____ Date_____

Batch/Code No._____ Time_____

a) *Assign scores for each quality attribute:*

Quality Attribute	Max Score	Score
1) Acidity	4	
2) Body	8	
3) Flavour	8	

b) *Indicate, if any, the degree of the defects, such as the following, by denoting Suspicion (S), Slight (Sl) or pronounced (P)*

Bricky _____

Chemical _____

Grassy _____

Earthy _____

Musty _____

Sour _____

Harsh _____

Woody _____

Unclean _____

_____ Signature _____

Annex B
(normative)

Determination of total ash

B.1 Procedure

Weigh accurately about 5 g of the material in a porcelain dish. Heat at 100 °C ± 2 °C until water is expelled then heat slowly over a flame until swelling ceases. Ignite in a muffle furnace at 550 °C ± 10 °C until grey ash results. Heat the dish again at 550 °C ± 10 °C for 30 min. Cool the dish in a desiccator and weigh. Repeat this process of heating for 30 min, cooling in a desiccator and weighing, until the difference between two successive weighings is less than one milligram. Record the lowest mass.

NOTE The dish containing this ash for the determination of acid insoluble ash should be preserved.

B.2 Calculation

$$\text{Total ash (on dry basis) percent by mass} = \frac{10\,000\,(W_2 - W)}{m\,(100 - mc)}$$

where

W_2 is the mass, in grams, of the dish with the ash;

W is the mass, in grams, of the empty dish;

mc is the percentage of moisture as determined by FDUS ISO 20938:2008; and

m is the weight of sample taken.

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 s, leaving no appreciate sediment.

C.1.2 Solubility in cold water

Place 2.5 g of the sample in a 500 mL of water at 16 °C ± 2 °C. The powder shall be soluble with moderate stirring in 3 min, leaving no appreciable sediment.

Bibliography

KS 175:2008, *Instant coffee – Specification*

Certification marking

Products that conform to Uganda standards may be marked with Uganda National Bureau of Standards (UNBS) Certification Mark shown in the figure below.

The use of the UNBS Certification Mark is governed by the Standards Act, and the Regulations made thereunder. This mark can be used only by those licensed under the certification mark scheme operated by the Uganda National Bureau of Standards and in conjunction with the relevant Uganda Standard. The presence of this mark on a product or in relation to a product is an assurance that the goods comply with the requirements of that standard under a system of supervision, control and testing in accordance with the certification mark scheme of the Uganda National Bureau of Standards. UNBS marked products are continually checked by UNBS for conformity to that standard.

Further particulars of the terms and conditions of licensing may be obtained from the Director, Uganda National Bureau of Standards.

ICS 67.140.20

Price based on 18 pages