

Cocoa powder — Specification

PART 1:

UNSWEETENED COCOA POWDER

PUBLIC REVIEW DRAFT APRIL 2013

KENYA STANDARD

KS 436-1: 2013

ICS 67.140.30

© KEBS 2013

THIRD EDITION 2013

PUBLIC REVIEW DRAFT APRIL 2013

KENYA STANDARD

KS 436-1: 2013

ICS 67.140.30

TECHNICAL COMMITTEE REPRESENTATION

The following organizations were represented on the Technical Committee:

Nestle Kenya limited

Government Chemists Department

Cadbury (K) Ltd.

Proctor & Allan E.A Ltd

Trufoods Ltd

Excel Chemicals Ltd.(Foods Division)

University of Nairobi — Department of Food Technology and Nutrition. - Chair.

Consumer Information Network

Kenya Industrial Research and Development Institute (KIRDI)

.

Kenya Bureau of Standards — Secretariat

KENYA STANDARD

KS 436-1: 2013

ICS 67.140.30

REVISION OF KENYA STANDARDS

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

© Kenya Bureau of Standards, 2012

Copyright: Users are reminded that by virtue of section 6 of the Copyright Act, Cap. 130 of the Laws of Kenya, copyright subsists in all Kenya Standards and except as provided under section 7 of this Act, no Kenya Standard produced by Kenya Bureau of Standards may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from the Managing Director.

ISBN 9966-23-784-4

KENYA BUREAU OF STANDARDS (KEBS)

Head Office: P.O. Box 54974, Nairobi-00200, Tel.: (+254 020) 605490, 602350, Fax: (+254 020) 604031

E-Mail: info@kebs.org, Web: <http://www.kebs.org>

© KEBS 2013 — All rights reserved

KENYA STANDARD

KS 436-1: 2013

ICS 67.140.30

**Coast Region
Rift Region**

P.O. Box 99376, Mombasa-80100
Box 2138, Nakuru-20100

Tel.: (+254 041) 229563, 230939/40
210553, 210555

Fax: (+254 041) 229448

Lake Region

P.O. Box 2949, Kisumu-40100

Tel.: (+254 057) 23549, 22396

Fax: (+254 057) 21814

North

P.O.

Tel.: (+254 051)

Cocoa powder — Specification

PART 1: UNSWEETENED COCOA POWDER

KENYA STANDARD

KS 436-1: 2013

ICS 67.140.30

FOREWORD

This Part 1 of KS 436 has been prepared by the Cocoa and Cocoa Products Technical Committee under the supervision of Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of standards.

The first edition of this standard was published in 1993. This edition addresses key parameters found to be stringent in cocoa production and consistent with other reference standards. These are the acid insoluble ash, which was removed, and the pH levels, which were adjusted.

The revision has introduced a category in the grading of unsweetened cocoa powder based on cocoa butter content. This edition includes limits for pesticide residues and a clause on sampling. An addition of clauses on environmental management.

The labeling clause has been further expanded to enable consumers make informed choices when purchasing cocoa powders.

During the preparation of this standard, reference was made to the following documents:

Codex Alimentarius Commission – CAC/VOLVII – ed: Codex Standards for cocoa products and chocolate.

Codex Stan 192- 1995 –Codex General Standard for Food Additives

Codex Stan 193- Codex Standard for contaminants and toxins in food and feed.

Indian Standard IS 1164: 1986 Specification for cocoa powder (reaffirmed 2007 third revision)

First reprint JULY 2009 (including Amendment No.1and Amendment No. 2)

Malaysian Standard MS871: 2001 Specification for Malaysian cocoa powder.

Cocoa and Chocolate Technology, 1974, by B. W. Minifie. –Oxford University Press.

Acknowledgement is hereby made for the assistance derived from the above sources.

KENYA STANDARD

KS 436-1: 2013

ICS 67.140.30

PUBLIC REVIEW DRAFT APRIL 2013

COCOA POWDER — SPECIFICATION

Part 1:

Unsweetened cocoa powder

1 Scope

This standard specifies the requirements and test methods for unsweetened cocoa powder.

2 Normative references

EAS 38- Labelling of prepackaged food

EAS 217 –Methods for the microbiological examination of foods.

EAS 41: 2000 - Part 1-16. –Methods of test for processed fruits and vegetables

EAS 39- Code of Hygienic Practice in the Food and Drink Manufacturing companies.

KS ISO 16050 -- Foodstuffs Determination of Aflatoxin B₁ and total content of aflatoxin B₁, B₂, G₁ and G₂ in cereals ,nuts and derived products-HPLC Method.

KS ISO:4833—Methods for the microbiological examination of foods – Colony count Technique at 30 ° C. -- General Guidance.

KS ISO 4832: Methods for the microbiological examination of foods – Enumeration of coliforms- - colony count technique at 30 °C. -- General Guidance

KS ISO: 6888-1- 3 Methods for the microbiological examination of foods – Enumeration of coagulase-positive staphylococci

KS ISO 21527-1, 2 Methods for the microbiological examination of foods—Enumeration of yeasts and moulds in food.

KS ISO 6579: - Methods for the microbiological examination of foods—Examination for salmonellae.

KS 05-229, *Specification for edible salt*

KS 436-3¹ Test methods for cocoa powders

KS 05-1051³⁾ Guide on maximum limits of pesticide residues

KS 05-660, *Guide to the safe use of food additives*

KS 1812, *Cocoa and cocoa products — Test methods*

3 TERMS AND DEFINITIONS

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

3.1

Cocoa powder

It is the final product obtained from the cocoa liquor through cocoa press cake from which the fat (cocoa butter) has been partially removed. Cocoa liquor is derived from the cocoa beans after these have first been fermented, dried, cleaned, roasted, cracked and substantially freed from the shell to obtain the nibs, which are then ground. The beans, nibs, cocoa liquor and cocoa press cake may sometimes be alkalinized by suitable alkalinizing agent.

3.2

NATURAL/NON-ALKALIZED COCOA POWDER

This is cocoa nib or cocoa liquor or cocoa press cake converted to cocoa powder without alkalization.

¹⁾ Test methods for cocoa powders.

³⁾ Guide on maximum limits of pesticide residues.

3.3

Alkalized cocoa powder

This is cocoa nib or cocoa liquor or cocoa press cake converted to cocoa powder after alkalization.

3.4

Cocoa beans

These are the seeds of the cocoa tree (*Theobroma cocoa L.*). The term refers to the whole seed, which has been fermented and dried.

3.5

COCOA NIBS

These are cocoa beans, roasted or unroasted, cleaned, shelled and have undergone germ separation.

3.6

COCOA LIQUOR

It is the cocoa nib reduced to a fine paste by a mechanical process without losing any of its natural fat content.

3.7

COCOA PRESS CAKE

This is the cocoa mass converted into a cake, which removes a proportion of cocoa butter.

3.8

COCOA BUTTER

This is the fat obtained from cocoa nib and its derivatives.

3.9

Alkalization

KENYA STANDARD

KS 4

This is a process whereby a suitable alkalizing agent is introduced to the cocoa beans, or cocoa nibs or cocoa mass or cocoa press cake to raise pH to the desired level.

3.10

ALKALIZING AGENT

It is an alkaline substance used to raise the pH or to reduce the acidity.

4 Grades

When tested according to KS 436-3¹⁾, unsweetened cocoa powder shall be graded according to Table 1.

TABLE 1 — COCOA POWDER FAT CONTENT.

GRADES	Butter-fat content (residual cocoa butter, %, m/m on moisture free basis)
High fat cocoa powder	min. 20
Cocoa powder	13—19
Low fat cocoa powder	max. 12

4.1 Food additives

Food additives usage shall be in compliance with Codex Stan 192- Codex general Standard for Food Additives.

¹⁾ Test methods for cocoa powders.

6 Quality requirements

6.1 Physical requirements

Unsweetened cocoa powder shall be in the form of free-flowing powder having a colour, taste and flavour characteristic of good cocoa powder. The powder shall be free from rancidity, fungal attack, added colouring matter, adulterants, starch or any other harmful ingredients.

6.2 Chemical requirements

Unsweetened cocoa powder shall comply with the chemical requirements, stipulated in Table 2 for natural and alkalized cocoa powders, when tested according to the methods of test indicated.

PUBLIC REVIEW DRAFT APRIL 2013

Table 2 — Chemical requirements for natural and alkalized cocoa powders

SL No	Characteristics	Requirements		Test Method
		Natural	Alkalized	
i)	Moisture content % by weight, (max)	5.5	5.5	KS 1812-2 ^a
ii)	Total ash (On dry and fat free basis), % by weight (max)	8	14.0	KS 1812-3
iii)	pH	5.5-5.9	6.0-8.0	KS 1812-4
iv)	a) Min. fineness through 75 micron sieve (205) (wet sieving), (%)min b) Max. % retained	99.8-0.2	99.8 0.2	KS 1812-5
v)	Cocoa butter	Ref. to Table 1	Ref. to Table 1	KS 1812-6
vi)	Crude Fibre (on moisture and fat free basis, % by mass), (max)	7.0	7.0	KS 1812-7

^{a)} Test methods for cocoa powders

7 Contaminants

7.1 Unsweetened cocoa powder shall comply with Codex Stan 193 - **Codex Standard for contaminants and toxins in food and feed** on heavy metal contaminants.

7.2 Heavy metal contaminant limits shall not exceed the levels stipulated in Table 3, when tested by the Atomic Absorption Spectrophotometer (AAS) Method.

TABLE 3 — LIMITS FOR HEAVY METAL CONTAMINANTS IN UNSWEETENED COCOA POWDER

SLNO	Metal Contaminant	Maximum level on cocoa fraction (ppm)
i)	Copper	50
ii)	Arsenic	1.0
iii)	Lead	1.0
v)	Cadmium	1

7.3 Pesticide residue limits in unsweetened cocoa powder shall comply with the limits specified in KS 05-1051³⁾

8 Hygiene

8 Hygiene

8.1 The product shall be manufactured in approved and licensed premises which shall comply with EAS 39, the Public Health Act, Cap. 242 laws of Kenya

8.2 Unsweetened cocoa shall comply with the Food, Drugs and Chemical Substances Act, Cap 254 of the laws of Kenya

8.3 Unsweetened cocoa shall be free from objectionable matter.

8.4 Microbiological requirements

8.4.1 Unsweetened cocoa shall not contain any pathogenic micro-organisms and when tested according to the test methods given in EAS 217 –Methods for the microbiological examination of foods.

The product shall comply with the microbiological requirements in Table 4.

³⁾ Guide on maximum limits of pesticide residues.

TABLE 4 — MICROBIOLOGICAL LIMITS FOR UNSWEETENED COCOA POWDER

SL No	Type of Microorganism	Maximum Limit
i)	Presumptive coliforms cfu per g	absent
ii)	E. coli cfu per g	absent
iii)	Salmonella spp .cfu per 25 g	absent
iv)	Yeasts and moulds cfu per g	10 ²

8.5 Total aflatoxin in Unsweetened cocoa powder shall not exceed 10 ppb and 5ppb for aflatoxin B₁ when tested according to KS ISO 16050⁶⁾. Foodstuffs – Determination of aflatoxin B₁ and the total content of aflatoxin B₁, B₂ G₁ and G₂ in cereals, nuts and derived products – High-performance liquid chromatographic method.

8.6 unsweetened cocoa shall comply with Weights and Measures Act Cap 513, Laws of Kenya

8.7 Unsweetened cocoa shall be manufactured in an environment which complies with EMCA No.8 1999

8.8 Disposal of used package and condemned materials shall be done in accordance with EMCA No.8 1999

9 PACKAGING

9.1 Unsweetened cocoa powder shall be packaged in food grade materials that secure integrity and safety of the product

⁶⁾ Foodstuffs – Determination of aflatoxin B₁ and the total content of aflatoxin B₁, B₂ G₁ and G₂ in cereals, nuts and derived products – High performance liquid chromatographic method.

S

10 Labelling

10.1 In addition to the labelling requirements in EAS 38- Labelling of prepackaged food, the following specific declarations shall be legibly and indelibly marked:

- i) The name of the product;
- ii) Type of the product, as either natural or alkalized;
- iii) Name, address and physical location of the manufacturer / vendor.
- iv) net weight in grams or kilograms;
- v) the grade based on the butter - fat content as described under 3;
- vi) expiry date;
- vii) country of origin;
- viii) Batch/Lot number.
- ix) Instructions for use
- x) Storage instructions
- xi) Instructions for disposal of package
- xii) Irradiation status where applicable
- xiii) G M O status where applicable

11 Sampling

Any container or package of unsweetened cocoa powder drawn from a lot or batch shall constitute a representative sample of that lot or batch.

PUBLIC REVIEW DRAFT APRIL 2013