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Cookies — Specification

Rwanda Standards Board

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In order to match with technological development and to keep continuous progress in industries, standards are subject to periodic review. Users shall ascertain that they are in possession of the latest edition

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 101 was prepared by Technical Committee RSB/TC 003, *Cereals, pulses, legumes and cereal products*

In the preparation of this standard, reference was made to the following standard (s):

1) KS 661:2007 Cookies—Specification

The assistance derived from the above source is hereby acknowledged with thanks.

This second edition cancels and replaces the first edition (RS 101:2007), which has been technically revised.

Committee membership

The following organizations were represented on the Technical Committee on Cereals, pulses, legumes and cereal products (RSB/TC 003) in the preparation of this standard.

ADMA International Ltd

FARMFRESH Ltd

Lamane Bakery

Rwanda Agriculture Board

SIMBA Supermarket

SOSOMA Industries

Rwanda Standards Board (RSB) – Secretariat

Cookies —Specification

1 Scope

This Draft Rwanda Standard specifies the requirements, sampling and test methods for cookies intended for human consumption.

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 942.17, *Arsenic in foods Molybdenum blue method*

AOAC 999.10, Lead*, Cadmium, Zinc, Copper and Iron in Foods, Atomic Absorption Spectrophotometry*

EAS 321, *Edible fats and oils —Specification*

ISO 16649-2, Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli -- Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide

RS 151, *Edible full fat soya bean flour — Specification*

RS CAC/RCP.1*, Code of practice — General Principles of Food Hygiene*

RS CODEX STAN 192, *General Standard for food additives*

RS CODEX STAN 212, *Sugars—Specification*

RS EAS 1, *Wheat flour— Specification*

RS EAS 12, *Potable water— Specification*

RS EAS 35, *Fortified edible salt— Specification*

RS EAS 38, *Labelling of pre-packaged foods*

RS ISO 11085, *Cereals, cereals -based products and animal feeding stuffs — Determination of crude fat and total fat content by the Randall extraction method*

RS ISO 16050, *Foodstuffs — Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products — High-performance liquid chromatographic method*

RS 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

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

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

RS ISO 24333, *Cereals and cereal products—Sampling*

3 Terms and definitions

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

3.1

food grade packaging material

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

3.1

filled cookies

are cookies sandwiched with the filing of cream, jam, jelly, ‘marshmallic caramel’, figs, raisins or similar products.

3.2

cream

a homogeneously mixed preparation of hydrogenated fat or bakery shortening, icing sugar, flavours and approved food colours with or without other permitted ingredients in small proportions.

3.3

coated cookies

cookies with or without the filing in-between, but coated with chocolate or caramel or icing sugar.

3.4

garnished cookies

cookies garnished with nuts, fruits, cherries, jelly crystals or candy crystals firmly set onto the product.

4 Requirements

4.1 Ingredients

4.1.1 Essential ingredients

The following essential ingredients shall be used in the preparation of batter used to make cookies:

a) Wheat flour, complying with RS EAS 1;

b) Fat or shortening complying with EAS 321;

c) Baking powder;

d) Potable water complying with RS EAS 12; and

e) Edible salt, complying with RS EAS 35.

4.2 Optional ingredients

The optional ingredients used in cookies shall comply with their relevant standards. Those ingredients include but are not limited to the following:

a) Cereal and cereal products;

b) Oil seed products;

c) Edible starches;

d) Milk and Milk products;

e) Sugars complying with RS CODEX STAN 212;

f) Honey complying with RS 164;

g) Fruits, edible vegetables, and derived products;

h) Spices;

i) Leavening agents;

j) Fortifying agents; and

k) Processing aids.

4.3 General requirements

Cookies shall:

a) be properly baked with no signs of under-baking or over-baking so that they are crispy

b) have uniform texture, tenderness and good appearance.

c) be free from objectionable taste such as soapy or bitter taste;

d) have the colour, texture, flavour and aroma characteristics of typical well-baked cookies

e) be free from any rancidity and insect infestation.

Note The appearance, taste, odour, flavour and tenderness shall be determined in accordance with the methods of sensory analysis of food.

4.4 Specific requirements

Cookies shall comply with the specific requirements stipulated in Table 1.

Table 1 —Specific requirements for cookies

S/N	**Characteristic**	**Requirement**	**Test method**
i.	Moisture, % by mass, max.	6.0	Annex A
ii.	Acid insoluble ash (on dry basis), % by mass, max.	0.05	Annex B
iii.	Acid of extracted fat (as oleic acid), % by mass, max.	1.0	Annex C
iv.	Broken pieces, % by mass, max.	5.0	GMP
v.	Fat content, % by mass, max.	30.0	RS ISO 11085

4.5 Microbiological requirements

Cookies shall comply with the microbiological limits indicated in Table 2.

Table2 — Microbiological limits for cookies

S/N	**Microorganism**	**Maximum limits**	**Test method**
i.	Total viable counts, CFU/g	10^4	RS ISO 4833-1
ii.	Yeasts and moulds, CFU/g	10^3	RS ISO 21527-2
iii.	*Pathogenic E.coli*, CFU/g	Absent	ISO 16649-2
iv.	*Salmonella spp, CFU/ 25g*	Absent	RS ISO 6579-1

5 Food additives

Food additives which may be used in the manufacture of cookies shall comply with RS CODEX STAN 192.

6 Hygiene

Cookies shall be manufactured processed, packaged, stored and distributed under hygienic conditions prescribed in RS CAC/RCP 1.

7 Contaminants

7.1 Heavy metals

Cookies shall comply with the heavy metal contaminants limits indicated in Table 3.

Table 3 — Limits for heavy metal contaminants

SI No	Contaminant	Maximum limit (mg/kg)	Test method
i.	Lead (Pb)	0.5	AOAC 999.10
ii.	Copper (Cu)	2.0	
iii.	Arsenic (Ar)	1.0	AOAC 942.17

7.2 Aflatoxins

When tested in accordance with RS ISO 16050, aflatoxin levels in cookies shall not exceed 10 µg/kg and 5 µg/kg for total aflatoxin and aflatoxin B1 respectively.

8 Packaging

Cookies shall be packaged in food grade packaging materials that will ensure the safety and integrity of the product throughout the shelf life.

9 Labelling

In addition to the requirements specified in RS EAS 38, the following specific labelling requirements shall apply and shall be legibly and indelibly marked:

a) name of the product as “Cookies”

b) name and physical address of the manufacturer;

c) batch number;

d) net weight;

e) list of ingredients;

f) date of manufacture;

g) expiry date;

h) country of origin; and

i) storage instructions.

10 Sampling

Sampling shall be done in accordance with RS ISO 24333.

Annex A
(normative)

Determination of moisture content

A.1 Apparatus

A.1.1 Moisture dish; made of porcelain, silica, glass or aluminium.

A 1.2 Oven; Electric maintained at 105 ± 1 · C

A.1.3 Desiccator

A.2 Procedure

A.2.1 Weigh accurately about 5g of the ground sample in the moisture dish, previously dried in the oven and weighed. Place the dish in the oven maintained at 105 ± 1 · C for 4 h. Cool in the desiccator and weigh.

A.2.1 Repeat the process of drying, cooling and weighing at 30 min intervals until the difference between the two consecutive weighings is less than one milligram. Record the lowest mass.

A.3 Calculation and expression of results

A.3.1 Moisture content, (w), expressed as a percentage by mass of the product as received, is given by the following equations.

$$w = 100(m1 - m2)/(m1 - m3)$$

Where

m1 = mass in g of the dish with the material before drying,
m2 = mass in g of the dish with the material after drying to constant weight, and
m3 = mass in g of the empty dish.

Annex B
(normative)

Determination of acid insoluble ash

B.1 Apparatus

B.1.1 Dish; Silica or porcelain

B.1.2 Muffle furnace; Maintained at 600 ± 20 · C.

B.1.3 Water bath

B.1.4 Desiccator

B.2 Reagents

Dilute hydrochloric acid, approximately 5 N, prepared from concentrated hydrochloric acid.

B.3 Procedures

Weigh accurately about 20 g of the biscuit powder in the previously weighed dish and ash in the muffle furnace at 600 ± 20 · C until light grey ash is obtained. Remove the dish from the furnish and allow it to cool at room temperature. Add 25 ml of the hydrochloric acid to the dish, cover with a watch-glass and heat on a boiling water-bath for 10 min. Mix the contents with the tip of a glass rod and filter through Whatman filter paper No. 42 or its equivalent. Wash the filter paper with water until the washings are free from acid, tested with blue litmus paper. Return the washed filter paper to the dish for ashing in the muffle furnace as above. Cool the dish in the desiccator and weigh. Again ignite the dish for half an hour in the furnace, cool and weigh. Repeat this operation until the dish has a constant mass, the difference between successive weighings being less than 1 mg. Filter 25 ml of the hydrochloric acid through a blank filter paper, wash, and ash and weigh it as in the case of acid insoluble ash. Substitute its mass from the mass of insoluble ash of the sample.

B.4 Calculation and expression of results

B.4.1 Acid insoluble ash, percent by mass

$$= \frac{100 - (\mathrm{m} - \mathrm{m1})}{\mathrm{m2}}$$

Where

m_1 = mass, in g, of the dish containing acid insoluble ash (*see* Note),

m = mass, in g, of the empty dish in which the sample is taken for ashing, and

m_2 = mass, in g, of the sample.

NOTE Correct the acid insoluble ash mass for the blank of filter paper, if any.

B.4.2 Acid insoluble ash, percent by mass (dry basis)

$$= \frac{A*100}{100*m} =$$

Where

A = acid insoluble ash, per cent by mass (*see* B.4.1), and

m = percentage of moisture in the biscuit (*see* A.3.1)

Annex C
(normative)

Determination of acidity of extracted fat

C.1 Apparatus

C.1.1 Soxhlet Apparatus, with a 250 ml flat bottom flask.

C.2 Reagents

C.2.1 Petroleum Ether, boiling point 40·C to 80·C.

C.2.2 Benzene-Alcohol-Phenolphthalein Stock Solution, to one litre of distilled benzene add one litre of

C.2.3 Standard Potassium Hydroxide Solutions, 0.05 N.

C.3 Procedures

C.3.1 with extracted cotton and filter paper Dry the thimble with the contents for 15 to 30 min; at 100 · C in an oven. Take the weight of the empty dry Soxhlet flask. Extract the fat in the Soxhlet apparatus for 3 h to 4 h and evaporate off the solvent in the flask on a water-bath.

Remove the traces of the residual solvent by keeping the flask in the hot air oven for about half an hour and weigh. Cool the flask and add 50 ml of mixed benzene-alcohol-phenolphthein reagent (see and titratethe contents to a distinct pink colour with the potassium hydroxidesolution taken in a10 ml micro burette. If thecontents of the flask become cloudy, during titration, add another 50 ml of the reagent (see C.2.2) and continue the titration. Make a blank titration of the 50 ml reagent. Subtract from the titre of the fat, the blank titre.

C.4 Calculations and expression of result

Acidity of extracted fat, (as oleic acid) per cent by mass

$$= \frac{1.41 * \mathrm{V}}{\mathrm{m1} - \mathrm{m2}}$$

Where

V = volume of 0.05 N potassium hydroxide solution used in the titration after subtracting the blank,

m_1 = mass, in g, of the Soxhlet flask containing fat, and

m2 = mass, in g, of the empty Soxhlet flask.

ICS 67.060