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Carbonated and non-carbonated beverages — Specification

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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.

RS 14 was prepared by Technical Committee RSB/TC 001, *TC Beverages*, In the preparation of this standard, reference was made to the following standard (s):

1) RS 14: 2004 carbonated and non carbonated beverages.

2) XYZ: Title

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

This second edition cancels and replaces the first edition (RS 14-1: 2004), of which have] been technically revised.

RS nnn consists of the following parts, under the general title *Introductory element — Main element*:

— *Part n: Part title*

— *Part [n+1]: Part title*

— *Part [n+2]: Part title*

Committee membership

The following organizations were represented on the Technical Committee on Title (RSB/TC 000) in the preparation of this standard.

UR-CAVM

AFRICAN BAFFARO GIN

IHC LTD

E^{se} URWIBUTSO/SINA Gerrd

IMPANO PRODUCE LTD

SPERANZA GROUP LTD

SALUNA COMPANY LTD

Rwanda Standards Board (RSB) – Secretariat

Carbonated and non-carbonated beverages — Specification

1 Scope

This Rwanda Standard specifies the requirements and methods of test and sampling for carbonated and noncarbonated beverages.

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.

AOAC 980.19, *Tin in food Atomic absorption spectrophotometric method*

AOAC 950.29, *Sucrose in non alcoholic beverages*

AOAC 990.31, *Sulfites in foods and beverages Ion Exclusion chromatographic method*

AOAC 942.17, *Arsenic in foods Molybdenum blue method*

AOAC 979.08, *Benzoate, caffeine, and Saccharin in carbonated beverages, liquid chromatographic method*

AOAC 999.10, Lead, Cadmium, Copper, Iron, and Zinc in foods, Atomic Absorption Spectrophotometry after microwave digestion

AOAC 999.11, Lead, Cadmium, Copper, Iron, and Zinc in foods, Atomic Absorption Spectrophotometry after dry ashing

CODEX STAN 150 Codex Standard for food grade salt

CODEX STAN 192, General standard for food additives

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

RS CODEX STAN 1, General Standard for the Labelling of Prepackaged Foods

RS ISO 21527-1 Microbiology of food and animal feeding stuffs — Horizontal method for the Enumeration of yeasts and moulds- part 1: Colony Count technique in products with water activity greater than or equal to 0,95

RS ISO 21527-2, Microbiology of food and animal feeding stuffs — Horizontal method for the Enumeration of yeasts and moulds- part 1: Colony Count technique in products with water activity less than or equal to 0,95

RS ISO 4832, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of microorganisms — Colony Count Technique

RS ISO 4833, Microbiology of food and animal feeding stuffs — Horizontal method for the Enumeration of microorganisms-Colony -Count technique at 30₀C

RS ISO 6579, Microbiology of food and animal feeding stuffs — Horizontal method for the detection of Salmonella spp

RS ISO 6888-1, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase — positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium

RS ISO 6888-2, Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) — Part 2: Technique using rabbit plasma fibrinogen agar medium

3 Definitions

For the purpose of this standard the following definitions apply:

3.1

carbonated beverages

beverages containing dissolved carbon dioxide in properly sealed containers or dispensing unit in a manner, which ensures freedom from spoilage.

3.2

One volume of carbonation

gas volume at 15.560 C under atmospheric pressure, when water will absorb a quantity of carbon dioxide equal to its own volume. By lowering the temperature and/or increasing the pressure, the volume of dissolved carbon dioxide may be increased.

3.3

non-carbonated beverages

beverages prepared using ingredients indicated in clause 5 excluding carbondioxide.

4 Types of soft drinks

4.1 Carbonated and non carbonated beverages shall be of the following types:

a) Carbonated water or soda water with or without flavour and

b) Flavoured and sweetened carbonated beverages.

4.2 Non-carbonated beverages with or without flavour.

5 Composition requirements

5.1 Water

Carbonated and non-carbonated soft drinks shall be prepared from potable water (conforming to RS 2, other than natural mineral water) which shall be clear, colourless, odourless, free from water borne organisms, and having an alkalinity of less than 50 ppm (expressed as $CaCO_3$), a total of dissolved solids less than 500 ppm and iron or manganese of less than 0.1 ppm.

5.2 Sweetening agents

Shall be dry or liquid forms of sugar, invert sugar, dextrose, fructose, lactose, mannitol, honey, glucose syrup, sorbitol and intense sweeteners or any combination of two or more of the said sugars and/or sweeteners. Carbonated and non-carbonated beverages containing nutritive sweeteners excepting dry ginger, ale and spiced beverages, when tested after removal of carbon dioxide shall record a Brix hydrometer value of not less than 5 degrees at 20 ^{0}C.

5.3 Non-nutritive sweeteners

Carbonated and non-carbonated beverages containing non-nutritive sweetener shall comply with the following limits

Table1 — limits of permitted non-nutritive sweetener

Content	***Maximum – Limits***
Acelsulfame K	*GMP*
Aspartame	*600 mg/l*
Cyclamic acids and cyclamates – total	*400 mg/l*
Saccharin and salts thereof – Total	*80 mg/l*

5.4 Flavouring preparations

Shall be those permitted by the Codex Standard for food additives, Codex STAN 192.

5.5 Food colors and food additives

Most important food colours for soft drinks are synthetic. Caramel, a non-synthetic colour is also used. The quality of food colours and food additives shall be those permitted in the Codex Standard for food additives Codex STAN 192

5.6 Quinine salt

Shall be in amount not exceeding 100 mg/kg, calculated as quinine sulphate to be determined as in Annex D.

5.7 Caffeine

Shall be used in amount not exceeding 200 mg/kg, to be determined as in Annex B.

5.8 Edible common salt.

Shall comply with Codex STAN 150.

5.9 Vitamin and mineral

The quantities shall be declared in the labelling.

5.10 Antioxidants, antifoaming and foaming agents

These shall be in accordance with the Codex Standard for food additives Codex STAN 192.

5.10.1 Anti foaming agents include

a) refined edible vegetable oil; and

b) dimethyl polysiloxane - max: 10 mg/kg.

5.10.2 Foaming agents

a) quillaia and Yucca; and

b) ammoniated glycyrrhizin

5.11 Preservatives

The following preservatives are permitted for use in soft drinks:

a) benzoic acid and its sodium and potassium salts : 1000 ppm;

b) sorbic acid and its sodium and potassium salts: 1000 ppm;

c) sulphur dioxide: 100 ppm;

d) calcium disodium ethylenediaminitetra-acetate (EDTA): 25 ppm;

e) sodium hexa-meta-phosphate (SHMP): GMP; and

f) stannous chloride: 10 ppm

5.12 Acidulants

Many soft drinks are satisfactorily acidified with acidulants of food grade such as citric acid, tartaric acid; phosphoric acid, fumaric acid or lactic acid. The amounts shall be in accordance with the Codex Standard for food additives Codex STAN 192**.**

6 Requirements

6.1 Flavour

The carbonated beverages shall have a well-balanced and pleasant flavour. The carbonated beverages of the flavoured type shall be free from off-flavour and off-odours.

6.2 Appearance

The carbonated beverages shall be free from insect and rodent contamination, skins, and practically free from other extraneous matter. Clear carbonated beverages shall be sparkling clarity and shall remain so when stored under normal conditions. The cloudy beverages shall be stable.

6.3 Carbonation

The beverages shall be carbonated to a pressure in accordance with their character. Carbonated beverages shall however have a minimum of one volume of carbon dioxide. A recommended method for the measurement of gas volume is given in Annex A Carbonated and non-carbonated beverages shall comply with the compositional requirements indicated in Table 1:

Table 2 — Compositional requirements for carbonated beverages.

S/N	Characteristics	Requirements	Method of Test
i	*BRIX at 20₀C in sugar sweetened carbonated beverages, min*	*5.0*	*AOAC 950.29*
ii	*Volume of carbonation, (for carbonated beverages) min*	*1*	*Annex A*
iv	*Sulphur, dioxide & sulphites, ppm, max*	*60*	*AOAC 990.31*
v	*Benzoic or sorbic acids or their alkalines salts ppm, max*	*400*	*AOAC 979.08*

6.4 Contaminants

Carbonated and non-carbonated beverages shall not contain heavy metal contaminants in excess of the limits indicated in Table 3

Table 3 — Limits for heavy metal contaminates in carbonated and non-carbonated beverages

S/N	Characteristic	Limits, Max	Method of test
i	*Arsenic as As, mg/l*	*0.1*	*AOAC942.17*
ii	*Lead as Pb, mg/l*	*0.2*	*AOAC 999.10*
iii	*Zinc as Zn, mg/l*	*5.0*	
iv	*Copper as Cu, mg/l*	*2.0*	
v	*Cadmium as Cd, mg/l*	*0.03*	
vi	*Tin as Sn,* µg/l	*250*	*AOAC 980.19*

6.1 Hygienic Conditions

Carbonated and non-carbonated beverages shall be manufactured in factories maintained under hygienic conditions stipulated in the RS CAC/RCP1 and shall comply with the microbiological requirements as the table 4.

Table 4 — Microbiological limits for carbonated and non-carbonated beverages.

S/N	**Characteristic**	**Limits, Max**	**Method Of Test**
i	*Total viable counts per ml, max*	*10^3*	*RS ISO 4833*
ii	*Faecal coliform counts per 100 ml*	*Shall be absent*	*RS ISO 4832*
iii	*Yeast and mould counts per ml max*	*10*	*RS ISO 21527-1-2*
iv	*E. coli per 100 ml*	*Shall be absent*	*RS ISO 16649-2*
v	Salmonella in 100 ml	Shall be absent	RS ISO 6579
vi	Staphylococcus aurus per 100 ml	Shall be absent	RS ISO 6888-1

7 Packing and labelling

7.1 Packing

7.1.1 Carbonated beverages shall be filled in glass or plastic containers and cans or dispensing units. The containers shall be clean and filled under strict sanitary conditions. After filling, the containers shall be hermetically sealed. The cans shall be sealed properly and bottles be crowned with crown caps, lined with cork disc or a flowed in plastic gasket.

7.1.2 Non-carbonated beverages shall be filled in food grade laminates or any other suitable material.

7.2 Labelling

In addition to the requirements in RS CODEX STAN 1 Labelling of container of carbonated and non-carbonate beverages shall include the following:

a) name of the product stating 'Diet' for special dietary products not containing sugar;

b) name, address and physical location of the manufacturer;

c) list of ingredients including the name of sweetener applied;

d) date of manufacture;

e) batch number;

f) expiry date; and

g) Country of origin for imported products or 'Made in Rwanda" for locally manufactured products.

8 Sampling of carbonated beverages

8.1 Scale of Sampling

8.1.1 Lot All bottles 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, bottles of the same batch shall be grouped together and each group so formed shall constitute a separate lot. Sample shall be tested from each lot for ascertaining conformity to the requirements of the standard.

8.1.2 The number of bottles 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 5.

Table 5 — Number of bottles to be selected for sampling

No. of bottles in the lot (L)	No. of bottles to be selected	
	Microbiological	Other tests
L ≤1300 *1300< L ≤3200* *L > 3200*	*12* *18* *24*	*18* *24* *30*

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

8.2 Test samples and reference samples

8.2.1 Samples for microbiological tests

The sample bottle selected for microbiological tests (see col. 2 of Table 5) shall be divided at random into three equal sets and labelled with all particulars of sampling. One of these sets of sample bottles shall be for the purchaser; another for the vendor and the third set is the reference.

8.2.2 Samples for other tests

The sample bottles selected for other tests (see col. 3 of Table 5) shall be divided at random into three equalsets and labelled with all the particulars of sampling. One of these sets of sample bottles shall be for the purchaser, another for the vendor and third is the reference.

[3]

ICS 67.160.20