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Series 32

Série 32

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April 2020

### Selected standards in the series Food

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**GCS 32.110-92**

Converted to GCS in 2014

## Roasted and Ground Coffee

Withdrawn

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## **Roasted and Ground Coffee**

ICS 67.140

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*Acknowledgment is made for the French translation of this Canadian General Standards Board specification by the Translation Bureau of the Department of the Secretary of State.*

## **Preface**

This document has been converted to a Government of Canada (GC) Standard in November 2014. Its previous designation was 32.110. The original content has not been modified.

Withdrawn

CANADIAN GENERAL STANDARDS BOARD

ROASTED AND GROUND COFFEE

1. SCOPE

- 1.1 This specification applies to regular and decaffeinated ground coffee made from roasted beans of green coffee, i.e. the seed of *Coffea arabica* L., *C. liberica* Hiern or *C. robusta* Chev., freed from all but a small portion of its spermoderm. It is mainly intended to be used by food services in procurement of food.
- 1.2 The testing and evaluation of a product against this specification may require the use of materials and/or equipment that could be hazardous. This document does not purport to address all the safety aspects associated with its use. Anyone using this specification has the responsibility to consult the appropriate authorities and to establish appropriate health and safety practices in conjunction with any existing applicable regulatory requirements prior to its use.

2. APPLICABLE PUBLICATIONS

- 2.1 The following publications are applicable to this specification:
- 2.1.1 Canadian General Standards Board (CGSB)  
CAN/CGSB-8.2 — Sieves, Testing, Woven Wire, Metric  
CAN/CGSB-52.8 — Urns, Beverage, Food Service.
- 2.1.2 Department of Agriculture  
Publication 1637 — Laboratory Methods for Sensory Evaluation of Food.
- 2.1.3 Department of Consumer and Corporate Affairs  
Consumer Packaging and Labelling Act and Regulations.
- 2.1.4 Department of National Health and Welfare  
The Food and Drugs Act and Regulations.
- 2.1.5 The Association of Official Analytical Chemists (AOAC)  
Official Methods of the Association of Official Analytical Chemists.
- 2.2 Reference to the above publications is to the latest issues. The sources of these publications are shown in the Notes section.

3. CLASSIFICATION

- 3.1 The coffee shall be supplied in the following types and fineness of grind, as specified (par. 8.1).
- 3.1.1 *Types*
- a. Regular coffee
  - b. Decaffeinated coffee.
- 3.1.2 *Fineness of grind*
- a. Urn grind
  - b. Fine Grind.

#### 4. GENERAL REQUIREMENTS

- 4.1 In addition to meeting the requirements of this specification, ground coffee shall meet the requirements of Food and Drug Regulations (par. 2.1.4).
- 4.2 Ground coffee shall be made from good, sound roasted beans of green coffee i.e. the seed of *Coffea arabica* L., *C. liberica* Hiern or *C. robusta* Chev., freed from all but a small portion of its spermoderm. Ground coffee shall be free from impurities, chicory and adulteration of any kind.
- 4.3 The beans shall be roasted in accordance with good commercial practice, at the time of grinding, packaging and delivery.

#### 5. DETAILED REQUIREMENTS

##### 5.1 Caffeine Content

- 5.1.1 The regular ground coffee shall contain the caffeine normally present in roasted coffee beans.
- 5.1.2 Decaffeinated ground coffee shall contain no more than 0.1% caffeine when determined as given in par. 7.2.3.

##### 5.2 Fineness of grind

- 5.2.1 When tested in accordance with par. 7.2.1, the ground coffee shall meet the sieve analysis requirements below:

Fineness Designation	Percentage Retained on Standard Sieve Size*		Percentage Passing Through Standard Sieve Size*
	1.70 and 1.18 mm**	850 and 600 µm***	600 µm****
Urn grind	7 (+5,-3)	73 (±4)	20 (±4)
Fine grind	3.0 (max.)	70 (+5,-10)	30 (+10,-5)

\* See standard CAN/CGSB-8.2, *Sieves, Testing, Woven, Wire, Metric*

\*\* alternative designations: Nos. 12 and 16 or Tyler 10 and 14 mesh

\*\*\* alternative designations: Nos. 20 and 30 or Tyler 20 and 28 mesh

\*\*\*\* alternative designations: No. 30 or Tyler 28 mesh

- 5.3 **Cup Quality** — The cup quality of the brewed coffee made of 40 g ground coffee per litre water (test samples) shall be equal to or better than the coffee also brewed of the same amount of the standard coffee specified in par. 5.4 and determined sensorily as specified in par. 7.2.4 .
- 5.4 **Standard Coffee** — The standard coffee shall be ground coffee, representative of nationally sold good coffee brands approved as a standard by the authority applying this specification.
- 5.5 **Package Types and Sizes** — Ground coffee shall be supplied in the following package types and sizes (net mass) as specified (par. 8.1):
- Cans (with vacuum), 369 or 300 g
  - Brick packs (laminated packages with vacuum), 369 or 300 g
  - Flexible laminated pouches with inert gas, 71 g.
- 5.6 Prior to packaging in flexible laminated packages, the coffee shall be thoroughly de-gassed in accordance with good manufacturing practice. The inert gas used in flexible laminated packages shall be either commercially pure nitrogen or carbon dioxide.
- 5.7 **Residual Oxygen** — Residual oxygen concentration of the head space in flexible laminated packages shall be less than 2% at the time of packaging and less than 5% after three months from the time of packaging when analyzed as specified in par. 7.2.2.

- 5.8 **Vacuum** — The vacuum in cans or brick packs shall be at least 81 kPa at the time of sealing when determined by a standard vacuum gauge (Note 1).

## 6. PREPARATION FOR DELIVERY

- 6.1 Unless otherwise specified (par. 8.1) normal commercial practice for packaging, labelling, packing and marking shall be applied. However the marking shall include the information specified in par. 6.2.
- 6.2 **Marking** — In addition to par. 6.1, all packages shall be marked with manufacturer's name or trademark and all shipping containers shall be marked with the date of packaging.
- 6.3 **Package Sizes** — Unless otherwise specified (par. 8.1) ground coffee shall be supplied in package sizes given in par. 5.5 for the type of package.

## 7. INSPECTION

- 7.1 **Sampling** — Sampling for inspection shall be left to the discretion of the inspection authority, unless a specific sampling plan has been specified (par. 8.1).
- 7.2 **Testing**
- 7.2.1 **Sieve Analysis** — Assemble a set of clean sieves in order of decreasing size with the largest mesh at the top and a pan at the bottom. Place a representative  $100 \pm 0.5$  g sample of the ground coffee in the top sieve. Place the set of sieves, with the cover on, on a shaking machine that operates with a single eccentric circular motion at  $285 \pm 10$  r/min with a tapping motion of  $150 \pm 5$  strokes per minute and vibrate for  $5 \text{ min} \pm 5 \text{ s}$ . Weigh the coffee retained by each sieve and caught in the pan. Two samples shall be tested, and the average mass of coffee retained on the 1.70 and 1.18 mm screens, the 850 and 600  $\mu\text{m}$  screens, and in the pan shall be reported as percentages.
- 7.2.2 **Residual Oxygen** — Using a self sealing puncture device, withdraw a representative sample of gas from a container. Analyse the gas for residual oxygen using an acceptable apparatus and the method specified by the apparatus manufacturer (Note 2).
- 7.2.3 **Caffeine Content** — The caffeine content of the coffee shall be determined in accordance with the method AOAC 15.020 (14th edition).
- 7.2.4 **Determination of Cup Quality** — The cup quality shall be determined in accordance with the paired comparison test using a nine-point hedonic scale specified in the publication 1637 given in par. 2.1.2. The test samples of coffee shall be brewed as given in Appendix A in case of urn grind and as given in Appendix B in case of fine grind.

## 8. NOTES

- 8.1 **Options** — The following options must be specified in the application of this specification:
- Type of coffee (par. 3.1.1)
  - Fineness of grind (par. 3.1.2)
  - Type of package and size (par. 5.5 and 6.3)
  - Packaging, labelling, packing and marking details, if normal commercial practice is not suitable (par. 6.1)
  - Sampling, if a specific plan is required (par. 7.1).
- 8.2 **Source of Referenced Publications**
- 8.2.1 The publication referred to in par. 2.1.1 may be obtained from the Canadian General Standards Board, Sales Unit, Ottawa, Canada K1A 1G6. Telephone (819) 956-0425 or 956-0426. Fax (819) 956-5644.

*Note 1: The gauge manufactured by James Morrison Brass Mfg. Co., Model CAS-01267, obtained from Cannors Manufacturing Ltd., Simcoe, Ontario, has been found satisfactory for this purpose.*

*Note 2: The following apparatus have been found suitable to analyze oxygen in the head space: Fisher Scientific, Oxygen Head Space Analyzer IL 307 or Gallenkamp-Lloyd Gas analyzer GC-400 or Standard Orsat Gas Analysis Apparatus.*

- 8.2.2 The publications referred to in par. 2.1.2, 2.1.3 and 2.1.4 may be obtained from the Canada Communication Group, Publishing, Ottawa, Canada K1A 0S9. Telephone (819) 956-4802.
- 8.2.3 The publication referred to in par. 2.1.5 may be obtained from the Association of Official Analytical Chemists, Box 540, Benjamin Franklin Station, Washington, DC 20044, U.S.A.

Withdrawn

## PREPARATION OF URN BREWED COFFEE

**A1. SCOPE**

- A1.1 This method describes the general urn brewing procedure for freshly ground coffee using 11 L coffee urn specified in CAN/CGSB-52.8.

**A2. EQUIPMENT**

Coffee urn, Type 2, Class A, CAN/CGSB-52.8

Coffee Filters, fluted

Top-loading balance, accurate to 0.1 g

Stopwatch

Thermometer

Long handled spoon.

**A3. MATERIALS**

Urn grind coffee

Clean, fresh supply of potable water

Urn cleaner.

**A4. PROCEDURE**

- a. Plug in the urn and turn on the cold water supply.
- b. Turn the power switch to the on position and remove the drain plug from the urn reservoir. Allow cold water to flow through the reservoir for at least 15 min to ensure a cold fresh water supply.
- c. Replace drain plug thereby causing the reservoir to fill and automatically shut-off after reaching the pre-set water level.
- d. When the water in the urn reservoir reaches the pre-set temperature of 93°C (200°F) it is ready to brew the coffee.
- e. Remove the filter support grid from the urn and place the filter paper in it.
- f. Add 454 g of the well-mixed urn ground test coffee to the filter unit.
- g. Evenly distribute the ground coffee in the filter with the aid of the spoon to provide a uniform thickness of grounds.
- h. Return the filter unit to the urn and swing the water spray arm into place over the filter.
- i. Check to ensure that the urn is at the proper brewing temperature, 93°C.
- j. Press brew switch and elute with 11.35 L of water using stopwatch and predetermined spray speed of the urn.
- k. When the brewing cycle has been completed, remove the filter support and dispose of coffee grounds.
- l. Rinse filter support and set aside.
- m. Mix the brewed coffee in the urn with a long handled spoon.
- n. The freshly brewed coffee is now ready to be evaluated.

**A5. CLEANING OF URN:**

- a. Thoroughly rinse the urn with hot water from the sprayhead and allow to drain.
- b. Hard to remove coffee stains may be cleaned by the use of a detergent urn cleaner.



## PREPARATION OF BREWED COFFEE USING FINE GRIND COFFEE

**B1. SCOPE**

- B1.1 This method describes the general brewing procedure for fine grind coffee that has been freshly ground, using a 1.7 L pot type coffee brewer.

**B2. EQUIPMENT**

A pot type coffee brewer such as:

“Bunn Pour-O-matic” coffee brewer, model VPR

Coffee pot, 1.7 L (60 oz)

Bunn coffee-filters, 12 cup size,

Top loading balance, accurate to 0.1 g

Thermometer, 0 to 104°C

Hot plate or coffee warmer.

**B3. MATERIALS**

Fine grind coffee (par. 5.2.1)

Clean, fresh supply of potable water.

**B4. PROCEDURE**

- a. Before plugging brewer into an electrical outlet, place the empty pot under the funnel (filter support) and pour three pots of cold fresh water through the screened opening in the top lid of the brewer. Water will be eluted through the funnel after the third pot of water is poured into the unit.
- b. Discard the water collected and replace the empty pot under the funnel.
- c. Plug the brewer into the electrical circuit of 120 V and allow approximately 30 min for water in the reservoir to heat to the required brewing temperature of 93°C.
- d. After the water has reached the brewing temperature, pour a half pot of water through the screened opening in the top lid of the brewer. Collect the outflow from the brewer and discard.
- e. Replace empty pot under the funnel. Brewer is now ready for use.
- f. Remove the filter support (funnel) from the brewer and place the filter paper in it.
- g. Add 68 g of the fine grind, well-mixed coffee (test sample or standard, par. 5.3) to the filter.
- h. Evenly distribute the coffee in the filter with the aid of a spoon to provide a uniform thickness of grounds. (Level, but do not shake the filter to accomplish this as the shaking will cause the fines to settle).
- i. Slide the funnel with filter paper back into its bracket below the spray head.
- j. Pour 1.7 L (60 oz) of cold fresh water through the screened opening in the top lid. Hot water will then be delivered through the spray head over the coffee bed within the filter. The brewed coffee thus flows into the pot below.
- k. When the coffee has stopped draining from the filter, remove pot and place it on an appropriate warmer to maintain coffee temperature at approximately 70°C.
- l. The freshly brewed coffee is now ready to be evaluated. (It should be noted that minimum time between brewing and serving should be maintained due to the fact that freshly brewed coffee loses its delicate aroma and flavour quickly).
- m. To brew additional pots of coffee (test sample and standard), remove spent grounds, rinse funnel and proceed from step e.