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IS 3309 (1992): Soluble Coffee-chicory Powder [FAD 6: Stimulant Foods]



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“Knowledge is such a treasure which cannot be stolen”

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IS 3309 : 1982

भारतीय मानक

विलेय काफी कासनी चूर्ण — विशिष्ट

Indian Standard

**SOLUBLE COFFEE-CHICORY POWDER —
SPECIFICATION**

(Second Revision)

UDC 633.994

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**BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002**

April 1992

Price Group 2

AMENDMENT NO. 1 NOVEMBER 1995
TO
IS 3309 : 1992 SOLUBLE COFFEE-CHICORY
POWDER — SPECIFICATION
(Second Revision)

(Foreword, para 3) — Add the following paras after para 3:

‘A scheme for labelling environment friendly products with the ECO Mark has been introduced at the instance of the Ministry of Environment and Forests (MEF), Government of India. The ECO Mark would be administered by the Bureau of Indian Standards (BIS) under the BIS Act, 1986 as per the Resolution No. 71 dated 20 February 1991 as published in the Gazette of the Government of India vide GSR No. 85(E) dated 21 February 1991. For a product to be eligible for ECO Mark it shall also carry the Standard Mark of BIS for quality besides meeting additional optional environmental friendly (EF) requirements. The EF requirements for soluble coffee-chicory powder are, therefore being included through Amendment No. 1 to this standard.

This amendment is based on the Gazette Notification No. 678 (E) dated 30 August 1994 for labelling Edible Oils, Tea and Coffee as environment friendly products, published by the Ministry of Environment and Forests.’

(Page 1, clause 3.5) — Add the following clauses after 3.5:

‘3.6 Optional Requirements for ECO Mark

3.6.1 General Requirements

3.6.1.1 The product shall conform to the requirements of quality prescribed under clauses 3.1 to 3.5.

3.6.1.2 The manufacturers shall produce to BIS environmental consent clearance from the concerned State Pollution Control Board as per the provisions of the *Water (Prevention and Control of Pollution) Act, 1974*; and the *Air (Prevention and Control of Pollution) Act, 1981*; along with the authorization, if required under the *Environment (Protection) Act, 1986*, while applying for ECO Mark. The product shall also conform to the requirements laid down under the *prevention of Food Adulteration Act, 1954* and the *Rules* made thereunder.

Amend No. 1 to IS 3309 : 1992

3.6.2 Specific Requirements

3.6.2.1 The product shall be free from infestation due to insects, fungus and rodents.

3.6.2.2 The product shall be free from extraneous matter like strings, stones, dirt, wood, glass and metallic pieces and from any added colouring and flavouring. It shall also be free from rancidity and shall have its characteristic flavour.

3.6.2.3 The product shall be free from adulterants like dandelion (excluding chicory), acorns, figs, dates, stones and cereals.

3.6.2.4 The pesticide residues in the product shall not exceed the limits given below when tested by the methods as shown against each:

<i>Sl No.</i>	<i>Name of Pesticide</i>	<i>Tolerance Limit mg/kg</i>	<i>Method of Test Ref to</i>
i)	Monocrotophos	0.1	IS 11374 : 1985

(Page 1, clause 4.1) — Add the following clause after 4.1:

‘4.1.1 For ECO Mark the product shall be packed in packages which are made from recyclable, reusable or bio-degradable materials which shall be declared by the manufacturer and may be accompanied with detailed instructions for proper use.’

(Page 1, clause 4.2) — Add the following clause after 4.2 and renumber the subsequent clause:

‘4.2.1 The following additional information shall also be marked on the label for ECO Mark:

- a) List of following critical ingredients in descending order of quantity, percent by mass:
 - i) Coffee
 - ii) Chicory
- b) The criteria for which the product has been labelled as ECO Mark.’

**AMENDMENT NO. 2 JANUARY 2007
TO
IS 3309 : 1992 SOLUBLE COFFEE-CHICORY
POWDER — SPECIFICATION**

(Second Revision)

(Page 1, clause 2) — Add 'IS 1699 : 1995 Methods of sampling and tests for food colours (*second revision*)' at the appropriate place.

[Page 1, clause 3.6 (see also Amendment No. 1)] — Add the following new clause after 3.6:

'3.7 The copper content in soluble coffee chicory powder shall not exceed 30 ppm when tested by atomic absorption spectrophotometer as per the method prescribed in 15.1 of IS 1699.'

(FAD 6)

**AMENDMENT NO. 3 DECEMBER 2009
TO
IS 3309 : 1992 SOLUBLE COFFEE-CHICORY POWDER —
SPECIFICATION**

(Second Revision)

[Page 2, clause 4.2, Sl No. (h)] — Substitute 'Net quantity' for 'Net mass'.

(FAD 6)

Reprography Unit, BIS, New Delhi, India

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Stimulant Foods Sectional Committee had been approved by the Food and Agriculture Division Council.

The term coffee-chicory powder is commonly applied to a mixture of roasted and ground coffee and roasted and ground chicory in different proportions, coffee being not less than 51 percent by mass. The present standard applies to soluble coffee-chicory powder which is obtained by extracting under suitable conditions a mixture of roasted and ground coffee and roasted and ground chicory with water, or extracting them separately and mixing the two extracts and then drying the mixed extract to a powder which may be agglomerated. The standard also covers freeze-dried soluble coffee-chicory powder. A separate Indian Standard specification has been prepared for roasted coffee-chicory powder (see IS 3802 : 1991).

This standard was issued earlier in 1965 and revised in 1975. In view of the technological changes, the standard is being revised again. The revised version includes the agglomerate form of the product in addition to the powder form. It also incorporates changes in the cup test as well as in the packaging and labelling requirements. The moisture limit has also been revised from 3.5 to 4.0 percent. The maximum limit for chicory content has also been given in the standard. The method of test for determination of chicory content is presently under investigation. However till the method of test is finalized, manufacturers are required to maintain records of the chicory added to the soluble coffee-chicory powder. In the revised version the 'best before' date (to be declared by the manufacturer) has been included as optional under the labelling clause. Shelf life studies of soluble coffee-chicory powder and similar products are being organized under different conditions. After completion of these studies the relevant technical committee will reconsider the issue for making the declaration mandatory under the provision of this standard.

While formulating this standard, due consideration has been given to the relevant Rules issued by the Government of India under the *Prevention of Food Adulteration Act, 1954 and the Standards of Weights and Measures (Packaged Commodities) Rules, 1977*. This standard is, however, subject to the restrictions imposed under these Rules, wherever applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (revised)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SOLUBLE COFFEE-CHICORY POWDER — SPECIFICATION

(*Second Revision*)

1 SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for soluble coffee-chicory powder or agglomerate prepared by dehydration of an aqueous extract or a mixture of aqueous extracts prepared from roasted and ground coffee and roasted chicory.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
1070 : 1977	Water for general laboratory use (<i>second revision</i>)
2491 : 1972	Code for hygienic conditions for food processing units (<i>first revision</i>)
2791 : 1991	Soluble coffee powder (<i>third revision</i>)
3802 : 1991	Roasted coffee-chicory powder (<i>first revision</i>)

3 REQUIREMENTS**3.1 Description**

The material shall be manufactured from suitably roasted and ground coffee and roasted chicory. The product shall be in the form of a free flowing powder or shall be in the agglomerated (granules) form having the colour, taste and flavour characteristic of coffee-chicory powder. It shall not contain any impurities of additives to coffee other than chicory. The material in agglomerated form shall as far as possible have granules of uniform size.

3.2 The material shall be evaluated for cup test in accordance with the procedure prescribed in Annex A of this standard.

3.3 Hygienic Conditions

The material shall be manufactured in premises built and maintained under hygienic conditions (see IS 2491 : 1972). The handling equipment like roasters, grinders, extractors and driers, and the packing equipment shall be clean and free from any objectionable odour.

3.4 The material shall also comply with requirements given in Table 1.

Table 1 Requirements for Soluble Coffee-Chicory Powder
(*Clause 3.4*)

Sl No.	Characteristic	Requirement	Method of Test, Ref to Annex of IS 2791 : 1972
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, <i>Max</i>	4.0	B
ii)	Total ash, percent by mass (on dry basis)	7.0 to 10.0	C
iii)	Caffeine (anhydrous), percent by mass (on dry basis), <i>Min</i>	1.4	D
iv)	Solubility in boiling water	Dissolves readily in 30 seconds with moderate stirring	E
v)	Solubility in cold water at $16 \pm 2^\circ\text{C}$	Soluble with moderate stirring in three minutes	E

3.5 The chicory content in the soluble coffee chicory powder shall not exceed 49 percent by mass on dry basis.

NOTE — As the method of test for determination of chicory content is presently under investigation (see Foreword), manufacturers would be required to maintain a record showing the quantity of chicory added in each batch.

4 PACKING AND MARKING**4.1 Packing**

The material shall be packed in 25 g, 50 g, 100 g, 200 g, 500 g, 1 kg and multiples thereof, in air-tight tin plate or glass containers or in suitable metal foil laminate containers with food grade plastic lining. Where metal foil laminate containers with plastic lining are used, a cautionary notice to the following effect shall be printed:

‘ONCE OPENED TRANSFER CONTENTS IMMEDIATELY INTO AIR-TIGHT CONTAINER’.

NOTE — Other food grade packing materials can be used subject to their suitability being established.

4.2 Marking

The following particulars shall be marked legibly and indelibly on the label of the container:

- a) Name of the material;
- b) Indication of the source of manufacture;

- c) Batch or code number;
- d) List of ingredients;
- e) Month of manufacture;
- f) Best before—(date to be given by the manufacturer) (optional);
- g) Percentage coffee and percentage chicory declaration;
- h) Net mass;
- j) Other requirements laid down under the Standards of Weight and Measures (*Packaged Commodity*) Rules, 1977/*Prevention of Food Adulteration Rules*;;
- k) The following cautionary note shall be printed on flexible containers;

'ONCE OPENED, TRANSFER CONTENTS IMMEDIATELY INTO AIR-TIGHT CONTAINER'.

4.2.1 Standard Mark

Each container may also be marked with the Standard Mark.

5 SAMPLING

5.1 Representative samples of the material shall be drawn and criteria for ascertaining conformity of the material to the requirements of this specification shall be as prescribed in Annex G of IS 2791 : 1991.

6 TESTS

6.1 Tests shall be carried out as prescribed in the annexes specified in col 4 of Table 1.

6.2 Quality of Reagents

Unless specified otherwise, pure chemicals shall be employed in tests and distilled water (*see* IS 1070 : 1977) shall be used where the use of water as a reagent is intended.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

ANNEX A (Clause 3.2)

CUP TEST

A-1 EVALUATION FOR SOLUBILITY

A-1.1 Weigh 2.5 g of soluble coffee-chicory powder into a 500-ml beaker. Then pour 150 ml of freshly boiled water and examine. The solubility will be considered as 'good' if the material dissolves within 30 s; 'fair' if between 30-40 s; and 'poor' if over 40 s. For 'good, fair and poor solubility', assign 5, 3 and 1 marks respectively. If solubility is poor and lumps are found floating on the surface, no mark should be assigned.

A-2 PREPARATION OF SAMPLE FOR CUP TEST

A-2.1 Weigh 2.5 g of soluble coffee-chicory powder in a clean, non-smelling watch glass. Observe colour and granularity.

A-2.2 Transfer the material (*see* A-2.1) to a 200-ml porcelain bowl and add 150 ml freshly boiled chlorine-free water over the soluble coffee-chicory powder. The temperature of water should be not less than 90°C at the time of pouring over the coffee. Allow to cool to about 60°C and evaluate. Evaluation should be completed before the brew gets cold.

A-2.3 Consumer Acceptance Test

A-2.3.1 Weigh 2.5 g of soluble coffee and transfer to a 250 ml porcelain bowl. Take 150 ml of water and 50 ml of milk and pour over the instant coffee powder in the porcelain bowl. The temperature of water and milk shall not be less

than 90°C at the time of pouring over the coffee. Add 8 g of sugar. Stir and smell. Allow to cool to about 60°C and evaluate. Evaluation shall be completed before the brew gets cold.

A-3 PRECAUTIONS

A-3.1 The cup test should preferably be conducted an hour after breakfast and an hour before lunch. The panelist should not smoke during the thirty minutes before the tasting session and should also refrain from using perfumes before tasting.

A-3.2 The panelists should record their reactions in the proforma immediately after evaluating an attribute.

A-3.3 In one session not more than 8 samples should be tasted.

A-4 EVALUATION

A-4.1 Evaluate the soluble coffee-chicory powder and the liquor qualities according to the score card given in A-4.6. If more than one sample is required to be evaluated at one time, the score card may be modified accordingly.

A-4.2 Powder

Depending on the degree of defects classified as suspicion, slight or pronounced, deduct 1, 2 or 3 marks respectively. If the powder is caked, no marks should be assigned.

A-4.3 Liquor

Depending on the degree of defects, the marks deducted should be 5 for suspicion, 10 for slight and 15 for pronounced.

A-4.4 Assignment of Total Score

On the basis of the combined score (of powder and liquor qualities), the final evaluation shall be categorized as follows:

Excellent Good Fair Poor Unacceptable
 31 and above 21-30 16-20 10-15 Below 10

A-4.5 The soluble coffee-chicory powder shall be deemed to have passed the test, if the net score is 20 and above.

A-4.6 Score Card — The details are given below:

Name.....Date.....
 Batch/Code No.....Time.....
 Assign scores for each quality attribute:

<i>Quality Attribute</i>	<i>Max</i>	<i>Score</i>
	<i>Score</i>	
1) Powder		
i) Test for solubility	5	
ii) Colour appeal	5	
iii) Granular structure — Whether even or uneven, in case of powder and uniformity of size, in case of agglomerates	5	

NOTE — If the powder is specky (containing black particles), and/or uneven with a powdery, dusty appearance, the degree of such defects may be indicated as Suspicion, Slight or Pronounced.

2) Liquor:

i) Colour	5
ii) Strength [overall feeling of thickness (body). The term body is used to describe the mouth feel of a drink, corres- ponding to certain con- sistency or an apparent viscosity but not an increase in true viscosity]	10
iii) Flavour	10
a) Taste	5
b) Aroma	5

Oily.....
 Burnt.....
 Bland.....
 Stale.....
 Harsh.....
 Sour.....
 Fermented.....
 Sediment.....

Indicate, if any, the degree of defects, by denoting suspicion, slight or pronounced.

Signature

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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