
Draft Indian Standard
CARBONATED WATER- SPECIFICATION

(Third Revision of IS 2346)

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FOREWORD

This Indian Standard (Third Revision) would be adopted by the Bureau of Indian Standards, after the draft finalized by the Drinks and Carbonated Beverages Sectional Committee is approved by the Food and Agriculture Division Council.

In a tropical country like India, the Carbonated water industry has an important place. The quality of such beverages depends on the quality of the various ingredients that go in its manufacture - water, acidulants, sweetening agents, emulsifiers and stabilizers, flavours, colour and carbon dioxide being the most important ones. The hygienic conditions of the units producing these beverages also need vigilant control to safeguard public health.

This standard was originally issued in 1963 and first revised in 1973, in which maximum permissible limits of those ingredients which in excess could adversely affect human health were specified.

In the second revision in 1992, the scope of this standard was widened to include beverages for dietetic purposes, containing electrolyte mixtures, flavoured and sweetened carbonated water with or without fruit juice, fruit pulp and fruit concentrates, keeping in view the existing trade practices. Several requirements on ingredients had been updated in order to bring the standard in line with existing regulatory requirements and manufacturing practices.

In this third revision the title has been aligned with the Prevention of Food Adulteration Rules, 1955 and the scope of this standard has been modified to include all ready to serve non alcoholic beverages, sweetened or unsweetened, with or without permitted flavour but excluding use of juice, pulp, concentrate, extract of fruit & vegetables, honey, tea coffee, milk & dairy product.

In view of the different varieties of carbonated and non-carbonated beverages produced in the country, it has not been possible to include in the standard the exact or even the range of proportions of different ingredients required for the different varieties of the beverages.

In the preparation of this standard, due consideration has been given to the Prevention of Food Adulteration Act, 1954 and the Rules framed thereunder. Due consideration has also been given to the Standard of Weights & Measures (Packaged Commodities) Rules, 1977. However, this standard is subject to restrictions imposed under these, 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.

CARBONATED WATER - SPECIFICATION*(Third Revision of IS 2346)***1 SCOPE**

This standard prescribes the requirements and the methods of sampling and tests for Carbonated Water.

2 REFERENCE

The Standards listed in Annex A contain provisions which through reference in this text, constitute provision of this standard: At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

3 TERMINOLOGY

Carbonated water means water conforming to the standards prescribed for Packaged Drinking Water impregnated with carbon dioxide under pressure and may contain any of the ingredient singly or in combination as given at clause 4. This exclude the use of juice / pulp / concentrate / extract of fruits and vegetables, honey, tea, coffee, milk and dairy products.

4 TYPES

The Carbonated water shall be of following types:

- 4.1 Flavoured and sweetened, carbonated water.
- 4.2 Carbonated water or soda water with or without permitted flavours.
- 4.3 Flavoured and sweetened/unsweetened, carbonated with dietetic/electrolyte mixtures in formulation.

5 INGREDIENTS

5.1 Carbonated water may be prepared from the ingredients listed under 5.1.1 to 5.1.30 or any other which shall meet the requirements of the relevant Indian standard or statutory requirements, as the case may be.

- 5.1.1 *Water* (IS 14543 or IS 13428)
- 5.1.2 *Sugar* (IS 1151 or IS 5982)
- 5.1.3 *Liquid Glucose* (IS 873)
- 5.1.4 *Dextrose Monohydrate* (IS 874)
- 5.1.5 *Invert Sugar*
- 5.1.6 *Fructose*
- 5.1.7 *Lactose* (IS 1000)
- 5.1.8 *Artificial Sweeteners*- As permitted under the Prevention of Food Adulteration Rules, 1955.
- 5.1.9 *Flavouring Agents* - As permitted under the Prevention of Food Adulteration Rules, 1955.
- 5.1.10 *Food Colours* - As permitted under the Prevention of Food .Adulteration Rules, 1955.

- 5.1.11 *Acidulants* (citric acid, fumaric acid, tartaric acid, phosphoric acid, DL lactic acid, ascorbic acid, malic acid): As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.12 *Clouding Agents* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.13 *Edible Gums* such as guar, karaya, xanthan, arabic, carrobean, furcellaran, tragacanth, gum ghatti. As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.14 *Edible Gelatin, Albumin, Licorice and its Derivatives* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.15 *Ester Gum* (glycerol, ester of wood rosin) As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.16 *Salts of Sodium, Calcium and Magnesium*
- 5.1.17 *Foaming Agents* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.18 *Emulsifying and Stabilizing Agents* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.19 *Sequestering and Buffering Agents* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.20 *Vitamins and Minerals* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.21 *Sodium Bicarbonate, Food Grade (IS 2124)*
- 5.1.22 *Edible Common Salt (IS 253 or IS 7224)*
- 5.1.23 *Caffeine (IS 11911)* - The Quantity of caffeine shall not be more than 145 mg/kg. In case of energy drinks, where caffeine is added as stimulant and not as a flavour, the caffeine content more than 145 mg/l may be allowed and labelling requirement shall be as given in the note of clause 7.
- 5.1.24 *Quinine Salts* - conforming to Indian pharmacopoeia, not exceeding 100 mg/kg calculated as quinine sulphate.
- 5.1.25 *Preservatives* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.26 *Anti-oxidants* - As permitted under the *Prevention of Food Adulteration Rules, 1955*.
- 5.1.27 *Antifoaming Agents* - As permitted under *Prevention of Food Adulteration Rules, 1955*.
- 5.1.28 *Carbon dioxide* - conforming to Grade 2 of IS 307.

6 REQUIREMENTS

6.1 Hygienic conditions

Carbonated Water shall be manufactured in factories maintained in hygienic conditions in accordance with IS 5837. A check list for good hygienic practices and food safety system for Carbonated water plants is given in Annex B.

6.2 Description

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

6.3 Flavour

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

6.4 Carbonation

The beverages shall be carbonated with carbon dioxide conforming to the Grade 2 of IS 307 to a pressure in accordance with their character. The carbonated water shall, however, have a minimum of half volume of carbon dioxide. A recommended method for the measurement of gas volume is given in Annex C.

NOTE - The gas volume is the amount of carbon dioxide the water will absorb at the normal atmospheric pressure at 15.56°C.

6.5 Microbiological Requirements

6.5.1 *Escherichia coli* (or thermotolerant bacteria) shall be absent in any 200 ml sample when tested in accordance with the method given in IS 5887(Part 1)* or IS 15185.

6.5.2 *Coliform*, bacteria shall be absent in any 200 ml sample when tested in accordance with the method given in IS 5401(Part 1)* or IS 15185.

6.5.3 *Faecal streptococci* and *Staphylococcus aureus*, shall be absent in any 200 ml sample when tested in accordance with the method given in IS 5887 (Part 2)*. Streptococci (Enterococci) may also be tested by the method specified in IS 15186.

6.5.4 *Sulphite reducing anaerobes*, shall be absent in 50 ml sample when tested in accordance with the method given in Annex C of IS 13428.

6.5.5 *Pseudomonas aeruginosa*, shall be absent in 200 ml sample when tested in accordance with the method given in Annex D of IS 13428.

6.5.6 Aerobic Microbial Count

The total viable colony count shall not exceed 100 per ml at 20 to 22°C in 72 h and 20 per ml at 37°C in 24 h when tested in accordance with the methods given in IS 5402.

6.5.7 Yeast and Mould shall be absent in 200 ml sample when tested in accordance with the method given in IS 5403.

6.5.8 *Salmonella* and *Shigella* shall be absent in any 200 ml sample when tested in accordance with the method given in IS 5887 (Part 3)* and IS 5887 (Part 7) respectively. *Salmonella* may also be tested by the method specified in IS 15187.

6.5.9 *Vibrio cholera* and *V. parahaemolyticus*, shall be absent in 200 ml sample when tested in accordance with the method given in IS 5887 (Part 5).

NOTE - In case of dispute, the method indicated by '*' in 5.6.1 to 5.6.3 and 5.6.8 shall be reference method.

6.6 The material shall also conform to the requirements given in Table 1.

6.7 The maximum limit of the pesticide residues for pesticides as given in Annex D shall be as follows:

SI No.	Parameters	Limits
i)	Pesticide Residues considered individually	Not more than 0.0001 mg/litre
ii)	Total Pesticide Residue	Not more than 0.0005 mg/litre

6.7.1 The analysis for pesticide residues shall be conducted by a recognized laboratory using internationally established test methods.

6.8 Product Durability

Product durability shall be declared on the container as per clause 7.1 h). It shall be based on in-house shelf life study and proper checks and records be maintained for the conformity of the declared product durability.

7 PACKING

7.1 Containers

The Carbonated water shall be filled in glass containers conforming to IS 1107. It may also be filled in cans, food grade plastic containers conforming to relevant Indian Standard.

7.2 All returnable containers in which Carbonated water are packed shall be cleaned and sanitized according to 4.1 of IS 5837.

7.3 The containers shall be filled under strictly sanitary conditions (IS 5837). After filling, the containers shall be hermetically sealed with clean, new crown corks or caps conforming to IS 1994.

7.4 Inspection of Empty and Filled Containers

Transparent containers such as glass bottles & PET bottles both before and after filling, shall pass for inspection before a brightly illuminated background and be viewed, if necessary, under magnification. Automatic inspection by specially designed units may also be employed. Defective containers or products shall be rejected.

8 MARKING

8.1 The container or label on the container or the crown/cap shall legibly bear the following information:

- a) Name of the product;
- b) Name and address of the manufacturer;
- c) Date of manufacture;
- d) Batch number;
- e) Net volume of content;
- f) Direction for storage;
- g) Brand name, if any;
- h) Best before information; and
- j) Any other markings required under the *Standards of Weights and Measures (Packaged Commodities) Rules, 1977*, and the *Prevention of Food Adulteration Act, 1954* and the Rules framed thereunder

NOTE - In case of energy drinks where caffeine content is more than 145 mg/l, following labelling requirement shall be applicable:

a) The label on the package of formulated caffeinated beverage must include advisory statements to the effect that:

- i) The beverage contains (mention amount) caffeine; and
- ii) The beverage is not recommended for:
 - children
 - pregnant or lactating women; and
 - individuals sensitive to caffeine.

8.2 Labelling Prohibitions

8.2.1 No claims concerning medicinal (preventative, alleviative or curative) effects shall be made in respect of the properties of the product covered by the standard. Claims of other beneficial effects related to the health of the consumer shall not be made unless true and not misleading.

8.2.2 The name of the locality, hamlet or specified place may not form part of the brand name unless it refers to beverages processed at the place designated by that brand name.

8.2.3 The use of any statement or of any pictorial device which may create confusion in the mind of the public or in any way mislead the public about the nature, origin, composition and properties of Carbonated water put on sale is prohibited.

9 SAMPLING

9.1 Representative sample of the material shall be drawn as prescribed in Annex E.

10 TESTING

10.1 Test shall be carried out as prescribed in the appropriate appendices specified in the clauses. (To be added after the parameters are finalized).

10.2 Quality of Reagents

Unless otherwise specified, pure chemicals shall be employed in test, and distilled water (see IS 1070) shall be used wherever the use of water as a reagent is included.

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

Table 1 Requirements for Ready-to-Serve Non-Alcoholic Beverages
(Clause 5.7)

Sl No. (1)	Characteristic (2)	Requirements (3)	Method of Test, Ref to (4)
A. Organoleptic and Physical Parameters			
i)	Colour	Agreeable (GMP)	IS 3025(Part 11)
ii)	Odour	Agreeable (GMP)	
iii)	<i>pH, Min</i>	2.5	
iv)	Taste	Agreeable (GMP)	
B. Parameters Concerning Substances Undesirable in Excessive Amounts including Toxic Substances			
i)	Aluminium, mg/l, <i>Max</i>	0.03	IS 3025(Part 55) or IS 15302* /IS 3025(Part 37)
ii)	Arsenic, mg/l, <i>Max</i>	0.01	
iii)	Antimony (as Sb), mg/l, <i>Max</i>	0.005	Annex G of IS 13428* or IS 15303
iv)	Barium, mg/l, <i>Max</i>	1.0	Annex F of IS 13428* or IS 15302
v)	Borate (as B), mg/1, <i>Max</i>	5.0	Annex H of IS 13428
vi)	Cadmium, mg/1, <i>Max</i>	0.01	IS 3025(Part 41)
vii)	Chromium (total), mg/1, <i>Max</i>	0.05 - Total including Hexavalent chromium	Annex J of IS 13428
viii)	Copper, mg/1, <i>Max</i>	0.05	IS 3025(Part 42)
ix)	Chloride, mg/1, <i>Max</i>	200	IS 3025(Part 32)
x)	Calcium, mg/1, <i>Max</i>	75	IS 3025(Part 40)
xi)	Cyanide, mg/1, <i>Max</i>	Absent	IS 3025(Part 27)
xii)	Fluoride, mg/l, <i>Max</i>	0.5	Clause 23 of IS 3025
xiii)	Iron, mg/1, <i>Max</i>	0.1	IS 3025(Part 53)* or IS 15303

xiv)	Lead, mg/l, <i>Max</i>		0.01	IS 3025(Part 47)
xv)	Manganese, mg/l, <i>Max</i>		0.1	Clause 35 of IS 3025
xvi)	Magnesium, mg/l, <i>Max</i>		30.0	IS 3025(Part 46)
xvii)	Residual Free Chlorine, mg/l, <i>Max</i>		0.2	IS 3025(Part 26)
xviii)	Mercury, mg/l, <i>Max</i>		0.001	IS 3025(Part 48)
xix)	Nickel, mg/l, <i>Max</i>	0.02		Annex L of IS 13428
xx)	Nitrate (as NO ₃), mg/l, <i>Mac</i>	45		IS 3025(Part 34)
xxi)	Nitrite (as NO ₂), mg/l, <i>Max</i>	0.02		IS 3025(Part 34)
xxii)	Selenium, mg/l, <i>Max</i>		0.01	IS 3025(Part 56) or IS 15303*
xxiv)	Sulphate, mg/l, <i>Max</i>		200	IS 3025(Part 24)
xxv)	Sulphide, mg/l, <i>Max</i>		0.05	IS 3025(Part 29)
xxvi)	Silver, mg/l, <i>Max</i>	0.01		Annex J of IS 13428
xxvii)	Sodium, mg/l, <i>Max</i>		200	IS 3025(Part 45)
xxviii)	Tin, mg/l, <i>Max</i>		100.0	CI 17 of IS 2860
xxix)	Zinc, mg/l, <i>Max</i>		5.0	IS 3025(Part 49)
xxx)	Polychlorinated biphenyls (PCB's, Arochlor), mg/l, <i>Max</i>		Not detectable	Annex M of IS 13428
xxxii)	Polynuclear aromatic hydrocarbons,		Not detectable	APHA 6440 mg/l, <i>Max</i>
xxxiii)	Phenolic compound, mg/l, <i>Max</i>		Not detectable	IS 3025(Part 43)
xxxiv)	Mineral Oil, mg/l, <i>Max</i>		Not detectable	IS 3025(Part 39)
xxxv)	Anionic surface active agent (as MBAS), mg/l, <i>Max</i>		0.2	Annex K of IS 13428

C. Radio-Active Residues

i)	`Beta' Emitters, Bq/l, <i>Max</i>		1.0	IS 14194(Part 1)
ii)	`Alpha' Emitters, Bq/l, <i>Max</i>		0.1	IS 14194(Part 2)

NOTE - In case of dispute, the method indicated by '*' shall be reference method ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>
253:1985	Edible common salt (third revision)
307:1966	Carbon dioxide (<i>second revision</i>)
873:1974	Liquid glucose (<i>first revision</i>)
874:1992	Dextrose monohydrate (<i>third revision</i>)
1000:1989	Lactose (commercial) - Specification (<i>first revision</i>)
1070:1992	Reagent grade water - Specification (<i>third revision</i>)
1107:1986	Aerated water glass containers, crown finish type (<i>second revision</i>)
1151:2003	Refined sugar - Specification (<i>second revision</i>)
1994:1987	Crown closures (<i>second revision</i>)
2124:2000	Sodium bicarbonate - Specification (<i>second revision</i>)
2860:1964	Method on sampling and test for processed fruits & vegetables
3025:1964	Methods of sampling and test (physical and chemical) for water used in industry
3025	Methods of sampling and test (physical and chemical) for water and waste water
(Part 11): 1983	pH value (<i>first revision</i>)

(Part 23):1986	Alkalinity (<i>first revision</i>)
(Part 24):1986	Sulphates (<i>first revision</i>)
(Part 26):1986	Chlorine, residual (<i>first revision</i>)
(Part 27):1986	Cyanide (<i>first revision</i>)
(Part 29):1986	Sulphide (<i>first revision</i>)
(Part 32):1988	Chloride (<i>first revision</i>)
(Part 34):1988	Nitrogen (<i>first revision</i>)
(Part 37):1988	Arsenic (<i>first revision</i>)
(Part 39):1991	Oil and grease
(Part 40):1991	Calcium
(Part 41):1992	Cadmium (<i>first revision</i>)
(Part 42):1992	Copper (<i>first revision</i>)
(Part 43):1992	Phenols (<i>first revision</i>)
(Part 45):1993	Sodium and potassium (<i>first revision</i>)
(Part 46):1994	Magnesium (<i>first revision</i>)
(Part 47):1994	Lead (<i>first revision</i>)
(Part 48):1994	Mercury (<i>first revision</i>)
(Part 49):1994	Zinc (<i>first revision</i>)
(Part 53):2003	Iron (<i>first revision</i>)
(Part 55):2003	Aluminium (<i>first revision</i>)
(Part 56):2003	Selenium (<i>first revision</i>)
4905:1968	Methods for random sampling
4941:1994	Extracted honey (<i>second revision</i>)
5401 (Part 1):2002	Microbiology - General guidance for enumeration of coliform: Part 1 Colony count technique (<i>first revision</i>)
5402:2002	Microbiology - General guidance for enumeration of micro-organisms Colony count technique at 30°C (<i>first revision</i>)
5403:1999	Method for yeast and mould count in foodstuffs and animal feed (<i>first revision</i>)
5837:1970	Code for hygienic conditions of soft drink manufacturing units
5887	Methods for detection of bacteria responsible for food poisoning
(Part 1):1976	Isolation, identification and enumeration of <i>Escherichia coli</i> (<i>first revision</i>)
(Part 2):1976	Isolation, identification and enumeration of <i>Staphylococcus aureus</i> and <i>faecal streptococci</i> (<i>first revision</i>)
(Part 3):1999	General guidance on methods for detection of <i>Salmonella</i> (<i>second revision</i>)
(Part 5):1976	Isolation, identification and enumeration of <i>Vibrio cholerae</i> and <i>Vibrio parahaemolyticus</i> (<i>first revision</i>)
(Part 7):1999	General guidance on methods for isolation and identification of <i>Shigella</i>
5982:2003	Plantation white sugar - Specification (<i>first revision</i>)
7224:1985	Iodized salt (<i>third revision</i>)
11911:1986	Caffeine, food grade
13428:1998	Packaged natural mineral water - Specification (<i>first revision</i>)
14194	Radionuclides in environmental samples - Methods of estimation
(Part 1):1994	Gross beta activity measurement
(Part 2):1994	Gross alpha activity measurement
14543:1998	Packaged drinking water (other than packaged natural mineral water) - Specification
15185:2002	Water quality - Detection and enumeration of <i>Escherichia coli</i> and coliform bacteria - Membrane filtration method
15186:2002	Water quality - Detection and enumeration of intestinal enterococci Membrane filtration method
15187:2002	Water quality -Detection of salmonella species
15302:2002	Determination of aluminium and barium in water by direct nitrous oxideacetylene flame atomic absorption spectrometry

15303:2002

Determination of antimony, iron and selenium in water by electrothermal atomic absorption spectrometry.

ANNEX B
(Clause 6.1)

COMPLIANCE CHECKLIST FOR CARBONATED WATER PLANTS

SL No. (1)	SANITATION DEFECTS (2)	ASSIGNED DEFECT POINTS (3)	INSPECTOR'S DEFECT POINTS (4)
1.	PREMISES		
	a) Not well drained	3	
	b) Not free from nuisances and sources of contamination, to include approaches to shipping docks and dust control	5	
2.	CONSTRUCTION OF BUILDING		
	a) Not large enough to accommodate the operation without hampering sanitary practices	5	
	b) Walls, floors, and ceilings not in good repair or not constructed of materials that can easily be kept clean and sanitary .	5	
	c) Wiring, pipes, hangers, and ducts not appropriately constructed or enclosed to prevent contamination	5	
	d) Exterior openings not in good repair or not equipped with screens or other means to prevent the entrance of insects, birds, and/or other animals	5	
	e) Air curtains not working, (if used)	3	
	f) Screen doors not outward opening and not self-closing	3	
	g) Processing area opens directly into living quarters, qarages, or maintenance shops	4	
	h) Facilities for storage of raw materials, packing and packaging materials, and finished products not provided and/or not sanitary or in good repair	5	
3.	SEPARATE ROOMS		
	a) Rooms not separate when required	4	
4.	CONSTRUCTION OF TOILET/DRESSING ROOM AND HANDWAHSHING FACILITIES		
	a) Sufficient number of toilets of water closets not provided	5	
	b) Toilet rooms not conveniently located	4	
	c) Toilet rooms constructed of materials that are not easily cleaned	4	
	d) Toilet rooms not vented to the outside	4	
	e) Toilet rooms open directly into rooms where products are being processed and/of doors not self-closing and tight-fitting	5	
5.	LIGHTING (203)		

SL No. (1)	SANITATION DEFECTS (2)	ASSIGNED DEFECT POINTS (3)	INSPECTOR'S DEFECT POINTS (4)
	a) Insufficient lighting b) Lights in processing area not shielded or shatterproof when required	4 5	
6.	VENTILATION AND HUMIDITY		
	a) Insufficient control of moisture and air movement causing mold and condensates on walls, ceilings or product b) Ventilation system not clean and in good repair c) Air not filtered and/or directed outward where required	5 5 5	
7.	WATER SUPPLY		
	a) Cross-connection exists between potable and nonpotable water supply or sewage system b) Not easily accessible c) Inadequate in quantity (hot or cold) d) Lacks protection against possible back siphonage	Critical 4 5 5	
8.	PRODUCT WATER SUPPLY SOURCE AND TESTING		
	a) Potable water supply found not found as per IS 14543 or 13428 b) Water quality certificate not current or available c) Chemical, Radiological, and/or bacteriological testing not conducted at required frequency	Critical 5 5	
9.	NONPOTABLE WATER		
	a) Nonpotable water outlets not identified by prominently displayed color code and labels b) Nonpotable water used for other than authorized Purposes	5 5	
10.	ICE		
	a) Not made from potable water c) Not manufactured, handled, stored or used in a sanitary manner	Critical 5	
11.	DISPOSAL OF WASTES		
	a) Liquid wastes not disposed of in a sanitary manner b) Floor drains not functional or properly trapped c) Dry and product waste not collected in suitable, properly covered containers and disposed of at frequent intervals and/or in a sanitary manner	5 3 5	
12.	TOILET AND HANDWASHING FACILITIES		
	a) Hand washing sign, water at tepid temperature (approx. 105° F/ 40°C) soap, soap dispenser or appropriate hand-drying facilities, absent or not conveniently located b) Toilets and hand washing facilities not maintained in a clean, orderly fashion c) Toilet rooms used for storage of cleaning equipment and/or supplies	5 5 3	

SL No. (1)	SANITATION DEFECTS (2)	ASSIGNED DEFECT POINTS (3)	INSPECTOR'S DEFECT POINTS (4)
13.	CONSTRUCTION, REPAIR AND MAINTENANCE OF EQUIPMENT AND UTENSILS		
	a) Design, construction and use of such equipment does not preclude the adulteration of product b) Prohibited lubricants used on product contact surfaces c) Product contact surfaces not of nontoxic material d) Lubricants not used in a manner that prevents contamination of product or product contact surfaces e) Product contact surfaces not of impervious material, not smooth, nor of corrosion-resistant material e) Equipment not in good repair so that all surfaces are readily sanitizable f) Equipment not easily accessible for cleaning, maintenance inspection	Critical Critical Critical 5 5 5 5	
14.	WASHING, FILLING AND CAPPING/CROWNING DEVICES		
	a) Design of washing, filling and/or capping/crowning equipment permits manual control of necks or tops of containers between steps b) Overhead covers not present to prevent debris from falling into containers	5 4	
15.	SYRUP EQUIPMENT		
	a) Mixing/storage tanks, pipelines, filters and other equipment not of sanitary construction b) Tanks not self draining, free from defects and seams	4 4	
16.	BOTTLE WASHERS		
	a) Bottle washers not equipped with accurate thermometers of the required type	5	
17.	COMPRESSED AIR EQUIPMENT		
	a) Compressed air not filtered as required b) Piston-type compressors not equipped with oil and moisture traps	5 4	
18.	CLEANING AND SANITIZING TREATMENT		
	a) Cleaning or sanitizing methods do not prevent product contamination or adulteration b) Cleaning and sanitizing chemicals not used as prescribed by manufacturer c) Unauthorized chemical compounds used for cleaning and sanitizing d) All multiservice containers, equipment, and utensils not cleaned and sanitized after use e) Cleaning and sanitizing chemicals not properly labeled or stored f) Test kit or other device not used when chemical sanitizers are utilized	Critical Critical Critical 5 5 5	

SL No. (1)	SANITATION DEFECTS (2)	ASSIGNED DEFECT POINTS (3)	INSPECTOR'S DEFECT POINTS (4)
	g) Water used as sanitizer less than 170°F (77°C) and contact time not as required h) Receiving, processing, storage rooms and areas not maintained in a clean, sanitary manner i) Ingredient and product contact surfaces not cleaned and sanitized as required j) Lines flushed with potable water before processing operation begins	5 5 5 5	
19.	BOTTLE WASHING		
	a) Multiservice primary containers not washed, rinsed sanitized prior to filling b) Chemical sanitizers not removed as specified c) Mechanical washers not inspected or records of such inspection not maintained as required d) Temperatures of the main tank or the bottle washer not recorded as specified e) Record of Main tank Temperature not maintained as required	Critical 5 5 5 5	
20.	IN-PLACE CLEANING AND SANITIZING		
	a) Cleaning and sanitizing procedures do not eliminate all food residues, contaminants, cleaning solutions, adulterants and disease ;causing contaminants b) Clean-in-place pipelines not constructed as required to maintain slope and alignment c) Access points for inspection of piping not located at sufficient intervals d) Records of sanitizer concentration and time of contact not maintained as required e) Chemical sanitizers/ozone concentration and time requirements not as specified	Critical 4 5 5 5	
21.	METHODS		
	a) Methods permit contamination/adulteration of product b) Methods permit deterioration of product	Critical 5	
22.	PREPARATION OF SYRUPS		
	a) Syrups not prepared in a sanitary manner	5	
23.	FILLING		
	a) Filling, capping/crowning not done by means of automatic machinery b) Equipment not monitored as required to ensure containers are sound, properly capped/crowned or sealed, labeled and coded	5 5	
24.	PUBLIC HEALTH CONTROLS		
	a) Raw materials do not meet requirements of IS 2346 b) Not inspected upon receipt and at other times as needed for determination of adulteration, contamination or	Critical 5	

SL No. (1)	SANITATION DEFECTS (2)	ASSIGNED DEFECT POINTS (3)	INSPECTOR'S DEFECT POINTS (4)
	infestation c) Examinations not performed to assure adequate public health control of finished products d) Records of examination and tests of raw materials and finished products not available	5 5	
25.	CHEMICAL, PHYSICAL AND MICROBIOLOGICAL STANDARDS		
	a) Water exceeds chemical, physical and microbiological requirements of IS 2346	Critical	
26.	COOLING AND REFRIGERATION		
	a) Cooler rooms not free from objectionable odors or mold and not maintained in a sanitary manner b) Product not stored at proper temperature and humidity c) Thermometer not available as required	5 5 3	
27.	STORING AND STORAGE FACILITIES		
	a) Storing methods do not minimize deterioration or prevent contamination (includes packaging, packing and single service articles) b) Shelves, cabinets or dunnage not used where necessary to prevent contamination or deterioration	5 5	
28.	CONTROL OF INSECTS, BIRDS, RODENTS AND OTHER ANIMALS		
	a) Presence of insects, birds, rodents and other animals in production area b) Unauthorized insecticides or rodenticides used c) Insecticides or rodenticides not used as prescribed by label directions d) Presence of insects, birds, rodents and other animals in non production area e) Effective measures for control of insects, birds, rodents and other animals not maintained at all times f) Rodent harborages or insect breeding places present g) Insecticides or rodenticides are handled or stored in an unsafe manner	Critical Critical Critical 5 5 5 5	
29.	VEHICLES AND TRANSPORTATION FACILITIES		
	a) Not constructed or operated to protect contents from contamination or deterioration b) Not properly maintained or not clean	Critical 3	
30.	CLEANLINESS AND HEALTH OF PERSONNEL		
a	CLEANLINESS		
	a) Employees not washing hands after contamination b) Evidence of eating, smoking, chewing tobacco or expectorating in product handling areas	Critical 5	

SL No. (1)	SANITATION DEFECTS (2)	ASSIGNED DEFECT POINTS (3)	INSPECTOR'S DEFECT POINTS (4)
	c) Unauthorized jewelry and fingernail polish worn by plant personnel d) Employees not wearing garments/hair restraints suitable for work being performed e) Storage of employee's personal effects in production room f) Lunchroom(s) not maintained in clean, orderly fashion g) Each employee not furnished a locked or other suitable, storage facility h) Locker(s) not maintained in clean, orderly fashion	3 5 3 4 3 4	
B	HEALTH a) Employees affected with or a carrier of a communicable or infectious disease and employees having an infectious wound, sore, or lesion on hands, arms, or other exposed parts of the body not excluded from contacting ingredients, products or food contact surfaces b) Prescribed medical examinations of personnel not being made and records of such not available c) Plant personnel not instructed in acceptable hygienic practices, disease control and proper sanitary rules of food handling	Critical 4 5	

31.	FORMULA $\text{SCR} = \frac{\text{Net Total of Column 3} - \text{Net Total of Column 4}}{\text{Net Total of Column 3}} \times 100$ SCR- Sanitary Compliance Rating	TOTAL 405	405	
] MINUS NONAPPLICABLE DEFECT POINTS	-	
		NET TOTAL DEFECT	405	
32.	a) SCR COMPUTATIONS	b) SCR ASSIGNED	c) NUMBER OF CRITICAL DEFECTS	
33.	OTHER REGULATORY AGENCIES CONCERNED WITH SANITATION OF THIS ESTABLISHMENT (Record the agency, date and results of last inspection)			

Sl. No (1)	SANITATION DEFECTS (2)	ASSIGNED DEFECT POINTS (3)	INSPECTOR'S DEFECT POINTS (4)
NOTE – NO CRITICAL DEFECTS TO BE ALLOWED			

ANNEX C
(Clause 6.4)
METHOD OF MEASURING GAS VOLUME

C-1 APPARATUS

C-1.1 The apparatus consists of a pressure gauge having a hollow spike with holes in its side. The bottle is inserted from the side into the slot provided in the neck of the carbon dioxide tester and is secured in place by lightening with a threaded system. The pressure gauge is inserted until the needle point touches the crown cork. There is a sniff valve on the gauge stem which is kept closed until the needle point of the pressure gauge is forced through the crown cork. The reading is noted on the gauge.

C-2 PROCEDURE

C-2.1 Clamp the bottle in the frame of the gas volume tester. Pierce the crown cork but do not shake the bottle. Sniff off the top gas quickly until the gauge reading drops to zero. Make certain to close the valve the instant the needle touches zero in the pressure gauge. Shake the bottle vigorously until the gauge gives a reading that additional shaking does not change. Record the pressure. Note the temperature and record it. Obtain the volume of gas from **Table 2**.

ANNEX D
LIST OF PESTICIDE RESIDUE
(Clause 6.7)

SI	Name of Pesticide No.
(1)	(2)
i)	DDT (o,p & p,p- isomers of DDT, DDE & DDD)
ii)	γ -HCH (Lindane)
iii)	α , β and δ -HCH
iv)	Endosulfan (α , β and Sulphate)
v)	Monocrotophos
vi)	Ethion
vii)	Chlorpyrifos
viii)	Phorate (Phorate and its oxygen analogue that is phorate sulphoxide and phorate sulphone)
ix)	2,4-D
x)	Butachlor
xi)	Isoproturon
xii)	Alachor
xiii)	Atrazine
xiv)	Methyl Parathion (Methyl Parathion and its oxygen analogue that is methyl-paraoxon)
xv)	Malathion (Malathion and its oxygen analogue that is malaaxon)
xvi)	Aldrin and dieldrin

**ANNEXE
(Clause 8.1)
SAMPLING OF CARBONATED WATER**

E-1 SCALE OF SAMPLING

E-1.1 Lot

All containers 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, containers of the same batch shall be grouped together and each group so formed shall constitute a separate lot.

E-1.1.1 Samples shall be tested from each lot for ascertaining conformity to the requirements of the standard.

E-1.2 The number of containers to be selected from a lot for testing for the microbiological and other requirements shall depend on the size of the lot and shall be in accordance with **Table 3**.

Table 3 Number of Containers to be Selected for Sampling
(Clause E-1.2)

No. of Containers in the Lot	No. of Containers to be Selected for	
	Microbiological Tests (2)	Other Tests (3)
(1)		
Up to 1 300	12	18
1 301 to 3 200	18	24
3 201 and above	24	30

E-1.3 The containers to be selected for testing shall be chosen at random from the lot and for this purpose random number tables (see IS 4905) shall be used. In case such tables are not available, the following procedure may be adopted.

Starting from any container, count them as 1,2,3.....upto to r. Every container thus counted shall be withdrawn, r being the integral part of N/n , where N is the total number of containers in the lot and n the total number of containers to be chosen.

E-2 TEST SAMPLES AND REFEREE SAMPLES

E-2.1 Samples for Microbiological Tests

The sample containers selected for microbiological tests (see col 2 of Table 3) shall be divided at random into three equal sets and labeled with all the particulars of sampling. One of these sets of sample containers shall be for the purchaser, another for the vendor and the third for the referee.

E-2.2 Samples for Other Tests

The sample containers selected for other tests (see col 3 of Table 3) shall be divided at random into three equal sets and labeled with all the particulars of sampling. One of these sets of sample containers shall be for the purchaser, another for the vendor and the third for the referee.

E-2.3 Referee Samples

Referee samples shall consist of sample containers for microbiological tests (see E-2.1) and a set of sample containers for other tests (see E-2.2) and shall bear the seals of the purchaser and the vendor (or their representatives) and shall be kept at a place agreed to between the two.

E-3 TESTING OF SAMPLES

E-3.1 Tests of Microbiological Requirements

The sample containers obtained as in E-2.1 shall be tested for all the microbiological requirements

E-3.2 Test for Other Requirements

Sample containers obtained as in E-2.2 shall be tested for all the other requirements.

E-4 CRITERIA FOR CONFORMITY

E-4.1 Lot shall be considered as conforming to the requirements of this standard if all the samples tested (see E-3.1 and E-3.2) satisfy the requirements specified in the standard.