

**MINISTRY OF HEALTH AND FAMILY WELFARE**  
**(Food Safety and Standards Authority of India)**

Notification

New Delhi, dated the 1<sup>st</sup> August, 2011

F.No. 2-15015/30/2010 Whereas in exercise of the powers conferred by section clause (e) of sub section (2) of section 92 read with 16 of Food Safety and Standards Act, 2006 (34 of 2006) the Food Safety and Standards Authority of India proposes to make Food Safety and Standards Regulations in so far they relates to Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011, and;

Whereas these draft Regulations were published in consolidated form at pages 1 to 776 in the Gazette of India Extraordinary Part III – Sec. 4 dated 20<sup>th</sup> October 2010 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of the period of thirty days from the date on which the copies of the Gazette containing the said notification were made available to the public;

And whereas the copies of the Gazette were made available to the public on the 21<sup>st</sup> October 2010;

And whereas objections and suggestions received from the stakeholders within the specified period on the said draft Regulations have been considered and finalized by the Food Safety and Standards Authority of India.

Now therefore, the Food Safety and Standards Authority of India hereby makes the following Regulations, namely,—

**FOOD SAFETY AND STANDARDS (FOOD PRODUCTS STANDARDS AND FOOD ADDITIVES) REGULATIONS, 2011**

**CHAPTER 1**  
**GENERAL**

**1.1: Title and commencement**

1.1.1: These regulations may be called the Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011.

1.1.2: These regulations shall come into force on or after 5<sup>th</sup> August, except the regulations 2.1.7.(1)(2)(3)(4), 2.1.8 (1)(3), 2.1.11 (1)(2), 2.1.12(1), including table 14 of Appendix A and table 2 of Appendix B which shall come in to force after six months from that date.

Provided that wherever the standards given in these regulations are at variance with any of the provisions of the licenses already granted, Food Business Operator shall comply with the provisions of these regulations within six months from the date of commencement of the regulations.

**1.2: Definitions**

In these regulations unless the context otherwise requires:

1. BOILED MILK means milk which has been brought to boil.
2. “De-oiled meal” means the residual material left over when oil is extracted by a solvent from any oil-bearing material;
3. DOUBLE TONED MILK means the product prepared by admixture of cow or buffalo milk or both with fresh skimmed milk, or by admixture of cow or buffalo milk or both that has been standardised to fat and solids-not-fat percentage given in the table below in 2.1.1:1 by adjustment of milk solids. It shall be pasteurised and shall show a negative Phosphatase Test. When fat or dry non-fat milk solids are used, it shall be ensured that the product remains homogeneous and no deposition of solids takes place on standing.
4. “Hydrogenation” means the process of addition of hydrogen to an edible vegetable oil using a catalyst to produce a fat with semi-solid consistency;
5. Flavoured Milk, by whatever name called, may contain nuts (whole, fragmented or ground) chocolate, coffee or any other edible flavour, edible food colours and cane sugar. Flavoured milk shall be pasteurised, sterilised or boiled. The type of milk shall be mentioned on the label.

6. Full Cream Milk means milk or a combination of buffalo or cow milk or a product prepared by combination of both that has been standardised to fat and solids-not-fat percentage, given in the table below in 2.1.1:1, by adjustment/addition of milk solids, Full Cream Milk shall be pasteurised. It shall show a negative phosphatase test. It shall be packed in clean, sound and sanitary containers properly sealed so as to prevent contamination.

7. 'Irradiation' means any physical procedure, involving the intentional exposure of food to ionizing radiations.

8. 'Irradiation facility' means any facility which is capable of being utilized for treatment of food by irradiation.

9. 'Irradiated food' means articles of food subjected to radiation by :—

(i) Gamma Rays;

(ii) X-rays generated from machine sources operated at or below an energy level of 5 million electron volts; and

(iii) Sub-atomic particles, namely, electrons generated from machine sources operated at or below an energy level of 10 million electron volts, to dose levels as specified in Schedule I of the Atomic Energy (Control of Irradiation of Food) Rules 1991.

10. MILK is the normal mammary secretion derived from complete milking of healthy milch animal without either addition thereto or extraction therefrom unless otherwise provided in these Regulations. It shall be free from colostrum. Milk of different classes and of different designations shall conform to the standards laid down in the Table below in 2.1.1:1

Total urea content in the milk shall not be more than 700 ppm

11. MIXED MILK means a combination of milk of cow, buffalo, sheep, goat or any other milch animal and may be a combination of any of these milk which has been made and conforms to the standards given in the table below in 2.1.1:1.

12. MILK PRODUCTS means the products obtained from milk such as cream, malai, curd, skimmed milk curd, chhanna, skimmed-milk chhanna, cheese, processed cheese, ice-cream, milk ices, condensed milk-sweetened and unsweetened, condensed skimmed milk-sweetened and unsweetened, milk powder, skimmed milk powder, partly skimmed milk powder, khoa, infant milk food, table butter and desi butter.

Milk products shall not contain any substance not found in milk unless specified in the standards.

13. "Margarine" means an emulsion of edible oils and fats with water;

14. 'Operator of irradiation facility' means any person appointed as such by licensee who satisfies the qualifications and requirements as for training specified in Schedule II of the Atomic Energy (Control of Irradiation of Food) Rules, 1991

15. PASTEURISATION—

The terms "Pasteurisation", "Pasteurised" and similar terms shall be taken to refer to the process of heating every particle of milk of different classes to at least 63<sup>0</sup> C and holding at such temperature continuously for at least 30 minutes or heating it to at least 71.5<sup>0</sup>C and holding at such temperature continuously for at least 15 seconds or an approved temperature time combination that will serve to give a negative Phosphatase Test.

All pasteurised milk of different classes shall be cooled immediately to a temperature of 10<sup>0</sup> C, or less

16. RECOMBINED MILK means the homogenised product prepared from milk fat, non-fat-milk solids and water. Recombined milk shall be pasteurised and shall show a negative Phosphatase test.

17. "Refined vegetable oil" means any vegetable oil which is obtained by expression or solvent extraction of vegetable oil bearing materials, deacidified with alkali and/or by physical refining and/or by miscella refining using permitted food grade solvents and/or degumming followed by bleaching with absorbent earth and/or activated carbon and deodorized with steam without using any other chemical agents

18. "Refining" means a process by which an expressed vegetable oil or a solvent-extracted oil is deacidified—

(i) With alkali, or

(ii) by physical refining, or both, or

(iii) By miscella refining using permitted food grade solvent, followed by bleaching with absorbent earth and/or activated carbon or both of them and deodorized with steam without using any other chemical agent;

(iv) refining if required may include the process of degumming using phosphoric/citric acid.

19. SKIMMED MILK means the product prepared from milk from which almost all the milk fat has been removed mechanically.

20. STERILISATION :The term “sterilisation when used in association with milk, means heating milk in sealed container continuously to a temperature of either 115<sup>0</sup> C for 15 minutes or at least 130<sup>0</sup> C for a period of one second or more in a continuous flow and then packed under aseptic condition in hermetically sealed containers to ensure preservation at room temperature for a period not less than 15 days from the date of manufacture;

21. STANDARDISED MILK means cow milk or buffalo milk or sheep milk or goat milk or a combination of any of these milk that has been standardised to fat and solids-not-fat percentage given in the table below in 2.1.1:1 by the adjustment of milk solids. Standardised milk shall be pasteurised and shall show a negative Phosphatase Test.

22. “Solvent-extracted oil” means any vegetable oil obtained from oil-bearing material by the process of extraction by a solvent;

23. “Solvent-extracted edible flour” means the ground material obtained from specially prepared deoiled meal, that is, the residual material left over when oil is extracted by a solvent from oil cake immediately following the single-pressing of good quality edible oilseeds;

24. TONED MILK means the product prepared by admixture of cow or buffalo milk or both with fresh skimmed milk; or by admixture of cow or buffalo milk or both that has been standardised to fat and solids-not-fat percentage given in the table below in 2.1.1:1 by adjustment of milk solids. It shall be pasteurised and shall show a negative Phosphatase Test. When fat or dry non-fat-milk solids are used, it shall be ensured that the product remains homogeneous and no deposition of solids takes place on standing.

25. “Vegetable oils” means oils produced from oilcakes or oilseeds or oil-bearing materials of plant origin and containing glycerides;

26. “Vegetable oil product” means any product obtained for edible purposes by subjecting one or more edible oils to any or a combination of any of the processes or operations, namely, refining, blending, hydrogenation or interesterification and winterization (process by which edible fats and oils are fractioned through cooling), and includes any other process which may be notified by the Central Government in the official Gazette;

## CHAPTER 2 FOOD PRODUCT STANDARDS

### 2.1: DAIRY PRODUCTS AND ANALOGUES

#### 2.1.1: MILK

1. The standards of different classes and designations of milk shall be as given in the table below. Milk shall conform to both the parameters for milk fat and milk solids not fat, independently, as prescribed in columns (4) and (5) of the said table:

Table

Class of Milk	Designation	Locality	Milk Fat	Minimum percent Milk solids not fat
(1)	(2)	(3)	(4)	(5)
Buffalo Milk	Raw, pasteurized, boiled, flavoured, sterlized	Assam, Bihar, Chandigarh Delhi Gujarat Haryana Jharkhand Maharashtra Meghalaya Punjab Sikkim Uttar Pradesh	6.0	9.0

(1)	(2)	(3)	(4)	(5)
		Uttarakhand West Bengal		
Buffalo Milk	Raw, pasteurized, boiled, flavoured, sterlized	Andaman and Nicobar Andhra Pradesh Arunachal Pradesh Chhatisgarh Dadra & Nagar haveli Goa, Daman & Diu Himachal Pradesh Jammu& Kashmir & Karnataka Kerala Lakshadweep, Minicoy & Amindivi Island Madhya Pradesh Manipur Mizoram Nagaland Orissa Puducherry Rajasthan Tamil Nadu Tripura	5.0	9.0
Cow Milk	Raw, pasteurized, boiled, flavoured, sterlized	Chandigarh Haryana Punjab	4.0	8.5
Cow Milk	Raw, boiled, pasteurized, flavoured and sterlized	Andaman & Nicobar Islands Andhra Pradesh Arunachal Pradesh AssamBihar Chhatisgarh Dadra & Nagar haveli Delhi Goa, Daman & Diu Gujarat Himachal Pradesh Jammu & Kashmir Jharkhand Karnataka Kerala Lakshadweep, Minicoy & Adminidive Islands Madhya Pradesh Maharashtra Manipur Meghalaya Nagaland Puducherry Rajasthan Sikkim Tamil Nadu Tripura	3.5	8.5

(1)	(2)	(3)	(4)	(5)
		Uttar Pradesh Uttarakh and West Bengal		
Cow Milk	Raw, boiled, pasteurized, flavoured and sterlized	Mizoram Orissa	3.0	8.5
Goat or Sheep Milk	Raw, boiled, pasteurized, flavoured and sterlized	Chandigarh Chhatisgarh Haryana Kerala Madhya Pradesh Maharashtra Punjab Uttar Pradesh Uttarakhand	3.5	9.0
Goat or Sheep Milk	Raw, boiled, pasteurized, flavoured and sterlized	Andaman & Nicobar Islands Andhra Pradesh Arunachal Pradesh Assam Bihar Chhatisgarh Dadra and Nagar haveli Delhi Goa, Daman & Diu Gujarat Himachal Pradesh Jammu & Kashmir Jharkhand Karnataka Lakshadweep, Minicoy & Amindive Islands Manipur Meghalaya' Mizoram Nagaland Orissa Puducherry Rajasthan Sikkim, Tamil Nadu Tripura West Bengal	3.0	9.0
Mixed Milk	Raw, pasteurised, boiled, flavoured and sterilised	All India	4.5	8.5
Standardized milk	Pasteurised, flavoured and sterilized	All India	4.5	8.5
Recombined Milk	Pasteurised, flavoured and sterilized	All India	3.0	8.5

(1)	(2)	(3)	(4)	(5)
Toned Milk	Pasteurised, flavoured and sterilized	All India	3.0	8.5
Double Toned milk	Pasteurised, flavoured and sterilized	All India	1.5	9.0
Skimmed Milk	Raw, boiled, pasteurised, flavoured and sterilized	All India	Not more than 0.5 percent	8.7
Full Cream Milk	Pasteurised and sterilized	All India	6.0	9.0

NOTE :-(i) When milk is offered for sale without indication of the class, the standards prescribed for buffalo milk shall apply.

(ii) The heat treatment for the various designated milk shall be as follows:

Designation	Heat treatment
Raw	Nil.
Pasteurised	Pasteurisation.
Boiled	Boiling
Flavoured	Pasteurisation or Sterilisation
Sterilised	Sterilisation

#### 2.1.2 Cream:

1. Cream including sterilised cream means the product of cow or buffalo milk or a combination thereof. It shall be free from starch and other ingredients foreign to milk. It may be of following three categories, namely:—

1. Low fat cream—containing milk fat not less than 25.0 percent by weight.
2. Medium fat cream—containing milk fat not less than 40.0 percent by weight.
3. High fat cream—containing milk fat not less than 60.0 percent by weight.

Note:- Cream sold without any indication about milk fat content shall be treated as high fat cream.

2. Cream Powder means the product obtained by partial removal of water from cream obtained from milk of cow and / or buffalo. The fat and / or protein content of the cream may be adjusted by addition and/ or withdrawal of milk constituents in such a way as not to alter the whey protein to casein ratio of the milk being adjusted. It shall be of uniform colour and shall have pleasant taste and flavour free from off flavour and rancidity. It shall also be free from vegetable oil/ fat, mineral oil, added flavour and any substance foreign to milk.

The product may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

(i) Moisture	Not more than 5.0 percent
(ii) Milk fat	Not less than 42.0 percent
(iii) Milk protein in Milk solid not fat	Not less than 34.0 percent

#### 2.1.3: MALAI

1. Malai means the product rich in butter fat prepared by boiling and cooling cow or buffalo milk or a combination thereof. It shall contain not less than 25.0 per cent milk fat.

#### 2.1.4: DAHI OR CURD

1. Dahi or curd means the product obtained from pasteurised or boiled milk by souring, natural or otherwise, by a harmless lactic acid culture or other harmless bacterial culture may also be used in conjunction with lactic acid bacteria cultures for souring. Dahi may contain added cane sugar. Dahi shall have the same minimum percentage of milk fat and milk solids-not-fat as the milk from which it is prepared.

Where dahi or curd is sold or offered for sale without any indication of class of milk, the standards prescribed for dahi prepared from buffalo milk shall apply.

Milk solids may also be used in preparation of this product.

#### 2.1.5: CHHANA OR PANEER

1. Chhana or paneer means the product obtained from the cow or buffalo milk or a combination thereof by precipitation with sour milk, lactic acid or citric acid. It shall not contain more than 70.0 per cent moisture and the milk fat content shall not be less than 50.0 per cent of the dry matter.

Milk solids may also be used in preparation of this product.

Provided that paneer or chhana when sold as low fat paneer or chhana, it shall conform to the following requirements:—

- |               |   |
|---------------|---|
| (i) Moisture  | Not more than 70.0 percent                |
| (ii) Milk fat | Not more than 15.0 percent of dry matter: |

Provided further that such low fat paneer/chhana shall be sold in sealed package only and shall bear proper label declaration as provided in regulation 2.4.5 (39) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

#### 2.1.6: CHEESE

1. Cheese means the ripened or unripened soft or semihard, hard and extra hard product, which may be coated with food grade waxes or polyfilm, and in which the whey protein / casein ratio does not exceed that of milk. Cheese is obtained by coagulating wholly or partly milk and/ or products obtained from milk through the action of non-animal rennet or other suitable coagulating agents and by partially draining the whey resulting from such coagulation and/ or processing techniques involving coagulation of milk and/ or products obtained from milk which give a final product with similar physical, chemical and organoleptic characteristics. The product may contain starter cultures of harmless lactic acid and / or flavour producing bacteria and cultures of other harmless microorganisms, safe and suitable enzymes and sodium chloride. It may be in the form of blocks, slices, cut, shredded or grated cheese.

(i) Ripened Cheese is cheese which is not ready for consumption shortly after manufacture but which must be held for some time at such temperature and under such other conditions as will result in necessary biochemical and physical changes characterizing the cheese in question.

(ii) Mould Ripened cheese is a ripened cheese in which the ripening has been accomplished primarily by the development of characteristic mould growth through the interior and/ or on the surface of the cheese.

(iii) Unripened cheese including fresh cheese is cheese which is ready for consumption shortly after manufacture.

Cheese or varieties of cheeses shall have pleasant taste and flavour free from off flavour and rancidity.

It may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B:

Provided that cheese or varieties of cheeses coated with food grade waxes/ or polyfilm / or wrapping of cloth shall bear proper label declaration as provided in regulation 2.4.5 (44) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011. It shall conform to the following requirements:—

Product	Moisture	Milk Fat on Dry basis
(1)	(2)	(3)
(i) Hard Pressed Cheese	Not more than 39.0 percent	Not less than 48.0
(ii) Semi Hard Cheese	Not more than 45.0 percent	Not less than 40.0 percent
(iii) Semi Soft Cheese	Not more than 52.0 percent	Not less than 45.0 percent
(iv) Soft Cheese	Not more than 80.0 percent	Not less than 20.0 percent
(v) Extra Hard Cheese	Not more than 36.0 percent	Not less than 32.0 percent
(vi) Mozzarella Cheese	Not more than 60.0 percent	Not less than 35.0 percent
(vii) Pizza Cheese	Not more than 54.0 percent	Not less than 35.0 percent

2. “Processed Cheese” means the product obtained by grinding, mixing, melting and emulsifying one or more varieties of cheeses with the aid of heat and emulsifying agents. It may contain cream, butter, butter oil and other milk products subject to maximum 5.0 percent lactose content in the final product and edible common salt, vinegar/ acetic acid, spices and other vegetable seasoning and foods other than sugars properly cooked or prepared for flavouring and characterization of the product provided these additions do not exceed one sixth of the weight of the total solids of the final product on dry matter basis and cultures of harmless bacteria and enzymes. It shall have pleasant taste and smell free from off flavour and rancidity. It may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |   |                             |
|----------------------------|---|-----------------------------|
| (i) Moisture               | - | Not more than 47.0 percent  |
| (ii) Milk fat on dry basis | - | Not less than 40.0 percent. |

Provided that processed cheese chiplets (packed sliced cheese) when sold in a package other than tin, shall not contain more than 50.0 percent moisture.

3. “Processed Cheese Spread means the product obtained by grinding, mixing, melting and emulsifying one or more varieties of cheese with emulsifying agents with the aid of heat. It may contain Cream, Butter oil and other dairy products, subject to a maximum limit of 5.0 percent lactose in the final product, salt, vinegar, spices, condiments and seasonings, natural carbohydrate sweetening agents namely sucrose, dextrose, corn syrup, corn syrup solids, honey, maltose, malt syrup and hydrolysed lactose and food properly cooked or otherwise prepared for flavouring and characterization of the product provided these additions do not exceed one sixth of the weight of total solids of the final product on dry weight basis and cultures of harmless bacteria and enzymes. It shall have pleasant taste and flavour free from off flavour and rancidity. It may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |   |                             |
|----------------------------|---|-----------------------------|
| (i) Moisture               | - | Not more than 60.0 percent  |
| (ii) Milk fat on dry basis | - | Not less than 40.0 percent. |

4. Cheddar Cheese means ripened hard cheese obtained by coagulating heated/pasteurised milk of Cow and/ or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria, non-animal rennet or other suitable coagulating enzymes. It shall be in the form of hard pressed block with a coating of food grade waxes or wrapping of cloth or polyfilm. It shall have firm, smooth and waxy texture with a pale straw to orange colour without any gas holes. It may contain food additives permitted in these Regulations and Appendices including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |   |                            |
|----------------------------|---|----------------------------|
| (i) Moisture               | - | Not more than 39.0 percent |
| (ii) Milk Fat on Dry Basis | - | Not less than 48.0 percent |

5. Danbo Cheese means ripened semi hard cheese obtained by coagulating heated /pasteurised milk of cow and/ or Buffalo and mixtures thereof with cultures of harmless lactic acid producing bacteria, non-animal rennet or other suitable coagulating enzymes. It shall be smooth in appearance with firm texture and uniform yellow colour and may be coated with food grade waxes or wrapping of cloth or polyfilm. It may contain food additives permitted in these Regulations including Appendix A. It shall conform to the microbiological requirements prescribed in. Appendix B. It shall conform to the following requirements:—

- |                            |   |                             |
|----------------------------|---|-----------------------------|
| (i) Moisture               | - | Not more than 39.0 percent. |
| (ii) Milk Fat on Dry Basis | - | Not less than 45.0 percent  |

6. Edam Cheese means the ripened semi hard cheese obtained by coagulating heated / pasteurised milk of Cow and / or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria non-animal rennet or other suitable coagulating enzymes. It shall have a firm texture suitable for cutting with a yellowish colour and a hard rind which may be coated with food grade waxes, wrapping of cloth, polyfilm or vegetable oil. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |   |                             |
|----------------------------|---|-----------------------------|
| (i) Moisture               | - | Not more than 46.0 percent. |
| (ii) Milk Fat on Dry basis | - | Not less than 40.0 percent. |



7. Gouda Cheese means ripened semi hard cheese obtained by coagulating milk of Cow and/ or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria non-animal / rennet or other suitable coagulating enzymes. It shall have firm texture suitable for cutting, straw to yellowish colour and a hard rind which may be coated with food grade waxes, wrapping of cloth, or vegetable oil. It may contain food additives permitted in these Regulations including Appendix “A”. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |                             |
|----------------------------|-----------------------------|
| (i) Moisture               | Not more than 43.0 percent  |
| (ii) Milk Fat on Dry Basis | Not less than 48.0 percent. |

8. Havarti Cheese means ripened semi hard cheese obtained by coagulating milk of cow and / or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria, non-animal rennet or other suitable coagulating enzymes. It shall have firm texture suitable for cutting, a light yellow colour and may have a semi soft slightly greasy rind. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

Requirements	Havarti	30 percent Havarti	60 percent Havarti
(1)	(2)	(3)	(4)
Moisture	Not more than 48.0 percent	Not more than 53.0 percent	Not more than 60.0 percent
Milk Fat on Dry basis	Not less than 45.0 percent	Not less than 30.0 percent	Not less than 60.0 percent.

9. Tilsiter means ripened semi hard cheese obtained by coagulating milk of Cow and/ or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria and cultures of Bacterium linens, non-animal rennet or other suitable coagulating enzymes. It shall have firm texture suitable for cutting with a ivory to yellow colour with a firm rind which may show red and yellow smear producing bacteria or coated with food grade waxes or wrapping of cloth or polyfilm after removal of the smear. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

Requirement	Tilsiter	30 percent Tilsiter	60 percent Tilsiter
(1)	(2)	(3)	(4)
Moisture	Not more than 47.0 percent	Not more than 53.0 percent	Not more than 39.0 percent
Milk fat on Dry Basis	Not less than 45.0 percent	Not less than 30.0 percent	Not less than 60.0 percent

10. Cottage Cheese and Creamed Cottage Cheese means soft unripened cheese obtained by coagulation of pasteurised skimmed milk of Cow and/ or Buffalo or mixtures thereof with cultures of harmless lactic acid bacteria with or without the addition of other suitable coagulating enzymes. Creamed Cottage Cheese is cottage cheese to which a pasteurised creaming mixture of cream, skimmed milk, condensed milk, non fat dry milk, dry milk protein, Sodium/ Potassium/ Calcium/ Ammonium caseinate is added. It shall have a soft texture with a natural white colour. It may contain spices, condiments, seasonings and fruits pulp. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |  |                            |
|--|----------------------------|
| (i) Moisture                             | Not more than 80.0 percent |
| (ii) Milk Fat(in Creamed Cottage Cheese) | Not less than 4.0 percent  |

11. Cream Cheese (Rahmfrischkase) means soft unripened cheese obtained by coagulation of pasteurised milk of cow and / or buffalo or mixtures thereof and pasteurised cream with cultures of harmless lactic acid producing bacteria with or without the addition of suitable coagulating enzymes. It shall have a soft smooth texture with a white to light cream colour. It may contain spices, condiments, seasonings and fruits pulp. The product may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |                             |
|----------------------------|-----------------------------|
| (i) Moisture               | Not more than 55.0 percent. |
| (ii) Milk Fat on Dry Basis | Not less than 70.0 percent. |

12. Coulommiers Cheese means soft unripened cheese obtained by coagulation of milk of cow and /or buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria and non-animal rennet or other suitable coagulating enzymes and moulds characteristic of the variety. It shall have soft texture and white to cream yellow colour and may show presence of white mould including orange or red spots on the surface. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |                            |
|----------------------------|----------------------------|
| (i) Moisture               | Not more than 56.0 percent |
| (ii) Milk Fat on Dry Basis | Not less than 46.0 percent |

13. Camembert Cheese means ripened soft cheese obtained by coagulating milk of Cow and/ or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria and cultures of *Penicillium caseicolum* and *Bacterium linens* non-animal rennet or other suitable coagulating enzymes. It may be in the form of flat cylindrical shaped cheese covered with white mould (*Penicillium caseicolum*) with occasional orange coloured spots (*Bacterium linens*). It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

<i>Requirements</i>	<i>30.0 percent Camembert cheese</i>	<i>40.0 percent Camembert cheese</i>	<i>45.0 percent Camembert cheese</i>	<i>50.0 percent Camembert cheese</i>
(1)	(2)	(3)	(4)	(5)
Moisture	Not more than 62.0 percent	Not more than 56.0 percent	Not more than 56.0 percent	Not more than 56.0 percent
Milk fat on Dry Basis	Not more than 30.0 percent	Not more than 40.0 percent	Not more than 45.0 percent	Not more than 50.0 percent

14. Brie Cheese means soft ripened cheese obtained by coagulating milk of Cow and/ or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria and cultures of *Penicillium caseicolum* and *Bacterium linens*, non-animal rennet and other suitable enzymes. It shall be white to creamy yellow in colour with a smooth texture showing presence of white mould (*Penicillium caseicolum*) with occasional orange coloured spots (*Bacterium linens*) on the rind. It may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B.

It shall conform to the following requirements:—

- |                            |                            |
|----------------------------|----------------------------|
| (i) Moisture               | Not more than 56.0 percent |
| (ii) Milk Fat on Dry basis | Not less than 40.0 percent |

15. Saint Paulin - means ripened semi hard cheese obtained by coagulating milk of Cow and / or Buffalo or mixtures thereof with non-animal rennet, cultures of harmless lactic acid producing bacteria or other suitable enzymes. It shall have white to yellow colour with a firm and flexible texture and a hard rind which may be coated with food grade waxes or polyfilm. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |                            |
|----------------------------|----------------------------|
| (i) Moisture               | Not more than 56.0 percent |
| (ii) Milk Fat on Dry Basis | Not less than 40.0 percent |

16. Samsøe means hard ripened cheese obtained by coagulating milk of Cow and /or Buffalo or combination there of with non-animal rennet and cultures of harmless lactic acid producing bacteria or suitable coagulating enzymes. It shall be yellow in colour with a firm texture suitable for cutting and may have a rind with or without food grade waxes or polyfilm coating. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

<i>Requirements</i>	<i>Samsøe</i>	<i>30 percent Samsøe</i>
(1)	(2)	(3)
(i) Moisture	Not more than 44.0 percent	Not more than 50.0 percent
(ii) Milk Fat on Dry Basis	Not less than 45.0 percent	Not less than 30.0 percent

17. Emmentaler means hard ripened cheese with round holes obtained by coagulating milk of Cow and/ or Buffalo or mixtures thereof with non-animal rennet, cultures of harmless lactic acid producing bacteria or other suitable coagulating enzymes. It may contain Cupric Sulphate not exceeding 15 mgm/Kg expressed as Copper. It shall have a light Yellow colour and a firm texture suitable for cutting and may have a hard rind. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B.

It shall conform to the following requirements:—

- |                            |                             |
|----------------------------|-----------------------------|
| (i) Moisture               | Not more than 40.0 percent. |
| (ii) Milk Fat on Dry Basis | Not less than 45.0 percent  |

18. Provolone means pasta filata cheese obtained by coagulating milk of Cow and/ or Buffalo or mixtures thereof with cultures of harmless lactic acid producing bacteria, non-animal rennet or other suitable coagulating enzymes. It may be smoked. It shall be white to yellow straw in colour with a fibrous or smooth body and rind which may be covered with vegetable fat/ oil, food grade waxes or polyfilm. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |                            |
|----------------------------|----------------------------|
| (i) Moisture —             |                            |
| (a) Unsmoked Cheese        | Not more than 47.0 percent |
| (b) Smoked Cheese          | Not more than 45.0 percent |
| (ii) Milk Fat on Dry Basis | Not less than 45.0 percent |

19. Extra Hard Grating Cheese means ripened cheese obtained by coagulating milk of Cow and/ or Buffalo, goat/ sheep milk or mixtures thereof with cultures of harmless lactic acid producing bacteria, non-animal rennet, or other suitable coagulating enzymes. It may be white to light cream in colour with a slightly brittle texture and an extra hard rind which may be coated with vegetable oil, food grade waxes or polyfilm. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

- |                            |                            |
|----------------------------|----------------------------|
| (i) Moisture               | Not more than 36.0 percent |
| (ii) Milk Fat on Dry Basis | Not less than 32.0 percent |

#### 2.1.7: DAIRY BASED DESSERTS/ CONFECTIONS

1. Ice Cream, Kulfi, Chocolate Ice Cream or Softy Ice Cream(hereafter referred to as the said product) means the product obtained by freezing a pasteurized mix prepared from milk and /or other products derived from milk with or without the addition of nutritive sweetening agents, fruit and fruit products, eggs and egg products, coffee, cocoa, chocolate, condiments, spices, ginger and nuts and it may also contain bakery products such as cake or cookies as a separate layer and/or coating. The said product may be frozen hard or frozen to a soft consistency; the said product shall have pleasant taste and smell free from off flavour and rancidity; the said product may contain food additives permitted in these regulation including Appendix A; the said product shall conform to the microbiological requirements specified in Appendix B; the said product shall conform to the following requirements, namely:—

Requirement	Ice Cream	Medium Fat Ice Cream	Low Fat Ice Cream
(1)	(2)	(3)	(4)
Total Solid	Not less than 36.0 percent	Not less than 30.0 percent	Not less than 26.0 percent
Wt/Vol (gms/l)	Not less than 525	Not less than 475	Not less than 475
Milk Fat	Not less than 10.0 percent	More than 2.5 percent but less than 10.0 percent	Not more than 2.5 percent
Milk Protein(Nx6.38)	Not less than 3.5 percent	Not less than 3.5 percent	Not less than 3.0 percent

Note: In case where Chocolate, Cake or similar food coating, base or layer forms a separate part of the product only the Ice Cream portion shall conform to the requirements given above. The type of ice-cream shall be clearly indicated on the label otherwise standard for ice-cream shall apply.

2. Dried Ice Cream Mix/ Dried Frozen Dessert/ Confection(hereafter referred to as the said product) means the product in a powder form which on addition of prescribed amount of water shall give a product conforming to the requirements of the respective products, namely - ice cream, medium fat ice-cream, low fat ice-cream as prescribed under regulation 2.1.7 (1) and frozen confection, medium fat frozen confection and low fat frozen confection as prescribed under regulation 2.1.7 (3) of these regulations except the requirement of weight /volume for both the products. The moisture content of the product shall not be more than 4.0 percent. It may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B.

3. Frozen Dessert / Frozen Confection(hereafter referred to as the said product) means the product obtained by freezing a pasteurised mix prepared with milk fat and / or edible vegetable oils and fat having a melting point of not more than 37.0 degree C in combination and milk protein alone or in combination / or vegetable protein products singly or in combination with the addition of nutritive sweetening agents e.g. sugar, dextrose, fructose, liquid glucose, dried liquid glucose, maltodextrin, high maltose corn syrup, honey, fruit and fruit products, eggs and egg products coffee, cocoa, chocolate, condiments, spices, ginger, and nuts. The said product may also contain bakery products such as cake or cookies as a separate layer/or coating, it may be frozen hard or frozen to a soft consistency. It shall have pleasant taste and flavour free from off flavour and rancidity and may contain food additives permitted in Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

Requirement	Frozen Dessert/ Frozen Confection	Medium Fat Frozen Dessert/ Frozen Confection	Low Fat Frozen Dessert/ Frozen Confection
(1)	(2)	(3)	(4)
Total Solid	Not less than 36.0 percent	Not less than 30.0 percent	Not less than 26.0 percent
Wt/Vol (gms/l)	Not less than 525	Not less than 475	Not less than 475
Total Fat	Not less than 10.0 percent	more than 2.5 percent but less than 10.0 percent	Not more than 2.5 percent
Total Protein (N x 6.25)	Not less than 3.5 percent	Not less than 3.5 percent	Not less than 3.0 percent

Note: In case where Chocolate, Cake or similar food coating, base or layer forms a separate part of the product only the frozen dessert/ confection portion shall conform to the requirements given above. The type of frozen confection shall be clearly indicated on the label otherwise, standards of frozen dessert / frozen confection shall apply and every package of Frozen Dessert / Frozen Confection shall bear proper label declaration under regulation 2.4.5 (41) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011 .

4. Milk Ice or Milk Lolly (hereafter referred to as the said product) means the product obtained by freezing a pasteurized mix prepared from milk and/or other products derived from milk with or without the addition of nutritive sweetening agents, fruit and fruit products, eggs and egg products, coffee, cocoa, chocolate, condiments, spices, ginger and nuts; the said product may also contain bakery products such as cake or cookies as a separate layer and/or coating; the said product shall have pleasant taste and smell free from off flavour and rancidity. It may contain food additives permitted in Appendix A; the said product shall conform to the microbiological requirements prescribed in Appendix B; the said product shall also conform to the following requirements, namely :—

- |                           |                            |
|---------------------------|----------------------------|
| (1) Total solids (m/m)    | Not less than 20.0 percent |
| (2) Milk Fat (m/m)        | Not more than 2.0 percent  |
| (3) Milk Protein (Nx6.38) | Not less than 3.5 percent  |

5. Khoya by whatever variety of names it is sold such as Pindi, Danedar, Dhap, Mawa or Kava means the product obtained from cow or buffalo or goat or sheep milk or milk solids or a combination thereof by rapid drying. The milk fat content shall not be less than 30 percent on dry weight basis of finished product. It may contain citric acid not more than 0.1 per cent by weight. It shall be free from added starch, added sugar and added colouring matter.

## 2.1.8: EVAPORATED/CONDENSED MILK &amp; MILK PRODUCTS

1. Evaporated Milk means the product obtained by partial removal of water from milk of cow and/ or buffalo by heat or any other process which leads to a product of the same composition and characteristics. The fat and protein content of the milk may be adjusted by addition and/ or withdrawal of milk constituents in such a way as not to alter the whey protein to casein ratio of the milk being adjusted. It shall have pleasant taste and flavour free from off flavour and rancidity. It shall be free from any substance foreign to milk. It may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

Product	Milk Fat	Milk Solids solids not fat	Milk Protein in milk
(1)	(2)	(3)	(4)
(i) Evaporated milk	Not less than 8.0 percent m/m	Not less than 26.0 percent m/m	Not less than 34.0 percent m/m
(ii) Evaporated partly skimmed milk	Not less than 1.0 percent and not more than 8.0 percent m/m	Not less than 20.0 percent m/m	Not less than 34.0 percent m/m
(iii) Evaporated skimmed milk	Not more than 1.0 percent m/m	More than 2.5 percent but less than 10.0 percent	Not less than 34.0 percent m/m
(iv) Evaporated high fat milk	Not less than 15.0 percent m/m	Not less than 27.0 percent m/m	Not less than 34.0 percent m/m

2. Sweetened Condensed Milk means the product obtained by partial removal of water from milk of Cow and/ or Buffalo with the addition of sugar or a combination of sucrose with other sugars or by any other process which leads to a product of the same composition and characteristics. The fat and/ or protein content of the milk may be adjusted by addition and / or withdrawal of milk constituents in such a way as not to alter the whey protein to casein ratio of the milk being adjusted. It shall have pleasant taste and flavour free from off flavour and rancidity. It shall be free from any substance foreign to milk. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

Product	Milk Fat	Milk Solids	Milk Protein in milk solids not fat
(i) Sweetened condensed milk	Not less than 9.0 percent m/m	Not less than 31.0 percent m/m	Not less than 34.0 percent m/m
(ii) Sweetened condensed skimmed milk	Not more than 1.0 percent m/m	Not less than 26.0 percent m/m	Not less than 34.0 percent m/m
(iii) Sweetened condensed partly skimmed milk	Not less than 3.0 percent m/m and not more than 9.0 percent	m/m	Not less than 28.0 percent m/m
(iv) Sweetened condensed high fat milk	Not less than 16.0 percent m/m	Not less than 30.0 percent m/m	Not less than 34.0 percent m/m

3. Milk Powder - means the product obtained by partial removal of water from milk of Cow and / or Buffalo. The fat and / or protein content of the milk may be adjusted by addition and/ or withdrawal of milk constituents in such a way as not to alter the whey protein to casein ratio of the milk being adjusted. It shall be of uniform colour and shall have pleasant taste and flavour free from off flavour and rancidity. It shall also be free from vegetable oil/ fat, mineral oil, thickening agents, added flavour and sweetening agent. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

Product	Moisture	Milk Fat	Milk protein in milk solids not fat	Titration acidity (ml 0.1N NAOH / 10 gm solids not fat)	Solubility Percent	Total ash on dry weight basis
(i) Whole milk powder	Not more than 4.0 percent m/m	Not less than 26.0 percent m/m	Not less than 34.0 percent m/m	Not more than 18.0	Not more than 2 ml	Not more than 7.3 percent
(ii) Partly skimmed milk powder	Not more than 5.0 percent	Not less than 1.5 percent m/m and not more than 26.0 percent m/m	Not less than 34.0 percent m/m	Not more than 18.0	Not more than 2 ml	Not more than 8.2 percent
(iii) Skimmed milk powder	Not more than 5.0 percent	not more than 1.5 percent m/m	Not less than 34.0 percent m/m	Not more than 18.0	Not more than 2 ml	Not more than 8.2 percent

### 2.1.9: FOODS FOR INFANT NUTRITION

1. Infant Milk Food means the product prepared by spray drying of the milk of cow or buffalo or a mixture thereof. The milk may be modified by the partial removal/substitution of different milk solids; carbohydrates, such as sucrose, dextrose and dextrans/maltodextrin, maltose and lactose; salts like phosphates and citrates; vitamins A, D, E, B Group, Vitamin C and other vitamins; and minerals like iron, copper, zinc and iodine. The source of Mineral Salts and Vitamin Compounds may be used from:—

1. Calcium (Ca) - Calcium carbonate, Calcium chloride, Calcium citrate, Calcium phosphate monobasic, Calcium phosphate dibasic, Calcium phosphate tribasic;
2. Phosphorous (P) - Calcium phosphate monobasic, Calcium phosphate dibasic, Calcium phosphate tribasic, Magnesium phosphate dibasic, Potassium phosphate dibasic;
3. Chloride (Cl) - Calcium chloride, Choline chloride, Magnesium chloride, Manganese chloride, Sodium chloride, Sodium chloride iodized;
4. Iron (Fe) - Ferrous citrate, Ferrous lactate, Ferrous sulphate, Ferric pyrophosphate;
5. Magnesium (Mg) - Magnesium chloride, Magnesium oxide, Magnesium phosphate dibasic;
6. Sodium (Na) - Sodium bicarbonate, Sodium chloride, Sodium chloride iodized, Sodium citrate, Sodium phosphate monobasic;
7. Potassium (K) - Potassium phosphate dibasic;
8. Copper (Cu) - Cupric citrate, Cupric sulphate;
9. Iodine (I) - Potassium iodide, Sodium iodide;
10. Zinc (Zn) - Zinc sulphate;
11. Manganese (Mn) - Manganese chloride, Manganese sulphate;
12. Vitamin A - Retinyl acetate, Retinyl palmitate, Retinyl propionate;
13. Provitamin A - Beta-carotene;
14. Vitamin D - Vitamin D2 - Ergocalciferol, Vitamin D3 - Cholecalciferol, Cholecalciferol-cholesterol;
15. Vitamin E - d-alpha-tocopherol, dl-alpha-tocopherol, d-alpha-tocopheryl acetate, dl-alpha-tocopheryl acetate, d-alpha-tocopheryl succinate, dl-alpha-tocopheryl succinate;
16. Thiamine (Vitamin B1) - Thiamine chloride hydrochloride, Thiamine mononitrate;
17. Riboflavin (Vitamin B2) - Riboflavin, Riboflavin 5' -phosphate sodium;
18. Niacin - Nicotinamide, Nicotinic acid;
19. Vitamin B6 - Pyridoxine hydrochloride;
20. Biotin (Vitamin H) - d-biotin;
21. Folacin - Folic acid;
22. Pantothenic acid - Calcium pantothenate, Panthenol;
23. Vitamin B12 - Cyanocobalamin, Hydroxycobalamin;

24. Vitamin K - Phytylmenaquinone;
25. Vitamin C - Ascorbic acid, Sodium ascorbate, Calcium ascorbate, Ascorbyl-6-palmitate;
26. Choline - Choline bitartrate, Choline chloride;
27. Inositol;
28. Selenium - Sodium selenite.

The product shall be free of lumps and shall be uniform in appearance. It shall be free from starch and added antioxidants. It shall also be free from dirt, extraneous matter, preservatives and added colour and flavour and from any material which is harmful to human health. It shall not have rancid taste or musty odour. It shall not contain food additives.

It shall conform to the following requirements, namely:—

1. Moisture, per cent by weight (not more than)	4.5
2. Total milk protein, per cent by weight (not less than)	12.0
3. Milk fat, per cent by weight (not less than)	18.0
4. Total ash, per cent by weight (not more than)	8.5
5. Ash insoluble in dilute Hydrochloric acid, per cent by weight (not more than)	0.1
6. Solubility:	
Solubility Index maximum	2.0ml
Solubility per cent by weight (not less than)	98.5
7. Vitamin A (as retinol) $\mu\text{g}$ . per 100 g. (not less than)	350 $\mu\text{g}$
8. Added Vitamin D (expressed as Cholecalciferol or Ergocalciferol) $\mu\text{g}$ per 100g. (not less than)	4.5 $\mu\text{g}$
9. Vitamin C, mg per 100 g. (not less than)	35 mg
10. Thiamine, $\mu\text{g}$ per 100 g. (not less than)	185 $\mu\text{g}$
11. Riboflavin, $\mu\text{g}$ per 100 g. (not less than)	275 $\mu\text{g}$
12. Niacin, $\mu\text{g}$ per 100 g. (not less than)	1160 $\mu\text{g}$
13. Pyridoxine $\mu\text{g}$ per 100 g. (not less than)	160 $\mu\text{g}$
14. Folic acid, $\mu\text{g}$ per 100 g. (not less than)	20 $\mu\text{g}$
15. Pantothenic acid, mg per 100 g. (not less than)	1.4 mg
16 Vitamin B12, $\mu\text{g}$ per 100 g. (not less than)	0.7 $\mu\text{g}$
17 Choline, mg per 100 g. (not less than)	32 mg
18 Vitamin K $\mu\text{g}$ per 100 g. (not less than)	18 $\mu\text{g}$
19 Biotin, $\mu\text{g}$ per 100 g. (not less than)	7.0 $\mu\text{g}$
20 Sodium mg per 100 g. (not less than)	90 mg
21 Potassium, mg per 100 g. (not less than)	370 mg
22 Chloride, mg per 100 g. (not less than)	250 mg
23 Calcium, mg per 100 g. (not less than)	230 mg
24 Phosphorous, mg per 100 g. (not less than)	115 mg
25 Magnesium, mg per 100 g. (not less than)	22 mg
26 Iron, mg per 100 g. (not less than)	5.0 mg
27 Iodine, $\mu\text{g}$ per 100 g. (not less than)	20 $\mu\text{g}$
28 Copper, $\mu\text{g}$ per 100 g. (not less than)	280 $\mu\text{g}$
29 Zinc, mg per 100 g. (not less than) and not more than	2.5 mg 5.0 mg
30 Manganese, $\mu\text{g}$ per 100g. (not less than)	20 $\mu\text{g}$
31 Selenium, $\mu\text{g}$ per 100 g. (not less than)	14 $\mu\text{g}$

32. Bacterial count, per g. (not more than)	10,000
33 Coliform count absent in	0.1 gram
34 Yeast and mould count absent in	0.1 gram
35 Salmonella and Shigella absent in	25 gram
36 E. coli absent in	0.1 gram
37 Staphylococcus aureas absent in	0.1 gram

It shall be packed in hermetically sealed, clean and sound containers or in flexible pack made from film or combination or any of the substrate made of Board paper, polyethylene, polyester metallised film or in such a way to protect from deterioration.

It may be packed in nitrogen or a mixture of nitrogen and carbon dioxide.

2. Infant formula means the product prepared by spray drying of the milk of cow or buffalo or mixture thereof. The milk may be modified by partial removal/substitution of milk fat with vegetable oils rich in polyunsaturated fatty acids and/or by different milk solids; carbohydrates such as sucrose, dextrose and dextrans/ maltodextrin, maltose and lactose; salts such as phosphates and citrates; vitamins A, D, E, B and C group and other vitamins; minerals such as iron, copper, zinc and iodine and others. Vegetable oils rich in polyunsaturated fatty acids shall be added to partially substitute milk fat to an extent that the product shall contain a minimum of 12 per cent by weight of milk fat and a minimum of linoleate content of 1.398 g per 100 g. of the product.

The products shall also contain a minimum of 0.70 I.U. of vitamin E per 100 kcal. It may contain in addition to the vitamins and minerals listed, other nutrients may be added when required in order to provide nutrients ordinarily found in human milk such as,—

1. Carotenes	Not less than 0.25 mg/L
2. Fluorine	Not less than 0.107 mg/L
3. Amino acids	Not less than 9 mg/L (only L forms of amino acids should be used)
4. Non-protein nitrogen	Not less than 173 mg/L
5. Nucleotides	Not less than 11.7 mg/L
6. Carnitine	Not less than 11.27 µg/L
7. Lactalbumin	Not less than 1.4 g/L
8. Lactoferrin	Not less than 0.27 g/L
9. Lysozyme	Not less than 0.8 g/L
10. Fucose	Not less than 1.3 g/L
11. Glucosamine	Not less than 0.7 g/L
12. Inositol	Not less than 0.39 g/L
13. Citric acid	Not less than 0.35 g/L
14. Cholesterol	Not less than 88 mg/L
15. Lipid Phosphorus	Not less than 7 mg/L
16. Prostaglandins	Not less than PGE 150 mg/L

Not less than PGF 400 mg/L

When any of these nutrients is added, the amount of these added nutrients shall be declared on the label, which should be not less than mentioned. It may contain medium chain triglycerides, taurine, molybdenum and chromium.

The source of Mineral Salts and Vitamin Compounds may be used from:—

- (1) Calcium (Ca) - Calcium carbonate, Calcium chloride, Calcium citrate, Calcium phosphate monobasic, Calcium phosphate dibasic, Calcium phosphate tribasic;
- (2) Phosphorous (P) - Calcium phosphate monobasic, Calcium phosphate dibasic, Calcium phosphate tribasic, Magnesium phosphate dibasic, Potassium phosphate dibasic;



- (3) Chloride (Cl) - Calcium chloride, Choline chloride, Magnesium chloride, Manganese chloride, Sodium chloride, Sodium chloride iodized;
- (4) Iron (Fe) - Ferrous citrate, Ferrous lactate, Ferrous sulphate, Ferric pyrophosphate;
- (5) Magnesium (Mg) - Magnesium chloride, Magnesium oxide, Magnesium phosphate dibasic;
- (6) Sodium (Na) - Sodium bicarbonate, Sodium chloride, Sodium chloride iodized, Sodium citrate, Sodium phosphate monobasic;
- (7) Potassium (K) - Potassium phosphate dibasic;
- (8) Copper (Cu) - Cupric citrate, Cupric sulphate;
- (9) Iodine (I) - Potassium iodide, Sodium iodide;
- (10) Zinc (Zn) - Zinc sulphate;
- (11) Source of Manganese (Mn) - Manganese chloride, Manganese sulphate.

#### Vitamins

1. Vitamin A - Retinyl acetate, Retinyl palmitate, Retinyl propionate;
2. Provitamin A - Beta-carotene;
3. Vitamin D - Vitamin D<sub>2</sub> - Ergocalciferol, Vitamin D<sub>3</sub> - Cholecalciferol, Cholecalciferol-cholesterol;
4. Vitamin E - d-alpha-tocopherol, dl-alpha-tocopherol, d-alpha-tocopheryl acetate, dl-alpha-tocopheryl acetate, d-alpha-tocopheryl succinate, dl-alpha-tocopheryl succinate;
5. Thiamine (Vitamin B<sub>1</sub>) - Thiamine chloride hydrochloride, Thiamin mononitrate;
6. Riboflavin (Vitamin B<sub>2</sub>) - Riboflavin, Riboflavin 5' -phosphate sodium;
7. Niacin - Nicotinamide, Nicotinic acid;
8. Vitamin B<sub>6</sub> - Pyridoxine hydrochloride;
9. Biotin (Vitamin H) - d-biotin;
10. Folacin - Folic acid;
11. Pantothenic acid - Calcium pantothenate, Panthenol;
12. Vitamin B<sub>12</sub> - Cyanocobalamin, Hydroxycobalamin;
13. Vitamin K - Phytylmenaquinone;
14. Vitamin C - Ascorbic acid, Sodium ascorbate, Calcium ascorbate, Ascorbyl-6-palmitate;
15. Choline - Choline bitartrate, Choline chloride;
16. Inositol;
17. Selenium - Sodium selenite.

The product shall be free of lumps and shall be uniform in appearance. It shall be free from added starch, added colour and added flavour. It shall not have rancid taste and musty odour.

It may contain food additive listed below, —

Food Additives	Maximum level in 100 ml of the ready-to-drink product
pH - adjusting agents	
Sodium hydroxide	
Sodium hydrogen carbonate	Limited by good
Sodium carbonate	manufacturing practice and within the limits for Sodium and
Potassium Hydroxide	Potassium in all types of infant formulae
Potassium hydrogen Carbonate	
Potassium Carbonate	
Calcium hydroxide	
Sodium Citrate	
Potassium Citrate	

L (+) Lactic acid producing cultures	Limited by good formulae manufacturing practice in all types of infant formulae
Citric Acid	

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Antioxidants	
Mixed tocopherols concentrate and L-Ascorbyl palmitate	1 mg in all types of infant formulae
Mono and Diglycerides	0.4 gram

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It shall conform to the following requirements namely:

1.	Moisture, per cent by weight (not more than)	4.5
2.	Total milk protein, per cent by weight (not less than) and not more than	10.0 16.0
3.	Total fat, percent by weight (not less than)	18.0
	Milk Fat, percent by weight (not less than)	12.0
	Linoleate per 100 gram (not less than)	1.398g
4.	Total ash, per cent by weight (not more than)	8.5
5.	Ash insoluble in dilute Hydrochloric acid, per cent by weight (not more than)	0.1
6.	Solubility:	
	(a) Solubility Index maximum	2.0ml
	(b) Solubility per cent by weight (not less than)	98.5
7.	Vitamin A (as retinol) $\mu\text{g}$ . per 100 g. (not less than)	350 $\mu\text{g}$
8.	Added Vitamin D (expressed as Cholecalciferol or Ergocalciferol) $\mu\text{g}$ . per 100g. (not less than)	4.5 $\mu\text{g}$
9.	Vitamin C, mg per 100 g. (not less than)	35 mg
10.	Thiamine, $\mu\text{g}$ per 100 g. (not less than)	185 $\mu\text{g}$
11.	Riboflavin, $\mu\text{g}$ per 100 g. (not less than)	275 $\mu\text{g}$
12.	Niacin, $\mu\text{g}$ per 100 g. (not less than)	1160 $\mu\text{g}$
13.	Pyridoxine $\mu\text{g}$ per 100 g. (not less than)	160 $\mu\text{g}$
14.	Folic acid, $\mu\text{g}$ per 100 g. (not less than)	20 $\mu\text{g}$
15.	Pantothenic acid, mg per 100 g. (not less than)	1.4 mg
16.	Vitamin B12, $\mu\text{g}$ per 100 g. (not less than)	0.7 $\mu\text{g}$
17.	Choline, mg per 100 g. (not less than)	32 mg
18.	Vitamin K $\mu\text{g}$ per 100 g. (not less than)	18 $\mu\text{g}$
19.	Biotin, $\mu\text{g}$ per 100 g. (not less than)	7.0 $\mu\text{g}$
20.	Vitamin E (as a-tocopherol compounds) IU per 100g. (not less than)	3.15 IU
21.	Sodium mg per 100 g. (not less than)	90 mg
22.	Potassium, mg per 100 g. (not less than)	370 mg
23.	Chloride, mg per 100 g. (not less than)	250 mg
24.	Calcium, mg per 100 g. (not less than)	230 mg
25.	Phosphorous, mg per 100 g. (not less than)	115 mg
26.	Magnesium, mg per 100 g. (not less than)	22 mg
27.	Iron, mg per 100 g. (not less than)	5.0 mg
28.	Iodine, $\mu\text{g}$ per 100 g. (not less than)	20 $\mu\text{g}$
29.	Copper, $\mu\text{g}$ per 100 g. (not less than)	280 $\mu\text{g}$

30.	Zinc, mg per 100 g. (not less than) and not more than	2.5 mg 5.0 mg
31	Manganese, µg per 100g. (not less than)	20 µg
32.	Selenium, µg per 100 g. (not less than)	14 µg
33.	Bacterial count, per g. (not more than)	10,000
34.	Coliform count absent in	0.1 gram
35.	Yeast and mould count absent in	0.1 gram
36.	Salmonella and Shigella absent in	25 gram
37.	E. coli absent in	0.1 gram
38.	Staphylococcus aureas absent in	0.1 gram

Premature/Low birth weight infant milk substitutes—

Provided that the premature/low birth weight infant milk substitutes shall also meet the following requirement in addition to the requirements mentioned above:—

1. Protein shall be 2.25 - 2.75 gram per 100 kcal

2. Mineral contents shall not be less than 0.5 gram per 100 kcal. The Calcium: Phosphorous ratio shall be 2:1. The Sodium, Potassium and Chloride combined together shall be not less than 40 milli equivalent per Litre;

3. Whey: Casein ratio shall be 60:40. Essential amino acids should include taurine, cystine, tyrosine and histidine;

Lactose free infant milk substitute

Lactose and sucrose free infant milk substitute Sucrose free infant milk substitute

Provided that the lactose free or lactose and sucrose free or sucrose free infant milk substitutes shall also meet the following requirement in addition to the requirements mentioned in the standard, provided that in these three products edible vegetable oil may be used in place of milk fat and lecithin may be used as an emulsifier:—

1. Soy protein-based, lactose-free formula shall have soy-protein and carbohydrate as glucose, dextrose, dextrin/maltodextrin, maltose and/or sucrose;

2. Lactose-free cow's/buffalo's milk-based formulas shall have carbohydrate as glucose, dextrose, dextrin/maltodextrin, maltose and sucrose.

Hypoallergenic infant milk substitutes

Provided that the Hypoallergenic infant milk substitutes shall also meet the following requirement in addition to the requirements mentioned in the standard:—

1. Protein shall be hydrolyzed whey or casein or;

2. 100% free amino acids as a protein source;

It shall be packed in hermetically sealed, clean and sound containers or in flexible pack made from film or combination or any of the substrate made of Board paper, polyethylene, polyester metallised film or in such a way to protect from deterioration. It shall be packed in nitrogen or a mixture of nitrogen and carbon dioxide."

3. Milk-cereal based complementary food milk-cereal based complementary food commonly called as weaning food or supplementary food means foods based on milk, cereal and/or legumes (pulses), soyabean, millets, nuts and edible oil seeds, processed to low moisture content and so fragmented as to permit dilution with water, milk or other suitable medium.

Milk-cereal based complementary food is intended to supplement the diet of infants after the age of six months.

Milk cereal based complementary food are obtained from milk, variety of cereals, pulses, soyabean, millets, nuts and edible oil seeds after processing. It may contain edible vegetable oils, milk solid, various carbohydrates such as sucrose, dextrose, dextrans/ maltodextrin, maltose and lactose, calcium salts; phosphates and citrates and

other nutritionally significant minerals and vitamins. It shall contain a minimum of 10 per cent milk protein by weight of the product. It shall also contain minimum 5 per cent milk fat by weight. It shall not contain hydrogenated fats containing trans-fatty acids. It may contain fungal  $\alpha$  amylase upto a maximum extent of 0.025 percent by weight, fruits and vegetables, egg or egg products. It may also include amino acids such as lysine, methionine, taurine, carnitine etc.

The source of Vitamin Compounds and Mineral Salts may be used from,—

1. Calcium (Ca) - Calcium carbonate, Calcium phosphate tribasic, Calcium sulphate;
2. Phosphorous (P) - Calcium phosphate tribasic;
3. Chloride (Cl) - Sodium chloride;
4. Iron (Fe) - Hydrogen reduced iron, Electrolytic iron;
5. Magnesium (Mg) - Magnesium chloride, Magnesium oxide, Magnesium phosphate dibasic;
6. Sodium (Na) - Sodium chloride;
7. Zinc (Zn) - Zinc sulphate;

#### Vitamins

1. Vitamin A - Retinyl acetate, Retinyl palmitate, Retinyl propionate;
2. Provitamin A - Beta-carotene;
3. Vitamin D - Vitamin D<sub>2</sub> -Ergocalciferol, Vitamin D<sub>3</sub> -Cholecalciferol, Cholecalciferol-cholesterol;
4. Vitamin E - d-alpha-tocopherol, dl-alpha-tocopherol, d-alpha-tocopheryl acetate, dl-alpha-tocopheryl acetate, d-alpha-tocopheryl succinate, dl-alpha-tocopheryl succinate;
5. Thiamine (Vitamin B<sub>1</sub>) - Thiamine chloride hydrochloride, Thiamine mononitrate;
6. Riboflavin (Vitamin B<sub>2</sub>) -Riboflavin, Riboflavin 5' -phosphate sodium;
7. Niacin - Nicotinamide, Nicotinic acid;
8. Vitamin B<sub>6</sub> - Pyridoxine hydrochloride;
9. Biotin (Vitamin H) - d-biotin;
10. Folacin - Folic acid;
11. Pantothenic acid - Calcium pantothenate, Panthenol;
12. Vitamin B<sub>12</sub> - Cyanocobalamin, Hydroxycobalamin;
13. Vitamin K - Phytolmenaquinone;
14. Vitamin C - Ascorbic acid, Sodium ascorbate, Calcium ascorbate, Ascorbyl-6-palmitate;
15. Choline - Choline bitartrate, Choline chloride;
16. Inositol;
17. Selenium- Sodium selenite.

It shall be in the form of powder, small granules or flakes, free from lumps and shall be uniform in appearance.

It shall be free from dirt and extraneous matter and free from preservatives and added colour and flavour. It shall be free from any material, which is harmful to human health.

It may contain the following additives, —

Emulsifiers	Maximum level in 100 gm of the product on a dry weight basis
Lecithin	1.5 gms
Mono and Diglycerides	1.5 gms
PH - adjusting agents	
Sodium hydrogen carbonate	
Sodium carbonate	

Sodium Citrate	
Potassium hydrogen Carbonate	
Potassium Carbonate	Limited by good manufacturing practice within the limit for sodium
Potassium Citrate	
Sodium Hydroxide	
Calcium Hydroxide	
Potassium Hydroxide	
L (+) Lactic Acid	
Citric Acid	

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Antioxidants

Mixed tocopherols concentrate	300 mg /kg fat, singly or in combination
$\alpha$ - Tocopherol	

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L-Ascorbyl Palmitate	200mg / kg fat
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It shall conform to the following requirements, namely:—

1. Moisture, per cent by weight (not more than)	5.0
2. Total protein, per cent by weight (not less than)	15.0
3. Fat, per cent by weight (not less than)	7.5
4. Total Carbohydrate, per cent by weight (not less than)	55.0
5. Total ash, per cent by weight (not more than)	5.0
6. Ash insoluble in dilute Hydrochloric acid, per cent by weight (not more than)	0.1
7. Crude fibre (on dry basis) per cent by weight (not more than)	1.0
8. Vitamin A (as retinol) $\mu$ g per 100 g. (not less than)	350 $\mu$ g
9. Added Vitamin D, $\mu$ g per 100 g. (expressed as Cholecalciferol or Ergocalciferol (not less than)	5 $\mu$ g
10. Vitamin C, mg per 100 g. (not less than)	25 mg
11. Thiamine (as hydrochloride), mg per 100 g. (not less than)	0.5 mg
12. Riboflavin, mg per 100 g. (not less than)	0.3 mg
13. Niacin, mg per 100 g. (not less than)	3.0 mg
14. Folic acid $\mu$ g per 100 g. (not less than)	20 $\mu$ g
15. Iron, mg per 100 g. (not less than)	5.0 mg
16. Zinc mg per 100 g. (not less than)	2.5 mg
and not more than	5.0 mg
17. Bacterial count, per g. (not more than)	10,000
18. Coliform count absent in	0.1 gram
19. Yeast and mould count absent in	0.1 gram
20. Salmonella and Shigella absent in	25 gram
21. E. coli absent in	0.1 gram
22. Staphylococcus aureas absent in	0.1 gram

It shall be packed in hermetically sealed, clean and sound containers or in flexible pack made from film or combination or any of the substrate made of Board paper, polyethylene, polyester metallised film or in such a way to protect from deterioration.

4. Processed cereal based complementary food commonly called as weaning food or supplementary food means foods based on cereal and/or legumes (pulses), soyabean, millets, nuts and edible oil seeds, processed to low moisture content and so fragmented as to permit dilution with water, milk or other suitable medium.

Processed cereal based complementary food are intended to supplement the diet of infants after the age of six months and up to the age of two years.

Processed cereal based complementary food are obtained from variety of cereals, pulses, soyabean, millets, nuts and edible oil seeds after processing. It shall contain milled cereal and legumes combined not less than 75 percent. Where the product is intended to be mixed with water before consumption, the minimum content of protein shall not be less than 15% on a dry weight basis and the PER shall not be less than 70% of that of casein. The sodium content of the products shall not exceed 100 mg/100 gram of the ready-to-eat product.

Hydrogenated fats containing trans-fatty acids shall not be added to the products. It may also contain following ingredients: - protein concentrates, essential amino acids (only natural L forms of amino acids shall be used), iodized salt; milk and milk products; eggs; edible vegetable oils and fats; fruits and vegetables; various carbohydrates such as sucrose, dextrose, dextrin, maltose dextrin, lactose, honey, corn syrup; malt; potatoes.

The source of Vitamin Compounds and Mineral Salts may be used from,—

1. Calcium (Ca) - Calcium carbonate, Calcium phosphate tribasic, Calcium sulphate;
2. Phosphorous (P) - Calcium phosphate tribasic, Phosphoric acid;
3. Chloride (Cl) - Sodium chloride, Hydrochloric acid;
4. Iron (Fe) - Hydrogen reduced iron, Electrolytic iron;
5. Sodium (Na) - Sodium chloride;
6. Zinc (Zn) - Zinc acetate, Zinc chloride, Zinc oxide, Zinc sulphate;

Vitamins

1. Vitamin A - Retinyl acetate, Retinyl palmitate, Retinyl propionate;
2. Provitamin A - Beta-carotene;
3. Vitamin D - Vitamin D<sub>2</sub> - Ergocalciferol, Vitamin D<sub>3</sub> - Cholecalciferol, Cholecalciferol-cholesterol;
4. Vitamin E - d-alpha-tocopherol, dl-alpha-tocopherol, d-alpha-tocopheryl acetate, dl-alpha-tocopheryl acetate, d-alpha-tocopheryl succinate, dl-alpha-tocopheryl succinate;
5. Thiamine (Vitamin B<sub>1</sub>) - Thiamine chloride hydrochloride, Thiamine mononitrate;
6. Riboflavin (Vitamin B<sub>2</sub>) - Riboflavin, Riboflavin 5' -phosphate sodium;
7. Niacin - Nicotinamide, Nicotinic acid;
8. Vitamin B<sub>6</sub> - Pyridoxine hydrochloride;
9. Biotin (Vitamin H) - d-biotin;
10. Folic acid - Folic acid;
11. Pantothenic acid - Calcium pantothenate, Panthenol;
12. Vitamin B<sub>12</sub> - Cyanocobalamin, Hydroxycobalamin;
13. Vitamin K - Phytylmenaquinone;
14. Vitamin C - Ascorbic acid, Sodium ascorbate, Calcium ascorbate, Ascorbyl-6-palmitate;
15. Choline - Choline bitartrate, Choline chloride;
16. Inositol;
17. Selenium- Sodium selenite.

It shall be in the form of powder, small granules or flakes, free from lumps and shall be uniform in appearance.

All ingredients, including optional ingredients, shall be clean, safe, suitable and of good quality. It shall be free from preservatives, added colour and flavour.

It may contain the following food additives:—

<i>Name of the Food Additives</i>	<i>Maximum Level in a 100 g of Product on a dry weight basis</i>
<b>Emulsifiers</b>	
Lecithin	1.5 gram
Mono and Diglycerides	1.5 gram
<b>pH Adjusting Agents</b>	
Sodium hydrogen carbonate	Limited by good manufacturing practice and within the limits for sodium
Potassium hydrogen carbonate	
Calcium carbonate}	Limited by good manufacturing practice
L(+) lactic acid	
Citric acid	
<b>Antioxidants</b>	
Mixed tocopherols concentrate	300 mg/kg fat, singly or in combination
Alpha-tocopherol	
L-Ascorbyl palmitate	200 mg/kg fat
L-Ascorbic acid and its sodium and potassium salts	50 mg, expressed as ascorbic acid and within limits for sodium
<b>Enzymes</b>	
Malt carbohydrates	Limited by good manufacturing practice
<b>Leavening Agents</b>	
Ammonium carbonate}	Limited by good manufacturing practice
Ammonium hydrogen carbonate}	
It shall also conform to the following requirements namely:—	
1. Moisture, per cent by weight (not more than)	4.0
2. Total protein, per cent by weight (not less than)	15.0
3. Total Carbohydrate, per cent by weight (not less than)	55.0
4. Total ash, per cent by weight (not more than)	5.0
5. Ash insoluble in dilute Hydrochloric acid, per cent by weight (not more than) 0.1	0.1
6. Crude fibre (on dry basis) per cent by weight (not more than)	1.0
7. Vitamin A (as retinol) µg per 100 g. (not less than)	350 µg
8. Added Vitamin D, µg per 100 g. (expressed as Cholecalciferol or Ergocalciferol (not less than)	5 µg
9. Vitamin C, mg per 100 g. (not less than)	25 mg
10. Thiamine (as hydrochloride), mg per 100 g. (not less than)	0.5 mg
11. Riboflavin, mg per 100 g. (not less than)	0.3 mg
12. Niacin, mg per 100 g. (not less than)	3.0 mg
13. Folic acid µg per 100 g. (not less than)	20.0 µg
14. Iron, mg per 100 g. (not less than)	5.0 mg
15. Zinc mg per 100 g. (not less than)	2.5 mg
and not more than	5.0 mg
16. Bacterial count, per g. (not more than)	10,000
17. Coliform count absent in	0.1 gram
18. Yeast and mould count absent in	0.1 gram

- |                                       |          |
|---------------------------------------|----------|
| 19. Salmonella and Shigella absent in | 25 gram  |
| 20. E. coli absent in                 | 0.1 gram |
| 21. Staphylococcus aureas absent in   | 0.1 gram |

It shall be packed in hermetically sealed clean and sound containers or in flexible pack made from film or combination of any or the substrate made of board paper, polyethylene, polyester, metalised film or aluminum foil in such a way to protect from deterioration."

5. Follow-Up Formula-Complementary Food" means the product prepared by spray drying of the milk of cow or buffalos or mixture thereof. It may contain vegetable protein. Follow-up formula based on milk shall be prepared from ingredients mentioned below except that a minimum of 3 gram per 100 available Calories (or 0.7 gram per 100 kilojoules) of protein shall be derived from whole or skimmed milk as such, or with minor modification that does not substantially impair the vitamin or mineral content of the milk and which represents a minimum of 90% of the total protein.

Follow-up formula for use as a liquid part of the complementary diet for infants after the age of six months and up to the age of two years when prepared in accordance with the instructions for use, 100 ml of the ready-for-consumption product shall provide not less than 60 kcal (or 250 kJ) and not more than 85 kcal (or 355 kJ).

Follow-up formula shall contain the following nutrients indicated below,

- (1) Protein - Not less than 3.0 gram per 100 available calories (or 0.7 gram per 100 available kilojoules).  
Not more than 5.5 g per 100 available calories (or 1.3 g per 100 available kilojoules).

(Protein shall be of nutritional quality equivalent to that of casein or a greater quantity of other protein in inverse proportion to its nutritional quality. The quality of the protein shall not be less than 85% of that of casein).

Essential amino acids may be added to follow-up formula to improve its nutritional value. Only L forms of amino acids shall be used.

- (2) Fat - Not less than 4 g per 100 Calories (0.93 gram per 100 available kilojoules)  
Not more than 6 gram per 100 calories (1.4 gram per 100 available kilojoules)

Linoleic acid (in the form of glyceride) - Not less than 310 mg  
(per 100 Calories or 74.09 mg per 100 available KJ)

The products shall contain nutritionally available carbohydrates suitable for the feeding of the older infant and young child in such quantities as to adjust the product to the energy density in accordance with the requirements given above.

It may also contain other nutrients when required to ensure that the product is suitable to form part of a mixed feeding scheme intended for use after six months of age. When any of these nutrients is added, the food shall contain not less than Recommended Dietary Allowances (RDA) amounts of these nutrients.

The source of Mineral Salts and Vitamin Compounds may be used from, —

1. Calcium (Ca)-Calcium carbonate, Calcium chloride, Calcium citrate, Calcium phosphate monobasic, Calcium phosphate dibasic, Calcium phosphate tribasic;
2. Phosphorous (P)- Calcium phosphate monobasic, Calcium phosphate dibasic, Calcium phosphate tribasic, Magnesium phosphate dibasic, Potassium phosphate dibasic;
3. Chloride (Cl)-Calcium chloride, Choline chloride, Magnesium chloride, Manganese chloride, Sodium chloride, Sodium chloride iodized;
4. Iron (Fe)- Ferrous citrate Ferrous lactate, Ferrous sulphate, Ferric pyrophosphate;
5. Magnesium (Mg)- Magnesium chloride, Magnesium oxide, Magnesium phosphate dibasic;
6. Sodium (Na)- Sodium bicarbonate, Sodium chloride, Sodium chloride iodized, Sodium citrate, Sodium phosphate monobasic;
7. Potassium (K)- Potassium phosphate dibasic;
8. Copper (Cu)- Cupric citrate, Cupric sulphate;
9. Iodine (I)-Potassium iodide, Sodium iodide;



10. Zinc (Zn)- Zinc sulphate;
11. Source of Manganese (Mn)- Manganese chloride, Manganese sulphate.

#### Vitamins

1. Vitamin A - Retinyl acetate, Retinyl palmitate, Retinyl propionate;
2. Provitamin A - Beta-carotene;
3. Vitamin D - Vitamin D<sub>2</sub> - Ergocalciferol, Vitamin D<sub>3</sub> - Cholecalciferol, Cholecalciferol-cholesterol;
4. Vitamin E - d-alpha-tocopherol, dl-alpha-tocopherol, d-alpha-tocopheryl acetate, dl-alpha-tocopheryl acetate, d-alpha-tocopheryl succinate, dl-alpha-tocopheryl succinate;
5. Thiamine (Vitamin B<sub>1</sub>) - Thiamine chloride hydrochloride, Thiamine mononitrate;
6. Riboflavin (Vitamin B<sub>2</sub>) - Riboflavin, Riboflavin 5' -phosphate sodium;
7. Niacin-Nicotinamide, Nicotinic acid;
8. Vitamin B<sub>6</sub> - Pyridoxine hydrochloride;
9. Biotin (Vitamin H) - d-biotin;
10. Folic acid - Folic acid;
11. Pantothenic acid - Calcium pantothenate, Panthenol;
12. Vitamin B<sub>12</sub> - Cyanocobalamin, Hydroxycobalamin;
13. Vitamin K - Phytylmenaquinone;
14. Vitamin C - Ascorbic acid, Sodium ascorbate, Calcium ascorbate, Ascorbyl-6-palmitate;
15. Choline - Choline bitartrate, Choline chloride;
16. Inositol;
17. Selenium - Sodium selenite.

The product shall be free of lumps and shall be uniform in appearance. It shall be free from added starch and added colour and flavour. It shall not have rancid taste and musty odour.

It may contain the following additives, —

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*Maximum Level in 100 ml of Product Ready-for-Consumption*

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*pH-Adjusting Agents*

Sodium hydrogen carbonate  
Sodium carbonat  
Sodium citrat  
Potassium hydrogen carbonate  
Potassium carbonate  
Potassium citrate  
Sodium hydroxide  
Calcium hydroxide  
Potassium hydroxide  
L(+) Lactic acid  
Citric acid

Limited by good Manufacturing Practice within the limit for sodium

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*Antioxidants*

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Mixed tocopherols concentrate	
α - Tocopherol	3 mg singly or in combination
L-Ascorbyl palmitate	5 mg singly or in combination.

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It shall also conform to the following requirements,—

<i>S. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
1.	Moisture, per cent by weight (not more than)	4.5
2.	Total milk protein, per cent by weight (not less than) and (not more than)	13.5 24.75
3.	Total fat, per cent by weight (not less than) and (not more than)	18.0 27.0
	Linoleate per 100 gm (not less than)	1.398
4.	Total ash, per cent by weight (not more than)	8.5
5.	Ash insoluble in dilute Hydrochloric acid, per cent by weight (not more than)	0.1
6.	Solubility:	
	Solubility Index maximum	2.0 ml.
	Solubility per cent by weight (not less than)	98.5
7.	Vitamin A (as retinol) µg per 100 g. (not less than)	350 µg
8.	Added Vitamin D (expressed as Cholecalciferol or Ergocalciferol) µg per 100 g. (not less than)	4.5 µg
9.	Vitamin C, mg per 100 g. (not less than)	36 mg
10.	Thiamin, mcg per 100 g. (not less than)	180 µg
11.	Riboflavin, µg per 100 g. (not less than)	270 µg
12.	Niacin, µg per 100 g. (not less than)	1125 µg
13.	Pyridoxine µg per 100 g. (not less than)	202.50 µg
14.	Folic acid, µg per 100 g. (not less than)	20.0 µg
15.	Pantothenic acid, mg per 100 g. (not less than)	1.35 mg
16.	Vitamin B12, µg per 100 g. (not less than)	0.675 µg
17.	Choline, mg per 100 g. (not less than)	32 mg
18.	Vitamin K µg per 100 g. (not less than)	18 µg
19.	Biotin, µg per 100 g. (not less than)	6.75 µg
20.	Vitamin E (as a- tocopherol compounds) I.U. per 100g (not less than)	3.15 IU
21.	Sodium, mg per 100 g. (not less than)	90 mg
22.	Potassium, mg per 100 g. (not less than)	360 mg
23.	Chloride, mg per 100 g. (not less than)	247.50 mg
24.	Calcium, mg per 100 g. (not less than)	405 mg
25.	Phosphorous, mg per 100 g. (not less than)	270 mg
26.	Magnesium, mg per 100 g. (not less than)	27 mg
27.	Iron, mg per 100 g. (not less than)	5 mg
28.	Iodine, µg per 100 g. (not less than)	22.50 µg
29.	Copper, µg per 100 g. (not less than)	280 µg
30.	Zinc, mg per 100 g. (not less than) and (not more than)	2.5 mg 5.0 mg
31.	Manganese, µg per 100 g. (not less than)	20 µg
32.	Selenium, µg per 100 g. (not less than)	14 µg
33.	Bacterial count, per g. (not more than)	10,000
34.	Coliform count absent in	0.1 gram
35.	Yeast and mould count absent in	0.1 gram
36.	Salmonella and Shigella absent in	25 gram
37.	E. coli absent in	0.1 gram
38.	Staphylococcus aureas absent in	0.1 gram

It shall be packed in hermetically sealed, clean and sound containers or in flexible pack made from film or combination or any of the substrate made of Board paper, polyethylene, polyester metallised film or in such a way to protect from deterioration. It shall be packed in nitrogen or a mixture of nitrogen and carbon dioxide.

#### 2.1.10: BUTTER, GHEE & MILK FATS

1. Butter means the fatty product derived exclusively from milk of Cow and/or Buffalo or its products principally in the form of an emulsion of the type water-in-oil. The product may be with or without added common salt and starter cultures of harmless lactic acid and / or flavour producing bacteria. Table butter shall be obtained from pasteurised milk and/ or other milk products which have undergone adequate heat treatment to ensure microbial safety. It shall be free from animal, body fat, vegetable oil and fat, mineral oil and added flavour. It shall have pleasant taste and flavour free from off flavour and rancidity. It may contain food additives permitted in these Regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B.

Provided that where butter is sold or offered for sale without any indication as to whether it is table or desi butter, the standards of table butter shall apply.

It shall conform to the following requirements:

Product	Moisture	Milk Fat	Milk solids not Fat	Commonsalt
Table Butter	Not more than 16.0 percent m/m	Not less than 80.0 percent m/m	Not more than 1.5 percent m/m	Not more than 3.0 percent m/m
Desi Cooking Butter	-	Not less than 76.0 percent m/m	-	—

2. Ghee means the pure clarified fat derived solely from milk or curd or from desi (cooking) butter or from cream to which no colouring matter or preservative has been added. The standards of quality of ghee produced in a State or Union Territory specified in column 2 of the Table below shall be as specified against the said State or Union Territory in the corresponding Columns 3,4,5 and 6 of the said Table.

S. No.	Name of the State/ Union Territory	Butyro Refractometer reading at 40 <sup>0</sup> C	Minimum Reichert Value	Percentage of	
				FFA as oleic acid (max.)	Moisture (Max.)
(1)	(2)	(3)	(4)	(5)	(6)
1.	Andhra Pradesh	40.0 to 43.0	24	3	0.5
2.	Andaman & Nicobar Islands	41.0 to 44.0	24	3	0.5
3.	Arunachal Pradesh	40.0 to 43.0	26	3	0.5
4.	Assam	40.0 to 43.0	26	3	0.5
5.	Bihar	40.0 to 43.0	28	3	0.5
6.	Chandigarh	40.0 to 43.0	28	3	0.5
7.	Chattisgarh	40.0 to 44.0	26	3	0.5
8.	Dadra and Nagar haveli	40.0 to 43.0	24	3	0.5
9.	Delhi	40.0 to 43.0	28	3	0.5
10.	Goa	40.0 to 43.0	26	3	0.5
11.	Daman & Diu	40.0 to 43.5	24	3	0.5
12.	Gujarat				
	a) Areas other than cotton tract areas	40.0 to 43.5	24	3	0.5
	b) Cotton tract areas	41.5 to 45.0	21	3	0.5

(1)	(2)	(3)	(4)	(5)	(6)
13.	Haryana				
	a) Areas other than cotton tract areas	40.0 to 43.0	28	3	0.5
	b) Cotton tract areas	40.0 to 43.0	26	3	0.5
14.	Himachal Pradesh	40.0 to 43.0	26	3	0.5
15.	Jammu & Kashmir	40.0 to 43.0	26	3	0.5
16.	Jharkhand	40.0 to 43.0	28	3	0.5
17.	Karnataka				
	a) Areas other than Belgaum district	40.0 to 43.0	24	3	0.5
	b) Belgaum district	40.0 to 44.0	26	3	0.5
18.	Kerala	40.0 to 43.0	26	3	0.5
19.	Lakshwadeep	40.0 to 43.0	26	3	0.5
20.	Madhya Pradesh				
	a) Areas other than cotton tract areas	40.0 to 44.0	26	3	0.5
	b) Cotton tract areas	41.5 to 45.0	21	3	0.5
21.	Maharashtra				
	a) Areas other than cotton tract areas	40.0 to 43.0	26	3	0.5
	b) Cotton tract areas	41.5 to 45.0	21	3	0.5
22.	Manipur	40.0 to 43.0	26	3	0.5
23.	Meghalya	40.0 to 43.0	26	3	0.5
24.	Mizoram	40.0 to 43.0	26	3	0.5
25.	Nagaland	40.0 to 43.0	26	3	0.5
26.	Orisssa	40.0 to 43.0	26	3	0.5
27.	Pondicherry	40.0 to 44.0	26	3	0.5
28.	Punjab	40.0 to 43.0	28	3	0.5
29.	Rajasthan				
	a) Areas other than Jodhpur District	40.0 to 43.0	26	3	0.5
	b) Jodhpur district	41.5 to 45.0	21	3	0.5
30.	Tamil Nadu	41.0 to 44.0	24	3	0.5
31.	Tripura	40.0 to 43.0	26	3	0.5
32.	Uttar Pradesh	40.0 to 43.0	26	3	0.5
33.	Uttarakhand	40.0 to 43.0	26	3	0.5
34.	West Bengal				
	a) Areas other than Bishnupur sub division	40.0 to 43.0	28	3	0.5
	b) Bishnupur sub division	41.5 to 45.0	21	3	0.5
34.	Sikkim	40.0 to 43.0	28	3	0.5

(Baudouin test shall be negative)

Explanation.-By cotton tract is meant the areas in the States where cotton seed is extensively fed to the cattle and so notified by the State Government concerned.

3. Milkfat / Butter oil and Anhydrous Milk fat / Anhydrous Butter oil means the fatty products derived exclusively from milk and/ or products obtained from milk by means of process which result in almost total removal of water and milk solids not fat. It shall have pleasant taste and flavour free from off odour and rancidity. It shall be free from vegetable oil/ fat, animal body fat, mineral oil, added flavour and any other substance foreign to milk. It may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

<i>Requirements</i>	<i>Milk fat/Butter Oil</i>	<i>Anhydrous milk fat/ Anhydrous Butter Oil</i>
(i) B.R reading at 40°C	40-44	40-44
(ii) Moisture m/m	Not more than 0.4 percent	Not more than 0.1 percent
(iii) Milk Fat m/m	Not less than 99.6 percent	Not less than 99.8 percent
(iv) Reichert Value	Not less than 24	Not less than 24
(v) F.F.A as oleic acid	Not more than 0.4 percent	Not more than 0.3 percent
(vi) Peroxide Value (milli eqvt of Oxygen/ Kg fat)	Not more than 0.6 percent	Not more than 0.3 percent
(vii) Boudouins Test	Negative	Negative

#### 2.1.11: CHAKKA AND SHRIKHAND

1. Chakka-means a white to pale yellow semi-solid product of good texture and uniform consistency obtained by draining off the whey from the Yoghurt obtained by the lactic fermentation of cow's milk, buffalo's milk, skimmed milk and recombined or standardised milk which has been subjected to minimum heat treatment equivalent to that of pasteurisation. It shall have pleasant Yoghurt/Dahi like flavour. It shall not contain any ingredient foreign to milk. It shall be free from mouldness and free from signs of fat or water seepage or both. It shall be smooth and it shall not appear dry. It shall not contain extraneous colour and flavours. It shall conform to the following requirements, namely :—

<i>Requirements</i>	<i>Chakka</i>	<i>Skimmed Milk Chakka</i>	<i>Full Cream Chakka</i>
1. Total solids, per cent by weight	Min. 30	Min.20	Min.28
2. Milk fat (on dry basis) per cent by weight	Min.33	Max. 5	Min. 38
3. Milk protein ( on dry basis) per cent by weight	Min.30	Min.60	Min.30
4. Titrable acidity ( as lactic acid) percent by Weight	Max.2.5	Max.2.5	Max.2.5
5. Total Ash ( on dry basis) percent by weight	Max.3.5	Max.5.0	Max. 3.5;

Chakka when sold without any indication shall conform to the standards of Chakka.

2. Shrikhand-means the product obtained from chakka or Skimmed Milk Chakka to which milk fat is added. It may contain fruits, nuts, sugar, cardamom, saffron and other spices. It shall not contain any added colouring and artificial flavouring substances. It shall conform to the following specifications, namely:—

<i>Requirements</i>	<i>Shrikhand</i>	<i>Full Cream Shrikhand</i>
1. Total solids, per cent by weight	Not less than...58	Not less than...58
2. Milk fat (on dry basis) per cent by weight	Not less than...8.5	Not less than...10
3. Milk protein ( on dry basis) per cent by weight (for Fruit Shrikhand- Not less than.....6.0)	Not less than...9	Not less than...7
4. Titrable acidity ( as lactic acid) percent by weight	Not more than ....1.4	Not more than ....1.4
5. Sugar (sucrose)( on dry basis) per cent by weight	Not more than... 72.5	Not more than... 72.5
6. Total Ash ( on dry basis) percent by weight	Not more than ....0.9	Not more than ....0.9.

In case of Fruits Shrikhand it shall contain Milk fat (on dry basis) per cent by weight... Not less than 7.0 and Milk Protein (on dry basis) per cent by weight... Not less than 9.0.

#### 2.1.12: FERMENTED MILK PRODUCTS

1. Yoghurt means a coagulated product obtained from pasteurised or boiled milk or concentrated milk, pasteurised skimmed milk and /or pasteurised cream or a mixture of two or more of these products by lactic acid fermentation through the action of *Lactobacillus bulgaricus* and *Streptococcus thermophilus*. It may also contain cultures of *Bifidobacterium bifidus* and *Lactobacillus acidophilus* and other cultures of suitable lactic acid producing harmless bacteria and if added a declaration to this effect shall be made on the label. The microorganisms in the final product must be viable and abundant. It may contain milk powder, skimmed milk powder, unfermented buttermilk, concentrated whey, whey powder, whey protein, whey protein concentrate, water soluble milk proteins, edible casein, and caseinates manufactured from pasteurised products. It may also contain sugar, corn syrup or glucose syrup in sweetened, flavoured and fruit yoghurt or fruits in fruits yoghurt. It shall have smooth surface and thick consistency without separation of whey. It shall be free from vegetable oil/ fat, animal body fat, mineral oil and any other substance foreign to milk. The product may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

<i>Product</i>	<i>Milk Fat</i>	<i>Milk solids not fat</i>	<i>Milk protein</i>	<i>Sugar</i>
(i) Yoghurt	Not less than 3.0 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m	-
(ii) Partly skimmed Yoghurt	Not less than 0.5 percent m/m &	Not more than 3.0 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m
(iii) Skimmed Yoghurt	Not more than 0.5 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m	-
(iv) Sweetened Flavoured Yoghurt	Not less than 3.0 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m	Not less than 6.0 percent m/m
(v) Fruit Yoghurt	Not less than 1.5 percent m/m	Not less than 8.5 percent m/m	Not less than 2.6 percent m/m	Not less than 6.0 percent m/m

Provided that Titrable acidity as lactic acid shall not be less than 0.85 percent and not more than 1.2 percent. The specific lactic acid producing bacterial count per gram shall not be less than 10,00,000. Provided further that the type of Yoghurt shall be clearly indicated on the label otherwise standards of plain Yoghurt shall apply. The Yoghurt subjected to heat treatment after fermentation at temperature not less than 65 degree C shall be labelled as Thermised or Heat Treated Yoghurt and shall conform to the above parameters except the minimum requirement of specific lactic acid producing count per gram.

#### 2.1.13: WHEY PRODUCTS

1. Whey Powder means the product obtained by spray or roller drying sweet whey or acid whey from which major portion of milk fat has been removed. Sweet Whey means the fluid separated from the curd after the coagulation of milk, cream, skimmed milk or buttermilk in the manufacture of cheese, casein or similar products, principally with non-animal rennet type enzymes.

Acid Whey is obtained after coagulation of milk, cream, skimmed milk or buttermilk, principally with acids of the types used for manufacture of edible acid casein, chhana, paneer, or fresh cheese. It shall be of uniform colour with pleasant taste and flavour free from off flavour and rancidity. It may contain food additives permitted in these regulation including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

<i>Requirements</i>	<i>Whey Powder</i>	<i>Acid Whey Powder</i>
(i) Moisture	Not more than 5.0 percent	Not more than 4.5 percent
(ii) Milk Fat	Not more than 2.0 percent m/m	Not more than 2.0 percent m/m
(iii) Milk Protein (N x 6.38)	Not less than 10.0 percent m/m	Not less than 7.0 percent m/m
(iv) Total Ash	Not more than 9.5 percent m/m	Not more than 15.0 percent m/m
(v) pH (in 10.0% solution)	Not less than 5.1	Not more than 5.1
(vi) Lactose content expressed as anhydrous Lactose	Not less than 61.0 percent m/m	Not less than 61.0 percent m/m

Note: (i) Although the powders may contain both anhydrous lactose and lactose monohydrates, the lactose content is expressed as anhydrous lactose.

(ii) 100 parts of lactose monohydrate contain 95 parts of anhydrous lactose.

#### 2.1.14: EDIBLE CASEIN PRODUCTS

1. Edible Casein Products mean the products obtained by separating, washing and drying the coagulum of skimmed milk.

2. Edible acid casein means the product obtained by separating, washing and drying the acid precipitated coagulum of skimmed milk.

3. Edible non-animal rennet casein means the product obtained after washing and drying the coagulum remaining after separating the whey from the skimmed milk which has been coagulated by non-animal rennet or by other coagulating enzymes

4. Edible caseinate means the dry product obtained by reaction of edible casein or fresh casein curd with food grade neutralising agents and which have been subjected to an appropriate heat treatment. It shall be qualified by the name of the cation and the drying process used (Spray or Roller dried).

The products shall be white to pale cream or have greenish tinge; free from lumps and any unpleasant foreign flavour, it may contain food additives permitted in these regulations including Appendix A. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirements:—

<i>Requirements</i>	<i>Non-animal rennet Casein</i>	<i>Acid Casein</i>	<i>Caseinate</i>
(i) Moisture	Not more than 12.0 percent m/m	Not more than 12.0 percent m/m	Not more than 8.0 percent m/m
(ii) Milk Fat	Not more than 2.0 percent m/m	Not more than 2.0 percent m/m	Not more than 2.0 percent m/m
(iii) Milk Protein (N x 6.38) on dry weight basis	Not less than 84.0 percent m/m	Not less than 90.0 percent m/m	Not less than 88.0 percent mm
(iv) Casein in Protein	Not less than 95.0 percent m/m	Not less than 95.0 percent m/m	Not less than 95.0 percent m/m
(v) Ash including P <sub>2</sub> O <sub>5</sub>	Not less than 7.5 percent m/m	Not more than 2.5 percent m/m	—
(vi) Lactose	Not more than 1.0 percent m/m	Not more than 1.0 percent m/m	Not more than 1.0 percent m/m
(vii) Free fatty Acid ml/0.1N NaOH/gm	-	Not more than 0.27 percent	-
(viii) pH Value in 10% solution	-	-	Not more than 8.0

## 2.2: FATS, OILS AND FAT EMULSIONS

### 2.2.1 OILS:

1. Coconut oil (naryal ka tel) means the oil expressed from copra obtained from the kernel of *Cocos mucifera* nuts. It shall be clear and free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40°C.	34.0 to 35.5
OR	
Refractive Index at 40°C	1.4481-1.4491
Saponification value	Not less than 250
Iodine value	7.5 to 10.
Polenske Value	Not less than 13
Unsaponifiable matter	Not more than 1.0 per cent.
Acid value	Not more than 6.0.

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these regulations and appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

2. Cotton seed oil (binola ka tel) means the oil extracted from clean, sound delinted and decorticated cotton seeds (genus *Gossypium*). It shall be refined. It shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40°C.	55.6 to 60.2
OR	
Refractive Index at 40°C	1.4630-1.4660
Saponification value	190 to 198
Iodine value	98 to 112.
Unsaponifiable matter	Not more than 1.5 per cent.
Acid value	Not more than 0.50

There shall be no turbidity after keeping the filtered sample at 30°C for 24 hours

Bellier Test (Turbidity temperature-Acetic acid method)	19.0 oC -21.0°C
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Test for Argemone oil shall be negative

However, it may contain food additives permitted in these regulations and appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

3. Groundnut oil (moongh-phali-ka tel) means the oil expressed from clean and sound groundnuts (*Arachis hypogoes*). It shall be clear, free from rancidity, suspended or other foreign matter, separated water added colouring or flavouring substances or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 oC	54.0 to 57.1
Or	
Refractive Index at 40°C	1.4620-1.4640
Saponification value	188 to 196
Iodine value	85 to 99.



Unsaponifiable matter	Not more than 1.0 per cent.
Acid value	Not more than 6.0
Bellier test Turbidity temperature Acetic acid method	39°C to 41°C

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

4. Linseed oil (tisi ka tel) means the oil obtained by process of expressing clean and sound linseed (*linum usitatissimum*). it shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substance, or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 oC	69.5-74.3
Or	
Refractive Index at 40°C	1.4720-1.4750
Saponification value	188 to 195
Iodine value	Not less than 170
Unsaponifiable matter	Not more than 1.5 per cent.
Acid value	Not more than 4.0

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

5. Mahua oil means the oil expressed from clean and sound seeds or nuts of *Madhuca* (*Bassi latifolia* or *B. longifolia* or a mixture of both). It shall be clear and shall be free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, or mineral oil. It shall be refined and shall conform to the following standards:—

Butyro-refractometer reading at 40 oC	49.5 to 52.7
Or	
Refractive Index at 40°C	1.4590 - 1.4611
Saponification value	187 to 196
Iodine value	58 to 70
Unsaponifiable matter	Not more than 2.0 per cent
Acid value	Not more than 0.50

Test for argemone oil shall be negative

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

6. Rape-seed oil (toria oil) mustard oil (sarson ka tel) means the oil expressed from clean and sound mustard seeds, belonging to the compestris, juncea or napus varieties of Brassica. It shall be clear free from rancidity, suspended or foreign matter, separated water, added colouring or flavouring substances or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 oC	58.0 to 60.5
OR	
Refractive index at 40 oC	1.4646 to 1.4662
Saponification value	168 to 177
Iodine value	96-112 : Polybromide test shall be Negative
Unsaponifiable matter	Not more than 1.2 per cent by weight
Acid value	Not more than 6.0
Bellier test (Turbidity temperature - Acetic acid Method)	23.0 oC to 27.5 oC
Test for Argemone oil	Negative
Test for Hydrocyanic Acid	Negative
Test for argemone oil shall be negative	

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

7. Rapeseed or mustard oil - low erucic acid means the oil obtained from clean and sound, low erucic acid oil bearing seeds of rapeseed belonging to compestris, juncea, or napus varieties of Brassica by the method of expression or solvent extraction and it shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or mineral oil and shall contain not more than 2 % erucic acid (as % of total fatty acids) and shall conform to the following standards, namely:—

Butyro-refractometer reading at 40 oC	58.6 to 61.7
OR	
Refractive index at 40 oC	1.465 to 1.467
Iodine value (Wij's method)	105 to 126
Saponification value	182-193
Unsaponifiable matter	Not more than 20g/kg
Acid value	Not more than 0.6
Bellier test (Turbidity temperature - Acetic acid Method)	Not more than 19.0 oC
Test for Argemone oil	Negative
Test for Hydrocyanic Acid (Ferric Chloride test)	Passes the test

Further, Rapeseed oil obtained by solvent extraction shall be supplied for human consumption only if it is refined and it shall conform to the standard laid down under regulation 2.2.1 (16) except acid value which shall be not more than 0.6. Additionally, it shall have Flash Point (Pensky Marten Closed Method) not less than 250°C and the oil so refined shall contain Hexane not more than 5.00 ppm :

Provided further that it may contain food additives permitted under these Regulations and Appendices".

8. Olive oil means the oil expressed from the fruit of the olive tree (*Olea europaea sativa* Hoffm. et Link). It shall be of three types:—

(i) Virgin olive oil means the oil obtained from the fruit of the olive tree by mechanical or other physical means under conditions, particularly thermal, which do not lead to alteration of the oil. Virgin olive oil is oil which is suitable for consumption in the natural state without refining. It shall be clear, yellow to green in colour, with specific odour and taste, free from odours or tastes indicating alteration or pollution of oil. It shall be free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or mineral oil.

(ii) Refined olive oil means the oil obtained from virgin olive, the acid content and or organoleptic characteristics of which render it unsuitable for consumption in the natural state, by means of refining methods which do not lead to alterations in the initial glyceridic structure. It shall be clear, limpid without sediment, yellow in colour, without specific odour or taste and free from odours or taste indicating alteration or pollution of oil. It shall be free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or mineral oil.

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

(iii) Refined olive-pomace oil means the oil obtained from "olive pomace" by extraction by means of solvents and made edible by means of refining methods which do not lead to alteration in the initial glyceridic structure. It shall be clear, limpid, without sediment, yellow to yellow-brown in colour, without specific odour or taste and free from odours or tastes indicating alteration or pollution of the oil. It shall be free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or mineral oil.

However, it may contain food additives permitted in these Regulations and Appendices.

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16) . The oil so refined shall not contain Hexane more than 5.00 ppm

It shall conform to the following standards:—

<i>Parameters</i>	<i>Virgin olive oil</i>	<i>Refined olive oil</i>	<i>Refined olive— Pomace oil</i>
B.R. Reading at 40°C	51.0-55.6	51.0-55.6	51.6-55.9
Or			
Refractive Index at 40°C	1.4600-1.4630	1.4600-1.4630	1.4604-1.4632
Saponification value (mg KOH/g oil)	184-196	184-196	182-193
Iodine value (wijs)	75-94	75-94	75-92
Unsaponifiable matter (using light petroleum)	Not more than 15g/kg	Not more than 15g/kg	Not more than 30g/kg
Acid Value	Not more than 6.0	Not more than 0.5	Not more than 0.5
Bellier test	Not more than 17°C	Not more than 17° C	Not applicable
Semi-Siccative oil test	Negative	Negative	Negative
Olive pomace oil test	Negative	Negative	Negative
Cotton seed oil test	Negative	Negative	Negative
Teaseed oil test	Negative	Negative	Negative
Sesame seed oil test	Negative	Negative	Negative
Test for Argemone oil	Negative	Negative	Negative

9. Poppy seed oil means the oil expressed from poppy seeds (*papaver somniferum*). It shall be clear, free from rancidity, suspended or other foreign matter separated water, added colouring or flavouring substances or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 oC	60.0 to 64.0
Or	
Refractive Index at 40°C	1.4659 - 1.4685
Saponification value	186 to 194
Iodine value	133 to 143
Unsaponifiable matter	Not more than 1.0 per cent
Acid value	Not more than 6.0
Test for argemone oil shall be negative.	

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

10. Safflower seed oil (berry ka tel) means the oil expressed from the seeds of *Carthamus tinctorius*. It shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 °C	62.4 to 64.7
Or	
Refractive Index at 40°C	1.4674-1.4689
Saponification value	186-196
Iodine value	135-148
Unsaponifiable matter	Not more than 1.0 per cent
Acid value	Not more than 6.0
Bellier test Turbidity temperature Acetic acid method	Not more than 16 oC
Test for argemone oil shall be negative.	

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

10. Safflowerseed oil and Safflowerseed oil (High Oleic Acid) means the oil expressed from the seeds of *Carthamus tinctorious* L. It shall be clear, free from rancidity, suspended or foreign matter, separated water, added colouring or flavouring substances, or mineral oil. Safflowerseed oil (High Oleic Acid) shall contain not less than 70% oleic acid as percent of total fatty acid shall conform to the following standards:—

<i>Parameters</i>	<i>High Oleic Acid Safflowerseed Oil</i>	<i>Safflowerseed Oil</i>
B.R. Reading at 40°C	51.0-57.1	61.7-66.4
Or		
Refractive Index at 40°C	1.460-1.464	1.467-1.470

Iodine value (wijs method)	80-100	136-148
Saponification value	186-194	186-198
Unsaponifiable matter	Not more than 10g/kg	Not more than 15g/kg
Acid Value	Not more than 4.0 mg/KOH/g oil	Not more than 4.0 mg/KOH/g oil
Bellier test Turbidity temperature Acetic acid method		Not more than 16 oC
Test for Argemone oil	Negative	Negative

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

11. TARAMIRA OIL means the oil expressed from clean and sound seeds of Taramira (*Eruca sativa*). It shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 °C	58.0 to 60.0
Or	
Refractive Index at 40°C	1.4646-1.4659
Saponification value	174 to 177
Iodine value	99 to 105
Unsaponifiable matter	Not more than 1.0 per cent
Acid value	Not more than 6.0
Test for argemone oil shall be negative.	

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

12. TIL OIL (Gingelly or sesame oil) means the oil expressed from clean and sound seeds of Til (*Sesamum indicum*), black, brown, white, or mixed. It shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 °C	58.0 to 61.0
Or	
Refractive Index at 40°C	1.4646-1.4665
Saponification value	188-193
Iodine value	103-120
Unsaponifiable matter	Not more than 1.5 per cent
Acid value	Not more than 6.0
Bellier test Turbidity temperature Acetic acid method	Not more than 22 °C

Provided that the oil obtained from white sesame seeds grown in Tripura, Assam and West Bengal shall conform to the following standards:—

Butyro-refractometer

reading at 40 °C	60.5 to 65.4
Or	
Refractive Index at 40°C	1.4662-1.4694
Saponification value	185 to 190
Iodine value	115 to 120
Acid value	Not more than 6.0
Unsaponifiable matter	Not more than 2.5 per cent
Bellier test Turbidity temperature Acetic acid method	Not more than 22 oC
Test for argemone oil shall be negative.	

However, it may contain food additives permitted in these regulations and Appendix A

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

13. NIGER SEED OIL (Sargiya ka tel) means the edible oil obtained by process of expressing clean and sound seeds of *Guizotia abyssinica*. It shall be clear and free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, mineral or other oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 °C	61.0-65.0
Or	
Refractive Index at 40°C	1.4665-1.4691
Saponification value	188-193
Iodine value	110 to 135
Unsaponifiable matter	Not more than 1.0 per cent
Acid value	Not more than 6.0
Bellier test Turbidity temperature Acetic acid method	25°C - 29°C
Test for argemone oil shall be negative.	

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

14. Soyabean oil means the oil expressed from clean and sound soyabeans (*Soja max*) from which the major portion of the gums naturally present have been removed by hydration and mechanical or physical separation. It shall be clear, free from rancidity, suspended or other foreign matter, separated water added colouring or flavouring substances or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 oC	58.5 to 68.0
Or	
Refractive Index at 40°C	1.4649-1.4710
Saponification value	189 to 195
Iodine value	120 to 141
Unsaponifiable matter	Not more than 1.5 per cent

Acid value	Not more than 2.50
Phosphorus	Not more than 0.02

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

15. Maize (corn) oil means the oil, extracted from the gram of clean and sound seeds of *zea mays* linn. fam. graminiae, refined. it shall be free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or Mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 oC	56.7 to 62.5
Or	
Refractive Index at 40°C	1.4637-1.4675
Saponification value	187 to 195
Iodine value	103 to 128
Unsaponifiable matter	Not more than 1.5 per cent
Acid value	Not more than 0.50

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

16. Refined vegetable oil means any vegetable oil which is obtained by expression or solvent extraction of vegetable oil bearing materials, deacidified with alkali and/or physical refining and/or by miscella refining using permitted foodgrade solvents followed by bleaching with absorbent earth and/or carbon and deodourised with steam. No other chemical agent shall be used. The name of the vegetable oil from which the refined oil has been manufactured shall be clearly specified on the label of the container. In addition to the under-mentioned standards to which refined vegetable oils shall conform to the standards prescribed in these regulations for the specified edible oils shall also apply except for acid value which shall be not more than 0.5. Moisture shall not exceed 0.10 per cent by weight.

Test for argemone oil shall be negative.

1. The refined vegetable oil shall be obtained from the following vegetable oils:

- (i) Coconut Oil
- (ii) Cottonseed Oil
- (iii) Groundnut Oil
- (iv) Nigerseed Oil
- (v) Safflower Oil
- (vi) Sesame Oil
- (vii) Soyabean Oil
- (viii) Sunflower Oil
- (ix) Mustard/Rapeseed Oil
- (x) Linseed Oil

- (xi) Mahua Oil
- (xii) Olive Oil
- (xiii) Poppyseed Oil
- (xiv) Taramira Oil
- (xv) Maize (Corn) oil
- (xvi) Watermelonseed Oil
- (xvii) Palm Oil
- (xviii) Palmolein
- (xix) Palm Kernel Oil
- (xx) Rice Bran Oil
- (xxi) Salseed fat
- (xxii) Mango Kernel fat
- (xxiii) Kokum fat
- (xxiv) Dhupa fat
- (xxv) Phulwara fat

2. The refined vegetable oil shall comply with the following requirements:

The oils shall be clear and free from rancidity, adulterants, sediments, suspended and other foreign matter, separated water, added colouring and flavouring substances and mineral oil

3. However, it may contain food additives permitted in these Regulations and Appendices

17. Almond oil means the oil expressed from the seeds of *Prunus amygdalus Batach, var, dulcis koehne* (sweet almond) or of *Prunus amygdalus Batach, var Amara Focke* (bitter almond) without the application of heat. It shall be clear from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or mineral oil. It shall conform to the following standards:—

Butyro-refractometer reading at 40 °C	54 to 57
Or	
Refractive Index at 40°C	1.4620-1.4639
Saponification value	186 to 195
Iodine value	90 to 109
Acid value	Not more than 6.0
Bellier test Turbidity temperature Acetic acid method	Not more than 60°C

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

18. Water-melon seed oil means the oil extracted from the clean, sound seeds of the fruit of water-melon (*Citrullus vulgaris schrad*, family: *cucurbitaceae*). It shall be clear, free from rancidity, adulterants, sediments, suspended and other foreign matter, separated water, added colouring and flavouring substances and mineral oil. It shall conform to the following standards:—

Moisture and volatile matter 0.25 per cent	Not more than
Butyro-refractometer reading at 40 °C	55.6 - 61.7

Or



Refractive Index at 40°C	1.4630-1.4670
Saponification value	190 - 198
Iodine value	115 - 125
Acid value	Not more than 6.0
Unsaponifiable matter	Not more than 1.5

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

19. Palm oil means the oil obtained from fleshy mesocarp of fruits of the oil palm (*Elaeis Guinensis*) tree by the method of expression or solvent extraction. It shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring and flavouring substances or mineral oil. It shall conform to the following standards, namely:—

Butyro-refractometer reading at 50 oC	35.5 - 44.0
Or	
Refractive Index at 50 oC	1.4491-1.4552
Melting point (capillary slip method)	Not more than 37 oC
Iodine value(Wij's method)	45-56
Saponification value	195-205
Unsaponifiable matter	Not more than 1.2 per cent
Acid value	Not more than 10.0

Indigenously produced raw Palm Oil obtained by method of expression may be supplied for human consumption as such provided acid value is not more than 6.0 But palm oil imported into the country or produced by solvent extraction shall be refined before it is supplied for human consumption and it shall conform to the standards laid down under regulation 2.2.1 (16). Additionally, it shall have Flash Point (Pensky-Marten closed method) - Not less than 250° C

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

The oil so refined shall not contain Hexane more than 5.00 ppm.

20. Palmolein means the liquid fraction obtained by fractionation of palm oil obtained from the fleshy mesocarp of fruits of oil palm (*Elaeis Guineensis*) tree by the method of expression or solvent extraction. It shall be clear, free from rancidity, suspended or other foreign matter separated water, added colouring and flavouring substances or mineral oils. It shall conform to the following standards, namely:—

Butyro-refractometer reading at 40 oC	43.7 - 52.5
Or	
Refractive Index at 40 oC	1.4550 - 1.4610
Iodine value (Wij's method)	54-62
Saponification value	195-205
Cloud Point	Not more than 18°C
Unsaponifiable matter	Not more than 1.2 per cent
Acid value	Not more than 6.0

Further, if the palmolein is obtained from solvent extracted palm oil, it shall be refined before it is supplied for human consumption and it shall conform to the standards laid down under regulation 2.2.1 (16). Additionally, it shall have Flash Point (Pensky Marten closed method) - not less than 250°C.

Test for argemone oil shall be negative. However, it may contain food additives permitted in these Regulations and Appendices

The oil so refined shall not contain Hexane more than 5.00 ppm.

21. Palm kernel oil means the oil obtained from sound kernel of the fruits of oil palm (*Elaeis guinensis*) tree by the method of expression or solvent extraction. It shall be clear, free from rancidity suspended, or other foreign matter, separated water, added colouring and flavouring substances or mineral oil. It shall conform to the following standards, namely:—

Butyro-refractometer reading at 40 °C	35.3 - 39.5
Or	
Refractive Index at 40 °C	1.4490 - 1.4520
Iodine value (Wij's method)	10 - 23
Saponification value	237-255
Unsaponifiable matter	Not more than 1.2 per cent
Acid value	Not more than 6.0

Further, if the oil is obtained by the method of solvent extraction, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). additionally, it shall have flash point (pensky marten closed method) - not less than 250°C.

test for argemone oil shall be negative.

however, it may contain food additives permitted in these regulations and appendices

the oil so refined shall not contain hexane more than 5.00 ppm.

22. Sun flower seed oil means the oil obtained from clean and sound sunflower seeds or cake from the plants *Helianthus annuus* linn (Family:compositae) by the method of expression or solvent extraction. It shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances or mineral oil. It shall conform to the following standards, namely:—

Butyro-refractometer reading at 40 oC	57.1 - 65.0
Or	
Refractive Index at 40 oC	1.4640 - 1.4691
Iodine value (Wij's method)	100 - 145
Saponification value	188-194
Unsaponifiable matter	Not more than 1.5 per cent
Acid value	Not more than 6.0

Further, if the oil is obtained by the method of solvent extraction, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). Additionally, it shall have Flash Point (Pensky Marten closed method) - not less than 250°C.

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

The oil so refined shall not contain Hexane more than 5.00 ppm.

22.01 Sunflowerseed oil and Sunflowerseed oil (High Oleic Acid) means the oil obtained from clean and sound Sunflowerseed or the High Oleic acid oil bearing Sunflowerseeds of *Helianthus annuus* L. by the method of expression or solvent extraction. It shall be clear, free from rancidity, suspended foreign matter, separated water, added colouring or flavouring substance or mineral oil. It shall contain not less than 75% oleic acid as percent of total fatty acids. It shall conform to the following standards:—

<i>Parameters</i>	<i>High Oleic Acid Sunflowerseed Oil</i>	<i>Sunflowerseed Oil</i>
B.R. Reading	61.7-68.0 at 25°C	52.5-63.2 at 40°C
Or		
Refractive Index	1.467-1.471 at 25°C	1.461-1.468 at 40°C
Iodine value (Wijs method)	78-90	118-141
Saponification value	182-194	188-194
Unsaponifiable matter	Not more than 15g/kg	Not more than 15g/kg
Acid Value	Not more than 4.0 mg/KOH/g oil	Not more than 4.0 mg/KOH/g oil
Test for Argemone oil	Negative	Negative

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

23 Rice bran oil means the oil obtained from the layer around the endosperm of rice obtained from paddy of *Oryza Sativa* Linn. Fam Gramineae which is removed during the process of rice milling and is generally known as rice bran.

Refined Rice Bran Oil shall be obtained from solvent extracted oil, neutralised with alkali, bleached with bleaching earth or activated carbon or both and deodorised with steam. Alternatively deacidification' bleaching and deodorisation may be done by physical means.

The oil shall be clear and free from rancidity, adulterants, sediments, suspended and other foreign matters, separated water and added colouring and flavouring substances. The clarity of the oil shall be judged by the absence of turbidity after keeping the filtered sample at 35°C for 24 hrs. Rice Bran Oil shall be sold for human consumption only after refining. It shall conform to the following standards, namely:—

Moisture and Volatile Matter	Not more than 0.1 percent by weight
Refractive Index at 40 °C	1.4600 - 1.4700
Or	
Butyro-refractometer reading at 40 °C	51.0 - 66.4
Saponification value	180 - 195
Iodine value (Wij's method)	90 - 105
Acid value	Not more than 0.5
Unsaponifiable matter, percent by weight	
● for chemically refined	Not more than 3.5 percent
● for physically refined	Not more than 4.5 percent
● Oryzanol Content	Not less than 1.0 percent
Flash Point (Pensky Marten Closed method)	Not less than 250 °C

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). the oil so refined shall not contain hexane more than 5.00 ppm.

24. Blended edible vegetable oil means an admixture of any two edible vegetable oils where the proportion by weight of any edible vegetable oil used in the admixture is not less than 20 per cent. The individual oils in the blend shall conform to the respective standards prescribed by these regulations. The blend shall be clear, free from rancidity, suspended or insoluble matter or any other foreign matter, separated water, added colouring matter, flavouring substances, mineral oil, or any other animal and non-edible oils, or fats, argemone oils, hydrocyanic acid, castor oil and tricresyl phosphate. It shall also conform to the following standards, namely:—

a) Moisture and volatile matter not more than 0.2 per cent by weight;

b) Acid value:—

Nature of oil	Acid Value
(1) Both raw edible vegetable oils in the blend	Not more than 6.0
(2) One raw edible vegetable oil (s) and one refined vegetable oil (s) in the blend	Not more than 5.0
(3) Both refined edible vegetable oils in the blend	Not more than 0.5
(4) Unsaponifiable matter, percent by weight	
(i) Blended with chemically refined rice bran oil	Not more than 3.0 percent by weight
(ii) Blended with other edible vegetable oil	Not more than 1.50 percent by weight
(5) Flash point (Pensky Martin closed method)	Not less than 250°C

Test for Argemone oil shall be negative

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16).

the oil so refined shall not contain hexane more than 5.00 ppm.

2.2.2 Interesterified vegetable fat: means an edible fatty material that has been so treated as to bring about a rearrangement of fatty acid positions within the glyceride entities and hence a change in the physical properties like melting point, viscosity, specific gravity and the like with very little change in the constitution of the fatty acids themselves by a process of interesterification of the essentially neutral edible oil or fat, singly or in mixtures generally through the use of alkaline catalysts exemplified by sodium or potassium metals, or their ethoxides or hydroxides in the form either of anhydrous powders or in anhydrous glycerol medium followed by such post-process steps as washing, bleaching and deodourisation, the last of which can be omitted if the interesterified fat is to be incorporated as part of the raw material for further processing in edible fat products.

The interesterified fat shall be clear, free from soap, flavouring substances, rancidity, suspended or other foreign matter, separated water and mineral oil. It shall conform to the following standards, namely:—

(i) It shall not contain any harmful colouring, flavouring or any other matter deleterious to health;

(ii) No colour shall be added to interesterified fat unless so authorised by Government, but in no event any colour resembling the colour of ghee shall be added;

(iii) If any flavour is used, it shall be distinct from that of ghee in accordance with a list of permissible flavours and in such quantities as may be prescribed by Government:

Provided that diacetyl to the extent of not more than 4.0 ppm may be added to interesterified fat exclusively meant for consumption by the Armed Forces;

(iv) It shall not have moisture exceeding 0.25 per cent;

(v) The melting point as determined by capillary slip method shall be from 31°C to 41°C, both inclusive;

(vi) The Butyro-refractometer reading at 40°C, shall not be less than 48 or Refractive Index at 40°C shall not be less than 1.4580;

(vii) It shall not have unsaponifiable matter exceeding 2.0 per cent;

(viii) It shall not have free fatty acids (calculated as Oleic acid) exceeding 0.25 per cent;

(ix) The product on melting shall be clear in appearance and shall be free from staleness or rancidity, and pleasant to taste and smell;

(x) It shall contain raw or refined sesame (til) oil not less than 5 per cent by weight, but sufficient so that when it is mixed with refined groundnut oil in the proportion of 20:80, the colour produced by the Baudouin Test shall not be lighter than 2.0 red units in a 1 cm. cell on a Lovibond scale;

(xi) It shall contain not less than 25 I.U. of synthetic Vitamin A per gram at the time of packing and shall show a positive test for Vitamin A when tested by Antimony Trichloride (Carr-Price) reagent (As per IS: 5886-1970);

(xii) No anti-oxidant, synergist, emulsifier or any other such substance shall be added to it except with the prior sanction of the Authority.

Test for argemone oil shall be negative.

However, it may contain food additives permitted in these Regulations and Appendices

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

### 2.2.3 PARTIALLY HYDROGENATED SOYABEAN OIL

1. Partially hydrogenated and winterised soyabean oil means deodourised product obtained by light (mild or "Brush") hydrogenation of degummed, deacidified, decolourised and winterised soyabean oil. The oil shall be degummed by water with or without a food grade additive, deacidified by either neutralisation with alkali or steam distillation (physical refining) or miscella refining using permitted food grade solvent, decolourised with bleaching earth and/or carbon, partially hydrogenated using nickel catalyst, winterised with or without the use of a food grade solvent, filtered in a suitable filter press and deodourised with steam.

The product shall be clear, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, castor oil, mineral oil, and other vegetable and animal fats.

It may contain food additives permitted in these Regulations and Appendices.

It shall conform to the following standards:

Moisture	Not more than 0.1 percent by weight
Refractive Index at 40 oC	1.4630 - 1.4690
Or	
Butyro-refractometer reading at 40 oC	55.6 - 64.8
Saponification value	189 - 195
Iodine value (Wij's method)	107 - 120
Acid value	Not more than 0.50
Unsaponifiable Matter	Not more than 1.5 percent by weight
Linolenic Acid (c18:3)	Not more than 3 percent by weight
Cloud Point (°C)	Not more than 10°C
Flash Point (Pensky Marten Closed method)	Not less than 250 °C

Test for argemone oil shall be negative

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

2. Partially hydrogenated soyabean oil means deodourised product obtained by light (mild or "brush") hydrogenation of degummed, deacidified, decolorised soyabean oil. The oil shall be degummed by water with or without a food grade additive, deacidified by either neutralisation with alkali or steam distillation (physical refining) or miscella refining using permitted food grade solvent, decolourised with bleaching earth and/or carbon and partially hydrogenated using nickel catalyst. The product shall again be deacidified, bleached and deodourised with steam.

The product shall be clear liquid at 35 degree C. It shall be clear on melting, free from rancidity, suspended or other foreign matter, separated water, added colouring or flavouring substances, castor oil, mineral oil or other vegetable and animal Oils & fats.

It may contain food additives permitted in these Regulations and Appendices

It shall conform to the following standards:

Moisture	Not more than 0.1 percent by weight
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Refractive Index	
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at 40 °C	
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1.4630 - 1.4670
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Or

Butyro-refractometer	
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reading at 40 °C	
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55.6 - 61.7
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Saponification value	
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189 - 195
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Iodine value (Wij's method)	
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95 - 110
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Acid value	
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Not more than 0.50
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Unsaponifiable Matter	
-----------------------	--

Not more than 1.5 percent by weight
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Linolenic Acid (c18: 3)	
-------------------------	--

Not more than 3 percent by weight
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Cloud Point (°C)	
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Not more than 25°C
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Flash Point (Penske Marten Closed method)	
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Not less than 250 °C
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Test for argemone oil shall be negative

Note : The edible oils prescribed under regulation 2.2.1 shall be free from Castor oil.

Further, if the oil is obtained by the method of solvent extraction and the oil imported into India whether obtained by solvent extraction or otherwise, it shall be supplied for human consumption only after refining and shall conform to the standards laid down under regulation 2.2.1 (16). The oil so refined shall not contain Hexane more than 5.00 ppm.

#### 2.2.4 EDIBLE FATS:

1. Beef fat or suet means fat obtained from a beef carcass. it shall have a saponification value varying from 193 to 200 and an iodine value from 35 to 46.

it may contain food additives permitted in these regulations and appendices

2. Mutton fat means fat obtained from the carcass of sheep. it shall have a saponification value varying from 192 to 195 and an iodine value from 35 to 46.

it may contain food additives permitted in these regulations and appendices

3. Goat fat means the rendered fat from goat. it shall have a saponification value varying from 193 to 196 and iodine value from 36 to 45.

It may contain food additives permitted in these Regulations and Appendices

4. Lard means the rendered fat from hogs and shall not contain more than one per cent of substances other than fatty acids and fat. it shall have a saponification value varying from 192 to 198 and iodine value from 52 to 65.

it may contain food additives permitted in these regulations and appendices

5. Cocoa butter means the fat obtained by expression from the nibs of the beans of Theobroma cocoa L. It shall be free from other oils and fats, mineral oil and added colours. It shall conform to the following standards:

Percentage of free fatty acids  
(calculated as oleic acid)

Not more than 1.5

Iodine value 32 to 42

Melting point 29o C to 34o C.

Butyro refractometer  
reading at 40°C

OR

Refractive Index at 40°C 40.9 to 48.0

1.4530-1.4580;

Saponification value 188 to 200

6. Refined salseed fat means the fat obtained from seed kernels of sal trees, shorea robusta Gaertn, F.(N. diperrocaspaeae which has been neutralized with alkali, bleached with bleaching earth or activated carbon or both, and deodorized with steam, no other chemical agents being used. Alternatively, deacidification, bleaching and deodorisation may be done by physical means. The material shall be clear on melting and free from adulterants, sediment, suspended or other foreign matter, separated water or added colouring substance. However, it may contain food additives permitted in these Regulations and Appendices. There shall be no turbidity after keeping the filtered sample at 40°C for 24 hours. It shall conform to the following standards:—

(i) Moisture Not more than 0.1 percent

(ii) Butyro refractometer reading at 400C 36.7 - 51.0

OR

Refractive Index at 400C 1.4500 - 1.4600

(iii) Iodine Value (Wijs' Method) 31 - 45

(iv) Saponification value 180 - 195

(v) Unsaponifiable matter Not more than 2.5 percent by weight

(vi) Free fatty acids (expressed as Oleic acid) Not more than 0.25 percent by weight

Or

Acid value Not more than 0.5

(vii) 9:10 epoxy and 9:10 Dihydroxy stearic acid Not more than 3.0 percent by weight

(viii) Flash point (Pensky Marten closed method) Not less than 2500C

Test for argemone oil shall be negative

7. Kokum Fat means the fat obtained from clean and sound kernels of Kokum (*Garcinia indica choisy*) "also known as kokum, by process of expression or by a process of solvent extraction from cake or kernel. It shall be refined. The fat shall be clear on melting and free from rancidity, adulterants, sediments, suspended or other foreign matter, separated water, added colouring and flavouring matters and mineral oil." However, it may contain food additives permitted in these regulations and Appendix A.

It shall also conform to the following standards, namely:—

(a) Butyro-refractometer reading at 40o C, or 45.9-47.3

Refractive Index at 40o C 1.4565 to 1.4575

(b) Saponification value 187-191.7

(c) Unsaponifiable matters Not more than 1.5 per cent by weight

(d) Iodine value (wijs) 32-40

(e) Acid value Not more than 0.5

(f) Flash Point Not less than 250o C

Pensky-Martens (closed) method

Test for argemone oil shall be negative.

8. Mango Kernel Fat means the fat obtained from clean and sound kernels of Mango (*Mangifera Indica* Linn) by process of expression or by a process of solvent extraction from cake or kernel. It shall be refined. The fat shall be clear on melting and free from rancidity, adulterants, sediment suspended or other foreign matter, separated water, added colouring and flavouring matters and mineral oil. However, it may contain food additives permitted in these Regulations and Appendices.

It shall also conform to the following standards, namely :—

(a) Butyro-refractometer reading at 400 C, or Refractive Index at 400 C	43.7-51.6 1.4550 to 1.4604
(b) Saponification value	185-198
(c) Unsaponifiable matters	Not more than 1.5 per cent by weight
(d) Iodine value (wijs)	32-57
(e) Acid value	Not more than 0.5
(f) Flash Point Pensky-Martens (closed) method	Not more than 250o C

Test for argemone oil shall be negative.

9. Dhupa Fat means the fat obtained from clean and sound seed kernels of Dhupa, also known as Indian Copal (*Vateria Indica* Linn) tree by process of expression or by a process of solvent extraction from cake or kernel. It shall be refined. The fat shall be clear on melting and free from rancidity, adulterants, sediment, suspended or other foreign matter, separated water, added colouring and flavouring matter and mineral oil. However, it may contain food additives permitted in these Regulations and Appendices

It shall also conform to the following standards, namely :—

(a) Butyro-refractometer reading at 400 C, or Refractive Index at 400 C	47.5-49.5 1.4576 to 1.4590
(b) Saponification value	187-192
(c) Unsaponifiable matters	Not more than 1.5 per cent by weight.
(d) Iodine value (wijs)	36-43
(e) Acid value	Not more than 0.5
(f) Flash Point	Not less than 2500 C

Penske-Martens (closed) method

Test for argemone oil shall be negative.

10. Phulwara Fat means the fat obtained from clean and sound seed kernels of Phulwara [variously named *Aisandra Butyrace* (Roxb) *Baelni*, *Madhuca Butyracea* or *Bassia Butyracea*] by a process of expression or by a process of solvent extraction from cake or Kernel. It shall be refined. The fat shall be clear on melting and shall be free from rancidity, adulterants sediments, suspended on other foreign matters, separated water, added colouring and flavouring substances and mineral oil. However, it may contain food additives permitted in these Regulations and Appendices.

It shall also conform to the following Standards, namely :—

(a) Butyro-refractometer reading at 400 C, or Refractive Index at 400 C	48.6-51.0 1.4584 to 1.4600
(b) Saponification value	192.5-199.4
(c) Unsaponifiable matters	Not more than 1.5 per cent by weight.
(d) Iodine value (wijs)	43.8-47.4
(e) Acid value	Not more than 0.5
(f) Flash Point Penske-Martens (closed) method	Not less than 2500 C

Test for argemone oil shall be negative.



### 2.2.5 MARGARINE AND FAT SPREADS:

1. Table margarine means an emulsion of edible oils and fats with water. It shall be free from rancidity, mineral oil and animal body fats. It may contain common salt not exceeding 2.5 per cent, skimmed milk powder not exceeding 2 per cent; it may contain food additives permitted in these Regulations and Appendices. It shall conform to the following specifications, namely:—

Fat	Not less than 80 per cent mass/mass
Moisture	Not less than 12 per cent and not more than 16 per cent mass/ mass.
Vitamin A	Not less than 30 I.U. per gram of the product at the time of sale.
Melting point of extracted fat (Capillary Slip Method)	310C to 370C
Unsaponifiable matter of extracted fat	Not more than 1.5 per cent by weight extracted fat.
Free fatty acids (as oleic acid) of extracted fat	Not more than 0.25 per cent by weight
OR	
Acid Value	Not more than 0.5

It shall contain not less than 5.0 percent of its weight of Til oil but sufficient to ensure that when separated fat is mixed with refined groundnut oil in the proportion of 20:80 the red colour produced by the Baudouin test shall not be lighter than 2.5 red units in 1 cm cell on a lovibond scale.

Provided that such coloured and flavoured margarine shall also contain starch not less than 100 ppm and not more than 150 ppm.

Provided further that such coloured and flavoured margarine shall only be sold in sealed packages weighing not more than 500gms.

Test for Argemone oil shall be negative

2. Bakery and Industrial Margarine- means an emulsion of vegetable oil product with water. It shall be free from added colour and flavour, rancidity, mineral oil and animal body fats. It may contain common salt not exceeding 2.5 percent. However, it may contain food additives permitted in these Regulations and Appendices. It shall conform to the following standards, namely:—

Fat	Not less than 80 per cent m/m.
Moisture	Not less than 12 per cent and Not more than 16 per cent m/m.
The separated fat of the products shall conform to the following :—	
(i) Vitamin A	Not less than 30 IU per gram at the time of packaging and shall show a positive test for Vitamin 'A' when tested by Antimony trichloride (carrprice) reagents (as per IS 5886-1970).
(ii) Melting point by Capillary slip method	31°C - 41°C
(iii) Unsaponifiable matter	Not exceeding 2.0 per cent but in case of the products where proportion of Rice bran oil is more than 30 per cent by wt. the unsaponifiable matter shall be not more than 2.5 per cent by wt. provided quantity of Rice bran oil is declared on the label of such product as laid down in Regulation 2.4.5 (34) of Food Safety and Standards (Food Products Standards and Food Additive) Regulations, 2011.
(iv) Free Fatty Acid calculated as Oleic acid or Acid value	Not more than 0.25 per cent. Not more than 0.5.

It shall contain raw or refined sesame oil (Til oil) in sufficient quantity so that when the product is mixed with refined groundnut oil in the proportion of 20 : 80, the colour produced by the Boudouin test shall not be lighter than 2.0 red unit in a 1 cm. cell on a Lovibond scale.

Test for argemone oil shall be negative.

3. Fat spread means a product in the form of water in oil emulsion, of an aqueous phase and a fat phase of edible oils and fats excluding animal body fats. The individual oil and fat used in the spread shall conform to the respective standards prescribed by these regulations.

Fat spread shall be classified into the following three groups:—

S.No	Types	Characteristics
(a)	Milk fat spread	Fat content will be exclusively milk fat.
(b)	Mixed fat spread	Fat content will be a mixture of milk fat with any one or more of hydrogenated, unhydrogenated refined edible vegetable Oils or interesterified fat.
(c)	Vegetable fat spread	Fat content will be a mixture of any two or more of hydrogenated, unhydrogenated refined vegetable oils or interesterified fat.

The fat content shall be declared on the label. In mixed fat spread, the milk fat content shall also be declared on the label alongwith the total fat content.

The word 'butter' will not be associated while labelling the product.

It may 'contain' edible common salt not exceeding 2 per cent by weight in aqueous phase; milk solid not fat: It may contain food additives permitted in these Regulations and Appendices. It shall be free from animal body fat, mineral oil and wax. Vegetable fat spread shall contain raw or refined Sesame oil (Til oil) in sufficient quantity so that when separated fat is mixed with refined groundnut oil in the proportion of 20:80 the red colour produced by Baudouin test shall not be lighter than 2.5 red units in 1 cm cell on a Lovibond scale.

It shall also conform to the following standards, namely:—

- |       |  |  |
|-------|--|--|
| (i)   | Fat  | Not more than 80 per cent and not less than 40 per cent by weight.   |
| (ii)  | Moisture   | Not more than 56 per cent and not less than 16 per cent by weight.   |
| (iii) | Melting point of Extracted fat (capillary slip method) in case of vegetable fat spread | Not more than 37°C   |
| (iv)  | Unsaponifiable matter of extracted fat   |  |
|       | (a) In case of milk fat and mixed fat spread   | Not more than 1 per cent by weight   |
|       | (b) In case of vegetable fat spread  | Not more than 1.5 per cent   |
|       | (c) Acid value of extracted fat  | Not more than 0.5  |
| (v)   | The vegetable fat spread shall contain   | Not less than 25 IU synthetic vitamin 'A' per gram at the time of packing and shall show a positive test for vitamin 'A' when tested by Antimony Trichloride (Carr-Price) reagents (as per I.S. 5886 - 1970)". |
| (vi)  | It shall contain Starch  | Not less than 100 ppm and<br>Not more than 150 ppm   |

It shall be compulsorily sold in sealed packages weighing not more than 500g. under Agmark certificate mark.

## 2.2.6 HYDROGENATED VEGETABLE OILS

1. Vanaspati means any refined edible vegetable oil or oils, subjected to a process of hydrogenation in any form. It shall be prepared by hydrogenation from groundnut oil, cottonseed oil and sesame oil or mixtures thereof or any other harmless vegetable oils allowed by the government for the purpose. Refined sal seed fat, if used, shall not

be more than 10 per cent of the total oil mix. Vanaspati shall be prepared from one or more of the following vegetable oils:

- a. Coconut oil
- b. Cotton-seed oil
- c. Dhupa fat
- d. Groundnut oil
- e. Kokum fat
- f. Linseed oil
- g. Mahua oil
- h. Maize (Corn) oil
- i. Mango kernel fat
- j. Mustard/Rape-seed oil
- k. Niger-seed oil
- l. Palm oil
- m. Phulwara fat
- n. Rice bran oil
- o. safflower (Kariseed) oil
- p. Salseed oil (up to 10%)
- q. Sesame oil
- r. Soyabean oil
- s. Sunflower oil
- t. Watermelon seed oil
- u. Vegetable oils imported for edible purposes:

It shall conform to the standards specified below:—

- (i) It shall not contain any harmful colouring, flavouring or any other matter deleterious to health;
- (ii) No colour shall be added to hydrogenated vegetable oil unless so authorised by Government, but in no event any colour resembling the colour of ghee shall be added;
- (iii) If any flavour is used, it shall be distinct from that of ghee in accordance with a list of permissible flavours and in such quantities as may be prescribed by Government:  
 Provided that diacetyl to the extent of not more than 4.0 p.p.m. may be added to Vanaspati exclusively meant for consumption by the Armed Forces;
- (iv) The product on melting shall be clear in appearance and shall be free from staleness or rancidity, and pleasant to taste and smell;
- (v) It shall contain raw or refined sesame (til) oil in sufficient quantity so that when the vanaspati is mixed with refined groundnut oil in the proportion of 20:80, the colour produced by the Baudouin test shall not be lighter than 2.0 red units in a 1 cm. cell on a Lovibond scale;
- (vi) No anti-oxidant, synergist, emulsifier or any other substance shall be added to it except with the prior sanction of the Authority.

Provided that imported crude palm oil and fractions thereof shall not be used by the producers other than those who are engaged in manufacture of vanaspati/any other hydrogenated oil produce and are equipped in the same location with the facilities for generation of hydrogen gas and hydrogenation of the said imported crude palm oil and fractions thereof with the gas so generated in the manufacture of vanaspati/any other hydrogenated vegetable oil product for edible consumption.

- (vii) The product shall conform to the following requirements:

- a) Moisture, percent by mass: Not more than 0.25
- b) Melting point as determined by capillary slip method shall be from 31- 410C both inclusive
- c) it shall not have unsaponifiable matter exceeding 2.0 percent but in case of vanaspati where proportion of rice bran oil is more than 30 percent by weight, the unsaponifiable matter shall not be more than 2.5 percent by weight provided quantity of rice bran is declared on the label of such vanaspati as laid down in regulation 2.4.2(8) of packaging and labeling regulations
- d) Free fatty acid (as oleic acid), percent by mass: Not more than 0.25
- e) Synthetic Vitamin 'A': Not less than 25.0 International units (IU) per gram at the time of packing and shall test positive when tested with Antimony Trichloride (carr-Price Reagent) as per IS:5886-1970
- f) Residual Nickel: Not more than 1.5 ppm
- g) Test for argemone oil shall be negative.

2. Bakery shortening means vanaspati meant for use as a shortening or leavening agent in the manufacture of bakery products, that is, for promoting the development of the desired cellular structure in the bakery product with an accompanying increase in its tenderness and volume; this will also conform to the standards prescribed in regulation 2.2.6 (1) excepts that—

- (a) the melting point as determined by the capillary slip method shall not exceed 41°C.
- (b) if aerated, only nitrogen, air or any other inert gas shall be used for the purpose and the quantity of such gas incorporated in the product shall not exceed 12 per cent by volume thereof.
- (c) it may contain added mono-glycerides and diglycerides as emulsifying agents.

Test for argemone oil shall be negative.

## 2.3: FRUIT & VEGETABLE PRODUCTS

### 2.3.1: Thermally Processed Fruits

#### 1. Thermally Processed Fruits

(Canned/Bottled/Flexible packaged/Aseptically packed) means the products obtained from sound, matured, dehydrated, fresh or frozen, peeled or un-peeled, previously packed, whole, halves or cut pieces of fruits packed with any suitable packing medium and processed by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage. It may contain water, fruit juice, dry or liquid nutritive sweeteners, spices and condiments and any other ingredients suitable to the product. The packing medium alongwith its strength shall be declared on the label.

2. The product may contain food additives permitted in these Regulations and Appendices. The product shall conform to the microbiological requirements given in Appendix B. Drained weight of fruits shall be not less than the weight given below:-

- |                 |  |
|-----------------|--|
| (i) Liquid pack | Not less than 50.0 percent of net weight of the contents |
| (ii) Solid Pack | Not less than 70.0 percent of net weight of the contents |

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

### 2.3.2: Thermally Processed Fruit Cocktail / Tropical Fruit Cocktail

1. Thermally Processed Fruit Cocktail / Tropical Fruit Cocktail (Canned, Bottled, Flexible Pack And / Or Aseptically Packed) means the product prepared from a mixture of fruits which shall be declared on the label. Such fruits may be fresh, frozen, dehydrated or previously processed. The fruit mixture may be packed with any suitable packing medium and processed by heat in an appropriate manner before or after being sealed in a container so as to prevent spoilage. The packing medium alongwith its strength when packed shall be declared on the label.

2. The name of the fruits used in the product and prepared in any style shall be declared on the label alongwith the range of percentage of each fruit used in the product. The drained weight of fruits shall be not less than the weight given below:—

- |                 |  |
|-----------------|--|
| (a) Liquid pack | 50.0 percent of net weight of contents |
| (b) Solid Pack  | 70.0 percent of net weight of contents |

3. The product may contain food additives permitted in these Regulations and Appendices. The product shall conform to the microbiological requirements given in Appendix B. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

### 2.3.3: Thermally Processed Vegetables

1. Thermally Processed Vegetables (Canned, Bottled/Flexible pack / Aseptically Packed) means the product obtained from fresh, dehydrated or frozen vegetables either singly or in combination with other vegetables, peeled or un-peeled, with or without the addition of water, common salt and nutritive sweeteners, spices and condiments or any other ingredients suitable to the product, packed with any suitable packing medium appropriate to the product processed by heat, in an appropriate manner, before or after being sealed in a container so as to prevent spoilage. The packing medium along with its strength shall be declared on the label. The product may be prepared in any suitable style appropriate to the product. The product may contain food additives permitted in these Regulations and Appendices. The product shall conform to the microbiological requirements given in Appendix B. The name of the vegetables used in the product and prepared in any style shall be declared on the label along with the range of percentage of each vegetable used in the product. Drained weight of vegetables shall be not less than the weight given below:—

- |  |  |
|--|--|
| (i) Liquid Pack  |  |
| (a) Mushroom   | 50.0 percent of net weight of contents |
| (b) Green beans, carrots, peas, sweet corn/ baby corn  | 50.0 percent of net weight of contents |
| (c) Mushroom Packed in sauce                           | 25.0 percent of net weight of contents |
| (d) Other Vegetables                                   | 50.0 percent of net weight of contents |
| (ii) Solid Pack 70.0 percent of net weight of contents |  |

2. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

### 2.3.4: Thermally Processed Curried Vegetables / Ready to Eat Vegetables

1. Thermally Processed Curried Vegetables / Ready to Eat Vegetables means the product prepared from fresh, dehydrated or frozen or previously processed vegetables, legumes, cereals or pulses, whether whole or cut into pieces. The vegetable(s), either singly or in combination, may be prepared in any suitable style applicable for the respective vegetable in normal culinary preparation. It may contain salt, nutritive sweeteners, spices and condiments, edible vegetable oils and fats, milk fat and any other ingredients suitable to the product and processed by heat, in an appropriate manner, before or after being- in a container, so as to prevent spoilage.

2. The product may contain food additives permitted in these Regulations and Appendices. The product shall conform to the microbiological requirements given in Appendix B.

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

### 2.3.5: Thermally Processed Vegetable soups

1. Thermally Processed Vegetable Soups (Canned, Bottled, flexible pack And/ Or Aseptically Packed) means unfermented but fermentable product, intended for direct consumption, prepared from juice/ pulp/puree of sound, mature vegetables, fresh, dehydrated, frozen or previously processed, singly or in combination, by blending with salt, nutritive sweeteners, spices and condiments and any other ingredients suitable to the product, cooked to a suitable consistency and processed by heat in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage. It may be clear, turbid or cloudy.

2. The product shall have total soluble solids (m/m) not less than 5.0 percent except for tomato soup where it shall be not less than 7.0 percent (w/ w).

3. The product may contain food additives permitted in these Regulations and Appendices. The product shall conform to the microbiological requirements given in Appendix B.

4. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.6: Thermally Processed Fruits Juices

1. Thermally Processed Fruits Juices (Canned, Bottled, Flexible And/Or Aseptically Packed) means unfermented but fermentable product, pulpy, turbid or clear, intended for direct consumption obtained by a mechanical process from sound, ripe fruit or the flesh thereof and processed by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage. The juice may have been concentrated and later reconstituted with water suitable for the purpose of maintaining the essential composition and quality factors of the juice. It may contain salt. One or more of the nutritive sweeteners may be added in amounts not exceeding 50 g/kg but not exceeding 200g/kg in very acidic fruits except in case of Apple Juice, Orange Juice (reconstituted from concentrate), Grape Juice, Pineapple Juice (reconstituted from concentrate). The product is not required to be called sweetened juice till the added nutritive sweeteners are not in excess of 15g/kg.

2. The product may contain food additives permitted in these Regulations and Appendices. The product shall conform to the microbiological requirements given in Appendix B.

The product shall meet the following requirements:—

#### FRUIT JUICES

	TSS Min( %)	Acidity expressed as Citric Acid Max.(%)	Added Nutritive Sweeteners Max ( g/kg)
1	2	3	4
1. Apple Juice	10	3.5 (as malic acid)	—
2. Orange Juice			
(a) Freshly expressed	10	3.5	50
(b) Reconstituted from concentrate	10	3.5	—
3. Grape Fruit Juice	9	-	50
4. Lemon juice	6	4.0	200
5. Lime juice	-	5.0	200
6. Grape Juice			
(a) Freshly expressed	15	3.5	
(b) Reconstituted from concentrate	15	3.5	—
7. Pineapple Juice			
(a) Freshly expressed	10	3.5	50
(b) Reconstituted from concentrate	10	3.5	—
8. Black Currant	11	3.5	200
9. Mango, Guava or any other pulp fruit	15	3.5	GMP
10. Other fruit juices of single species- not very acidic	10	3.5	50
11. Other fruit juices of single species- very acidic	10	3.5	200
12. Other fruit juices of single species or combination thereof - not very acidic	10	3.5	50
13. Other fruit juices of single species or combination thereof - very acidic	10	3.5	200

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.7 Thermally Processed Vegetable Juices

1. Thermally Processed Vegetable Juices (Canned, Bottled, Flexible Pack And/Or Aseptically Packed) means the unfermented but fermentable product or may be lactic acid fermented product intended for direct consumption obtained from the edible part of one or more vegetables, including roots, and tubers (e.g. carrots, garlic) stems and shoots (e.g. Asparagus), leaves and flowers (e.g. spinach and cauliflower) and legumes (e.g. peas) singly or in combination, may be clear, turbid or pulpy, may have been concentrated & reconstituted with water suitable for the purpose of maintaining the essential composition & quality factors of the juice and processed by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage. It may contain salt, nutritive sweeteners, spices and condiments, vinegar, whey or lactoserum having undergone lactic acid fermentation not more than 100 gm/kg and any other ingredients suitable to the product.

2. The product shall have total soluble solids free of added salts not less than 5.0 percent (w/w).

3. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B.

4. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.8 Thermally Processed Tomato Juice:

1. Thermally Processed Tomato Juice means the unfermented juice obtained by mechanical process from tomatoes (*Lycopersicon esculentus* L) of proper maturity and processed by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage. The juice may have been concentrated and reconstituted with water for the purpose of maintaining the essential composition and quality factors of the juice. The product may contain salt and other ingredients suitable to the product. The product shall be free from skin, seeds and other coarse parts of tomatoes. The product shall have pleasant taste and flavour characteristic of tomatoes free from off flavour and evidence of fermentation.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall conform to the requirements of Total Soluble Solids m/m free of added salt to be not less than 5.0 percent.

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.9 Thermally Processed Fruit Nectars:

1. Thermally Processed Fruit Nectars (Canned, Bottled, Flexible Pack And / Or Aseptically Packed) means an unfermented but fermentable pulpy or non-pulpy, turbid or clear product intended for direct consumption made from fruit singly or in combination, obtained by blending the fruit juice / pulp/fruit juice concentrate and/ or edible part of sound, ripe fruit(s), concentrated or unconcentrated with water, nutritive sweeteners and any other ingredient appropriate to the product and processed by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage.

2. Lemon and Lime juice may be added as an acidifying agent in quantities which would not impair characteristic fruit flavour of the fruit used. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

	<i>TSS Min( %)</i>	<i>Min. Fruit Juice Content (%)</i>	<i>Acidity Expressed as Citric Acid Max (%)</i>
<b>NECTARS OF CITRUS JUICE</b>			
Orange Nectar	15	40	1.5
Grape Fruit Nectar	15	20	1.5
Pineapple Nectar	15	40	1.5
Mango Nectar	15	20	1.5
Guava Nectar	15	20	1.5
Peach Nectar	15	20	1.5
Pear Nectar	15	20	1.5
Apricot Nectar	15	20	1.5
Non-pulpy Black Currant Nectar	15	20	1.5
Other Fruit Nectar	15	20	1.5
Other Fruit Nectars of High Acidity/Pulpy / Strong flavour	15	20	1.5
Mixed Fruit Nectar	15	20	1.5

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.10: Thermally Processed Fruit Beverages / Fruit Drink/ Ready to Serve Fruit Beverages

1. Thermally Processed Fruit Beverages / Fruit Drink/ Ready to Serve Fruit Beverages (Canned, Bottled, Flexible Pack And/ Or Aseptically Packed) means an unfermented but fermentable product which is prepared from juice or Pulp/Puree or concentrated juice or pulp of sound mature fruit. The substances that may be added to fruit juice or pulp are water, peel oil, fruit essences and flavours, salt, sugar, invert sugar, liquid glucose, milk and other ingredients appropriate to the product and processed by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall meet the following requirements:—

- |  |                            |
|--|----------------------------|
| (i) Total Soluble solid (m/m)          | Not less than 10.0 percent |
| (ii) Fruit juice content (m/m)         |                            |
| (a) Lime/Lemon ready to serve beverage | Not less than 5.0 percent  |
| (b) All other beverage/drink           | Not less than 10.0 percent |

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.11: Thermally Processed Mango Pulp / Puree and Sweetened Mango Pulp / Puree

1. Thermally Processed Mango Pulp / Puree and Sweetened Mango Pulp / Puree (Canned, Bottled, Flexible Pack And/ Or Aseptically Packed) means unfermented but fermentable product intended for direct consumption obtained from edible portion of sound, ripe mangoes (*Mangifera indica*.L.), by sieving the prepared fruits, where as, the puree is obtained by finely dividing the pulp by a finisher or other mechanical means and processed by heat in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage.

2. It may contain one or more nutritive sweeteners in amounts not exceeding 50 gm/ kg. However, the product shall be described as sweetened Mango pulp/ puree if the amount of nutritive sweeteners is in excess of 15 gm / kg.



3. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:-

(i) Total Soluble Solids (m/m)

- |                                   |                            |
|-----------------------------------|----------------------------|
| (a) Sweetened                     | Not less than 15.0 percent |
| Unsweetened                       |                            |
| (b) (Natural Mango Pulp)          | Not less than 12.0 percent |
| (ii) Acidity as Citric Acid       | Not less than 0.3 percent  |
| (For sweetened canned mango pulp) |                            |

4. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.12 Thermally Processed Fruit Pulp / Puree And Sweetened Fruit Pulp / Puree other than Mango

1. Thermally Processed Fruit Pulp / Puree And Sweetened Fruit Pulp / Puree other than Mango (Canned, Bottled, Flexible Pack And / Or Aseptically Packed) means unfermented but fermentable product intended for direct consumption obtained from edible portion of sound, ripe fruit of any suitable kind & variety by sieving the prepared fruits, where as, the puree is obtained by finely dividing the pulp by a finisher or other mechanical means and processed by heat in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage.

2. It may contain one or more nutritive sweeteners in amounts not exceeding 50 gm/Kg. However, the product shall be described as sweetened pulp/puree if the amount of nutritive sweeteners is in excess of 15 gm. /kg.

3. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:-

- |   |                           |
|---|---------------------------|
| (i) Total Soluble Solids (m/m) exclusive of added sugar | Not less than 6.0 percent |
| (ii) Acidity as Citric Acid                             | Not less than 0.3 percent |

The container shall be filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.13 Thermally Processed Concentrated Fruit / Vegetable Juice Pulp/ Puree

1. Thermally Processed Concentrated Fruit / Vegetable Juice Pulp/ Puree (Canned, Bottled, Flexible Pack And/ Or Aseptically Packed) means the unfermented product which is capable of fermentation, obtained from the juice or pulp or puree of sound, ripe fruit(s) / vegetable(s), from which water has been removed to the extent that the product has a total soluble content of not less than double the content of the original juice/ pulp/ puree prescribed vide in regulation 2.3.6 and 2.3.7. Natural volatile components may be restored to the concentrates where these have been removed. It may be pulpy, turbid or clear and preserved by heat, in an appropriate manner, before or after being sealed in a container, so as to prevent spoilage.

2. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.14 Thermally Processed Tomato Puree And Paste

1. Thermally Processed Tomato Puree And Paste (Canned, Bottled, Flexible Pack And/ Or Aseptically Packed) means unfermented product which is capable of fermentation, obtained by concentrating the juice of sound ripe tomatoes to the desired concentration. It may contain salt and other ingredients suitable to the products.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

<i>S.No</i>	<i>Product</i>	<i>Total Soluble Solids (w/w)</i>
1	Tomato puree	Not less than 9.0 percent
2	Tomato Paste	Not less than 25 percent

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.15 Soup Powders:

1. Soup Powders means the products obtained by mechanical dehydration of fresh vegetables/ fruits juice/ pulp/puree of sound, vegetables / fruits and or earlier concentrated, dehydrated, frozen or processed fruits & vegetables, singly or in combination by blending with salt, nutritive sweeteners, spices and condiments and any other ingredients suitable to the product, as appropriate to the product and packed suitably to prevent spoilage.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall comply with the following requirements:—

- |   |                           |
|---|---------------------------|
| (i) Moisture (m/m)  | Not more than 5.0 percent |
| (ii) Total soluble solids (m/m) (on dilution on ready to serve basis) | Not less than 5.0 percent |

#### 2.3.16 Fruit/Vegetable Juice / Pulp/ Puree With Preservatives For Industrial Use only:

1. Fruit/Vegetable Juice / Pulp/ Puree With Preservatives For Industrial Use only means an unfermented but fermentable product, pulpy, turbid or clear, obtained by a mechanical process from sound ripe fruits/ vegetables.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B.

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.17 Concentrated Fruit Vegetable Juice /Pulp / Puree With Preservatives For Industrial Use Only:

1. Concentrated Fruit Vegetable Juice /Pulp / Puree With Preservatives For Industrial Use Only means an unfermented product, which is capable of fermentation, obtained from the juice or pulp or puree of fruit(s) / vegetable (s), from which the water has been removed to the extent that the product has a soluble solids content of not less than double the content of the original juice, pulp, puree prescribed under Regulation 2.3.6 and Regulation 2.3.7. It may be pulpy, turbid or clear.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B.

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.18 Tamarind Pulp/Puree and Concentrate:

1. Tamarind Pulp/Puree And Concentrate means the unfermented product which is capable of fermentation, obtained from fresh or dried tamarind, by boiling with water and sieving it, and preserved either by thermal processing or by using permitted preservatives.

2. The Tamarind Concentrate is the product obtained from tamarind pulp/ puree from which water has been removed by evaporation to achieve appropriate concentration.

3. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

	Minimum TSS Percent	Minimum Acidity Percent	Ash Insoluble in dilute HCl Percent (Maximum)
Tamarind Pulp/Puree	32	4.5	0.4
Tamarind Concentrate	65	9.0	0.8

4. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the water capacity of the container, when packed in the rigid containers. The water capacity of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.19 Fruit Bar/ Toffee:

1. Fruit Bar/ Toffee means the product prepared by blending Pulp/Puree from sound ripe fruit, fresh or previously preserved, nutritive sweeteners, butter or other edible vegetable fat or milk solids and other ingredients appropriate to the product & dehydrated to form sheet which can be cut to desired shape or size.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall comply with the following requirements:—

(i) Moisture (m/m)	Not more than 20.0 percent
(ii) Total soluble solids (m/m)	Not less than 75.0 percent
(iii) Fruit content (m/m)	Not less than 25.0 percent

#### 2.3.20 Fruit/Vegetable, Cereal Flakes:

1. Fruit/Vegetable, Cereal Flakes means the product prepared by blending fruit(s) Pulp/Puree of sound ripe fruit(s)/ vegetables of any suitable variety, fresh, frozen or previously preserved, starch, cereals & nutritive sweeteners, other ingredients appropriate to the product with or without salt & dehydrated in the form of flakes.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall comply with the following requirements:—

(i) Moisture (m/m)	Not more than 6.0 percent
(ii) Acid insoluble Ash (m/m)	Not more than 0.5 percent
(iii) Starch (m/m)	Not more than 25.0 percent

#### 2.3.21 Squashes, Crushes, Fruit Syrups/Fruit Sharbats and Barley Water:

1. Squashes, Crushes, Fruit Syrups/Fruit Sharbats and Barley Water means the product prepared from unfermented but fermentable fruit juice/puree or concentrate clear or cloudy, obtained from any suitable fruit or several fruits by blending it with nutritive sweeteners, water and with or without salt, aromatic herbs, peel oil and any other ingredients suitable to the products.

1.1 Cordial means a clear product free from any cellular matter, obtained by blending unfermented but fermentable clarified fruit juice with nutritive sweeteners & water with or without salt and peel oil and any other ingredients suitable to the products.

1.2 Barley water means the product prepared from unfermented but fermentable fruit juice by blending it with nutritive sweeteners, water with or without salt and peel oil and barley starch not less than 0.25 percent and any other ingredient suitable to the product.

1.3 The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall comply with the following requirements:—

<i>Name of the products</i>	<i>Min (%) of fruit juice/ puree in the final product</i>	<i>Total Soluble Solids (Min) %</i>	<i>Acidity expressed as Citric Acid Max</i>
(1) Squash	25	40	3.5
(2) Crush	25	55	3.5
(3) Fruit Syrup/Fruit Sharbats	25	65	3.5
(4) Cordial	25	30	3.5
(5) Barley Water	25	30	2.5

1.4 Any syrup/ sharbats containing a minimum of 10 percent of dry fruits shall also qualify to be called as fruits syrups.

1.5 The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.22 Ginger Cocktail:

1. Ginger Cocktail (Ginger Beer Or Gingerale) means the product prepared by blending ginger juice or its oleoresin or essence with water and nutritive sweeteners.

2. The product shall be free from extraneous matter. When suitably diluted shall have the colour and flavour characteristic of the product.

3. The minimum total soluble solids shall not be less than 30.0 percent (m/ m).

4. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B.

5. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.23 Synthetic Syrup for use in Dispensers for carbonated water:

1. Synthetic Syrup for use in Dispensers for carbonated water means carbonated water obtained by blending nutritive sweeteners with water and other ingredients appropriate to the product.

2. The total soluble solid content (m/m) of the product shall not be less than 30 percent. The product when suitably reconstituted shall conform to the requirements of carbonated water and match in all respects, except Carbon Dioxide contents, with similar product as bottled for direct consumption. It shall be free from extraneous matter.

3. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B.

4. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.24: SYNTHETIC SYRUP or SHARBAT

1. Synthetic syrup or sharbat means the syrup obtained by blending syrup made from sugar, dextrose or liquid glucose.

It may also contain fruit juice and other ingredients appropriate to the product. It shall be free from burnt or objectionable taints, flavours, artificial sweetening agents, extraneous matter and crystallization. It may contain citric acid, permitted colours, permitted preservatives and permitted flavouring agents. It shall also conform to the following standards namely:—

Total soluble solids Not less than 65 per cent by weight

### 2.3.25 Murabba

1. Murabba means the product, prepared from suitable, sound whole or cut grated fruits, rhizome or vegetables, appropriately prepared, suitable for the purpose, singly or in combination, by impregnating it, with nutritive sweeteners to a concentration adequate to preserve it.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall conform to the following composition:

- (i) Total soluble solids (m/m) Not less than 65.0 percent
- (ii) Fruit contents (m/m) Not less than 55.0 percent

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

### 2.3.26 Candied, Crystallised And Glazed Fruit / Vegetable / Rhizome / Fruit Peel:

1.1 Candied Fruits / Vegetables/ Rhizome / Fruit Peel means the product prepared from sound and ripe fruits, vegetables, rhizomes or fruit peel, of any suitable variety, appropriately prepared, by impregnating it with nutritive sweeteners to a concentration adequate to preserve it.

1.2 Crystallised Fruit / Vegetable/ Rhizome / Fruit Peel means the product prepared from candied product by coating with pure crystallised sugar or by drying the syrup on wet candied fruit.

1.3 Glazed Fruit/ Vegetable/Rhizome / Fruit Peel means the product prepared from candied product by coating it with a thin transparent layer of heavy syrup with or without pectin which has dried to a more or less firm texture on the product.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

- (i) The percentage of total sugar (w/w) Not less than 70.0
- (ii) Percentage of reducing Sugar to total sugar Not less than 25.0

### 2.3.27 Tomato Ketchup and Tomato Sauce:

1. Tomato Ketchup and Tomato Sauce means the product prepared by blending tomato juice/Puree/Paste of appropriate concentration with nutritive sweeteners, salt, vinegar, spices and condiments and any other ingredients suitable to the product and heating to the required consistency. Tomato Paste may be used after dilution with water suitable for the purpose of maintaining the essential composition of the product.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

- (i) Total Soluble solids (m/m) Not less than 25.0 percent  
Salt free basis
- (ii) Acidity as acetic acid Not less than 1.0 percent

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

### 2.3.28 Culinary Pastes / Fruits and Vegetable Sauces Other Than Tomato Sauce and Soya Sauce

1. Culinary Pastes / Fruits and Vegetable Sauces Other Than Tomato Sauce and Soya Sauce means a culinary preparation used as an adjunct to food, prepared from edible portion of any suitable fruit/vegetable including, roots, tubers & rhizomes, their pulps/purees, dried fruits, singly or in combination by blending with nutritive sweeteners, salt, spices and condiments and other ingredient appropriate to the product.

2. The product may contain food additives permitted in these regulations including Appendix A. It may contain caramel but shall not contain any other added colour whether natural or synthetic. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

<i>Name of the Product</i>	<i>Total Soluble Solids (Salt free basis) (m/m)</i>	<i>Acidity % (as acetic acid)</i>
(1) Chilli Sauce	Not less than 8.0 percent	Not less than 1.0 percent
(2) Fruits / Vegetable Sauces	Not less than 15.0 percent	Not less than 1.2 percent
(3) Culinary Paste/ Sauce	Not less than 8.0 percent	Not less than 1.0 percent
(4) Ginger Paste	Not less than 3.0 percent	Not less than 1.0 percent

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.29 Soyabean Sauce:

1. Soyabean Sauce means the product obtained from wholesome soyabeans, by fermenting the soyabean paste in which trypsin inhibitors have been inactivated & blending with salt, nutritive sweeteners. It may contain spices and condiments and other ingredients appropriate to the product preserved by using permitted preservative.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

- |   |                            |
|---|----------------------------|
| (i) Total Soluble solids (m/m)<br>Salt free basis | Not less than 25.0 percent |
| (ii) Acidity as acetic acid                       | Not less than 0.6 percents |

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.30 Carbonated Fruit Beverages or Fruit Drinks:

1. Carbonated Fruit Beverages or Fruit Drink means any beverage or drink which is purported to be prepared from fruit juice and water or carbonated water and containing sugar, dextrose, invert sugar or liquid glucose either singly or in combination. It may contain peel oil and fruit essences. It may also contain any other ingredients appropriate to the products.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

- |                                |                            |
|--------------------------------|----------------------------|
| (i) Total Soluble solids (m/m) | Not less than 10.0 percent |
| (ii) Fruit content (m/m)       |                            |
| (a) Lime or Lemon juice        | Not less than 5.0 percent  |
| (b) Other fruits               | Not less than 10.0 percent |

3. The product shall have the colour, taste & flavour characteristic of the product & shall be free from extraneous matter.

4. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.31: Jam

1. Jam means the product prepared from sound, ripe, fresh, dehydrated, frozen or previously packed fruits including fruit juices, fruit pulp, fruit juice concentrate or dry fruit by boiling its pieces or pulp or puree with nutritive sweeteners namely sugar, dextrose, invert sugar or liquid glucose to a suitable consistency. It may also contain fruit pieces and any other ingredients suitable to the products. It may be prepared from any of the suitable fruits, singly or in combination. It shall have the flavour of the original fruit(s) and shall be free from burnt or objectionable flavours and crystallization.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirement:—

Total soluble solids (m/m)	Not less than 65.0 percent
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3. The product shall be manufactured from not less than 45 percent, by weight, of original prepared, fruit, exclusive of any added sugar or optional ingredients of finished product except where fruit is strawberry or raspberry where it shall contain not less than 25 percent fruit.

#### 2.3.32 Fruit Jelly:

1. Fruit Jelly means the product prepared by boiling fruit juice or fruit (s) of sound quality, with or without water, expressing and straining the juice, adding nutritive sweeteners, and concentrating to such a consistency that gelatinisation takes place on cooling. The product shall not be syrupy, sticky or gummy and shall be clear, sparkling and transparent.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

Total soluble solids (m/m)	Not less than 65.0 percent
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3. The product shall be manufactured from not less than 45 percent, by weight, of original prepared fruit, exclusive of any added sugar or optional ingredients of finished product.

#### 2.3.33 Fruit Cheese:

1. Fruit Cheese means the product prepared from pulp/puree of sound, ripe fruit (s), whether fresh, frozen or previously preserved or dry fruits, by cooking with salt, nutritive sweeteners to attain a thick consistency so that it sets on cooling. Cheese shall be neither too soft nor too hard to chew. It may be prepared from any of the suitable fruits, singly or in combination. It shall have the flavour of the original fruit(s) and shall be free from burnt or objectionable flavours and crystallization.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirement:—

Total soluble solids (m/m)	Not less than 65.0 percent
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3. The product shall be manufactured from not less than 45 percent by weight, of original prepared fruit, exclusive of any added sugar or optional ingredients of finished product except where fruit is strawberry or raspberry where it shall contain not less than 25 percent fruit.

#### 2.3.34 Marmalades:

1. Marmalades means a product prepared by boiling sound fruits with peel, pulp and Juice, with or without water, added nutritive sweeteners and concentrating to such a consistency that gelatinisation takes place on cooling of the product. It shall not be syrupy, sticky or gummy and shall be clear and transparent.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

(i) Total soluble solids (m/m)	Not less than 65.0 percent
(ii) Fruit content except peel (m/m)	Not less than 45.0 percent
(iii) Peel in suspension	Not less than 5.0 percent

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20 degree C which the sealed container is capable of holding when completely filled.

#### 2.3.35 Dehydrated Fruits:

1. Dehydrated Fruits means the product, prepared from edible part of suitable variety of sound fruit, free from blemishes, insect or fungal infection, of appropriate maturity, from which, moisture has been removed, under controlled conditions of temperature, humidity and airflow, to the extent that the product is preserved.

2. It may be whole, sliced, quarters, pieces or powdered. The finished product shall have uniform colour and shall be free from extraneous matter. The product shall have moisture content not more than 20 percent m/m. When in powder form, it shall be free flowing and free from agglomerates.

3. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B.

#### 2.3.36 Dehydrated Vegetables:

1. Dehydrated Vegetables means the product, prepared from edible portions of suitable variety of sound vegetable, free from insect or fungal infection, free from blemishes, suitably prepared, from which moisture has been removed under controlled conditions of temperature, humidity & airflow, to the extent that the product is preserved.

2. It may be whole, sliced, quarters, pieces, flakes, kibbled granules or powdered. The finished product shall have uniform colour and shall be free from discolouration due to scorching or enzymatic reaction. It shall be free from stalks, peels, stems and extraneous matter. When in powder form, it shall be free flowing and free from agglomerates.

3. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the requirements as given in the Table below

S. No.	Name of Vegetables	Moisture not more than (percent)	Sulphur Dioxide not more than (PPM)	Total ash not more than ( percent )	Ash insoluble dilute HCl not more than (percent)	Peroxidase Test
1.	Green Leafy Vegetables	7	2000 ppm	-	-	Negative
2.	(a) Tubers like Arvi (b) Lotus Root Tapioca (c) Yam (d) Carrot (e) Potato	7	2000 ppm	-	-	Negative
3.	Karela	6	-	-	-	Negative
4.	Cabbage	6	2000 ppm	-	-	Negative
5.	Okra	8	2000 ppm	-	-	Negative
6.	Other Vegetables	8	2000 ppm	5	0.5	Negative
7.	Powders of onion and Garlic	5	-	5	0.5	Negative
8.	Powders of other vegetables including tomatoes	5	2000 ppm	5	0.5	Negative

#### 2.3.37 Frozen Fruits/Fruit Products:

1. Frozen Fruits/Fruit Products means the product frozen in blocks or individually quick frozen and offered for direct consumption, if required. Frozen Fruits/Fruit products are prepared from fresh, clean, sound, whole, fruits of suitable maturity, free from insect or fungal infection, which are washed, sufficiently blanched to inactivate enzymes, if required, and are subjected to a freezing process in appropriate equipment. Freezing operation shall not be regarded as complete unless and until the product temperature has reached (minus) - 18°C at the thermal center after thermal stabilization. It may be prepared in any style appropriate for the respective Fruits/Fruit product in normal culinary preparation. It may contain salt, nutritive sweeteners, milk solids, spices and condiments and any other ingredient suitable to the product.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B.



### 2.3.38 Frozen Vegetables:

1. Frozen Vegetables means the product frozen in blocks or individually quick frozen and offered for direct consumption, if required. Frozen vegetables are prepared from sound, clean vegetables of suitable maturity, free from insect or fungal infection, which are washed, sufficiently blanched to inactivate enzymes and are subjected to a freezing process in appropriate equipment. Freezing operation shall not be regarded as complete unless and until the product temperature has reached (minus) - 18°C at the thermal center after thermal stabilization. It may be prepared in any style appropriate for the respective vegetable in normal culinary preparation. It may contain salt, nutritive sweeteners, milk solids, spices and condiments and any other ingredient suitable to the product.

2. It shall have normal colour characteristic of the individual Vegetable. It shall have taste & flavour characteristic of the kind & variety of the vegetable used & shall be free from sand, grit & other foreign matter.

3. The product shall test negative for peroxidase. The product shall conform to the microbiological requirements given in Appendix B.

### 2.3.39 Frozen Curried Vegetables/Ready-to-Eat Vegetables:

1. Frozen Curried Vegetables/Ready-to-Eat Vegetables means the product prepared from Fresh, Dehydrated or Frozen or previously processed vegetables, legumes, cereals or pulses, whether whole or cut into pieces. Vegetable(s) either singly or in combination may be prepared in any suitable style applicable for the respective vegetables in normal culinary preparation. It may contain salt, nutritive sweeteners, spices and condiments, edible vegetable oils and fats and milk fat and any other ingredients suitable to the product and subjected to freezing process in appropriate equipments. Freezing operation shall not be regarded as complete unless and until the product temperature has reached (minus) - 18°C at the thermal center after thermal sterilization.

2. The product shall conform to the microbiological requirements given in Appendix B.

### 2.3.40 Fruit Based Beverage Mix/Powdered Fruit Based Beverage:

1. Fruit Based Beverage Mix/Powdered Fruit Based Beverage means a product, in powder form, intended for use after dilution, obtained by blending fruit solids with nutritive sweeteners and other ingredients appropriate to the product & packed in hermetically sealed containers to prevent spoilage. It shall have colour & flavour characteristic of the named fruit. It may contain Vitamins and Minerals.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

(i) Moisture (m/m)	Not more than 5.0 percent
(ii) Fruit juice content (m/m) when reconstituted by dilution according to direction for use	Not less than 5.0 percent

### 2.3.41 Fruits and Vegetable Chutney:

1. Fruits and Vegetable Chutney means the product prepared from washed, clean, sound raw fruit(s) and / or vegetable(s) of any suitable variety, which have been peeled, sliced or chopped or shredded or comminuted and cooked with nutritive sweetener. It may contain salt, spices and condiments and any other ingredients suitable to the product and preserved by thermal processing or other means.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

(i) Total soluble solids (m/m)	
(a) Fruit Chutney	Not less than 50.0 percent
(b) Vegetable Chutney	Not less than 25.0 percent
(c) Hot and Sour (Spicy Chutney)	Not less than 25.0 percent
(ii) Fruits and Vegetable content (m/m)	Not less than 40.0 percent
(iii) pH	Not more than 4.6
(iv) Total ash (m/m)	Not more than 5.0 percent
(v) Ash insoluble in hydrochloric acid (m/m)	Not more than 0.5 percent

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled. This requirement shall not be applicable for bulk packs for industrial use.

#### 2.3.42 Mango Chutney:

1. Mango Chutney means the product prepared from washed clean sound mango (*Mangifera indica* L.) of any suitable variety, which have been peeled, sliced or chopped or shredded or comminuted and cooked with nutritive sweeteners. It may contain Salt, Spices, Condiments and any other ingredient suitable to the product and preserved by thermal processing/ or other means.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

(i) Total Soluble solids (m/m)	Not less than 50.0 percent
(ii) Fruit content (m/m)	Not less than 40.0 percent
(iii) pH	Not more than 4.6
(iv) Total ash	Not more than 5.0 percent
(v) Ash insoluble in hydrochloric acid	Not more than 0.5 percent

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.43 Pickles:

1. Pickles means the preparation made from fruits or vegetables or other edible plant material including mushrooms free from insect damage or fungal infection, singly or in combination preserved in salt, acid, sugar or any combination of the three. The pickle may contain onion, garlic, ginger, sugar jaggery, edible vegetable oil, green or red chillies, spices, spice extracts/oil, limejuice, vinegar/ acetic acid, citric acid, dry fruits and nuts. It shall be free from copper, mineral acid, alum, synthetic colours and shall show no sign of fermentation.

2. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. Pickles may be of combinations as given below:—

(i) Pickles in Citrus juice or Brine conforming to the following requirements:—

(a) Drained Weight	Not less than 60.0 percent
(b) Sodium Chloride content when packed in Brine	Not less than 12.0 percent
(c) Acidity as Citric Acid when packed In Citrus Juice	Not less than 1.2 percent

(ii) Pickles in Oil

(a) Drained Weight	Not less than 60.0 percent
(b) Fruit and Vegetable pieces shall be practically remaining submerged in oil	

(iii) Pickles in Vinegar

(a) Drained Weight	Not less than 60.0 percent
(b) Acidity of vinegar as acetic acid	Not less than 2.0 percent

(iv) Pickle without medium means the pickles other than enumerated above. This may contain ingredients given in Para 1 of this specification. Such pickles shall be labelled as "(give name of vegetable or fruits) Pickle".

#### 2.3.44 Table Olives:

1. Table Olives means the product obtained from sound clean fruits of proper maturity from Olive tree (*Olea europaea sativa* Hoff of link) and suitably processed and preserved by natural fermentation / thermal processing or by addition of preservative. The product may be in the form of green olives, olives turning colour before complete ripeness or black olives and may be whole, stoned (pitted) stuffed, halved, quartered, sliced, chopped, minced or in

broken form. The product may contain water, common salt, vinegar, olive oil, nutritive sweeteners and stuffing material pimiento, onion, almond, celery, anchovy, olive, orange or lemon peel, hazelnut capers etc singly or in combination or in the form of a paste, spices, spice extracts and aromatic herbs. The product shall be of uniform colour except seasoned olives and olives turning colour free from any foreign matter, off flavour and taste and abnormal fermentation. The product may contain food additive permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall conform to the following requirements:—

<i>Product in brine</i>	<i>Sodium Chloride in brine</i>	<i>PH of brine</i>	<i>Acidity of brine as lactic acid</i>
(A) Green olives treated /untreated	-	-	—
(i) in hermetically sealed containers	Not less than 5.0 percent	Not more than 4.0	—
(ii) in non hermetically sealed containers	Not less than 6.0 percent	Not more than 4.5	—
(iii) with natural lactic fermentation	-	-	Not less than 0.4 Percent
(B) Seasoned green olives	-	-	—
(i) in hermetically sealed containers	Not less than 4.0 percent	Not more than 4.0	—
(ii) in non hermetically sealed containers	Not less than 6.0 percent	Not more than 4.5	—
(C) Olives turning colour - all Treatments	Not less than 6.0 percent	-	—
(D) Black Olives			
(i) In brine	Not less than 7.0 percent	-	—
(ii) in dry salt	Not less than 10.0 percent	-	—
(E) Damaged matter		Not more than 2.0 percent by count	
(F) Insect damaged Units		Not more than 2.0 percent by count	
(G) Foreign matter		Not more than 1 unit per kg	

Explanations:- For the purpose of this paragraph,—

'Damaged Units' mean units showing imperfection or damage to the mesocarp which may or may not be associated with superficial marks;

'Insect Damaged Units' means units showing insect holes or deformed fruits or those with abnormal stains or whose mesocarp has an abnormal aspect;

'Foreign matter' means any vegetable matter not injurious to health such as leaves, stem etc.

#### 2.3.45 Grated Desiccated Coconut:

1. Grated Desiccated Coconut means the product obtained by peeling, milling and drying the kernel of coconut (*cocos nucifera*). The product may be in the form of thin flakes, chips or shreds. The product shall be white in colour free from foreign matter, living insects, mould, dead insects, insect fragments and rodent contamination. The product shall have pleasant taste and flavour, free from rancidity and evidence of fermentation. The product may contain food additives permitted in these regulations including Appendix A. The products shall conform to the microbiological requirements given in Appendix B. The product shall conform to the following requirements:—

(i) Extraneous Vegetable matter	Not more than 15 units/100 gm
(ii) Moisture (m/m)	Not more than 3.0 percent
(iii) Total Ash (m/m)	Not more than 2.5 percent
(iv) Oil Content (m/m)	Not less than 55.0 percent
(v) Acidity of extracted fat pressed as Lauric Acid (m/m)	Not more than 0.3 percent
(vi) Sulphur Dioxide	Not more than 50.0 mg/kg

Explanation:— For the purpose of this paragraph Extraneous vegetable matter means fragments of shell, fibre, peel and burnt particles.

#### 2.3.46 VINEGAR:

1. Brewed Vinegar means a product obtained by alcoholic and acetic acid fermentation of any suitable medium such as fruits, malt (brewed exclusively from malted barley or other cereals), molasses, Jaggary, Sugar Cane juice etc. with or without addition of caramel and spices. It shall not be fortified with acetic acid.

a) The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. It shall meet the following requirements:—

- |  |  |
|--|--|
| (i) Acidity (m/v)  | Not less than 3.75 percent calculated as acetic Acid |
| (ii) Total Solids (m/v)  | Not less than 1.5 percent                            |
| (iii) Total ash content  | Not less than 0.18 percent                           |
| (iv) It shall not contain sulphuric acid or any other mineral acid. It shall be free from any foreign substances or colouring matter except caramel. |  |

b) The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

2. Synthetic Vinegar means the product prepared from acetic acid with or without caramel & spices and shall confirm to the following requirements:

- (i) Acidity of the product shall not be less than 3.75 percent m/v.
- (ii) It shall not contain sulphuric acid or any other mineral acid. It shall be free from any foreign substance or colouring matter except caramel.

2. Synthetic vinegar shall be distinctly labelled as

SYNTHETIC - PREPARED FROM ACETIC ACID.

3. The container shall be well filled with the product and shall occupy not less than 90.0 percent of the net weight of the container, when packed in the rigid containers. The net weight of the container is the volume of distilled water at 20°C which the sealed container is capable of holding when completely filled.

#### 2.3.47 NUTS AND RAISINS:

1. Groundnut kernel (deshelled) for direct human consumption commonly known as moongphali are obtained from the plant *arachis hypogols*. the kernels shall be free from non-edible seeds such as mahua, caster, neem or argemone etc.

It shall be free from colouring matter and preservatives. It shall be practically free from extraneous matter, such as stones, dirt, clay etc. The kernels shall conform to the following standards, namely:—

Moisture	Not more than 7.0 per cent
Damaged kernel including slightly damaged kernel	Not more than 5.0 per cent by weight.
Aflatoxin content	Not more than 30 parts per billion.

2. Raisins means the product obtained by drying sound, clean grapes of proper maturity belonging to *Vitis vinifera* L. The product may be washed, with or without seeds and stems and may be bleached with Sulphur Dioxide. The product shall be free from foreign matter, living insects, mould, dead insects, insect fragments and rodent contamination. The product shall have uniform colour, pleasant taste and flavour, free from odour and taste and evidence of fermentation. The product shall be free from added colouring matter. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall conform to the following requirements:—

- |                             |                            |
|-----------------------------|----------------------------|
| (i) Moisture (m/m)          | Not more than 15.0 percent |
| (ii) Damaged Raisins (m/m)  | Not more than 2.0 percent  |
| (iii) Sugared Raisins (m/m) | Not more than 15.0 percent |

Explanation.- for the purpose of this paragraph,—

(i) 'Damaged Raisins' means raisins affected by sunburn, scars, mechanical injury which seriously affects the appearance, edibility and keeping quality;

(ii) 'Sugared Raisins' means raisins with external or internal sugar crystals which are readily apparent and seriously affect the appearance of the raisins.

3. Pistachio Nuts means the product obtained from mature seeds of *Pistacia vera* L which have been sun dried and their shells opened naturally or mechanically. The product may be raw, roasted, salted and/or lime juice treated. The product shall be free from foreign matter, living insects, mould, dead insects, insect fragments and rodent contamination. The product shall have pleasant taste and flavour, free from odour and taste, mustiness and rancidity. The product shall conform to the following requirements:—

(i) Moisture (m/m)	Not more than 7.0 percent
(ii) Unopened Shells (m/m)	Not more than 2.0 percent
(iii) Empty Shells (m/m)	Not more than 1.0 percent

Explanation.-for the purpose of this paragraph,—

(i) 'Unopened Shells' means shells which are not split open but contain a fully developed kernel;

(ii) 'Empty Shells' means shells in which kernel is not developed;

(iii) 'Mouldy Shells' means nuts affected by mould.

4. Dates means the product obtained by drying sound, clean fruits of proper maturity belonging to *Phoenix dactylifera*. The product may be washed, pitted or unpitted, with or without cap, pressed or loose. The product may be treated with sugar, glucose syrup, flour and vegetable oil. The product shall be free from foreign matter, living insects, mould, dead insects, insect fragments and rodent contamination. The product shall have pleasant taste and smell, free from odour and evidence of fermentation. The product shall be free from any added colouring matter. The product may contain food additives permitted in these regulations including Appendix A. The product shall conform to the microbiological requirements given in Appendix B. The product shall conform to the following requirements:—

(i) Moisture (m/m)	Not more than 30.0 percent
(ii) Ash insoluble in dil Hcl	Not more than 0.1 percent
(iii) Blemished / Damaged Units	Not more than 5.0 percent
(ii) (iv) Extraneous matter	Not more than 1.0 percent

Explanation:— For the purpose of this paragraph —

(i) 'Blemished' means units showing scars, discoloration, sun burn, dark spots on the surface;

(ii) 'Damaged' means dates affected by mashing and/ or tearing of the flesh exposing the pit or significantly changing the appearance.

(iii) 'Extraneous vegetable matter' means stalks, pieces of shells, pits, fibre, peel, etc.

5. Dry Fruits and Nuts means the products obtained by drying sound, clean fruits and nuts of proper maturity. The product may be with or without stalks, shelled or unshelled, pitted or unpitted or pressed into blocks. The product shall be free from mould, living / dead insects, insect fragments and rodent contamination. The product shall be uniform in colour with a pleasant taste and flavour characteristic of the fruit/ nut free from off flavour, mustiness, rancidity and evidence of fermentation. The product shall be free from added colouring. The product shall conform to the following requirements:—

(i) Extraneous Vegetable matter (m/m)	Not more than 1.0 percent
(ii) Damaged/ Discoloured units (m/m)	Not more than 2.0 percent
(iii) Acidity of extracted fat expressed as oleic Acid	Not more than 1.25 percent

Explanation — For the purpose of this paragraph —

(i) 'Extraneous vegetable matter' means stalks, pieces of shells, pits, fibre, peel;

(ii) 'Damaged or Discoloured' means units affected by sunburn, scars mechanical injury, discoloration and insects.

2.3.48 BEAN: means dry kidney shaped or flattened seeds of the leguminous varieties used as food, either whole or prepared as dal. It shall not contain hydrocyanic acid exceeding 20 parts per million as determined by Association of Official Analytical Chemists Maceration method.

## 2.4 CEREALS AND CEREAL PRODUCTS

### 2.4.1 ATTA

1. Atta or resultant atta means the coarse product obtained by milling or grinding clean wheat free from rodent hair and excreta. It shall conform to the following standards:—

Moisture	Not more than 14.0 per cent (when determined by heating at 130-133°C for 2 hours).
Total ash	Not more than 2.0 per cent (on dry weight basis).
Ash insoluble in dilute HCl	Not more than 0.15 per cent (on dry weight basis).
Gluten (on dry weight basis).	Not less than 6.0 per cent
Alcoholic acidity (with 90 per cent alcohol) expressed as H <sub>2</sub> SO <sub>4</sub> (on dry weight basis)	Not more than 0.18 per cent
It shall be free from rodent hair and excreta	

2. Fortified atta means the product obtained by adding one or more of the following materials to atta, namely:—

- (a) Calcium carbonate (prepared chalk, popularly known as Creta preparata).
- (b) Iron
- (c) Thiamine
- (d) Riboflavin, and
- (e) Niacin.

The calcium carbonate powder, if added for fortification shall be in such amount that 100 parts by weight of fortified atta shall contain not less than 0.30 and not more than 0.35 parts by weight of calcium carbonate. It shall be free from Rodent hair and excreta

3. Protein rich (paushtik) atta means the product obtained by mixing wheat atta with groundnut flour "or soya flour", or a combination of both", flour up to an extent of 10.0 per cent. Soya flour which is a solvent extracted soya flour used in such mix shall conform to the standards of Soya flour laid down under 2.4.13 (1). It shall be free from insect or fungus infestation, odour and rancid taste. It shall not contain added flavouring and colouring agents or any other extraneous matter. It shall conform to the following standards:—

Moisture	Not more than 14.0 per cent
Total ash	Not more than 2.75 per cent on dry basis.
Ash insoluble in dilute HCl	Not more than 0.1 per cent on dry basis.
Total Protein (N x 6.25)	Not less than 12.5 per cent on dry basis
Crude Fibre	Not more than 2.5 per cent on dry basis
Alcoholic acidity (with 90 per cent alcohol) expressed as H <sub>2</sub> SO <sub>4</sub>	Not more than 0.12 per cent
It shall be free from Rodent hair and excreta	

### 2.4.2 MAIDA:

1. Maida means the fine product made by milling or grinding clean wheat free from rodent hair and excreta and bolting or dressing the resulting wheat meal. It shall conform to the following standards:—

Moisture	Not more than 14.0 per cent (when determined by heating at 130-133°C for 2 hours).
Total ash	Not more than 1.0 per cent (on dry weight basis).

Ash insoluble in dilute HCl	Not more than 0.1 percent (on dry weight basis).
Gluten (on dry weight basis).	Not less than 7.5 per cent
Alcoholic acidity (with 90 per cent alcohol) expressed as H <sub>2</sub> SO <sub>4</sub> (on dry weight basis)	Not more than 0.12 per cent

It shall be free from Rodent hair and excreta.

If the product is to be used for bakery purpose, the following flour treatment agents in the quantities mentioned against each may be used, namely:—

Benzoyl peroxide (Max)	40 p.p.m.
Potassium bromate (Max)	20 p.p.m.
Ascorbic acid (Max)	200 p.p.m.

2. Fortified maida means the product obtained by adding one or more of the following materials to maida, namely:—

- (a) Calcium carbonate (prepared chalk popularly known as creta preparata).
- (b) Iron,
- (c) Thiamine,
- (d) Riboflavin, and
- (e) Niacin.

The calcium carbonate powder, if added for fortification, shall be in such amount that 100 parts by weight of fortified maida shall contain not less than 0.30 and not more than 0.35 parts by weight of calcium carbonate. It shall be free from Rodent hair and excreta.

3. Protein rich (paushtik) maida means the product obtained by mixing maida (wheat flour) with groundnut flour "or soya flour; or a combination of both" up to an extent of 10.0 per cent soya flour which is a solvent extracted flour used in such mix shall conform to the standards of soya flour laid down under regulation 2.4.13 (1). It shall be free from insect or fungus infestation, odour and rancid taste. It shall not contain added flavour and colouring agents or any other extraneous matter. It shall conform to the following standards:

Moisture	Not more than 14.0 per cent
Total ash	Not more than 1.4 per cent on dry basis.
Ash insoluble in dilute HCl	Not more than 0.1 percent on dry basis.
Total Protein (N x 6.25)	Not less than 12.5 percent on dry basis
Crude Fibre	Not more than 0.53 per cent on dry basis
Alcoholic acidity (with 90 per cent alcohol) expressed as H <sub>2</sub> SO <sub>4</sub>	Not more than 0.12 per cent
Gluten	Not less than 7.0 percent on dry basis

It shall be free from Rodent hair and excreta

#### 2.4.3 SEMOLINA (Suji or Rawa):

1. Semolina (suji or rawa) means the product prepared from clean wheat free from rodent hair and excreta by process of grinding and bolting. It shall be free from musty smell and off-odour and shall be creamy yellow in colour. It shall conform to the following standards:—

Moisture	Not more than 14.5 per cent (when determined by heating at 130-133°C for 2 hours).
Total ash	Not more than 1.0 per cent (on dry weight basis).
Ash insoluble in dilute HCl	Not more than 0.1 percent (on dry weight basis).
Gluten (on dry weight basis).	Not less than 6.0 per cent

Alcoholic acidity (with 90 per cent alcohol) expressed as H <sub>2</sub> SO <sub>4</sub> (on dry weight basis)	Not more than 0.18 per cent
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It shall be free from Rodent hair and excreta

#### 2.4.4 BESAN:

1. Besan means the product obtained by grinding dehusked Bengal gram (*Cicer arietinum*) and shall not contain any added colouring matter or any other foreign ingredient.

Besan shall conform to the following standards:—

Total ash	Not more than 5.0%.
Ash insoluble in dilute hydrochloric acid	Not more than 0.5%.

#### 2.4.5 Pearl Barley (Jau)

1. Pearl Barley (Jau) shall be the product obtained from sound and clean barley (*Horbeum vulgare* or *hordeum distichon*). It shall be whitish in colour and shall be free from fermented, musty or other objectionable taste or odour, adulterants and insect and fungus infestation and rodent contamination. It shall not contain other foodgrains more than 1 per cent by weight.

Barley powder shall be the product obtained by grinding clean and sound dehusked barley (*Hordeum vulgare* or *Hordeum distichon*) grains. Barley starches shall not be less than 98.0 per cent by weight.

Barley powder shall also conform to the following standards namely:—

Total ash (on dry basis)	Not more than 1.0%.
Ash insoluble in dilute hydrochloric acid (on dry basis)	Not more than 0.1%.
Crude fibre (on dry basis)	Not more than 0.5%.
Alcoholic acidity (as H <sub>2</sub> SO <sub>4</sub> ) with 90 per cent alcohol)	Not more than 0.10 per cent.

2. Wholemeal barley powder or barley flour or choker yukt jau ka churan means the product obtained by grinding clean and sound dehusked barley (*Hordeum vulgare* or *Hordeum distichon*) grains free from rodent hair and excreta]. It shall conform to the following standards:—

Moisture	Not more than 14.0 per cent (when determined by heating at 130-133°C for 2 hours).
Total ash	Not more than 3.0 per cent (on dry weight basis).
Ash insoluble in dilute HCl	Not more than 0.5 percent (on dry weight basis).
Alcoholic acidity (with 90 per cent alcohol) expressed as H <sub>2</sub> SO <sub>4</sub> (on dry weight basis)	Not more than 0.17 per cent

#### 2.4.6 Food grains:

1. Food grains meant for human consumption shall be whole or broken kernels of cereals, millets and pulses. In addition to the undermentioned standards to which foodgrains shall conform, they shall be free from Argemone, Maxicana and Kesari in any form. They shall be free from added colouring matter. The foodgrains shall not contain any insecticide residues other than those specified in regulation 2.3.1 of Food Safety and Standards (Contaminants, Toxins and Residues) Regulation, 2011 and the amount of insecticide residue in the foodgrains shall not exceed the limits specified in Regulation 2.3.1. of the said Table Food Safety and standards (Contaminants, Toxins and Residues) Regulation, 2011. The foodgrains meant for grinding/processing shall be clean, free from all impurities including foreign matter (extraneous matter).

##### 2. Wheat

Description: Wheat shall be the dried mature grains of *Triticum aestivum* Linn. or *Triticum vulgare* Vill., *triticum drum* Desf., *triticum sphaerococcum* Perc., *Triticum dicoccum* Schubl., *Triticum Compactum* Host. It shall be sweet, clean and wholesome. It shall also conform to the following standards namely:—



(i) Moisture—	Not more than 14 per cent by weight (obtained by heating the pulverised grains at 130°C-133°C for two hours).
(ii) Foreign matter — (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. By weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii) Other edible grains	Not more than 6 per cent by weight.
(iv) Damaged grains	Not more than 6.0 per cent by weight including kernel bunt affected grains and ergot affected grains. The limit of kernel bunt affected grains and ergot affected grains shall not exceed 3.0 per cent and 0.05 percent by weight, respectively.
(v) Weevilled grains—	Not more than 10 per cent by count.
(vi) Uric acid—	Not more than 100 mg. per kg.
(vii) Aflatoxin	Not more than 30 micrograms per kilogram
(viii) Deoxynivalenol (DON)	Not more than 1000 micrograms per kilogram

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 12 per cent by weight.

### 3. MAIZE:

Maize shall be the dried mature grains of *Zea mays* Linn. It shall be sweet, hard, clean and wholesome. It shall also conform to the following standards, namely:—

(i) Moisture-	Not more than 16.0 per cent by weight (obtained by heating the pulverised grains at 130°C-133°C for two hours).
(ii) Foreign matter — (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii) Other edible grains -	Not more than 3 per cent by weight.
(iv) Damaged grains-	Not more than 5 per cent by weight.
(v) Weevilled grains-	Not more than 10 per cent by count.
(vi) Uric acid-	Not more than 100 mg. per kg.
(vii) Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 9 per cent by weight.

### 4. JAWAR AND BAJRA:

Jawar and Bajra shall be the dried mature grains of *Sorghum Vulgare* Pers. and

*Pennisetum - typhoideum* Rich, respectively. These shall be sweet, hard, clean and wholesome. These shall also conform to the following standards, namely:—

(i) Moisture-	Not more than 16.0 per cent by weight (obtained by heating the pulverised grains at 130°C-133°C for two hours).
(ii) Foreign matter -Extraneous Matter	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent by weight shall be impurities of animal origin.
(iii) Other edible grains	Not more than 3 per cent by weight.

- |                      |  |
|----------------------|--|
| (iv) Damaged grains  | Not more than 6 per cent by weight out of which ergot affected grains shall not exceed 0.05 percent by weight. |
| (v) Weevilled grains | Not more than 6 per cent by weight.  |
| (vi) Uric acid       | Not more than 100 mg per kg  |
| (vii) Aflatoxin      | Not more than 30 micrograms per kilogram.  |

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 10 per cent by weight.

#### 5. RICE:

Rice shall be the mature kernels or pieces of kernels of *Oryza sativa* Linn. obtained from paddy as raw or par boiled. It shall be dry, sweet, clean, wholesome and free from unwholesome poisonous substance. It shall also conform to the following standards, namely:—

- |  |  |
|--|--|
| (i) Moisture-                                | Not more than 16 per cent by weight (obtained by heating the pulverised grains at 130°C-133°C for two hours).  |
| (ii) Foreign matter -<br>(Extraneous matter) | Not more than 1 per cent. by weight of which not more than 0.25 per cent. By weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin. |
| (iii) Damaged grains-                        | Not more than 5 per cent by weight   |
| (iv) Weevilled grains-                       | Not more than 10 per cent by count.  |
| (v) Uric acid-                               | Not more than 100 mg. per kg.  |
| (vi) Aflatoxin                               | Not more than 30 micrograms per kilogram.  |

Provided that the total of foreign matter, and damaged grains shall not exceed 6 per cent by weight.

#### 6. MASUR WHOLE:

Masur whole shall consist of lentil (*lens culinaris* Medik or *Even lens* Linn. or *Lens esculenta* Moench). It shall be sound, dry, sweet, clean and wholesome. It shall conform to the following standards, namely:—

- |  |   |
|--|---|
| (i) Moisture-                                | Not more than 14 per cent by weight (obtained by heating the pulverized grains at 130°C 133°C for two hours).   |
| (ii) Foreign matter -<br>(Extraneous matter) | Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin |
| (iii) Other edible grains-                   | Not more than 3 per cent by weight.   |
| (iv) Damaged grains-                         | Not more than 5 per cent by weight.   |
| (v) Weevilled grains-                        | Not more than 6 per cent by count.  |
| (vi) Uric acid-                              | Not more than 100 mg. per kg.   |
| (vii) Aflatoxin                              | Not more than 30 micrograms per kilogram.   |

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 8 per cent by weight.

#### 7. URD WHOLE:

Urd whole shall consist of seeds of the pulses (*phaseolus mungo* Linn). It shall be sound, dry, sweet and wholesome. It shall also conform to the following standards, namely:—

- |               |   |
|---------------|---|
| (i) Moisture- | Not more than 14.0 per cent by weight (obtained by heating the pulverised grains at 130°C-133°C for two hours). |
|---------------|---|

(ii) Foreign matter -Extraneous Matter	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent by weight shall be impurities of animal origin.
(iii) Other edible grains	Not more than 4 per cent by weight.
(iv) Damaged grains	Not more than 5 per cent by weight.
(v) Weevilled grains	Not more than 6 per cent by count.
(vi) Uric acid	Not more than 100 mg per kg
(vii) Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 9 per cent by weight.

#### 8. MOONG WHOLE:

Moong whole shall consist of seeds of green gram (*Phaseolous aurues* Roxb., *Phaseolus radiatus* Roxb.) It shall be sound, dry, sweet, wholesome and free from admixture of unwholesome substances. It shall also conform to the following standards, namely:—

(i) Moisture-	Not more than 14 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours).
(ii) Foreign matter — (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii) Other edible grains -	Not more than 4 per cent by weight.
(iv) Damaged grains-	Not more than 5 per cent by weight.
(v) Weevilled grains-	Not more than 6 per cent by count.
(vi) Uric acid-	Not more than 100 mg. per kg.
(vii) Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 9 per cent by weight.

#### 9. CHANA WHOLE:

Channa whole shall be the dried grains of gram (*cicer arietinum* Linn.) It shall be sound, clean, sweet, wholesome and free from unwholesome substances. It shall also conform to the following standards, namely:—

(i) Moisture-	Not more than 16 per cent by wight (obtained by heating the pulverised grains at 130°C-133°C for two hours).
(ii) Foreign matter - (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii) Other edible grains -	Not more than 4 per cent by weight.
(iv) Damaged grains-	Not more than 5 per cent by weight.
(v) Weevilled grains-	Not more than 10 per cent by count.
(vi) Uric acid-	Not more than 100 mg. per kg.
(vii) Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 9 per cent by weight.

## 10. SPLIT PULSE (DAL) ARHAR:

Dal Arhar shall consist of husk and split seeds of red gram (*Cajanus cajan* (L) Millsp). It shall be sound, clean, sweet, dry, wholesome and free from admixture of unwholesome substance. It shall also conform to the following standards, namely:—

(i) Moisture-	Not more than 14 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours).
(ii) Foreign matter - (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii) Other edible grains -	Not more than 0.5 per cent by weight.
(iv) Damaged grains-	Not more than 5 per cent by weight.
(v) Weevilled grains-	Not more than 3 per cent by count.
(vi) Uric acid-	Not more than 100 mg. per kg.
(vii) Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 6 per cent by weight.

## 11. SPLIT PULSE (DAL) MOONG:

Dal Moong shall consist of split seeds of green grams (*Phaseolus aureus* Roxb, *Phaseolus raditus*). It shall be sound, clean, sweet, wholesome and free from unwholesome. It shall also conform to the following standards, namely:—

(i) Moisture-	Not more than 14 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours).
(ii) Foreign matter - (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. By weight shall be impurities of animal origin.
(iii) Other edible grains -	Not more than 4 per cent by weight.
(iv) Damaged grains-	Not more than 5 per cent by weight.
(v) Weevilled grains-	Not more than 3 per cent by count.
(vi) Uric acid-	Not more than 100 mg. per kg.
(vii) Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 8 per cent by weight.

## 12. SPLIT PULSE (DAL) URD:

Dal Urd shall consist of split seeds of pulse (*Phaseolus mungo* Linn.) It shall be sound, dry, sweet, wholesome and free from admixture of unwholesome substances. It shall also conform to the following standards, namely:—

(i) Moisture-	Not more than 14 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours).
(ii) Foreign matter - (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii) Other edible grains -	Not more than 4 per cent by weight.

- |                       |   |
|-----------------------|---|
| (iv) Damaged grains-  | Not more than 5 per cent by weight.       |
| (v) Weevilled grains- | Not more than 3 per cent by count.        |
| (vi) Uric acid-       | Not more than 100 mg. per kg.             |
| (vii) Aflatoxin       | Not more than 30 micrograms per kilogram. |

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 8 per cent by weight.

#### 13. DAL CHANA:

Dal Chana shall consist of split grains of gram (*Cicer arietinum* Linn). It shall be sound, clean, sweet, dry, wholesome and free from admixture of unwholesome substances. It shall also conform to the following standards, namely:—

- |  |  |
|--|--|
| (i) Moisture-                                | Not more than 16 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours).  |
| (ii) Foreign matter -<br>(Extraneous matter) | Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin. |
| (iii) Other edible grains                    | Not more than 2 per cent by weight.  |
| (iv) Damaged grains-                         | Not more than 5 per cent by weight.  |
| (v) Weevilled grains-                        | Not more than 3 per cent by count.   |
| (vi) Uric acid-                              | Not more than 100 mg. per kg.  |
| (vii) Aflatoxin                              | Not more than 30 micrograms per kilogram.  |

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 7 per cent by weight.

#### 14. SPLIT PULSE MASUR:

Dal masur shall consist of dehusked whole and split seed of the lentil (*Lenil esculenta* Moench or *Lens culinaris* Medik or *Ervum lens* Linn). It shall be sound, clean, dry, sweet, wholesome and free from admixture of unwholesome substances. It shall also conform to the following standards, namely:—

- |  |  |
|--|--|
| (i) Moisture-                                | Not more than 14 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours).  |
| (ii) Foreign matter -<br>(Extraneous matter) | Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin. |
| (iii) Other edible grains -                  | Not more than 2 per cent by weight.  |
| (iv) Damaged grains-                         | Not more than 5 per cent by weight.  |
| (v) Weevilled grains-                        | Not more than 3 per cent by count.   |
| (vi) Uric acid-                              | Not more than 100 mg. per kg.  |
| (vii) Aflatoxin                              | Not more than 30 micrograms per kilogram.  |

Provided that the total of foreign matter, other edible grains and damaged grains shall not exceed 7 per cent by weight.

#### 15. Any other foodgrains not specified above shall conform to the following standards, namely:—

- |               |   |
|---------------|---|
| (i) Moisture- | Not more than 16 per cent by weight (obtained by heating the pulverized grains at 130°C-133°C for two hours). |
|---------------|---|

(ii) Foreign matter - (Extraneous matter)	Not more than 1 per cent. by weight of which not more than 0.25 per cent. by weight shall be mineral matter and not more than 0.10 per cent. by weight shall be impurities of animal origin.
(iii) Other edible grains	Not more than 6 per cent by weight.
(iv) Weevilled grains-	Not more than 10 per cent by count.
(v) Damaged grains-	Not more than 5 per cent by weight.
(vi) Uric acid-	Not more than 100 mg. per kg.
(vii) Aflatoxin	Not more than 30 micrograms per kilogram.

Provided that total of foreign matter, other edible grains and damaged grains shall not exceed 12.0 per cent by weight.

Explanation — For the purposes of items in regulation 2.4.6 (2-14):—

(a) "foreign matter" means any extraneous matter other than foodgrains comprising of-

(i) inorganic matter consisting of metallic pieces, sand, gravel, dirt, pebbles, stones, lumps of earth, clay and mud, animal filth and in the case of rice, kernels or pieces of kernels, if any, having mudsticking on the surface of the rice, and

(ii) organic matter consisting of husk, straws, weed seeds and other inedible grains and also paddy in the case of rice;

(b) poisonous, toxic and/or harmful seeds - means any seeds which is present in quantities above permissible limit may have damaging or dangerous effect on health, organoleptic properties or technological performance such as dhatura (*D. fastur linn* and *D. stramonium linn*), corn cokle (*Agrostemma githago L*, *Machai Lallium remulenum linn*), Akra (*Vicia species*).

(c) "Damaged grains" means kernels or pieces of kernels that are sprouted or internally damaged as a result of heat, microbe, moisture or whether, viz., ergot affected grain and kernel bunt grains;

(d) "Weevilled grains" means kernels that are partially or wholly bored by insects injurious to grains but does not include germ eaten grains and egg spotted grains;

(e) "Other edible grains" means any edible grains (including oil seeds) other than the one which is under consideration.

#### 2.4.7 CORNFLOUR (Maize starch):

1. CORNFLOUR (Maize starch) means the starch obtained from maize (*zea mays L.*). It shall contain no added colour, flavours or other chemicals. It shall be free from dirt, insects, larvae and impurities or other extraneous matter. It shall conform to the following standards:—

Moisture	Not more than 12.5%
Total ash	Not more than 0.5 per cent (on dry weight basis).
Ash insoluble in dilute HCl	Not more than 0.1 percent (on dry weight basis).
Alcoholic acidity (with 90 per cent alcohol)	Shall be equivalent to not more than 2.0 ml. N. NaOH per 100 g. of dried substance

#### 2.4.8 CORNFLAKES:

1. CORN FLAKES means the product obtained from dehulled, degermed and cook corn (*Zea mays L.*) by flaking, partially drying and toasting. It shall be in the form of crisp flakes of reasonably uniform size and golden brown in colour. It shall be free from dirt, insects, larvae and impurities and any other extraneous matter. It shall conform to the following standards:—

Moisture	Not more than 7.5%
Total ash excluding salt	Not more than 1.0 per cent (on dry weight basis).

Ash insoluble in dilute HCl	Not more than 0.1 percent (on dry weight basis).
Alcoholic acidity (with 90 per cent alcohol)	Shall be equivalent to not more than 2.0 ml. N. NaOH per 100 g. of dried substance

#### 2.4.9 CUSTARD POWDER:

1. CUSTARD POWDER means the product obtained from maize (*Zea mays* L.) or sago/topioca with or without the addition of small quantities of edible starches obtained from arrowroot, potato or jawar (*sorghum vulgare*) and with or without the addition of edible common salt, milk and albuminous matter. It may contain permitted colours and flavours. It shall be free from any other foreign matter. It shall be the form of fine powder, free from rancidity, fermented and musty odour. It shall conform to the following standards namely:—

Moisture	Not more than 12.5%
Total ash excluding added common salt (on dry basis)	Not more than 0.5 per cent
Ash insoluble in dilute HCl (on dry basis).	Not more than 0.1 percent

#### 2.4.10 MACARONI PRODUCTS:

1. PASTA PRODUCTS-(Macaroni, spaghetti, vermicelli) means the products obtained from suji or maida with or without addition of ingredients like edible groundnut flour, tapioca flour, soya flour, milk powder, spices, vitamins, minerals, by kneading the dough and extending it. It shall be free from added colour, dirt, insects larvae and impurities or any other extraneous matter. It shall conform to the following standards:—

Moisture	Not more than 12.5%
Total ash	Not more than 1.0 per cent on dry basis
Ash insoluble in dilute HCl (on dry basis).	Not more than 0.1 percent
Nitrogen	Not less than 1.7 per cent on dry basis

#### 2.4.11 MALTED AND MALT BASED FOODS

1. MALTED MILK FOOD means the product obtained by mixing whole milk, partly skimmed milk or milk powder with the wort separately from a mash of ground barley malt, any other malted cereal grain and wheat flour or any other cereal flour or malt extract with or without addition of flavouring agents and spices, emulsifying agents, eggs, protein isolates, edible common salt, sodium or potassium bicarbonate, minerals and vitamins and without added sugar in such a manner as to secure complete hydrolysis of starchy material and prepared in a powder or granule or flake form by roller drying, spray drying, vacuum drying or by any other process. It may contain cocoa powder. It shall be free from dirt and other extraneous matter. It shall not contain any added starch (except starch natural to cocoa powder) and added non-milk fat. It shall not contain any preservative or added colour. Malted milk food containing cocoa powder may contain added sugar. Malted milk food shall also conform to the following standards, namely:—

	<i>Malted milkfood without Cocoa powder</i>	<i>Malted milkfood withcocoa powder</i>
(a) Moisture	Not more than 5 per cent by weight.	Not more than 5 per cent by weight
(b) Total protein (N x 6.25)	(on dry basis)	Not less than 12.5 per cent by weight. Not less than 11.25 per cent by weight.
(c) Total fat (on Dry basis)	Not less than 7.5% by weight	Not less than 6% by weight.
(d) Total ash (on dry basis)	Not more than 5% by weight	Not more than 5% by weight.
(e) Acid insoluble ash (on dry basis) (in dilute HCl)	Not more than 0.1 per cent by weight	Not more than 0.1 per cent by weight
(f) Solubility	Not less than 85% by weight.	Not less than 80% by weight.
(g) Cocoa powder (on dry basis) –		Not less than 5.0% by weight.
(h) Test for starch	Negative	—

(i)	Bacterial count	Not more than 50,000 per gram.	Not more than 50,000 per gram.
(j)	Coliform count	Not more than 10 per gram.	Not more than 10 per gram.
(k)	Yeast and mould count		absent in 0.1 gm
(l)	Salmonella and Shigella		absent in 0.1 gm
(m)	E.Coli		absent in 0.1 gm
(n)	Vibrio cholera and V.Paraheamolyticus		absent in 0.1 gm
(o)	Faecal streptococci and Staphylococcus aureas	absent in 0.1 gm	

2. MALT BASED FOODS (MALT FOOD) means the product obtained by mixing malt (wort or flour or malt extract) of any kind obtained by controlled germination of seeds (cereals and/or grain legumes), involving mainly steeping germination and kiln drying processes with other cereal and legume flour with or without whole milk or milk powder, flavouring agents, spices, emulsifying agents, eggs, egg powder, protein isolates, protein hydrolysates, edible common salt, liquid glucose, sodium or potassium bicarbonate minerals, amino acids and vitamins. It may contain added sugar and/or cocoa powder and processed in such a manner to secure partial or complete hydrolysis of starchy material in the form of powder or granules or flakes by drying or by dry mixing of the ingredients. The grains, legumes and their products used in preparation of malt shall be sound, uninfested and free from insect fragments, rat excreta, fungal infested grains or any other type of insect or fungal damage.

It shall also conform to the following standards, namely:—

(a)	Moisture	- Not more than 5 per cent, by weight
(b)	Total Protein (N x 6.25) (on dry basis)	- Not less than 7.0 per cent, by weight
(c)	Total ash (on dry basis)	- Not more than 5 per cent, by weight
(d)	Acid insoluble ash (in dilute HCl)	- Not more than 0.1 per cent, by weight
(e)	Total plate count	- Not more than 50,000 per gram.
(f)	Coliform count	- Not more than 10 per gram.
(g)	Yeast and Mould Count	- Not more than 100 per gram.
(h)	E.Coli	- Absent in 10 gram.
(i)	Salmonella and Shingella	- Absent in 25 gram
(j)	Alcoholic Acidity (expressed as H <sub>2</sub> SO <sub>4</sub> ) with 90 per cent alcohol (on dry weight basis)	- Not more than 0.30 per cent.
(k)	Vibrio cholera and V.Paraheamolyticus	absent in 0.1 gm
(l)	Faecal streptococci and Staphylococcus aureas	absent in 0.1 gm

#### 2.4.12 ROLLED OATS:

1. ROLLED OATS (quick cooking oats) means the product made from sound hulled oats (*Avena sativa*). It shall be free from added colours, rancidity and flavouring agents. It shall be in the form of flakes of uniform size having a light cream colour. It shall be free from dirt, insects and insect fragments. It shall conform to the following standards:—

Moisture	Not more than 10.0 %
Total ash	Not more than 2.0 per cent on dry basis



Ash insoluble in dilute HCl (on dry basis).	Not more than 0.1 percent
Nitrogen	Not less than 1.8 per cent on dry basis
Crude Fibre	Not more than 2.0 percent on dry basis
Alcohol acidity (with 90 per cent alcohol)	Shall be equivalent to not more than 8.0 ml. N.NaOH per 100 gm. of dried substance.

#### 2.4.13 SOLVENT EXTRACTED FLOURS:

1. SOLVENT EXTRACT SOYA FLOUR means the product obtained from clean, sound healthy soyabeans by a process of cracking, dehulling, solvent extraction with food grade hexane and grinding. It shall be in the form of coarse or fine powder or grits, white to creamy white in colour of uniform composition and free from rancid and objectionable odour, extraneous matter, insects, fungus, rodent hair and excreta. It shall be free from any added colour and flavour. It shall conform to the following standards, namely:—

(a) Moisture	Not more than 9.0 per cent by weight
(b) Total ash	Not more than 7.2 per cent by weight on dry basis
(c) Ash insoluble in dilute HCl	Not more than 0.4 per cent by weight on dry basis.
(d) Protein (Nx6.25)	Not less than 48 per cent by weight on dry basis.
(e) Crude fibre	Not more than 4.2 per cent by weight on dry basis.
(f) Fat	Not more than 1.5 per cent by weight on dry basis
(g) Total bacterial count	Not more than 50,000 per gm.
(h) Coliform bacteria	Not more than 10 per gm.
(i) Salmonella bacteria	Nil in 25 gm
(j) Hexane (Food grade)	Not more than 10.00 ppm

2. SOLVENT EXTRACTED GROUNDNUT FLOUR means the product obtained from fresh, clean, degermed groundnut kernels which have been decuticled after mild roasting. The kernels shall be first expelled followed by solvent extraction with food grade hexane or by direct extraction of kernels. It shall be whitish to light brown in colour of uniform composition and shall be free from rancid and objectionable odour, extraneous matter, insect, fungus, rodent hair and excreta. It shall be free from added colour and flavour. It shall conform to the following standards namely :—

(a) Moisture	Not more than 8.0 per cent by weight
(b) Total ash	Not more than 5.0 per cent by weight on dry basis
(c) Ash insoluble in dilute HCl	Not more than 0.38 per cent by weight on dry basis.
(d) Protein(Nx6.25)	Not less than 48 per cent by weight on dry basis.
(e) Crude fibre	Not more than 5.0 per cent by weight on dry basis.
(f) Fat	Not more than 1.5 per cent by weight on dry basis
(g) Total bacterial	Not more than 50,000 per gm.count
(h) Coliform bacteria	Not more than 10 per gm.
(i) Salmonella bacteria	Nil in 25 gm
(j) Hexane (Food grade)	Not more than 10.00 ppm

3. SOLVENT EXTRACTED SESAME FLOUR means the product obtained by pressing, clean, sound healthy and decuticled sesame seeds followed by solvent extraction with food grade hexane or by direct extraction of kernels. It shall be in the form of flour of white or pale creamy white colour, of uniform composition and free from

rancid and objectionable odour, extraneous matter, insects, fungus, rodent hair and excreta. It shall be free from added colour and flavour. It shall conform to the following standards, namely :—

(a) Moisture	Not more than 9.0 per cent by Weight
(b) Total ash	Not more than 6.0 per cent by weight on dry basis
(c) Ash insoluble in dilute HCl	Not more than 0.15 per cent by weight on dry basis.
(d) Protein (Nx6.25)	Not less than 47 per cent by weight on dry basis.
(e) Crude fibre	Not more than 6.0 per cent by weight on dry basis.
(f) Fat	Not more than 1.5 per cent by weight on dry basis
(g) Total bacterial count	Not more than 50,000 per gm.
(h) Coliform bacteria	Not more than 10 per gm.
(i) Salmonella bacteria	Nil in 25 gm.
(j) Oxalic Acid	Not more than 0.5 per cent by weight content on dry basis.
(k) Hexane (Food grade)	Not more than 10.00 ppm.

4. SOLVENT EXTRACTED COCONUT FLOUR means the product obtained from fresh coconut Kernels or dried coconut copra of good quality and free from mould. Food grade hexane shall be used for extraction of the oil. It shall be of white or pale brownish yellow colour of uniform composition and free from rancid and objectionable odour, extraneous matter, insects, fungus, rodent hair and excreta. It shall be free from added colour and flavour. It shall conform to the following standards, namely :—

(a) Moisture	Not more than 9.0 per cent by weight
(b) Total ash	Not more than 6.0 per cent by weight on dry basis
(c) Ash insoluble in — dilute HCl	Not more than 0.35 per cent by weight on dry basis.
(d) Protein (Nx6.25)	Not less than 22.0 per cent by weight on dry basis.
(e) Crude fibre	Not more than 9.0 per cent by weight on dry basis.
(f) Fat	Not more than 1.5 per cent by weight on dry basis
(g) Total bacterial -	Not more than 50,000 per gm.count
(h) Coliform bacteria	Not more than 10 per gm.
(i) Salmonella bacteria	- Nil in 25 gm.
(j) Hexane (Food grade)	Not more than 10.00 ppm.

5. SOLVENT EXTRACTED COTTON SEED FLOUR means the product obtained by solvent extraction of oil with food grade hexane from oil cake immediately following the single pressing, from cotton seed of good quality which have been pre-cleaned and are free from infected or otherwise damage materials and extraneous matter. It shall be in the form of flour of white or pale brownish colour, of uniform composition and free from rancid and objectionable odour, extraneous matter, insect, fungus, rodent hair and excreta. It shall be free from added colours and flavours. It shall conform to the following standards, namely :—

(a) Moisture	Not more than 8.0 per cent by weight
(b) Total ash	Not more than 5.0 per cent by weight on dry basis
(c) Ash insoluble in dilute HCl	Not more than 0.35 per cent by weight on dry basis.
(d) Crude Protein (Nx6.25)	Not less than 47 per cent by weight on dry basis.
(e) Available lysine	Not less than 3.6 g. per 100 g. of crude protein.
(f) Crude fibre	Not more than 5.0 per cent by weight on dry basis.

(g) Free gossypol	Not more than 0.06 per cent by weight on dry basis.
(h) Total gossypol	Not more than 1.2 percent by weight on dry basis.
(i) Fat	Not more than 1.5 per cent by weight on dry basis.
(j) Total bacterial Count	Not more than 50,000 per gm.
(k) Coliform bacteria	Not more than 10 per gm.
(l) Salmonella bacteria	Nil in 25 gm.
(m) Hexane (Food grade) -	Not more than 10.00 ppm."

#### 2.4.14 STARCHY FOODS:

1. ARROWROOT means the separated and purified starch from the rhizomes of the plants known as *Maranta arundinacea* or from *Curcuma augustifolia*.

2. SAGO shall mean small hard globules or pearls made from either the starch of the sago palm or the tubers of *topioca (Manihot utilissima)* and shall be free from any extraneous matter including natural colours.

It shall conform to the following standards, namely:—

- |  |                                     |
|--|-------------------------------------|
| (i) total ash (on dry basis)                                   | shall not be more than 0.4 percent; |
| (ii) ash insoluble in dilute hydrochloric acid (on dry basis). | shall not exceed 0.1 percent        |

#### 2.4.15 BAKERY PRODUCTS:

1. Biscuits including wafer biscuits shall be made from maida, vanaspati or refined edible oil or table butter or desi butter or margarine or ghee or their mixture containing any one or more of the following ingredients, namely:—

Edible common salt, butter, milk powder, cereals and their products, cheese cocoa, coffee extract, edible desiccated coconut, dextrose, fruit and fruits products, dry fruit and nuts, egg, edible vegetable products, ginger, gluten groundnut flour, milk and milk products, honey, liquid glucose, malt products, edible oilseeds, flour and meals, spices and condiments, edible starches such as potato starch and edible flours, sugar and sugar products, invert sugar, jaggery, protein concentrates, oligofructose (max 15%) vinegar and other nutrients and vitamins:

Provided that it may contain food additives specified in these regulations including Appendix A:

Provided further that it may contain artificial sweetener as provided in regulation 3.1.3 of these regulations and label declaration as provided in regulation 2.4.5 (24, 25, 26, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided also that it shall conform to following standards, namely:—

- |   |                                     |
|---|-------------------------------------|
| (i) ash insoluble in dilute hydrochloric acid (on dry basis): | shall not be more than 0.1 per cent |
| (ii) acidity of extracted fat (as oleic acid):-               | not exceeding 1.5 per cent.         |

It may contain Oligofructose (dietary fibres) upto 15% maximum subject to label declaration under Regulation 2.4.5 (43) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

2. BREAD whether sold as white bread or wheat bread or fancy or fruity bread or bun or masala bread or milk bread or of any other name, shall mean the product prepared from a mixture of wheat atta, maida, water, salt, yeast or other fermentive medium containing one or more of the following ingredients, namely:—

Condensed milk, milk powder (whole or skimmed), whey, curd, gluten, sugar, gur or jaggery, khandsari, honey, liquid glucose, malt products, edible starches and flour, edible groundnut flour, edible soya flour, protein concentrates and isolates, vanaspati, margarine or refined edible oil of suitable type or butter or ghee or their mixture, albumin, lime water, lysine, vitamins, spices and condiments or their extracts, fruit and fruit product (Candied and crystallized or glazed), nuts, nut products, oligofructose (max 15%) and vinegar:

Provided that it may also contain food additives specified in these regulations including Appendix A:

Provided further that it may also contain artificial sweetener as provided in regulation 3.1.3 of this regulation and label declaration in Regulation 2.4.5 (24, 25, 26, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided also that it shall conform to the following standards, namely:—

- |   |  |
|---|--|
| (a) alcoholic acidity (with 90 per cent alcohol)      | Shall be not more than equivalent of 7.5 ml. N NaOH per 100 g of dried substances. |
| (b) ash insoluble in dilute HCL on dry weight basis — |  |
| (i) bread except masala bread or fruit bread          | Not more than 0.1 per cent   |
| (ii) masala bread or fruit bread                      | Not more than 0.2 per cent   |

Provided also that it shall be free from dirt, insect and insect fragments, larvae, rodent hairs and added colouring matter except any permitted food colours present as a carry over colour in accordance with the provision in regulation 3.1.17, in raw material used in the products.

It may contain Oligofructose (dietary fibres) upto 15% maximum subject to label declaration under labelling regulation 2.4.5 (43) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

## 2.5. MEAT AND MEAT PRODUCTS

### 2.5.1 Definition:

- (a) "animal" means an animal belonging to any of the species specified below;-
- (i) Ovines;
  - (ii) Caprines;
  - (iii) Suillines;
  - (iv) Bovines;
- and includes poultry and fish
- (b) "carcass" means the dead body or any part thereof including the viscera of any animal which has been slaughtered
- (c) "meat" means the flesh and other edible parts of a carcass
- (d) "meat food products" means any article of food or any article intended for, or capable of, being used as a food which is derived or prepared from meat by means of drying, curing, smoking, cooking, seasoning, flavouring, freezing or following a method of processing meat akin to any of the above methods, but shall not include the following products
- (i) Meat extracts, meat consommé and stock, meat sauces and similar products not containing fragments of meat;
  - (ii) Whole, broken or crushed bones, meat peptones, animal gelatin, meat powder, pork-rind powder, blood plasma, dried blood, dried blood plasma, cellular proteins, bone extracts and similar products;
  - (iii) Fats melted down from animal tissues;
  - (iv) Stomachs, bladders and intestines, clean and bleached, salted or dried;
  - (v) Products containing fragments of meat, but which contain a quantity of meat or meat product not exceeding ten percent of the total weight of the final product;
  - (vi) Patties, puffs, rolls, samosas, cutlets, koftas, kababs, chops, tikkas and soups made from mutton, chicken, goat meat, buffalo meat, beef and grilled chicken which are prepared for immediate consumption, the ampoules of chicken essence, hot-dogs and hamburgers prepared for immediate consumption which can not be stored even under refrigerated conditions;
- (e) "Slaughter house" means the building, premises or place which is licensed as a slaughter house by the local authority for the slaughter of animals intended for human consumption.

### 2.5.2 Meat and Meat Products:

1. CANNED CORNED BEEF means the product prepared from boneless meat of carcass of bovine animals including buffalo meat, which have been subjected to ante-mortem and postmortem inspection.

The product shall be uniformly cured with edible common salt and sodium and / or potassium nitrite. The product may contain ascorbic acid, sodium ascorbate or isoascorbate acid/ sodium iso-ascorbate singly or in

combination not exceeding 500 mg/kg. The product may also contain sucrose, dextrose, lactose, maltose and glucose syrup including corn syrup.

The product shall be packed in hermetically sealed containers and subjected to heat treatment followed by rapid cooling to ensure that the product is shelf stable. The sealed containers shall not show any change on incubation at 35°C for 10 days and 55°C for 5 days.

The product shall be in the form of a solid pack capable of being sliced.

The product shall be free from any added colour and natural and artificial flavour. The product shall be clean and substantially free from staining and contamination from the container, foreign matter and objectionable odour.

The product shall conform to the following requirements, namely:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Plate Count	1000/gram maximum
(2)	E.Coli	Absent in 25 gram
(3)	Solmonella	Absent in 25 gram
(4)	Staphylococcus aureus	Absent in 25 gram
(5)	Clostridium perfringens and Clostridium botulinum	Absent in 25 gram

2. CANNED LUNCHEON MEAT means the product prepared from edible portion of meat of mammalian animal, slaughtered in an abattoir, which have been subjected to ante-mortem and postmortem inspection and/or edible meat of poultry birds, including chickens, turkeys, ducks, geese, guinea fowl or pigeonslaughtered in an abattoir.

The product shall be uniformly cured with edible common salt and sodium and /or potassium nitrite. The product may be with or without binders such as cereal flour/starch, bread, biscuits or bakery products, milk powder, whey powder, egg protein, vegetable protein products, glucose, invert sugar, dextrose, lactose, maltose, glucose syrup, including corn syrup, spices, seasoning and condiments and water soluble hydrolysed protein.

The product may be smoked and flavoured with natural and natural identical flavours and permitted flavour enhancer.

The product may contain ascorbic acid / isoascorbic acid and its sodium salts singly or in combination not exceeding 500 mg/kg expressed as ascorbic acid as antioxidant and sodium and or potassium mono - di - polyphosphates singly or in combination not exceeding 3000 mg/kg expressed as P2O5 as water retention agents.

The product shall be packed in hermetically sealed container and subjected to heat treatment followed by rapid cooling to ensure that the product is shelf stable. The sealed container shall not show any change on incubation at 35°C for 10 days and 55°C for 5 days.

The product shall be clean and substantially free from stains from the container and foreign matter and shall be capable of being sliced.

The product shall conform to the following requirement, namely:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Fat content:	
	a) Product without binder	Not more than 30.0 percent
	b) Product with binder	Not more than 35.0 percent
(2)	Total Plate Count	1000/gram maximum
(3)	E.Coli	Absent in 25 gram
(4)	Salmonella	Absent in 25 gram
(5)	Staphylococcus aureus	Absent in 25 gram
(6)	Clostridium perfringens and Clostridium botulinum	Absent in 25 gram

3. CANNED COOKED HAM means the product prepared from meat of pigs which have been subjected to ante-mortem and postmortem inspection. The product shall be free from bones, detached cartilage tendous, ligaments and may be with or without skin and fat. The product shall be uniformly cured with edible common salt and sodium and / or potassium nitrite.

The product may contain sucrose, invert sugar, dextrose, lactose, maltose, glucose syrup including corn syrup, honey, spices, seasoning and condiments, water soluble hydrolysed protein and food grade gelatin. The product may be smoked and flavoured with natural flavouring substances and nature identical flavours as well as permitted flavour enhancers. The product may contain ascorbic acid / isoascorbic acid and its sodium salt singly or in combination not exceeding 500 mg/kg expressed as ascorbic acid, sodium and or potassium mono - di - polyphosphates singly or in combination not exceeding 3000 mg/ kg expressed as P2O5 as antioxidant and water retention agents respectively. The product may also contain sodium/potassium alginate not exceeding 10 mg/kg and or agar, carrageenan and sodium citrate as emulsifying and stabilizing agents.

The product shall be packed in hermetically sealed containers and subjected to heat treatment followed by rapid cooling to ensure that the product is shelf stable. The sealed containers shall not show any change on incubation at 350C for 10 days and 550C for 5 days.

The product shall be free from any stains from the container/package, objectionable matter and shall be capable of being sliced.

The product shall conform to the following requirement, namely:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Plate Count	1000/gram maximum
(2)	E.Coli	Absent in 25 gram
(3)	Salmonella	Absent in 25 gram
(4)	Staphylococcus aureus	Absent in 25 gram
(5)	Clostridium perfringens and Clostridium botulinum	Absent in 25 gram

4. CANNED CHOPPED MEAT means the product prepared from edible portion of meat of mammalian animals slaughtered in an abattoir, which have been subjected to ante-mortem and postmortem inspection and / or edible meat of poultry birds including chickens, turkeys, ducks, geese, slaughtered in an abattoir.

The product shall be uniformly cured with edible common salt and Sodium or Potassium Nitrite. The product may be with or without binders such as cereal flour/starch, bread, biscuit, or bakery product. Vegetable protein product, fructose, invert sugar; dextrose, lactose, maltose, glucose syrup including corn syrup, spices, seasoning and condiments and water soluble hydrolysed protein.

The product may be smoked and flavoured with natural and nature identical flavours and permitted flavour enhancer.

The product may contain ascorbic acid / iso-ascorbic acid and its sodium salts singly or in combination not exceeding 500 mg / kg expressed as ascorbic acid and sodium and or potassium mono-di-polyphosphate, singly or in combination not exceeding 3000 mg/kg expressed as P205 as antioxidants and water retention agent respectively.

The product shall be packed in hermetically sealed containers and subjected to heat treatment followed by rapid cooling to ensure that the product is shelf stable. The sealed containers shall not show any change on incubation at 35°C for 10 days and 55°C for 5 days.

The product shall be clean and substantially free from staining and contamination from the container, foreign matter and shall be capable of being sliced. The product shall conform to the following requirements, namely:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Fat content:	
	a) Product without binder	Not more than 25.0 percent
	b) Product with binder	Not more than 30.0 percent

(2)	Total Plate Count	1000/gram maximum
(3)	E.Coli	Absent in 25 gram
(4)	Salmonella	Absent in 25 gram
(5)	Staphylococcus aureus	Absent in 25 gram
(6)	Clostridium perfringens and Clostridium Botulinum	Absent in 25 gram

5. CANNED CHICKEN means the product prepared from edible portion of meat of poultry birds, slaughtered in an abattoir, which have been subjected to ante-mortem and postmortem inspection. The product shall be free from bones, blood clots, skin, hair, viscera and bruised/disintegrated material.

The product shall be cured with a mixture of edible common salt and sodium nitrite. The product shall be free from added colour flavour and meat tenderized. The packing medium and other ingredients shall be of food grade quality.

The product shall be packed in hermetically sealed clean and sound tin containers and subjected to adequate heat treatment followed by rapid cooling to ensure that the product is shelf stable. The sealed containers shall not show any change on incubation at 350C for 10 days and 550C for 5 days.

The contents shall have the characteristic colour, free from objectionable odour, discolouration and excessive disintegration.

The product shall conform to the following requirements, namely:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Plate Count	1000/gram maximum
(2)	E.Coli	Absent in 25 gram
(3)	Salmonella	Absent in 25 gram
(4)	Staphylococcus aureus	Absent in 25 gram
(5)	Clostridium perfringens and Clostridium Botulinum	Absent in 25 gram

6. CANNED MUTTON AND GOAT MEAT means the product prepared from edible portion of meat of sheep and goat animals slaughtered in an abattoir, which have been subjected to ante-mortem and postmortem inspection. The product shall be free from bones, blood clots, skin, hair, strings and fibrous tissue, bruised material, viscera, tendons and excessive fat.

The product shall be cut into pieces of reasonably uniform size and cured with a mixture of edible salt and sodium nitrate and or sodium nitrite. The product shall be free from added colour, flavour and meat tenderizer. The packing medium and other ingredients shall be of food grade quality.

The product shall be packed in hermetically sealed clean and sound tin containers and subjected to adequate heat treatment followed by rapid cooling to ensure that the product is shelf stable. The sealed container shall not show any change on incubation at 350C for 10 days and 550C for 5 days.

The contents shall have characteristic colour, free from objectionable odour, discoloration and excessive disintegration.

The product shall conform to the following requirements, namely:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total plate count	1000/gram maximum
(2)	E.Coli	Absent in 25 gram
(3)	Salmonella	Absent in 25 gram
(4)	Staphylococcus aureus	Absent in 25 gram
(5)	Clostridium perfringens and Clostridium botulinum	Absent in 25 gram

7. FROZEN MUTTON, CHICKEN, GOAT AND BUFFALO MEAT means the product prepared from edible portion of meat of animals specified under these regulations including buffalo meat slaughtered in an abattoir, which have been subjected to ante-mortem and postmortem inspection.

The fresh meat meant for freezing shall be clean, free from any foreign matter, objectionable odour/flavour and evidence of deterioration. Meat shall be prepared by quickly freezing in an appropriate equipment in such a way that

the range of temperature of maximum crystallization is passed quickly and the product attains a temperature of -180C or colder at the thermal centre after thermal stabilization. The product shall be kept deep frozen so as to maintain its quality during transportation, storage and sale.

The product shall conform to the following requirements, namely:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Plate Count	100000/ gram maximum
(2)	E.Coli	100/ gram maximum
(3)	Staphylococcus aureus	100/ gram maximum
(4)	Clostridium perfringens and Clostridium Botulinum	30/ gram maximum
(5)	Yeast and mould count	1000/ gram maximum
(6)	Salmonella	Absent in 25 gram
(7)	Listeria monocytogenes	Absent in 25 gram

## 2.6. Fish and Fish Products:

### 2.6.1 Fish and Fish Products

1. Frozen Shrimps or Prawns means the product prepared from fresh shrimps of sound quality belonging to Penaeidae, Pandalidae, Crangonidae, Palaemonidae Solenoceridae, Aristeidae and Sergestidae families. The product shall not contain a mixture of genera but may contain mixture of species of same genus with similar sensory properties. The product may be peeled or unpeeled, raw or cooked. The product may be glazed with water. The product shall conform to the following requirements:—

<i>S.No.</i>	<i>Characteristics</i>	<i>Requirements in RawProduct</i>	<i>Requirement in CookedProduct</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30 mg/100 gm	Absent in 25gm

2. Frozen Lobsters means the product prepared from fresh lobsters of sound quality belonging to the genus Homarus of the family Nephropidae and from the families Palinuridae and Scyllaride. The Norway Lobster may be prepared from Nephros norvegicus. The product shall not be a mixture of different species. The product may be raw or cooked. The product may be glazed with water. The product shall conform to the following requirements:—

<i>S.No.</i>	<i>Characteristics</i>	<i>Requirements in RawProduct</i>	<i>Requirement in CookedProduct</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30 mg/100 gm	Absent in 25gm

3. Frozen squid and parts of squid means the product prepared from fresh squid of sound quality belonging to squid species of Loliginidae, Ommastrephidae Onychoteuthide and Thysanotenthidae families. The product may be glazed with water. No food additive is allowed in this product. The product shall conform to the following requirements:

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30 mg/100 gm

4. Frozen finfish means the product prepared from fresh fish of good quality. The product may be with or without head from which viscera or other organs have been completely or partially removed. The product may be glazed with water. The products shall conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30 mg/ 100gm
(2)	Histamine	Not more than 20 mg / 100gm

5. Frozen fish fillets or minced fish flesh or mixtures thereof are products obtained from fresh wholesome fish of any species or mixtures of species with similar-sensory properties. Fillets may be pieces of irregular size and shape with or without skin. Minced fish flesh consists of particles of skeletal muscle". and is free from bones, viscera and skin. The product may be glazed with water. The products shall conform to the following requirement:-



<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30 mg/ 100gm
(2)	Histamine	Not more than 20 mg / 100gm

Note I: Products under article 1, 2, 3, 4 AND 5 shall be frozen in an appropriate equipment quickly to minus (-) 18° C or colder in such a way that the range of temperature of maximum crystallization is passed quickly. The quick freezing process shall not be regarded as complete unless the product temperature has reached minus (-) 18° C or colder at the thermal centre after thermal stabilization. The product shall be kept deep frozen so as to maintain the quality during transportation, storage and sale. The entire operation including processing and packaging shall ensure minimum dehydration and oxidation. The product may contain food additives permitted in Appendix A except listed product under regulation 2.6.1 (3). The product shall conform to the microbiological requirement given in Appendix B. The products shall be free from any foreign matter and objectionable odour/flavour.

6. Dried shark fins means the product prepared from dorsal and pectoral fins, lower lobe of caudal fin and Pelvic from fresh shark of edible quality. The product shall be free from adhering flesh and may be with or without skin. The product shall be dried in a suitable manner and shall be free from any food additive. The product shall be free from foreign matter, objectionable odour or flavour and rancidity. No food additive is allowed in this product. The products shall conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Moisture	Not more than 10.0 percent
(2)	Ash insoluble in HCl on dry basis	Not more than 1.0 percent
(3)	Yeast and Mould Count	Absent in 25gm

7. Salted fish/dried salted fish means the product prepared from fresh wholesome fish. The fish shall be bled, gutted, beheaded, split or filleted and washed. The fish shall be fully saturated with salt (Heavy salted) or partially saturated to a salt content not less than 10 percent by weight of the salted fish which has been dried. The product shall be free from foreign matter, objectionable odour and flavour. The product may contain food additives permitted in Appendix A. The product shall conform to the microbiological requirement given in Appendix B. The products shall conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Moisture	Not more than 16.0 percent
(2)	Sodium chloride	Not less than 10.0 percent and not more than 15.0 percent
(3)	Ash insoluble in HCl on dry basis	Not more than 1.0 percent
(4)	Yeast and Mould Count	Absent in 25gm

8. Canned finfish means the product prepared from the flesh of fresh finfish of sound quality belonging to any one species or mixture of species within the same genus having similar sensory properties. The product shall be free from head, tail and viscera. The product may be packed in any suitable packing medium. The packing medium and other ingredients used shall be of food grade quality. The products shall conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Histamine Content	Not more than 20 mg/100 gm
(2)	Total Volatile Base (Nitrogen)	Not more than 30mg/ 100gm

9. Canned Shrimp means the product prepared from fresh shrimp of sound quality from any combination of species of families Penaeidae, Pandalidae, Crangonidae and Palaemonidae from which heads, shell and antenna have been removed. The product may be in the form of peeled shrimps which have been headed and peeled without removal of the dorsal tract or cleaned and deveined shrimps in which the back is cut open after peeling and dorsal

tract has been removed upto the last segment next to the tail or broken shrimps consisting of pieces of peeled shrimp of less than four segments with or without the vein removed. The packing medium and other ingredients shall be of food grade quality. The products shall conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30 mg/100 gm
(2)	Acidity in brine expressed as Citric Acid	Not more than 0.2 percent

10. Canned sardines or sardine type products means, the product prepared from fresh or frozen fish belonging to *Sardinia pilchardus*, *Sardinia milanostrictus*, *neopilchardus*, *ocellatus*, *sag ax/caeruleus*, *Sardinia aurita*, *brasiliensis*, *maderensis*, *longiceps*, *gibbosa*, *celupea*, *harengus*, *Sprattus sprattus*, *Hypertophus vittatus*, *Nematolosaviaminghi*, *Etrumeus tesus*, *Ethmedium maculatun*, *Engranulis anchoita*, *mordax*, *ringens* and *opisthonema oglinum*.

The product shall be free from head and gills. It may be free from scales and or tail. The fish may be eviscerated. If eviscerated it shall be practically free from visceral parts other than roe milt or kidney. If ungutted it shall be practically free from undigested feed or used feed. The product shall be packed in any suitable medium. The packing medium and all other ingredients shall be of food grade quality. The products shall also conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Histamine Content	Not more than 20 mg/100 gm
(2)	Total Volatile Base (Nitrogen)	Not more than 30mg/100 gm

11. Canned salmon means the product prepared from fresh fish of sound quality belonging to any of the species of *Salmosalar* or *Oncorhynchus nerka*, *kisutchi*, *tshawytscha*, *gorboscha*, *ketax* and *masou* species. The product shall be free from head, viscera, fins and tails. The product shall be packed in any suitable medium. The packing medium and all other ingredients shall be of food grade quality. No food additive is allowed in this product. The product shall conform to the following requirement.

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements in Raw Product</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30 mg/100 gm

12. Canned crab meat means the product prepared from live crabs of sound quality from any of the edible species of the suborder *Branchyura* or the order *Decapoda* and all species of the family *Lithodiadae*. The product shall be prepared singly or in combination from the leg, claw, body and shoulder meat from which the shell has been removed. The product shall be packed in any suitable medium. The packing medium and all other ingredients shall be of food grade quality. The products shall conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Total Volatile Base (Nitrogen)	Not more than 30mg/100 gm
(2)	Acidity in brine expressed as Citric Acid	Not less than 0.06 percent and Not more than 0.2 percent

13. Canned Tuna and Bonito means the product prepared from fresh fish of sound quality belonging to *Thunnus alalunga*, *albacares*, *atlanticus*, *obessus*, *maccoyii*, *thynnus*, *tongoe*, *Euthynnus affinis*, *alleteratus*, *Jinlatus*, *Sarda chilentis*, *orientalis*, *Sarda* and *Katsuwonus pelamis* (syn *Euthynnus pelamis*) species. The product may be in the form of segments with or without skin, chunks, flakes or grated / shredded particles. The product shall be packed in any suitable medium. The packing medium and all other ingredients shall be of food grade quality. The products shall conform to the following requirements:—

<i>Sl. No.</i>	<i>Characteristics</i>	<i>Requirements</i>
(1)	Histamine Content	Not more than 20mg/100 gm
(2)	Total Volatile Base (Nitrogen)	Not more than 30mg/100 gm

Note II: All the product listed under articles 8, 9, 10, 11, 12 and 13 shall be packed in hermetically sealed clean and sound containers and subjected to adequate heat treatment followed by rapid cooling to ensure commercial sterility. The container shall be free from rust and mechanical defects. The container shall not show any change or

incubation at 37°C for 7 days. The final product shall be free from foreign matter, objectionable odour, or flavour. The products may contain food additives permitted in Appendix A except products listed under regulation 2.6.1 (11). The product shall conform to the microbiological requirement given in Appendix B.

Note- Without prejudice to the standards laid down in this Appendix, whenever water is used in the manufacture or preparation of any article of food, such water shall be free from micro-organisms likely to cause disease and also free from chemical constituents which may impair health.

## 2.7. SWEETS & CONFECTIONERY:

### 2.7.1 Sugar boiled confectionery:

Sugar boiled confectionery whether sold as hard boiled sugar confectionery or pan goods confectionery or toffee or milk toffee or modified toffee or lacto-bon-bon or by any other name shall mean a processed composite food article made from sugar with or without doctoring agents such as cream of tartar by process of boiling whether panned or not. It may contain centre filling, or otherwise, which may be in the form of liquid, semi-solid or solids with or without coating of sugar or chocolate or both. It may also contain any of the following:—

- (i) sweetening agents such as sugar, invert sugar, jaggery, lactose, gur, bura sugar, khandsari, sorbitol, honey, liquid glucose;
- (ii) milk and milk products;
- (iii) edible molasses;
- (iv) malt extracts;
- (v) edible starches;
- (vi) edible oils and fats;
- (vii) edible common salts;
- (viii) fruit and fruit products and nut and nut products;
- (ix) tea extract, coffee extract, chocolate, cocoa;
- (x) vitamins and minerals;
- (xi) shellac (food grade) not exceeding 0.4 per cent by weight bee wax (food grade), paraffin wax food grade, carnauba wax (food grade), and other food grade wax or any combination thereof;
- (xii) edible desiccated coconut;
- (xiii) spices and condiments and their extracts;
- (xiv) candied peels;
- (xv) enzymes;
- (xvi) permitted stabilizing and emulsifying agents;
- (xvii) edible foodgrains; edible seeds;
- (xviii) baking powder;
- (xix) gulkand, gulabanaafsha, mulathi;
- (xx) puffed rice;
- (xxi) china grass;
- (xxii) eucalyptus oil, camphor, menthol oil crystals, pepper mint oil;
- (xxiii) thymol;
- (xxiv) edible oil seed flour and protein isolates;
- (xxv) gum arabic and other edible gum.

It shall also conform to the following standards, namely:—

- |  |                   |                     |
|--|-------------------|---------------------|
| (i) Ash sulphated (on salt free basis) | Not more than 2.5 | per cent by weight. |
|--|-------------------|---------------------|

Provided that in case of sugar boiled confectionery where spices are used as centre filling, the ash sulphated shall not be more than 3 per cent by weight.

(ii) Ash insoluble (in dilute Hydrochloric acid) Not more than 0.2 Per cent by weight.

Provided that in case of sugar boiled confectionery where spices are used as centre filling, the ash insoluble in dilute Hydrochloric acid shall not be more than 0.4 per cent.

Where the sugar boiled confectionery is sold under the name of milk toffee and butter toffee, it shall conform to the following additional requirements as shown against each;

(1) Milk toffee-

(i) Total protein (N x 6.25) shall not be less than 3 per cent by weight on dry basis.

(ii) Fat content shall not be less than 4 per cent by weight on dry basis.

(2) Butter toffee- fat content shall not be less than 4 per cent by weight on dry basis.

Provided that it may contain food additives permitted in these regulations including appendix 'A'.

Provided further that if artificial sweetener has been added as provided in Regulation 3.1.3, it shall be declared on the label as provided in regulation 3.1.3, it shall be declared on the label as provided in Regulation 2.4.5 (24, 25, 26, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

#### 2.7.2: Lozenges:

Lozenges shall mean confections made mainly out of pulverised sugar, or icing sugar with binding materials such as edible gums, edible gelatine, liquid glucose or dextrin and generally made from cold mixing which does not require primary boiling or cooking of the ingredients. It may contain any of the following:—

- (i) sweetening agents such as dextrose, dextrosemonohydrate, honey, invert sugar, sugar, jaggery, bura sugar, khandsari, sorbitol, liquid glucose;
- (ii) milk and milk products;
- (iii) nuts and nuts products;
- (iv) malt syrup;
- (v) edible starches;
- (vi) edible common salt;
- (vii) ginger powder or extracts;
- (viii) cinnamon powder or extracts;
- (ix) aniseed powder or extracts;
- (x) caraway powder or extracts;
- (xi) cardamon powder or extracts;
- (xii) cocoa powder or extracts;
- (xiii) protein isolates;
- (xiv) coffee-extracts or its flavour;
- (xv) permitted colour matter;
- (xvi) permitted emulsifying and stabilizing agents
- (xvii) vitamins and minerals;

It shall also conform to the following standards:

- (i) Sucrose content Not less than 85.0 per cent by weight.
- (ii) Ash Sulphated (salt free basis) Not more than 3.0 percent by weight
- (iii) Ash insoluble in dilute Hydrochloric acid Not more than 0.2 per cent by weight

The product may contain food additives permitted in these regulations including Appendix A.

Provided that if artificial sweetener has been added in the product as provided in the regulation 3.1.3, it shall be declared on the label as provided in Regulation 2.4.5 (24, 25, 26, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided further that if only permitted artificial sweetener is used in the products as sweetener, the requirement for sucrose prescribed in these standards shall not be applicable to such products.

### 2.7.3: Chewing gum and bubble gum

Chewing gum and bubble gum shall be prepared from chewing gum base, or bubble gum base, natural or synthetic, non-toxic; cane sugar and liquid glucose (corn syrup).

The following sources of gum base may be used:—

- (1) Babul, Kikar (gum Arabic)
- (2) KHAIR
- (3) Jhingan (Jael)
- (4) Ghatti
- (5) Chiku (Sapota)
- (6) Natural rubber latex
- (7) Synthetic rubber latex
- (8) Glycerol ester of wood resin
- (9) Glycerol ester of gum resin
- (10) Synthetic resin
- (11) Glycerol ester or partially hydrogenated gum or wood resin.
- (12) Natural resin
- (13) Polyvinyl acetate
- (14) Agar (food grade)

It may also contain any of the following ingredients, namely:—

- (a) Malt
- (b) Milk powder
- (c) Chocolate
- (d) Coffee
- (e) Gelatin, food grade
- (f) Permitted Emulsifiers
- (g) Water, potable
- (h) Nutrients like Vitamins, minerals, proteins

It shall be free from dirt, filth, adulterants and harmful ingredients. it shall also conform to the following standards, namely:—

<i>Ingredients</i>	<i>Chewing gum</i>	<i>Bubble gum</i>
(i) Gum	Not less than 12.5 per cent by weight	Not less than 14.0 per cent by weight
(ii) Moisture	Not more than 3.5 per cent by weight	Not more than 3.5 per cent by weight
(iii) Sulphated Ash	Not more than 9.5 per cent by weight.	Not more than 11.5 per cent by weight.
(iv) Acid insoluble ash	Not more than 2.0 per cent by weight.	Not more than 3.5 per cent by weight.
(v) Reducing sugars (calculated as dextrose)	Not less than 4.5 per cent by weight.	Not less than 5.5 per cent by weight.
(vi) Sucrose	Not more than 70.0 per cent by weight.	Not more than 60.0 percent by weight.

Provided that it may contain food additives permitted in and these regulations Including Appendix A

Provided further, if artificial sweetener has been added as provided in Regulation 3.1.2 (1), it shall be declared on the label as provided in Regulation 2.4.5 (24, 25, 26, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided also, that, if only artificial sweetener is added in the product as sweeteners the parameters namely, reducing sugars and sucrose prescribed in the table above shall not be applicable to such product

#### 2.7.4: Chocolate

Chocolate means a homogeneous product obtained by an adequate process of manufacture from a mixture of one or more of the ingredients, namely, cocoa beans, cocoa nib, cocoa mass, cocoa press cake and cocoa dust (cocoa fines/powder), including fat reduced cocoa powder with or without addition of sugars, cocoa butter, milk solids including milk fat The chocolates shall not contain any vegetable fat other than cocoa butter.

The material shall be free from rancidity or off odour, insect and fungus infestation, filth, adulterants and any harmful or injurious matter.

The chocolates shall be of the following types:—

Milk chocolates is obtained from one or more of cocoa nib, cocoa mass, cocoa press cake, cocoa powder including low-fat cocoa powder with sugar and milk solids including milk fat and cocoa butter.

Milk Covering Chocolate - as defined above, but suitable for covering purposes.

Plain Chocolate is obtained from one or more of cocoa nib, cocoa mass, cocoa press cake, cocoa powder including low fat cocoa powder with sugar and cocoa butter.

Plain Covering Chocolate-same as plain chocolate but suitable for covering purposes.

Blended Chocolate means the blend of milk and plain chocolates in varying proportions.

White chocolate is obtained from cocoa butter, milk solids, including milk fat and sugar.

Filled Chocolates means a product having an external coating of chocolate with a centre clearly distinct through its composition from the external coating, but does not include flour confectionery pastry and biscuit products. The coating shall be of chocolate that meets the requirements of one or more of the chocolate types mentioned above. The amount of chocolate component of the coating shall not be less than 25 per cent of the total mass of the finished product.

Composite Chocolate-means a product containing at least 60 per cent of chocolate by weight and edible wholesome substances such as fruits, nuts. It shall contain one or more edible wholesome substances which shall not be less than 10 per cent of the total mass of finished product.

Provided that it may contain artificial sweeteners as provided in regulation 3.1.3 and label declaration as provided under Regulation 2.4.5 (24, 25, 26, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided further that in addition to the ingredients mentioned above, the chocolate may contain one or more of the substances as outlined below, under different types of chocolates.

- (a) edible salts
- (b) spices and condiments
- (c) permitted emulsifying and stabilizing agents
- (d) permitted sequestering and buffering agents.

The product may contain food additives permitted in these regulations including Appendix A.

Chocolates shall also conform to the following standards namely:—

Sl. No.	Characteristics	Requirements for					
		Milk Chocolate	Milk Covering Chocolate	Plain Chocolate	Plain Covering Chocolate	White Chocolate	Blended Chocolate
1.	Total fat (on dry basis) per cent by weight. Not less than	25	25	25	25	25	25
2.	Milk fat (on dry basis) Percent by weight. Not less than	2	2	-	-	2	—
3.	Cocoa solids (on Moisture-free and fat free basis) percent by weight Not less than	2.5	2.5	12	12	-	3.0
4.	Milk Solids (on Moisture-free and fat-free basis) percent by weight. Not less than/not more than	10.5	10.5	-	-	10.5	1
		-	-	-	-	-	9
5.	Acid insoluble ash (on moisture fat and sugar free basis) percent by weight. Not more than	0.2	0.2	0.2	0.2	0.2	0.2

#### 2.7.5: ICE LOLLIES OR EDIBLE ICES

1. "ICE LOLLIES OR EDIBLE ICES" means the frozen ice produce which may contain sugar, syrup, fruit, fruit juices, cocoa, citric acid, permitted flavours and colours. It may also contain permitted stabilizers and/or emulsifiers not exceeding 0.5 per cent by weight. It shall not contain any artificial sweetner.

Ice Candy means the product obtained by freezing a pasteurized mix prepared from a mixture of water, nutritive sweeteners e.g. sugar, dextrose, liquid glucose, dried liquid glucose, honey, fruits and fruit products, coffee, cocoa, ginger, nuts and salt. The product may contain food additives permitted in these Regulations and Appendices. It shall conform to the microbiological requirements prescribed in Appendix B. It shall conform to the following requirement:—

Total sugars expressed as Sucrose ... Not less than 10.0 percent

#### 2.8: Sweetening agents including Honey

##### 2.8.1: SUGAR

1. PLANTATION WHITE SUGAR (commonly known as sugar) means the crystallised product obtained from sugarcane or sugar beet. It shall be free from dirt, filth, iron filings, and added colouring matter. Extraneous matter shall not exceed 0.1 per cent by weight. It shall also conform to the following standards, namely :—

- (a) Moisture (when heated at 105 degree  $\pm$  1° degree C for 3 hours) Not more than 0.5 per cent by weight.  
 (b) Sucrose Not less than 98 per cent by weight.

The product may contain food additives permitted in these Regulations and Appendices.

2. REFINED SUGAR means the white crystallised sugar obtained by refining of plantation white sugar. It shall be free from dirt, filth, iron filings and added colouring matter. Extraneous matter shall not exceed 0.1 per cent by weight. It shall also conform to the following standards, namely:—

- (a) Moisture (when heated at 105  $\pm$  10 C for 3 hours) Not more than 0.5 per cent by weight.  
 (b) Sucrose Not less than 99.5 per cent by weight.

The product may contain food additives permitted in these Regulations and Appendices.

3. KHANDSARI SUGAR obtained from sugarcane juice by open pan process may be of two varieties, namely:

(i) Khandsari Sugar Desi; and

(ii) Khandsari Sugar (sulphur) also known as "Sulphur Sugar".

It may be crystalline or in powder form. It shall be free from dirt, filth, iron filings and added colouring matter. Extraneous matter shall not exceed 0.25 per cent by weight. It may contain sodium bicarbonate (food grade). It shall also conform to the following standards, namely:—

	<i>Khandsari Sugar (Sulphur Sugar)</i>	<i>Khandsari Sugar (Desi)</i>
(i) Moisture (when heated at 105° ± 1° C for 3 hours)	Not more than 1.5 per cent by weight.	Not more than 1.5 per cent by weight.
(ii) Ash insoluble in dilute hydrochloric acid	Not more than 0.5 per cent by weight	Not more than 0.7 per cent by weight.
(iii) Sucrose	Not less than 96.5 per cent by weight.	Not less than 93.0 per cent by weight.

The product may contain food additives permitted in these Regulations and Appendices.

NOTE: - Khandsari sugar can be distinguished from plantation white sugar on the following characteristics, namely:

<i>Khandsari Sugar (Sulphur Sugar)</i>	<i>Khandsari Sugar (Desi)</i>	
(i) Conductivity (106 mho/cm <sup>2</sup> )	100-300 in 5% solution at 30°C	Not more than 100 in 5% solution at 30°C
(ii) Calcium oxide (mg/100gms)	Not more than 100	Not more than 50

The product may contain food additives in Appendix A

4. BURA SUGAR means the fine grain size product made out of any kind of sugar. It shall be free from dirt, filth, iron filing and added colouring matter. Extraneous matter shall not exceed 0.1 per cent by weight. It shall also conform to the following standards, namely:—

- |   |  |
|---|--|
| (a) Sucrose                                   | Not less than 90.0 per cent by weight. |
| (b) Ash insoluble in dilute hydrochloric acid | Not more than 0.7 per cent by weight.  |

The product may contain food additives permitted in these Regulations and Appendices.

5. CUBE SUGAR means the sugar in the form of cube or cuboid blocks manufactured from refined crystallised sugar. It shall be white in colour, free from dirt and other extraneous contamination. It shall conform to the following standards :—

- |               |  |
|---------------|--|
| (a) Sucrose   | Not less than 99.7 per cent by weight. |
| (b) Moisture  | Not more than 0.25 per cent by weight. |
| (c) Total ash | Not more than 0.03 per cent by weight  |

The product may contain food additives permitted in these Regulations and Appendices.

6. ICING SUGAR means the sugar manufactured by pulverizing refined sugar or vacuum pan (plantation white) sugar with or without edible starch. Edible starch, if added, shall be uniformly extended in the sugar. It shall be in form of white powder, free from dust, or any other extraneous matter.

The product may contain food additives permitted in these Regulations and Appendices. It shall conform to the following standards:—

- |  |  |
|--|--|
| (a) Total starch and sucrose (moisture free) | Not less than 99.0 per cent (moisture free) by weight. |
| (b) Moisture                                 | Not more than 0.80 per cent by weight.                 |
| (c) Starch                                   | Not more than 4.0 percent by weight on dry basis.      |



### 2.8.2: MISRI

1. MISRI means the product made in the form of candy obtained from any kind of sugar or palmyrah juice. It shall be free from dirt filth, iron filings and added colouring matter. Extraneous matter shall not exceed 0.1 per cent by weight. It shall also conform to the following standards, namely:—

- |   |                               |
|---|-------------------------------|
| (a) Total ash   | Not more than 0.4% by weight  |
| (b) Total Sugar (Called, known or expressed as Sucrose) | Not less than 98.0% by weight |

The product may contain food additives permitted in these Regulations and Appendices.

### 2.8.3: "HONEY"

1. HONEY means the natural sweet substance produced by honey bees from the nectar of blossoms or from secretions of plants which honey bees collect, transform store in honey combs for ripening.

When visually inspected, the honey shall be free from any foreign matter such as mould, dirt, scum, pieces of beeswax, the fragments of bees and other insects and from any other extraneous matter.

The colour of honey vary from light to dark brown. Honey shall conform to the following standards, namely:—

- |  |                                     |
|--|-------------------------------------|
| (a) Specific gravity at 27°C             | Not less than 1.35                  |
| (b) Moisture                             | Not more than 25 per cent by mass   |
| (c) Total reducing sugars                | Not less than 65.0 per cent by mass |
| (i) for Carbia colossa and Honey dew     | Not less than 60 per cent by mass   |
| (d) Sucrose                              | Not more than 5.0 per cent by mass  |
| (i) for Carbia colossa and Honey dew     | Not more than 10 per cent by mass   |
| (e) Fructose-glucose ratio               | Not less than 0.95 per cent by mass |
| (f) Ash                                  | Not more than 0.5 per cent by mass  |
| (g) Acidity (Expressed as formic acid)   | Not more than 0.2 per cent by mass  |
| (h) Fiehe's test                         | Negative                            |
| (i) Hydroxy methyl furfural (HMF), mg/kg | Not more than 80                    |

If Fiehe's test is positive, and hydroxy methyl furfural (HMF) content is more than 80 milligram/kilogram then fructose glucose ratio should be 1.0 or more.

### 2.8.4: GUR OR JAGGERY

1. GUR OR JAGGERY means the product obtained by boiling or processing juice pressed out of sugarcane or extracted from palmyra palm, date palm or coconut palm. It shall be free from substances deleterious to health and shall conform to the following analytical standards, on dry weight basis :-

- |  |   |
|--|---|
| Total sugars expressed as invert sugar   | Not less than 90 percent and sucrose not less than 60 percent |
| Extraneous matter                        | Not more than 2 per cent. insoluble in water                  |
| Total ash                                | Not more than 6 per cent                                      |
| Ash insoluble in hydrochloric acid (HCl) | Not more than 0.5 per cent                                    |

Gur or jaggery other than that of the liquid or semi liquid variety shall not contain more than 10% moisture.

The product may contain food additives permitted in these Regulations and Appendices.

Sodium bicarbonate, if used for clarification purposes, shall be of food grade quality.

### 2.8.5: DEXTROSE

1. DEXTROSE is a white or light cream granular powder, odourless and having a sweet taste.

When heated with potassium cupritartrate solution it shall produce a copious precipitate of cuprous oxide. It shall conform to the following standards:—

Sulphated ash	Not more than 0.1 per cent on dry basis
Acidity	0.5 gm. Dissolved in 50 ml. of freshly boiled and cooled water requires for neutralisation not more than 0.20 ml. of N/10 sodium hydroxide to phenolphthalein indicator.
Glucose	Not less than 99.0 per cent on dry basis.

The product may contain food additives permitted in these Regulations and Appendices.

#### 2.8.6: GOLDEN SYRUP

1. GOLDEN SYRUP means the syrup obtained by inversion of sugar. It shall be golden yellow in colour, pleasant in taste and free from any crystallisation.

It shall conform to the following standards:—

Moisture	Not more than 25.0 per cent by weight
Total Ash	Not more than 2.5 per cent by weight
Total Sugar as invert sugar	Not less than 72.0 per cent by weight

The product may contain food additives permitted in these regulations including Appendix A.

Sodium bicarbonate, if used, for clarification purposes, shall be of Food Grade Quality.

2.8.7 DRIED GLUCOSE SYRUP means the material in the form of coarse or fine, white to creamish white powder, sweet to taste, bland in flavour and somewhat hygroscopic. It shall be free from fermentation, evidence of mould growth, dirt or other extraneous matter or added sweetening or flavouring agent.

It shall also not contain any added natural or coaltar food colour. It shall conform to the following standards:—

Total solid contents	Not less than 93.0 per cent by weight.
Reducing sugar content	Not less than 20.0 per cent by weight.
Total Sugar as invert sugar	Not more than 1.0 per cent by weight.

The product may contain food additives permitted in these Regulations and Appendices.

#### 2.8.8: SACCHARIN SODIUM

1. SACCHARIN SODIUM commonly known as soluble Saccharin having an empirical formula as  $C_7H_4NNaO_3S \cdot 2H_2O$  and molecular weight as 241.2 shall be the material which is soluble at 200 C in 1.5 parts of water and 50 parts of alcohol (95 per cent); and shall contain not less than 98.0 per cent and not more than the equivalent of 100.5 per cent of  $C_7H_4O_3NSNa$  calculated with reference to the substance dried to constant weight at 1050 C, assay being carried out as presented in Indian Pharmacopoeia. It shall not contain more than 2 p.p.m. of arsenic and 10 p.p.m. of lead. The melting point of Saccharin isolated from the material as per Indian Pharmacopoeia method shall be between 2260 C and 2300 C. The loss on drying of the material at 1050 C shall not be less than 12.0 per cent and not more than 16.0 per cent of its weight.

The material shall satisfy the tests of identification and shall conform to the limit tests for free acid or alkali, ammonium compounds and parasulpha moylbenzoate as mentioned in the Indian Pharmacopoeia.

#### 2.8.9: ASPARTYL PHENYLALANINE METHYL ESTER (ASPERTAME)

1. Aspartyl Phenyl Alanine Methyl Ester commonly known as Aspartame, having empirical formula as  $C_{14}H_{18}N_2O_5$  and molecular weight as 294.31 shall be the material which is slightly soluble in water and Methanole. It shall contain not less than 98 per cent and not more than 102 per cent of Aspartame on dried basis. It shall not contain more than 3 ppm of Arsenic and 10 ppm of Lead.

The loss on drying of the material at 1050 C for 4 hours shall not be more than 4.3 per cent of its weight. The sulphate ash shall not be more than 0.2 per cent. It shall not contain more than 1 per cent of diketo-piperazine.

## 2.8.10: Acesulfame Potassium

1. Acesulfame Potassium commonly known as Acesulfame-K, having empirical formula  $C_4H_4KNO_4S$ , molecular weight as 201.24 shall be the material which is odourless, white crystalline powder having intensely sweet taste and is very slightly soluble in ethanol but freely soluble in water. It shall contain not less than 99 per cent and not more than 101 per cent of Acesulfame-K on dried basis. It shall not contain more than 3 ppm. Fluoride. Heavy metals content shall not be more than 10 ppm. The loss on drying of material at 105 degree centigrade for two hours shall not be more than 1 percent of its weight.

## 2.8.11: Sucralose

1. Sucralose:

Chemical name - 1, 6-Dichloro-1, 6-Dideoxy- $\beta$ -D-Fructofuranosyl-4-Chloro-4-Deoxy- $\alpha$ -D-galactopyranoside;

Synonyms -4, 1 '6'-Trichlorogalactosucrose; INS 955

Chemical formula -  $C_{12}H_{19}Cl_3O_8$

Molecular weight- 397.64

It shall be white to off-white, odourless, crystalline powder, having a sweet taste. It shall be freely soluble in water, in methanol and in alcohol and slightly soluble in ethyl acetate. It shall contain not less than 98.0% and not more than 102.0% of  $C_{12}H_{19}Cl_3O_8$  calculated on anhydrous basis. It shall not contain more than 3PPM of Arsenic (as AS) and 10PPM or heavy metals (as Pb). It shall not contain more than 0.1% of methanol. Residue on ignition shall not be more than 0.7% and water not more than 0.2%.

## 2.9: SALT, SPICES, CONDIMENTS AND RELATED PRODUCTS

Note: (1) The extraneous matter wherever prescribed, shall be classified as follows:

a. Organic extraneous matter such as chaff, stems, straw

b. Inorganic extraneous matter such as dust, dirt, stones and lumpsof earth. This shall not exceed 2 percent by weight of the total Extraneous matter

(a) All the Spices, condiments and related products from 2.9.1 to 2.9.29 shall conform to the microbiological requirements given in table 3 of Appendix B.

## 2.9.1: Caraway (Siahjira):

1. (Siahjira) whole means the mericarps of nearly mature fruit of *Carum carvi* L. The fruits are split into two mericarps by thrashing after drying. It shall have characteristic flavour and shall be free from extraneous flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. It shall be free from attack by *Scyrelotinia* mushrooms. It shall be free from added colouring matter and other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Moisture	Not more than 13.0 percent by weight
(iii) Total ash on dry basis	Not more than 8.0 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis.	Not more than 1.5 percent by weight
(v) Volatile oil content on dry basis	Not less than 2.5 percent by (v/w).
(vi) Insect damaged matter	Not more than 1.0 percent by weight

Blond Caraway (*Carum carvi*) whole is slightly larger and its colour is paler.

2. Caraway Black (Siahjira) Whole means the dried seeds of *Carum bulbocastanum*. It shall conform to the following standards.

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Moisture	Not more than 12.0 percent by weight
(iii) Total ash on dry basis	Not more than 9.0 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight
(v) Volatile oil content on dry basis	Not less than 1.5 percent by (v/w)
(vi) Insect damaged matter	Not more than 1.0 percent by weight

1. Caraway (Siahjira) powder means the powder obtained by grinding the dried mature fruit of *Carum Carvi* L. without addition of any other matter. It may be in the form of small pieces of seeds or in finely ground form. It shall have characteristic flavour and shall be free from extraneous flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter and other harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 12.0 percent by weight
(ii) Total ash on dry basis	Not more than 8.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis	Not more than 1.5 percent by weight
(iv) Volatile oil content on dry basis	Not less than 2.25 percent by v/w
Blond	Not less than 1.33 percent by v/w

#### 2.9.2: Cardamom (Elaichi)

1. Cardamom (Chhoti Elaichi) Whole means the dried capsules of nearly ripe fruits of *Elettaria cardamomum* L. Maton Var. *Minuscula* Burkill. The capsules may be light green to brown or pale cream to white when bleached with sulphur dioxide. It shall have characteristic flavour free from any foreign odour, mustiness or rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. Thrip marks alone should not lead to the conclusion that the capsules have been infested with insects. The product shall be free from added colouring matter and other harmful substances.

It shall conform to the following standards:

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Empty and malformed capsules by count	Not more than 3.0 percent by count
(iii) Immature and shrivelled capsules	Not more than 3.0 percent by weight
(iv) Moisture	Not more than 13.0 percent by weight
(v) Total ash on dry basis	Not more than 9.5 percent by weight
(vi) Volatile oil content on dry basis	Not less than 3.5 percent by v/w
(vii) Insect damaged matter	Not more than 1.0 percent by weight

2. Cardamom (Chhoti Elaichi) seeds means the decorticated seeds separated from the dried capsules of nearly ripe fruits of *Elettaria Cardamomum* L. Maton var *miniscula* Burkill. The seeds shall have characteristic flavour free from foreign odour, mustiness or rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Light seeds	Not more than 3.0 percent by weight
(iii) Moisture	Not more than 13.0 percent by weight
(iv) Total ash on dry basis	Not more than 9.5 percent by weight
(v) Volatile oil content on dry basis	Not less than 3.5 percent by v/w
(vi) Insect damaged matter	Not more than 1.0 percent by weight

Explanation :- Light seeds mean seeds that are brown or red in colour and broken immature and shrivelled seeds.

3. Cardamom (Chhoti Elaichi) powder means the powder obtained by grinding dried seeds of *Elettaria Cardamomum* L. Maton var *miniscula* Burkill without addition of any other substance. It may be in the form of small pieces of seeds or in finely ground form. It shall have characteristic flavour free from foreign odour, mustiness or rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter and other harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 11.0 percent by weight
(ii) Total ash on dry basis	Not more than 8.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis.	Not more than 3.0 percent by weight
(iv) Volatile oil content on dry basis	Not less than 3.0 percent by v/w.

4. Large Cardamom (Badi Elaichi) whole means the dried nearly ripe fruit (capsule) of *Amomum subulatum* Roxb. The capsule shall have characteristic flavour free from foreign odour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any harmful substance.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Empty and malformed capsules by count	Not more than 2.0 percent by count
(iii) Immature and shrivelled capsules	Not more than 2.0 percent by weight
(iv) Moisture	Not more than 12.0 percent by weight
(v) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight
(vi) Total ash on dry basis	Not more than 8.0 percent by weight
(vii) Volatile oil content of seeds on dry basis	Not less than 1.0 percent by v/w.
(viii) Insect damaged matter	Not more than 1.0 percent by weight

5. Large Cardamom (Badi Elaichi) seeds means the seeds obtained by decortication of capsules of *Amomum subulatum* Roxb. It shall have characteristic flavour free from foreign odour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Light seeds / Brown / Red seeds	Not more than 3.0 percent by weight
(iii) Moisture	Not more than 12.0 percent by weight
(iv) Total ash on dry basis	Not more than 8.0 percent by weight
(v) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight
(vi) Volatile oil content on dry basis	Not less than 1.0 percent by v/w
(vii) Insect damaged matter	Not more than 1.0 percent by weight.

6. Large Cardamom (Badi Elaichi) powder means the powder obtained by grinding seeds of *Amomum subulatum* Roxb, without the addition of any other substance. It may be in the form of small pieces of seeds or in finely ground form. The powder shall have characteristic flavour free from off flavour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter and any harmful substance.

It shall conform to the following standards:—

(i) Moisture	Not more than 11.0 percent by weight
(ii) Total ash on dry basis	Not more than 8.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight
(iv) Volatile oil content on dry basis	Not less than 1.0 percent by weight

### 2.9.3: Chillies and Capsicum (Lal Mirchi)

1. Chillies and Capsicum (Lal Mirchi) whole - means the dried ripe fruits or pods of the *Capsicum annum* L & *Capsicum frutescens* L. The pods shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from extraneous colouring matter, coating of mineral oil and other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Unripe and marked fruits	Not more than 2.0 percent by weight
(iii) Broken fruits, seed & fragments	Not more than 5.0 percent by weight
(iv) Moisture	Not more than 11.0 percent by weight
(v) Total ash on dry basis	Not more than 8.0 percent by weight
(vi) Ash insoluble in dilute HCl on dry basis	Not more than 1.3 percent by weight
(vii) Insect damaged matter	Not more than 1.0 percent by weight

2. Chillies and Capsicum (Lal Mirchi) powder means the powder obtained by grinding clean ripe fruits or pods of *Capsicum annum* L and *Capsicum frutescens* L. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be dry, free from dirt, extraneous colouring matter, flavouring matter, mineral oil and other harmful substances. The chilli powder may contain any edible vegetable oil to a maximum limit of 2.0 percent by weight under a label declaration for the amount and nature of oil used.

It shall conform to the following standards:—

(i) Moisture	Not more than 11.0 percent by weight
(ii) Total ash on dry basis	Not more than 8.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis	Not more than 1.3 percent by weight
(iv) Crude fibre	Not more than 30.0 percent by weight
(v) Non-volatile ether extract on dry basis	Not less than 12.0 percent by weight

#### 2.9.4: Cinnamon (Dalchini)

1. Cinnamon (Dalchini) whole means the inner bark of trunks or branches of *Cinnamomum Zeylanicum* Blume. It shall have characteristic odour and flavour and shall be free from foreign flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter, foreign vegetable matter and other harmful substances.

It shall conform to the following standards:

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Moisture	Not more than 12.0 percent by weight
(iii) Total ash on dry basis	Not more than 7.0 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight
(v) Volatile oil content on dry basis	Not less than 0.7 percent by v/w
(vi) Insect damaged matter	Not more than 1.0 percent by weight

2. Cinnamon (Dalchini) powder means the powder obtained by grinding inner bark of trunk or branches of *Cinnamomum Zeylanicum* Blume. The powder shall be yellowish to reddish brown in colour with characteristic odour and flavour and shall be free from off flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter, foreign vegetable matter and other harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 12.0 percent by weight
(ii) Total ash on dry basis	Not more than 7.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight
(iv) Volatile oil content on dry basis	Not less than 0.5 percent by weight

## 2.9.5: Cassia (Taj)

1. Cassia (Taj) Whole means the bark of trees of *Cinnamomum Cassia* (Nees) ex Blume, *Cinnamomum aromaticum* (Nees) Syn, *Cinnamomum burmanii* (C.G. Nees) blume and *Cinnamomum loureini* Nees. The product shall have characteristic odour and flavour and shall be free from off flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter, foreign vegetable matter and other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Moisture	Not more than 12.0 percent by weight
(iii) Total ash on dry basis	Not more than 5.0 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis	Not more than 1.0 percent by weight
(v) Volatile oil content on dry basis	Not less than 2.0 percent by v/w.

2. Cassia (Taj) powder means the powder obtained by grinding bark of trees of *Cinnamomum Cassia* (Nees) ex Blume, *Cinnamomum aromaticum* (Nees) Syn, *Cinnamomum burmanii* (CG Nees) Blume and *Cinnamomum loureini* Nees without addition of any other matter. The powder shall have characteristic odour and flavour and shall be free from off flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter, foreign vegetable matter and other harmful substances.

It shall conform to the following standards:

(i) Moisture	Not more than 12.0 percent by weight
(ii) Total ash on dry basis	Not more than 5.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis	Not more than 1.0 percent by v/w
(iv) Volatile oil content on dry basis	Not less than 1.5 percent by weight

## 2.9.6: Cloves (Laung)

1. Cloves (Laung) Whole means the dried unopened flower buds of *Eugenia Caryophyllus* (C. Sprengel) Bullock and Harrison. It shall be of a reddish brown to blackish brown colour with a strong aromatic odour free from off flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. It shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Tendrils, Mother Cloves	Not more than 2.0 percent by weight
(iii) Khokar Cloves	Not more than 2.0 percent by weight
(iv) Moisture	Not more than 12.0 percent by weight
(v) Volatile oil content on dry basis	Not less than 17.0 percent by v/w
(vi) Headless cloves	Not more than 2.0 percent by weight
(vii) Insect damaged cloves	Not more than 2.0 percent by weight

Explanation: (1) Headless Cloves: A Clove consisting of only the receptacle and sepals and which has lost the domed shaped head.

(2) Khoker Cloves: A Clove which has undergone fermentation as a result of incomplete drying as evidenced by its pale brown colour whitish mealy appearance and other wrinkled surface.

(3) Mother Cloves: A fruit in the form of a ovoid brown berry surmounted by four incurved sepals.

2. Cloves (Laung) powder means the powder obtained by grinding the dried unopened flower buds of *Eugenia Caryophyllus* (C. Sprengel) Bullock and Harrison without any addition. It shall be of a brown colour with a violet tinge and shall have a strong spicy aromatic odour free from off flavour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. It shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Moisture	Not more than 10.0 percent by weight
(ii) Total ash on dry basis	Not more than 7.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis.	Not more than 0.5 percent by weight
(iv) Volatile oil content on dry basis	Not less than 16.0 percent by v/w
(v) Crude Fibre	Not more than 13.0 percent by weight

#### 2.9.7: Coriander (Dhania)

1. Coriander (Dhania) whole means the dried mature fruits (seeds) of *Coriandrum sativum* L. It shall have characteristic aroma and flavour. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Split fruits	Not more than 10.0 percent by weight
(iii) Damaged / Discoloured fruits	Not more than 2.0 percent by weight
(iv) Moisture	Not more than 9.0 percent by weight
(v) Volatile oil content on dry basis	Not less than 0.1 percent by v/w
(vi) Total ash on dry basis	Not more than 7.0 percent by weight
(vii) Ash insoluble in dilute HCl on dry basis.	Not more than 1.5 percent by weight
(viii) Insect damaged matter	Not more than 1.0 percent by weight

2. Coriander (Dhania) powder means the powder obtained by grinding clean, sound, dried mature fruits of *Coriandrum sativum* L. It shall be in the form of rough or fine powder. It shall have typical aroma and shall be free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination; the powder shall be free from added colour, starch, bleach or preservative.

It shall conform to the following standards:—

(i) Moisture	Not more than 9.0 percent by weight
(ii) Volatile oil content on dry basis	Not less than 0.09 percent by v/w
(iii) Total ash on dry basis	Not more than 7.0 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis.	Not more than 1.5 percent by weight

#### 2.9.8: Cumin (Zeera, Kalonji)

1. Cumin (Safed Zeera) whole means the dried mature fruits of *Cuminum Cyminum* L. It shall have characteristic aromatic flavour free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colour and harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 3.0 percent by weight
(ii) Broken fruits (Damaged, shrivelled, discoloured and immature seed)	Not more than 5.0 percent by weight
(iii) Moisture	Not more than 10.0 percent by weight
(iv) Total ash on dry basis	Not more than 9.5 percent by weight
(v) Ash insoluble in dilute HCl on dry basis.	Not more than 3.0 percent by weight
(vi) Non volatile ether extract on dry basis	Not less than 15.0 percent by weight
(vii) Volatile oil content on dry basis	Not less than 1.5 percent by v/w
(viii) Proportion of edible seeds other than cumin seeds	Absent
(x) Insect damaged matter	Not more than 1.0 percent by weight



2. Cumin (Safed Zeera) powder means the powder obtained by grinding the dried mature seeds of *Cuminum Cyminum* L. It shall have characteristic aromatic flavour free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colour and harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 10.0 percent by weight
(ii) Total ash on dry basis	Not more than 9.5 percent by weight
(iii) Acid insoluble ash on dry basis	Not more than 1.5 percent by weight
(iv) Non volatile ether extract on dry basis	Not less than 15.0 percent by weight
(v) Volatile oil content on dry basis	Not less than 1.3 percent by v/w

3. Cumin Black (Kalonji) whole means the seeds of *Nigella sativa* L. It shall have characteristic aromatic flavour free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colour and harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.5 percent by weight
(ii) Broken fruits (Damaged, shrivelled, discoloured and immature seed)	Not more than 5.0 percent by weight
(iii) Moisture	Not more than 10.0 percent by weight
(iv) Total ash on dry basis	Not more than 8.0 percent by weight
(v) Ash insoluble in dilute HCl on dry basis	Not more than 1.5 percent by weight
(vi) Non volatile ether extract on dry basis	Not less than 12.0 percent by weight
(vii) Volatile oil content on dry basis	Not less than 1.0 percent by v/w
(viii) Edible seeds other than cumin black	Not more than 2.0 percent by weight
(ix) Insect damaged matter	Not more than 1.0 percent by weight

4. Cumin Black (Kalonji) powder means the powder obtained by grinding the dried seeds of *Nigella sativa* L. It shall have characteristic aromatic flavour free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colour and harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 10.0 percent by weight
(ii) Total ash on dry basis	Not more than 7.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis	Not more than 1.5 percent by weight
(iv) Volatile oil content on dry basis	Not less than 0.9 percent by v/w
(v) Non volatile ether extract on dry basis (ml/100gm)	Not less than 12.0 percent by weight

#### 2.9.9: Fennel (Saunf)

1. Fennel (Saunf) whole means the dried ripe fruit of *Foeniculum vulgare* P. Miller Var. *Vulgare*. It shall have characteristic flavour free from foreign odour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any harmful substance.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Defective seeds	Not more than 5.0 percent by weight
(iii) Moisture	Not more than 12.0 percent by weight
(iv) Total ash on dry basis	Not more than 10.0 percent by weight
(v) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight

(vi) Volatile oil content on dry basis	Not less than 1.0 percent by v/w
(vii) Edible seeds other than fennel	Absent
(viii) Insect damaged matter	Not more than 1.0 percent by weight

2. Fennel (Saunf) powder means the powder obtained by grinding ripe fruits (seeds) of *Foeniculum Vulgare* P. Miller Var Vulgare. The powder shall have characteristic aromatic flavour free from off flavour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter and any harmful substance.

It shall conform to the following standards:—

(i) Moisture	Not more than 12.0 percent by weight
(ii) Total ash on dry basis	Not more than 9.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis.	Not more than 2.0 percent by weight
(iv) Volatile oil content on dry basis	Not less than 1.0 percent by v/w

#### 2.9.10: Fenugreek (Methi)

1. Fenugreek (Methi) Whole means the dried mature seeds of *Trigonella foenum graecum* L. The seeds shall be free from any off flavour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colour, and other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Moisture	Not more than 10.0 percent by weight
(iii) Total ash on dry basis	Not more than 5.0 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis	Not more than 1.5 percent by weight
(v) Cold water soluble extract on dry basis	Not less than 30.0 percent by weight
(vii) Edible seeds other than fenugreek	Not more than 2.0 percent by weight
(viii) Insect damaged matter	Not more than 1.0 percent by weight

2. Fenugreek (Methi) powder means the powder obtained by grinding the dried mature seeds of *Trigonella foenum graecum* L. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colour and other harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 10.0 percent by weight
(ii) Total ash on dry basis	Not more than 5.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis.	Not more than 1.5 percent by weight
(iv) Cold water soluble extract on dry basis	Not less than 30.0 percent by weight

#### 2.9.11: Ginger (Sonth, Adrak)

1. Ginger (Sonth, Adrak) whole means the dried rhizome of *Zingiber officinale* Roscoe in pieces irregular in shape and size, pale brown in colour with peel not entirely removed and washed and dried in sun. It may be bleached with lime. It shall have characteristic taste and flavour free from musty odour or rancid or bitter taste. It shall be free from mould, living and dead insects, insect fragments, and rodent contamination. The product shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Moisture	Not more than 12.0 percent by weight
(iii) Total ash on dry basis	
(a) Unbleached	Not more than 8.0 percent by weight

(b) Bleached	Not more than 12.0 percent by weight
(iv) Calcium as Calcium oxide on dry basis	
(a) Unbleached	Not more than 1.1 percent by weight
(b) Bleached	Not more than 2.5 percent by weight
(v) Volatile oil content on dry basis	Not less than 1.5 percent by v/w
(vi) Insect damaged matter	Not more than 1.0 percent by weight

2. Ginger (Sonth, Adrak) Powder means the powder obtained by grinding rhizome of *Zingiber officinale* Roscoe. It shall have characteristic taste and flavour free from musty odour or rancid or bitter taste. It shall be free from mould, living and dead insects, insect fragments, and rodent contamination. The powder shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Moisture	Not more than 12.0 percent by weight
(ii) Total ash on dry basis	
(a) Unbleached	Not more than 8.0 percent by weight
(b) Bleached	Not more than 12.0 percent by weight
(iii) Calcium as Calcium oxide on dry basis	
(a) Unbleached	Not more than 1.1 percent by weight
(b) Bleached	Not more than 2.5 percent by weight
(iv) Volatile oil content on dry basis	Not less than 1.5 percent by v/w
(v) Water soluble ash on dry basis	Not less than 1.7 percent by weight
(vi) Acid insoluble ash on dry basis	Not more than 1.0 percent by weight
(vii) Alcohol (90% v/w) soluble extract on dry basis	Not less than 5.1 percent by weight
(viii) Cold water soluble extract on dry basis	Not less than 11.4 percent by weight

#### 2.9.12: Mace (Jaipatri)

1. Mace (Jaipatri) whole means the dried coat or aril of the seed of *Myristica fragrans* Houttuyn. It shall not contain the aril of any other variety of *Myristica nalaabarica* or *Fatua* (Bombay mace) and *Myristica argenea* (Wild mace). It shall have characteristic aromatic flavour free from foreign odour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 0.5 percent by weight
(ii) Moisture	Not more than 10.0 percent by weight
(iii) Total ash on dry basis	Not more than 4.0 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis.	Not more than 0.5 percent by weight
(v) Volatile oil content on dry basis	Not less than 7.5 percent by v/w
(vi) Insect damaged matter	Not more than 1.0 percent by weight
(vii) Nutmeg in mace	Not more than 1.0 percent by weight

2. Mace (Jaipatri) powder means the powder obtained by grinding dried coat or aril of the seed of *Myristica fragrans* Houttuyn. It shall have characteristic aromatic flavour free from foreign odour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter.

The powder shall conform to the following requirements:—

(i) Moisture	Not more than 10.0 percent by weight
(ii) Total ash on dry basis	Not more than 3.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis	Not more than 0.5 percent by weight
(iv) Volatile oil content on dry basis	Not less than 5.0 percent by v/w
(v) Crude fibre	Not more than 10.0 percent by weight
(vi) Non-volatile ether extract	Not less than 20.0 and not more than 30.0 percent by weight.

#### 2.9.13: Mustard (Rai, Sarson)

1. Mustard (Rai, Sarson) whole means the dried, clean mature seeds of one or more of the plants of *Brassica alba* (L). Boiss (Safed rai), *Brassica campestris* L. var. *dichotoma* (Kali Sarson), *Brassica Campestris*, L. Var. yellow Sarson, Syn, *Brassica campestris* L, var *glauca* (Pili Sarson), *Brassica, campestris* L. Var. *toria* (Toria), *Barassicajuncea*, (L). Coss et Czern (Rai, Lotni) and *Brassica nigra* (L); Koch (Benarasi rai). It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from the seeds of *Argemone Maxicana* L, any other harmful substances and added colouring matter.

It shall conform to the following standards:

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Damaged or Shrivelled seeds	Not more than 2.0 percent by weight
(iii) Moisture	Not more than 10.0 percent by weight
(iv) Total ash on dry basis	Not more than 6.5 percent by weight
(v) Ash insoluble in dilute HCl on dry basis	Not more than 1.0 percent by weight
(vi) Non volatile ether extract on dry basis	Not less than 28.0 percent by weight
(vii) Volatile oil content on dry basis	Not less than 0.3 percent by v/w
(viii) Insect damaged matter	Not more than 1.0 percent by weight
(ix) Allyl iso thiocyanate (m/m) on dry basis	
(a) <i>B nigra</i>	Not less than 1.0 percent by weight
(b) <i>B Juncea</i>	Not less than 0.7 percent by weight
(x) P-hydroxybenzyl iso-thiocyanate (m/m) on dry basis in <i>sinapist alba</i>	Not less than 2.3 percent by weight
(xi) <i>Argemone</i> seeds	Absent

2. Mustard (Rai, Sarson) powder means the powder obtained by grinding dried, clean mature seeds of one or more of the plants of *Brassica alba* (L). Boiss (Safed rai), *Brassica campestris* L. var. *dischotoma* (Kali Sarson), *Brassica Campestris*, L. Var. (yellow Sarson), Syn, *Brassica campestris* L, var *glauca* (Pili Sarson), *Brassica, campestris* L. Var. *toria* (Toria), *Barassicajuncea*, (L). Coss et Czern (Rai, Lotni) and *Brassica nigra* (L); Koch (Benarasi rai) without addition of any other matter. It shall have characteristic pungent aromatic flavour free from rancidity and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from *Argemone maxicana*. L and other harmful substances. It shall also be free from added colouring matter.

It shall conform to the following standards:

(i) Moisture	Not more than 7.0 percent by weight
(ii) Total ash on dry basis	Not more than 6.5 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis.	Not more than 1.0 percent by weight
(iv) Non volatile ether extract on dry basis	Not less than 28.0 percent by weight
(v) Volatile oil content on dry basis	Not less than 0.3 percent by v/w
(vi) Crude fibre	Not more than 8.0 percent by weight
(vii) Starch	Not more than 2.5 per cent by weight
(viii) Test for argemone oil	Negative

## 2.9.14: Nutmeg (Jaiphal)

1. Nutmeg (Jaiphal) whole means the dried seed (kernel) of *Myristica fragrans* Houttuyn. It shall be of greyish brown colour but it may be white if it has been subjected to liming. It shall have characteristic aromatic flavour free from foreign odour and mustiness. It shall be free from mould, living and dead insects, insect fragments, and rodent contamination. The product shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Extraneous matter	Absent
(ii) Mace in Nutmeg	Not more than 3.0 percent by weight
(iii) Moisture	Not more than 10.0 percent by weight
(iv) Total ash on dry basis	Not more than 3.0 percent by weight
(v) Water insoluble ash on dry basis	Not more than 1.5 percent by weight
(vi) Ash insoluble in dilute HCl on dry basis.	Not more than 0.5 percent by weight
(vii) Volatile oil content on dry basis	Not less than 6.5 percent by v/w
(viii) Calcium content expressed as Calcium	Not more than 0.35 percent by weight Oxide on dry basis

2. Nutmeg (Jaiphal) powder means the powder obtained by grinding the dried seeds (kernel) or *Myristica fragrans* Houttuyn. It shall have characteristic aromatic flavour free from foreign odour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Moisture	Not more than 8.0 percent by weight
(ii) Total ash on dry basis	Not more than 3.0 percent by weight
(iii) Water insoluble ash on dry basis	Not more than 1.5 percent by weight
(iv) Ash insoluble in dilute HCl on dry basis	Not more than 0.5 percent by weight
(v) Volatile oil content on dry basis	Not less than 6.0 percent by v/w
(vi) Crude Fibre	Not more than 10.0 percent by weight
(vii) Non volatile ether extract on dry basis	Not less than 25.0 percent by weight

## 2.9.15: Pepper Black (Kalimirsch)

1. Pepper Black (Kalimirsch) whole means the dried berries of *Piper nigrum* L., brown to black in colour with a wrinkled pericarp. The berries are generally picked before complete ripening and may be brown, grey or black in colour. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colour, mineral oil and any other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Light Berries	Not more than 5.0 percent by weight
(iii) Pinheads or broken berries	Not more than 4.0 percent by weight
(iv) Bulk Density (gm/litre)	Not less than 490 gm/litre by weight
(v) Moisture	Not more than 13.0 percent by weight
(vi) Total ash on dry basis	Not more than 6.0 percent by weight
(vii) Non volatile ether extract on dry basis	Not less than 6.0 percent by weight
(viii) Volatile oil content on dry basis	Not less than 2.0 percent by v/w
(ix) Peperine Content on dry basis	Not less than 4.0 percent by weight
(x) Insect damaged matter (percent by weight)	Not more than 1.0 percent by weight

Explanation:—

(a) Light Berry means berry that has reached an apparently normal stage of development but the kernel does not exist.

(b) Pinhead means berry of very small size that has not developed.

(c) Broken berry means berry that has been separated in two or more parts.

2. Pepper Black (Kali Mirch) powder means the powder obtained by grinding dried berries of *Piper nigrum* L without addition to any other matter. It shall have characteristic aromatic flavour free from foreign odour, mustiness or rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter, mineral oil and any other harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 12.5 percent by weight
(ii) Total ash on dry basis	Not more than 6.0 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis	Not more than 1.2 percent by weight
(iv) Crude Fibre on dry basis	Not more than 17.5 percent by weight
(v) Non volatile ether extract on dry basis	Not less than 6.0 percent by weight
(vi) Volatile oil content on dry basis	Not less than 1.75 percent by v/w
(vii) Peperine Content on dry basis	Not less than 4.0 percent by weight

3. Light Black Pepper means the dried berries of *Piper nigrum* L. dark brown to dark black in colour. It shall be well dried and free from mould, living and dead insects, insect fragments, rodent contamination.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Other Foreign edible seeds	Not more than 2.0 percent by weight

4. Pinheads shall be wholly derived from the spikes of *piper nigrum* L. They shall be reasonably dry and free from insects. The colour shall be from dark brown to black. It shall be free from added colouring matter.

It shall conform to the following standards:—

Extraneous matter	Not more than 1.0 percent by weight
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#### 2.9.16: Poppy (Khas Khas)

1. Poppy (Khas Khas) whole means the dried mature seeds of *Papaver somniferum* L. It may be white or greyish in colour with characteristic flavour free from off flavour, mustiness and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Moisture	Not more than 11.0 percent by weight
(iii) Non volatile ether extract on dry basis	Not less than 40.0 percent by weight

#### 2.9.17: Saffron (Kesar)

1. Saffron (Kesar) means the dried stigmas or tops of styles of *Crocus Sativus* Linnaeus. It shall be dark red in colour with a slightly bitter and pungent flavour, free from foreign odour and mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Floral waste	Not more than 10.0 percent by weight
(iii) Moisture and volatile matter at 103 ± °C	Not more than 12.0 percent by weight

(iv) Total ash on dry basis	Not more than 8.0 percent by weight
(v) Ash insoluble in dilute HCl on dry basis	Not more than 1.5 percent by weight
(vi) Solubility in cold water on dry weight Basis	Not less than 65.0 percent by weight
(vii) Bitterness expressed as direct reading of absorbance of picrocrocine at about 257 nm on dry basis	Not less than 30.0 percent by weight
(viii) Safranal expressed as direct reading of absorbance of 330 nm on dry basis	Not less than 20.0 percent by weight and not more than 50.0 percent by weight
(ix) Colouring strength expressed as direct reading of absorbance of 440 nm on dry basis	Not less than 80.0 percent by weight
(x) Total Nitrogen on dry basis	Not more than 2.0 percent by weight
(xi) Crude Fibre on dry basis	Not more than 6.0 percent by weight

Explanation:- Floral waste means yellow filaments that are unattached and separated pollens, stamens, parts of ovaries and other parts of flowers of *Crocus sativus* Linnaeus.

2. Saffron (Kesar) powder means the powder obtained by crushing dried stigmas of *Crocus Sativus* Linnaeus. It shall be dark red in colour with a slightly bitter and pungent flavour, free from foreign odour and mustiness.

It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter.

It shall conform to the following standards:—

(i) Moisture and volatile matter	Not more than 10.0 percent by weight
(ii) Total ash on dry basis	Not more than 8.0 percent by weight
(iii) Acid insoluble ash on dry basis	Not more than 1.5 percent by weight
(iv) Solubility in cold water on dry weight basis	Not more than 65.0 percent by weight
(v) Bitterness expressed as direct reading of absorbance of picrocrocine at about 257 nm on Dry basis	Not less than 30.0 percent by weight
(vi) Safranal expressed as direct reading of absorbance of 330 nm on dry basis	Not less than 20.0 percent by weight and not more than 50.0 percent by weight
(vii) Colouring strength expressed as direct reading of absorbance of 440 nm on dry basis	Not less than 80.0 percent by weight
(viii) Total Nitrogen on dry basis	Not more than 3.0 percent by weight
(ix) Crude Fibre on dry basis	Not more than 6.0 percent by weight

#### 2.9.18: Turmeric (Haldi)

1. Turmeric (Haldi) whole means the primary or secondary rhizomes commercially called bulbs or fingers of *Curcuma Longa* L. The rhizomes shall be cured by soaking them in boiling water and then drying them to avoid regeneration. The rhizome be in natural state or machine polished. The product shall have characteristic odour and flavour and shall be free from mustiness or other foreign flavours. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from Lead Chromate added starch and any other extraneous colouring matter.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 1.0 percent by weight
(ii) Defective Rhizomes	Not more than 5.0 percent by weight
(iii) Moisture	Not more than 12.0 percent by weight
(iv) Insect damaged matter	Not more than 1.0 percent by weight
(v) Test for lead chromate	Negative

Explanation :- Defective rhizomes consist of shrivelled fingers and or bulbs internally damaged, hollow or porous rhizomes scorched by boiling and other types of damaged rhizomes.

2. Turmeric (Haldi) powder means the powder obtained by grinding dried rhizomes or bulbous roots of *Curcuma Longa* L. The powder shall have characteristic odour and flavour and shall be free from mustiness or other foreign odour. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from any added colouring matter including Lead Chromate and morphologically extraneous matter including foreign starch.

It shall conform to the following standards:—

(i) Moisture	Not more than 10.0 percent by weight
(ii) Total ash on dry basis	Not more than 9.0 percent by weight
(iii) Ash insoluble in dil. HCl on dry basis	Not more than 1.5 percent by weight
(iv) Colouring power expressed as curcuminoid content on dry basis	Not less than 2.0 percent by weight
(v) Total Starch	Not more than 60.0 percent by weight
(vi) Test for lead chromate	Negative

#### 2.9.19: CURRY POWDER

1. CURRY POWDER means the powder obtained from grinding clean, dried and sound spices belonging to the group of aromatic herbs and seeds such as black pepper, cinnamon, cloves, coriander, cardamom, chillies, cumin seeds, fenugreek, garlic, ginger, mustard, poppy seeds, turmeric, mace, nutmeg, curry leaves, white pepper, saffron and aniseeds. The material may contain added starch and edible common salt. The proportion of spices used in the preparation of curry powder shall be not less than 85.0 per cent by weight. The powder shall be free from dirt, mould growth and insect infestation. It shall be free from any added colouring matter and preservatives other than edible common salt.

The curry powder shall also conform to the following standards:—

Moisture	Not more than 14.0 percent by weight
Volatile oil	Not less than 0.25 percent (v/w) on dry basis
Non-volatile ether extract	Not less than 7.5 per cent by weight on dry basis.
Edible common salt	Not more than 5.0 per cent by weight on dry basis
Ash insoluble in dilute HCl	Not more than 2.0 per cent by weight on dry basis.
Crude Fibre	Not more than 15.0 percent by weight on dry basis
Lead	Not more than 10.0 p.p.m on dry basis

#### 2.9.20: MIXED MASALA

1. MIXED MASALA (WHOLE) means a mixture of clean, dried and sound aromatic herbs and spices. It may also contain dried vegetables and/or fruits, oilseeds, garlic, ginger, poppy seeds and curry leaves. It shall be free from added colouring matter. It shall be free from mould growth and insect infestation. The proportion of extraneous matter shall not exceed five per cent by weight, out of which the proportion of organic matter including foreign edible seeds and inorganic matter shall not exceed three per cent and two per cent respectively.

#### 2.9.21: Aniseed (Saunf)

1. Aniseed (Saunf) whole means the dried and mature fruit of *Pimpinella anisum* L. It shall have characteristic aromatic flavour and shall be free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Shrivelled, immature, damaged / insect damaged / broken fruit	Not more than 5.0 percent by weight
(iii) Moisture	Not more than 12.0 percent by weight



(iv) Total ash on dry basis	Not more than 9.0 percent by weight
(v) Ash insoluble in dilute HCl on dry basis	Not more than 1.5 percent by weight
(vi) Volatile oil content on dry basis	Not less than 1.0 percent by v/w
(vii) Insect damaged matter	Not more than 1.0 percent by weight
(viii) Foreign edible seeds	Not more than 2.0 percent by weight

#### 2.9.22: Ajowan (Bishops seed)

1. Ajowan (Bishops seed) means the dried ripe fruits (seeds) of *Trachyspermum ammi*. L Sprague. It shall have characteristic aromatic flavour and shall be free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any other harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 11.0 percent by weight
(ii) Extraneous matter	Not more than 2.0 percent by weight
(iii) Shrivelled / Damaged / insect damaged / broken fruit	Not more than 2.0 percent by weight
(iv) Volatile oil content on dry basis	Not less than 1.5 percent v/w

#### 2.9.23: Dried Mango Slices

1. Dried Mango Slices--Means the dried wholesome, edible part of raw mango fruit with or without the outer skin. It shall be free from fungus, moulds and insect infestation, rodent contamination, added colouring, flavouring matter. It shall also be free from deleterious substances injurious to health. It shall not contain any preservative except edible common salt which may be added to the extent of 5 per cent by weight on dry basis. It shall have characteristic taste and flavour. The proportion of extraneous substance shall not exceed 4 per cent by weight out of which inorganic matter shall not exceed 2 per cent by weight.

It shall also conform to the following standards, namely :—

Moisture	Not more than 12 per cent by weight.
Damaged slices	Not more than 5 per cent by weight.
Seed Coatings	Not more than 6 per cent by weight.

*Explanation:*

- (i) Seed coatings shall be exterior covering of the seed.
- (ii) Damaged slices mean the slices that are eaten by weevils or other insects and includes slices internally damaged by fungus, moisture or heating.

#### 2.9.24 Dried Mango Powder (Amchur)

1. Dried Mango Powder (Amchur)--Means the powder obtained by grinding clean and dried mango slices having characteristic taste and flavour. It shall be free from musty odour and objectionable flavour, rodent contamination, mould, fungus and insect infestation, extraneous matter and added colouring, flavouring matter. It shall also be free from deleterious substances injurious to health. It shall not contain any preservative except edible common salt which may be added to the extent of 5 per cent by weight on dry basis.

It shall also conform to the following standards, namely:—

(a) Moisture	Not more than 12 per cent by Weight
(b) Total ash (salt free basis)	Not more than 6 per cent by weight
(c) Ash insoluble in dilute HCl	Not more than 1.5 per cent by weight
(d) Crude fibre	Not more than 6 per cent by weight
(e) Acidity ash anhydrous tartaric acid	Not less than 12 per cent and not more than 26 percent by weight

## 2.9.25: Pepper White

1. Pepper White whole means the dried berries of *Piper nigrum* L. from which the outer pericarp is removed with or without preliminary soaking in water and subsequent drying, if necessary. The berries shall be light brown to white in colour with a smooth surface. The berries on grinding shall have characteristic aromatic flavour and shall be free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 0.8 percent by weight
(ii) Broken Berries	Not more than 3.0 percent by weight
(iii) Black berries	Not more than 5.0 percent by weight
(iv) Bulk Density (gm/litre)	Not less than 600 percent by weight
(v) Moisture	Not more than 13.0 percent by weight
(vi) Total ash on dry basis	Not more than 3.5 percent by weight
(vii) Non Volatile ether extract on dry basis	Not less than 6.5 percent by weight
(viii) Volatile oil content on dry basis	Not less than 1.0 percent by v/w
(ix) Peperine Content on dry basis	Not less than 4.0 percent by weight
(x) Insect damaged matter	Not more than 1.0 percent by weight

Explanation:- (a) Broken berries means berry that has been separated in two or more parts.

(b) Black Berry means berry of dark colour generally consisting of black pepper berry whose pericarp has not been fully removed.

2. Pepper White powder means the powder obtained by grinding dried berries of *Piper nigrum* L. from which the outer pericarp is removed and to which no foreign matter is added. It shall have characteristic aromatic flavour and shall be free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The powder shall be free from added colouring matter and any other harmful substances.

It shall conform to the following standards:—

(i) Moisture	Not more than 13.0 percent by weight
(ii) Total ash on dry basis	Not more than 3.5 percent by weight
(iii) Ash insoluble in dilute HCl on dry basis	Not more than 0.3 percent by weight
(iv) Crude fibre on dry basis	Not more than 6.5 percent by weight
(v) Non Volatile ether extract on dry basis	Not less than 6.5 percent by weight
(vi) Volatile oil content on dry basis	Not less than 0.7 percent by v/w
(vii) Peperine Content on dry basis	Not less than 4.0 percent by weight

## 2.9.26: Garlic (Lahsun)

1. Dried (Dehydrated) Garlic (Lahsun) means the product obtained by drying by any suitable method which ensures characteristics of fresh garlic on rehydration the cloves of *Allium sativum* L. without bleaching or precooking. It shall be white to pale cream in colour, free from scorched, toasted and baked particles. It may be whole, sliced, quarters, pieces, flakes, kibbled, granules or powdered. The product on rehydration shall have characteristic pungent of odour of garlic, free from off odour, mustiness fermentation and rancidity. It shall be free from mould, living and dead insects, insect fragments, rodent contamination and fungal infection. The products shall be free from added colouring matter and any other harmful substances. It shall be free from stalks, peels, stems, and extraneous matter. When in powdered form, it shall be free flowing and free from agglomerates.

The products may contain food additives permitted in these regulations including Appendix - A and it shall conform to the following standards, namely:—

(i) Extraneous matter	Not more than 0.5 percent
(ii) Moisture	
a. In case of powdered Garlic	Not more than 5.0 percent by weight
b. other than powdered Garlic	Not more than 8.0 percent by weight
(iii) Total ash on dry basis	Not more than 5.0 percent by dry weight
(iv) Ash insoluble in dil HCl	Not more than 0.5 percent by weight
(v) Cold water soluble extract on dry basis	Not less than 70.0 and not more than 90.0 percent by weight
(vi) Volatile organic sulphur compound on dry basis	Not less than 0.3 percent by weight
(vii) Peroxidase test	Negative

#### 2.9.27: Celery

1. Celery whole means the dried ripe fruits (seeds) of *Apium graveoleans* L. It shall be of uniform colour with characteristic aromatic flavour and shall be free from mustiness. It shall be free from mould, living and dead insects, insect fragments, rodent contamination. The product shall be free from added colouring matter and any other harmful substances.

It shall conform to the following standards:—

(i) Extraneous matter	Not more than 2.0 percent by weight
(ii) Moisture	Not more than 10.0 percent by weight

#### 2.9.28: Dehydrated Onion (Sukha Pyaj)

1. Dehydrated Onion (Sukha Pyaj) - means the product obtained by removal of most moisture by any acceptable method which ensures characteristics of fresh onions on rehydration, from sound bulbs of *Allium cepa*.L. free from mould, disease, outer skin, leaves and roots. The product may be whole or in the form of slices, rings, flakes, pieces, small grits or powder. The product may be white/cream/pink or red in colour, free from stalks, peals, stems and extraneous matters and scorched particles. The finished product shall be free from discolouration or enzymatic reaction. The product on rehydration shall be of characteristic flavour, free from foreign and off flavour, mustiness, fermentation and rancid flavour.

It shall be free from mould, living and dead insects, insect fragments and rodent contamination. The product shall be free from added colouring matter and any other harmful substances. When in powdered form, it shall be free flowing and free from agglomerates.

The products may contain food additives permitted in these regulations including Appendix - A and it shall conform to the following standards, namely:—

Extraneous matter	Not more than 0.5 percent by weight
Moisture:	
(a) In case of powdered onion	Not more than 5.0 percent by weight
(b) Other than powdered onion	Not more than 8.0 percent by weight
Total Ash on dry basis	Not more than 5.0 percent by weight
Ash insoluble in dil HCl	Not more than 0.5 percent by weight
Peroxidase	Negative

#### 2.9.29 Asafoetida

ASAFOETIDA (Hing or Hingra) means the oleogumresin obtained from the rhizome and roots of *Ferula alliaces*, *Ferula rubricaulis* and other species of *Ferula*. It shall not contain any colophony resin, galbanum resin, ammoniacum resin or any other foreign resin. Hing shall conform to the following standards, namely:

- (1) Total ash content shall not exceed 15 per cent by weight.
- (2) Ash insoluble in dilute hydrochloric acid shall not exceed 2.5 per cent by weight.
- (3) The alcoholic extract (with 90 per cent alcohol) shall not be less than 12 per cent as estimated by the U.S.P. 1936 method.
- (4) Starch shall not exceed 1 per cent by weight.

Hingra shall conform to the following standards namely:—

- (1) The total ash content shall not exceed 20 per cent by weight.
- (2) Ash insoluble in dilute hydrochloric acid shall not exceed 8 per cent by weight.
- (3) The alcoholic extract (with 90 per cent alcohol) shall not be less than 50 per cent as estimated by the U.S.P. 1936 method.
- (4) Starch shall not exceed 1 per cent by weight.

Compounded asafoetida or Bandhani Hing is composed of one or more varieties of asafoetida (Irani or Pathani Hing or both) and gum arabic, edible starches or edible cereal flour.

It shall not contain:—

- (a) colophony resin,
- (b) galbanum resin,
- (c) ammoniacum resin,
- (d) any other foreign resin,
- (e) coal tar dyes,
- (f) mineral pigment,
- (g) more than 10 per cent total ash content,
- (h) more than 1.5 per cent ash insoluble in dilute hydrochloric acid,
- (i) less than 5 per cent alcoholic extract, (with 90 per cent of alcohol) as estimated by the U.S.P. 1936 method.

#### 2.9.30 EDIBLE COMMON SALT:

1. EDIBLE COMMON SALT means a crystalline solid, white, pale, pink or light grey in colour free from contamination with clay, grit and other extraneous adulterant and impurities. It shall not contain moisture in excess of six per cent of the weight of the undried sample. The sodium chloride content (as NaCl) and matter soluble in water other than sodium chloride on dry weight basis shall be as specified in columns (2) and (3) of the Table below against the period of validity mentioned in the corresponding entry in column (1) of the said Table. The matter insoluble in water shall not exceed 1.0 per cent by weight on dry weight basis.

Period of Validity	Minimum percentage of sodium chloride content as NaCl (on dry basis)	Maximum Percentage of matter soluble in water other than sodium chloride (on dry basis)
Upto 31-3-1982	94.0	5.0
From 1-4-1982 to 31-3-1983	94.5	4.5
From 1-4-1983 to 31-3-1984	95.0	4.0
From 1-4-1984 to 31-3-1985	95.5	3.5
From 1-4-1985 onwards	96.0	3.0

The product may contain food additives permitted in these regulations including Appendix A. The total matter insoluble in water where an anticaking agent has been added shall not exceed 2.2 percent and sodium chloride content on dry basis shall not be less than 97.0 percent by weight.

2. IODISED SALT means a crystalline salt, white or pale, pink or light grey in colour, free from contamination with clay, grit and other extraneous adulterants and impurities. It shall conform to the following standards, namely:—

Moisture	Not more than 6.0 per cent by weight of the undried sample.
Sodium Chloride (NaCl)	Not less than 96.0 per cent by weight on dry basis.
Matter insoluble in water	Not more than 1.0 per cent by weight on dry basis
Matter soluble in water Other than Sodium Chloride	Not more than 3.0 per cent by weight on dry basis
Iodine content at—	
(a) Manufacture level	Not less than 30 parts per million on dry weight basis
(b) Distribution channel including retail level	Not less than 15 part per million on dry weight basis.

The product may contain food additives permitted in these regulations including Appendix A. The total matter insoluble in water where an anticaking agent has been added shall not exceed 2.2 percent and sodium chloride content on dry basis shall not be less than 97.0 percent by weight.

3. IRON FORTIFIED COMMON SALT means a crystalline solid, white or pale, pink or light grey in colour, free from visible contamination with clay and other extraneous adulterants and impurities. It shall conform to the following standards namely:—

Moisture	Not more than 5.0 per cent by weight
Water insoluble matter weight basis.	Not more than 1.0% on dry
Chloride content as NaCl	Not less than 96.5% by weight on dry weight basis
Matter insoluble in dilute HCl	Not more than 3.0 % by weight on dry weight basis, (to be determined by the method specified in IS 253-1970).
Matter soluble in water other than NaCl	Not more than 2.5% on dry weight weight basis
Iron content (as Fe)	850-1100 parts per million.
Phosphorous as Inorganic (PO <sub>4</sub> )	1500-2000 parts per million
Sulphate as (SO <sub>4</sub> )	Not more than 1.1% by weight.
Magnesium as (Mg) water soluble	Not more than 0.10% by weight
pH value in 5% aqueous Solution	2 to 3.5

The product may contain food additives permitted in these regulations including Appendix A. The total matter insoluble in water where an anticaking agent has been added shall not exceed 2.2 percent on dry weight basis.

4. POTASSIUM IODATE means a crystalline powder, white in colour free from impurities. It shall confirm to the following standards namely:—

1. Potassium Iodate (as KIO <sub>3</sub> ) percent by weight	Not less than	99.0
2. Solubility		Soluble in '30 Parts of water
3. Iodine (as I) per cent by wt. not more than		0.002
4. Sulphate (as SO <sub>4</sub> ) per cent by wt. not more than		0.02
5. Bromate, bromide, chlorate & chloride percent by wt. not more than		0.01
6. Matter insoluble in water percent by wt. not more than		0.10
7. Loss on drying percent by wt. not more than		0.1
8. PH (5 percent solution)		Neutral
9. Heavy metal (as Pb) ppm not more than		10
10. Arsenic (as As) ppm not more than		3
11. Iron (as Fe) ppm not more than		10

5. Iron Fortified Iodized Salt (double fortified salt) means a crushed Crystalline Solid; white or pale or pink or light grey in colour, free from contamination with clay and other extraneous adulterants and impurities. Salt used for manufacture of double fortified salt shall have minimum 99.0 percent sodium chloride content on dry weight basis and moisture not more than 1.5 percent and it shall conform to the following standards namely:—

Moisture	Not more than 1.5 per cent by weight
Water insoluble matter	Not more than 1.0% on dry weight basis.
Chloride content (as NaCl)	Not less than 97.0% on dry weight basis
Matter insoluble in dilute HCl	Not more than 0.30 % on dry weight basis
Matter soluble in water other than NaCl	Not more than 2.5% on dry weight basis
Iron content (as Fe)	850-1100 parts per million.
Iodine content:	
a. Manufacturers level	Not less than 30 ppm
b. Distribution Channel including Retail level	Not less than 15 ppm
Phosphorous as P <sub>2</sub> O <sub>5</sub>	2800-3100 parts per million
Sulphate as (SO <sub>4</sub> )	Not more than 1.1% by weight.
Magnesium as (Mg) water soluble	Not more than 0.10% by weight
pH value in 5% aqueous Solution	3.5 to 5.5

Provided that double fortified salt may contain Sodium Hexametaphosphate (food grade) as stabilizer at concentration of not more than 1.0 percent on dry weight basis.

## 2.10: BEVERAGES, (Other than Dairy and Fruits & Vegetables based)

### 2.10.1: TEA

1. TEA means tea other than Kangra tea obtained by acceptable processes, exclusively from the leaves, buds and tender stems of plant of the *Camellia sinensis* (L) O. Kuntze. It may be in the form of black or oolong tea. The product shall have characteristic flavour free from any off odour, taint and mustiness. It shall be free from living insects, moulds, dead insects, insect fragments and rodent contamination visible to the naked eye (corrected if necessary for abnormal vision). The product shall be free from extraneous matter, added colouring matter and harmful substances:

Provided that the tea may contain "natural flavours" and "natural flavouring substances" which are flavour preparations and single substance respectively, acceptable for human consumption, obtained exclusively by physical processes from materials of plants origin either in their natural state or after processing for human consumption in packaged tea only. Tea containing added flavour shall bear proper label declaration as provided in regulation 2.4.5 (23) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011. Tea used in the manufacture of flavoured tea shall conform to the standards of tea. The flavoured tea manufacturers shall register themselves with the Tea Board before marketing flavoured tea. Pectinase enzyme can be added up to a level of 0.2% during manufacture as processing aid. The product shall conform to the following requirement in which all the figures given are expressed on the basis of the material oven-dried at 103±2° C.

(a) Total Ash (m/m)	Not less than 4.0 percent and not more than 8.0 percent
(b) Water Soluble Ash	Not less than 45.0 percent of total ash
(c) Alkalinity of water soluble ash expressed as KOH (m/m)	Not less than 1.0 percent and not more than 3.0 percent
(d) Acid-insoluble ash (m/m)	Not more than 1.0 percent
(e) Water extract (m/m)	Not less than 32.0 percent
(f) Crude Fibre (m/m)	Not more than 16.5 percent

2. KANGRA TEA means tea derived exclusively from the leaves, buds and tender stems of plants of the *Camellia sinensis* or *Camellia* tea grown in Kangra and Mandi valleys of Himachal Pradesh. It shall conform to the following specifications namely;

(a) Total ash determined on tea dried to constant weight at 100°C	4.5 to 9.0 percent by weight
(b) Total ash soluble in boiling distilled water	Not less than 34 percent of total ash
(c) Ash insoluble in dilute hydrochloric acid	Not more than 1.2 percent by weight on dry basis.
(d) Extract obtained by boiling dried tea (dried to constant weight at 100°C) with 100 parts of distilled water for one hour under reflux	Not less than 23 percent.
(e) Alkalinity of soluble ash	Not less than 1.0 percent and not more than 2.2 percent expressed as K <sub>2</sub> O on dry basis
(f) Crude fibre determined on tea dried to constant weight at 100°C	Not more than 18.5 percent

It shall not contain any added colouring matter It may also contain 0.2 per cent Pectinase enzyme

Provided that tea may contain Natural Flavours and Natural Flavouring Substances which are flavour preparations and single substance respectively, acceptable for human consumption, obtained exclusively by physical process from materials of plant origin either in their raw state or after processing for human consumption:

Provided further that such tea containing added flavour shall bear proper label declaration as provided in regulation 2.4.5 (23) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided also that tea used in the manufacture of flavoured tea shall conform to the standards of tea.

Provided that if tea is sold or offered for sale without any indication as to whether it is Kangra tea or not, the standards or quality of tea prescribed in item regulation 2.10.1 (1) shall apply.

Provided also that Flavoured tea manufacturers shall register themselves with the Tea Board before marketing Flavoured tea;

3. Green Tea means the product derived solely and exclusively, and produced by acceptable processes, notably enzyme, inactivation, rolling or comminution and drying, from the leaves, buds and tender stems of varieties of the species *Camellia sinensis* (L) O. Kuntze, known to be suitable for making tea for consumption as a beverage. The product shall have characteristic flavour free from any off odour, taint and mustiness. It shall be free from living or dead insects, moulds, insect fragments and rodent contamination visible to the naked eye (corrected if necessary for abnormal vision). The product shall be free from extraneous matter, added colouring matter and harmful substances;

Provided that the tea may contain "natural flavours" and "natural flavouring substances" which are flavour preparations and single substance respectively, acceptable for human consumption, obtained exclusively by physical processes from material of plants origin either in their natural state or after processing for human consumption in packaged tea only. Tea containing added flavour shall bear proper label declaration as provided in regulation 2.4.5 (23) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011. Tea used in the manufacture of flavoured tea shall conform to the standards of tea. The flavoured tea manufacturers shall register themselves with the Tea Board before marketing flavoured tea. The product shall conform to the following requirements in which all the figures given are expressed on the basis of the material oven-dried at 103±2° C.

<i>Parameter</i>	<i>Limits</i>
(a) Total Ash (m/m)	Not less than 4.0 percent and not more than 8.0 percent
(b) Water-soluble ash	Not less than 45.0 percent of total ash.
(c) Alkalinity of water - soluble Ash expressed as KOH (m/m)	Not less than 1.0 percent of total ash and not more than 3.0 percent

(d) Acid-insoluble ash (m/m)	Not more than 1.0 percent
(e) Water-extract (m/m)	Not less than 32.0 percent
(f) Crude fibre (m/m)	Not more than 16.5 percent
(g) Total catechins (m/m)	Not less than 9.0 percent and not more than 19.0 percent

### 2.10.2: COFFEE

1. Coffee (green raw or unroasted) means the dried seeds of *Coffea arabica*, *Coffea liberica*, *Coffea excelsa* or *Coffea canephora* (robusta) with their husks (mesocarp and endocarp) removed.

1.1 Roasted coffee means properly cleaned green coffee which has been roasted to a brown colour and has developed its characteristic aroma.

1.2. Ground coffee means the powdered products obtained from 'roasted coffee' only and shall be free from husk.

1.3. Coffee (green raw or unroasted), 'roasted and ground coffee' shall be free from any artificial colouring, flavouring, facing extraneous matter or glazing substance and shall be in sound, dry and fresh condition, free from rancid or obnoxious flavour.

1.4. Roasted coffee and ground coffee shall conform to the following analytical standards:-

Moisture (on dry basis) m/m	Not more than 5.0 percent
Total Ash (on dry basis) m/m	3.0 to 6.0 percent
Acid insoluble ash (on dry basis) m/m	Not more than 0.1 percent
Water soluble ash (on dry basis) m/m	Not less than 65 percent of total ash
Alkainity of soluble ash in milliliters of 0.1 N hydrochloric acid per gram of material (on dry basis) m/m	Not less than 3.5 ml & Not more than 5.0 ml
Aqueous extracts on dry basis m/m	Not less than 26.0 and not more than 35.0 percent
Caffeine (anhydrous)(on dry basis) m/m	Not less than 1.0 percent

2. Soluble Coffee Powder means coffee powder, obtained from freshly roasted and ground pure coffee beans. The product shall be in the form of a free flowing powder or shall be in the agglomerated form (granules) having colour, taste and flavour characteristic of coffee. It shall be free from impurities and shall not contain chicory or any other added substances.

It shall conform to the following standards:

(i) Moisture (on dry basis) m/m	Not more than 4.0 percent
(ii) Total ash (on dry basis) m/m	Not more than 12.0 percent
(iii) Caffeined content (on dry basis) m/m	Not less than 2.8 percent
(iv) Soulubility in boiling water	Dissolves readily in 30 seconds with moderate stirring
(v) Soulubilty in cold water at 16±2°C	Soluble with moderate stirring in 3 minutes

### 2.10.3: CHICORY

1. Chicory means the roasted chicory powder obtained by roasting and grinding of the cleaned and dried roots of *chicorium intybus* Lin with or without the addition of edible fats and oils or sugar, like glucose or sucrose in proportion not exceeding 2.0 percent by weight in aggregate. It shall be free from dirt, extraneous matter, artificial colouring and flavouring agents.

It shall conform to the following standards, namely:—



(i) Total ash (on dry basis) m/m	Not less than 3.5 percent and Not more than 8.0 percent
(ii) Acid insoluble ash (on dry basis) m/m in diluted Hcl	Not more than 2.5 percent
(iii) Aqueous extracts (on dry basis) m/m	Not less than 55.0 percent

#### 2.10.4: COFFEE - CHICORY MIXTURE

1. Coffee - Chicory Mixture means the product prepared by mixing roasted and ground coffee and roasted and ground chicory and shall be in a sound, dry and dust free condition with no rancid or obnoxious flavour. It shall be in the form of a free flowing powder having the colour, taste and flavour characteristic of coffee - chicory powder. It shall be free from any impurities and shall not contain any other added substance. The coffee content in the mixture shall not be less than 51 per cent by mass. The percentage of coffee and chicory used shall be marked on the label as provided in Regulation 2.4.5 (1) (i) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

It shall conform to the following standards, namely:—

(i) Moisture	Not more than 5.0 per cent.
(ii) Total ash on dry basis	Not more than 7.50 per cent.
(iii) Acid insoluble ash on dry basis	Not more than 0.6 per cent.
(iv) Caffeine content on dry basis	Not less than 0.6 per cent.
(v) Aqueous extracts	Not more than 50 per cent.

2. Instant Coffee - Chicory Mixture means the product manufactured from roasted and ground coffee and roasted and ground chicory. It shall be in sound dry and dust free condition with no rancid or obnoxious flavour. It shall be in the form of a free flowing powder or shall be in the agglomerated (granules) form having the colour, taste and flavour characteristics of coffee chicory powder. It shall be free from any impurities and shall not contain any other added substance. The coffee content in the mixture shall not be less than 51 per cent by mass on dry basis. The percentage of coffee and chicory used shall be marked on the label as provided in Regulation 2.4.5 (1) (ii) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

It shall conform to the following standards, namely:—

(i) Moisture	Not more than 4.0 per cent.
(ii) Total ash on dry basis	Not more than 10 per cent.
(iii) Acid insoluble ash on dry basis	Not more than 0.6 per cent.
(iv) Caffeine (anhydrous)	Not less than 1.4 per cent on dry basis.
(v) Solubility in boiling water	Dissolves readily in 30 seconds with moderate stirring
(vi) Solubility in cold water at $16 \pm 20\text{C}$	Soluble with moderate stirring in 3 minutes

#### 2.10.5 Beverages - ALCOHOLIC

1. TODDY: Toddy means the sap from coconut, date, toddy palm tree or any other kind of palm tree which has undergone alcoholic fermentation. It shall be white cloudy in appearance which sediments on storage and shall possess characteristic flavour derived from the sap and fermentation without addition of extraneous alcohol. It shall be free from added colouring matter, dirt, other foreign matter or any other ingredient injurious to health. It shall also be free from chloral hydrate, paraldehyde, sedative, tranquilizer and artificial sweetener.

It shall also conform to the following standards, namely:

Alcoholic content	Not less than 5 percent (v/v)
Total acid as Tartaric acid (expressed in terms of 100 litres of absolute alcohol)	Not less than 400 grams

Volatile acid as Acetic acid expressed in terms of 100 litres of absolute alcohol)	Not more than 100 grams
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#### 2.10.6 BEVERAGES NON-ALCOHOLIC - CARBONATED

1. CARBONATED WATER means water conforming to the standards prescribed for Packaged Drinking Water under Food Safety and Standard Act, 2006 impregnated with carbon dioxide under pressure and may contain any of the following singly or in combination:

1. Sugar, liquid glucose, dextrose monohydrate, invert sugar, fructose, honey, fruits and vegetables extractives and permitted flavouring, colouring matter, preservatives, emulsifying and stabilising agents, citric acid, fumaric acid and sorbitol, tartaric acid, phosphoric acid, lactic acid, ascorbic acid, malic acid, edible gums such as guar, karaya, arabic carobean, furcellaran, tragacanth, gum ghatti, edible gelatin, albumin, licorice and its derivatives, salts of sodium, calcium and magnesium, vitamins, Caffeine not exceeding 145 parts per million, Estergum (Glycerol ester of wood resin) not exceeding 100 parts per million, Gellan Gum at GMP level and quinine salts not exceeding 100 parts per million (expressed as quinine sulphate). It may also contain Saccharin Sodium not exceeding 100 ppm or Acesulfame-K not exceeding 300 ppm or Aspartame (methyl ester) not exceeding 700 ppm. or sucralose not exceeding 300 ppm or Neotame not exceeding 33 ppm.

Provided that the quantity of added sugar shall be declared on the container / bottle and if no sugar is added that also shall be declared on the container/bottle as laid down in labelling Regulations 2.4.5 (24,25,26, 28 and 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011. In case of returnable bottles, which are recycled or refilling the declaration of quantity of added sugar and no sugar added may be given on the crown.

Provided also that the declaration of 'no sugar added' shall not be applicable for 'carbonated water (plain soda)'.

Provided also that the products which contain aspartame, acesulfame or any other artificial sweetener for which special labeling provisions have been provided under regulations 2.4.5 (24,25,26, 28 and 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011, shall not be packed, stored, distributed or sold in returnable containers.

It shall conform to the following requirements, namely—

- (1) Total plate count per ml not more than that.....50..cfu..
- (2) Coliform count in 100 ml .....0.....cfu...
- (3) Yeast and mould count per ml not more than... 2.....cfu

Provided further estergum used in carbonated water shall have the following standards, namely:—

Glycerol esters of wood rosins commonly known as ester-gum is hard yellow to pale amber coloured solid. It is a complex mixture of tri and diglycerol esters of resin acids from wood resin. It is produced by the esterification of pale wood resin with food grade glycerol. It is composed of approximately 90 per cent resin acids and 10 per cent neutrals (non-acidic compounds). The resin acid fraction is a complex mixture of isomeric diterpenoid monocarboxylic acids having the typical molecular formula of C<sub>20</sub> H<sub>30</sub> O<sub>2</sub> chiefly abietic acid. The substance is purified by steam stripping or by counter-current steam distillation.

##### *Identification:*

Solubility-Insoluble in water, soluble in acetone and in Benzene.

Infra Red Spectrum-Obtain the infra-red spectrum of a thin film of the sample deposited on a potassium bromide plate-scan between 600 and 4000 wave numbers. Compare with typical spectrum obtained from pure ester-gum.

Test for absence of tall oil rosin (Sulphur test)-Pass the test as given below:

When sulphur-containing organic compounds are heated in the presence of sodium formate, the sulphur is converted to hydrogen sulfide which can readily be detected by the use of lead acetate paper. A positive test indicates the use of tall oil rosin instead of wood resin.

Apparatus-Test Tube: Use a standard, 10x75 mm, heat-resistant, glass test tube, Burner - Bunsen: A small size burner of the microflame type is preferred.

*Reagents*

Sodium Formate Solution: Dissolve 20g of reagent grade sodium formate, NaOOCH, in 100 ml of distilled water.

Lead Acetate Test Paper: Commercially available from most chemical supply houses.

*Procedure*-Weigh 40-50 mg of sample into a test tube and 1-2 drops of sodium formate solution. Place a strip of lead acetate test paper over the mouth of the test tube. Heat the tube in the burner flame until fumes are formed that contact the test paper. Continue heating for 2-5 minutes. There must be no formation of a black spot of lead sulphide indicating the presence of sulphur containing compounds.

Detection Limit: 50 mg/kg sulphur).

Drop softening point-Between 880 C and 960 C.

Arsenic-Not more than 3ppm.

Lead-Not more than 10ppm.

Heavy metals (as lead)-Not more than 40 ppm.

Acid value- Between 3 and 9.

Hydroxyl number-Between 15 and 45.

## 2.10.7 Mineral water

1. Mineral water means includes all kinds of Mineral Water or Natural mineral water by whatever name it is called and sold.

2. Description and Types of Mineral water.

(i) Natural mineral water is water clearly distinguished from ordinary drinking water because -

(a) it is characterized by its content of certain mineral salts and their relative proportions and the presence of trace elements or of other constituents;

(b) it is obtained directly from natural or drilled sources from underground water bearing strata and not from Public water supply for which all possible precautions should be taken within the protected perimeters to avoid any pollution of, or external influence on, the chemical and physical qualities of natural mineral water.

(c) of the constancy of its composition and the stability of its discharge and its temperature, due account being taken of the cycles of minor natural fluctuations;

(d) it is collected under conditions which guarantee the original microbiological purity and chemical composition of essential components;

(e) it is packaged close to the point of emergence of the source with particular hygienic precautions;

(f) it is not subjected to any treatment other than those permitted by this standard;

(ii) Naturally Carbonated Natural Mineral Water - A naturally carbonated natural mineral water is a natural mineral water which, after possible treatment as given hereunder and re-incorporation of gas from the same source and after packaging taking into consideration usual technical tolerance, has the same content of carbon dioxide spontaneously and visibly given off under normal conditions of temperature and pressure.

(iii) Non-Carbonated Natural Mineral Water- A non-carbonated natural mineral water is a natural mineral water which, by nature and after possible treatment as given hereunder and after packaging taking into consideration usual technical tolerance, does not contain free carbon dioxide in excess of the amount necessary to keep the hydrogen carbonate salts present in the water dissolved.

(iv) Decarbonated Natural Mineral Water - A decarbonated natural mineral is a natural mineral water which, after possible treatment as given hereunder and after packaging, has less carbon dioxide content than that at emergence and does not visibly and spontaneously give off carbon dioxide under normal conditions of temperature and pressure.

(v) Natural Mineral Water Fortified with Carbon Dioxide from the Source - A natural mineral water fortified with carbon dioxide from the source is a natural mineral water which, after possible treatment as given hereunder and after packaging, has more carbon dioxide content than that at emergence.

(vi) Carbonated Natural Mineral Water - A carbonated natural mineral water is a natural mineral water which, after possible treatment as given hereunder and after packaging, has been made effervescent by the addition of carbon dioxide from another origin.

2. Treatment and handling:- Treatment permitted includes separation from unstable constituents, such as compounds containing iron, manganese, sulphur or arsenic, by decantation and/or filtration, if necessary, accelerated by previous aeration.

The treatments provided may only be carried out on condition that the mineral content of the water is not modified in its essential constituents, which give the water its properties.

The transport of natural mineral waters in bulk containers for packaging or for any other process before packaging is prohibited. Natural Mineral water shall be packaged in clean and sterile containers.

The source on the point of emergence shall be protected against risks of pollution.

The installation intended for the production of natural mineral waters shall be such as to exclude any possibility of contamination. For this purpose, and in particular —

(a) the installations for collection, the pipes and the reservoirs shall be made from materials suited to the water and in such a way as to prevent the introduction of foreign substances into the water,

(b) the equipment and its use for production, especially installations for washing and packaging, shall meet hygienic requirements;

(c) if, during production it is found that the water is polluted, the producer shall stop all operations until the cause of pollution is eliminated;

(d) The related packaging and labelling requirements are provided in the Regulation 2.1.2 , 2.2.1 and 2.4.5 of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

3. All Mineral Water shall conform to the following standards, namely:—

<i>Sl.No.</i>	<i>Characteristic</i>	<i>Requirements</i>
(1)	(2)	(3)
(1)	Colour, hazen unit/true colour unit	not more than 2
(2)	Odour	Agreeable
(3)	Taste	Agreeable
(4)	Turbidity	Not more than 2 nephelometric turbidity unit (NTU)
(5)	Total Dissolved Solids	150-700 mg/litre
(6)	pH	6.5-8.5
(7)	Nitrates (as NO <sub>3</sub> )	Not more than 50 mg/litre
(8)	Nitrites (as NO <sub>2</sub> )	Not more than 0.02 mg/litre
(9)	Sulphide (as H <sub>2</sub> S)	Not more than 0.05 mg/litre Not more than 0.05 mg/litre
(10)	Mineral oil	Absent
(11)	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	Absent
(12)	Manganese (as Mn)	Not more than 2.0 mg/litre
(13)	Copper (as Cu)	Not more than 1 mg/litre
(14)	Zinc (as Zn)	Not more than 5 mg/litre
(15)	Fluoride (as F)	Not more than 1 mg/litre
(16)	Barium (as Ba)	Not more than 1.0 mg/litre
(17)	Antimony (as Sb)	Not more than 0.005 mg/litre
(18)	Nickel (as Ni)	Not more than 0.02 mg/litre

(19)	Borate (as B)	Not more than 5 mg/litre
(20)	Surface active agents	Not detectable
(21)	Silver (as Ag)	Not more than 0.01 mg/litre
(22)	Chlorides (as Cl)	Not more than 200 mg/litre
(23)	Sulphate (as SO <sub>4</sub> )	Not more than 200 mg/litre
(24)	Magnesium (as Mg)	Not more than 50 mg/litre
(25)	Calcium (as Ca)	Not more than 100 mg/litre
(26)	Sodium (as Na)	Not more than 150 mg/litre
(27)	Alkalinity (as HCO <sub>3</sub> )	75-400 mg/litre
(28)	Arsenic (as As)	Not more than 0.05 mg/litre
(29)	Cadmium (as Cd)	Not more than 0.003 mg/litre
(30)	Cyanide (as CN)	Absent
(31)	Chromium (as Cr)	Not more than 0.05 mg/litre
(32)	Mercury (as Hg)	Not more than 0.001 mg/litre
(33)	Lead (as Pb)	Not more than 0.01 mg/litre
(34)	Selenium (as Se)	Not more than 0.05 mg/litre
(35)	Poly nuclear aromatic hydrocarbons	Not Detectable
(36)	Polychlorinated biphenyle (PCB)	Not detectable
(37)	Pesticide Residue	below detectable limits
(38)	"Alpha" activity	Not more than 0.1 Bacquerel/litre (Bq)
(39)	"Beta" activity	Not more than 1 Bacquerel/litre (Bq)]
(40)	Yeast and mould counts	Absent
(41)	Salmonella and Shigella	Absent
(42)	E.Coli or thermotolerant Coliforms 1 x 250 ml	Absent
(43)	Total coliform bacteria A x 250 ml	Absent
(44)	Fecal streptococci and Staphylococcus aureus 1 x 250 ml	Absent
(45)	Pseudomonas aeruginosa 1 x 250 ml	Absent
(46)	Sulphite-reducing anaerobes 1 x 50 ml	Absent
(47)	Vibrocholera 1 x 250 ml	Absent
(48)	V Paraheamolyticus 1 x 250 ml	Absent

2.10.8 Packaged drinking water (other than Mineral water):- means water derived from surface water or underground water or sea water which is subjected to hereinunder specified treatments, namely, decantation, filtration, combination of filtration, aerations, filtration with membrane filter depth filter, cartridge filter, activated carbon filtration, de-mineralisation, re-mineralisation, reverse osmosis and packed after disinfecting the water to a level that shall not lead to any harmful contamination in the drinking water by means of chemical agents or physical methods to reduce the number of micro-organisms to a level beyond scientifically accepted level for food safety or its suitability:

Provided that sea water, before being subjected to the above treatments, shall be subjected to desalination and related processes

The related packaging and labelling requirements are provided in regulation 2.1.2 , 2.2.1 and 2.4.5 of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

It shall conform to the following standards namely:

<i>Sl.No.</i>	<i>Characteristic</i>	<i>Requirements</i>
(1)	(2)	(3)
(1)	Colour	not more than 2 Hazen Units/ True Colour Units
(2)	Odour	Agreeable
(3)	Taste	Agreeable
(4)	Turbidity	Not more than 2 nephelometric turbidity unit (NTU)
(5)	Total Dissolved Solids	Not more than 500 mg/litre
(6)	pH	6.5-8.5
(7)	Nitrates (as NO <sub>3</sub> )	Not more than 45 mg/litre
(8)	Nitrites (as NO <sub>2</sub> )	Not more than 0.02 mg/litre
(9)	Sulphide (as H <sub>2</sub> S)	Not more than 0.05 mg/litre
(10)	Mineral Oil	Absent
(11)	Phenolic compounds (as C <sub>6</sub> H <sub>5</sub> OH)	Absent
(12)	Manganese (as Mn)	Not more than 0.1 mg/litre
(13)	Copper (as Cu)	Not more than 0.05 mg/litre
(14)	Zinc (as Zn)	Not more than 5 mg/litre
(15)	Fluoride (as F)	Not more than 1.0 mg/litre
(16)	Barium (as Ba)	Not more than 1.0 mg/litre
(17)	Antimony (as Sb)	Not more than 0.005 mg/litre
(18)	Nickel (as Ni)	Not more than 0.02 mg/litre
(19)	Borate (as B)	Not more than 5 mg/litre
(20)	Anionic surface active agents (as MBAS)	Not more than 0.2 mg/litre
(21)	Silver (as Ag)	Not more than 0.01 mg/litre
(22)	Chlorides (as Cl)	Not more than 200 mg/litre
(23)	Sulphate (as SO <sub>4</sub> )	Not more than 200 mg/litre
(24)	Magnesium (as Mg)	Not more than 30 mg/litre
(25)	Calcium (as Ca)	Not more than 75 mg/litre
(26)	Sodium (as Na)	Not more than 200 mg/litre
(27)	Alkalinity (as HCO <sub>3</sub> )	Not more than 200 mg/litre
(28)	Arsenic (as As)	Not more than 0.05 mg/litre
(29)	Cadmium (as CD)	Not more than 0.01 mg/litre
(30)	Cyanide (as CN)	Absent
(31)	Chromium (as Cr)	Not more than 0.05 mg/litre
(32)	Mercury (as Hg)	Not more than 0.001 mg/litre
(33)	Lead (as Pb)	Not more than 0.01 mg/litre

(1)	(2)	(3)
(34)	Selenium (as Se)	Not more than 0.01 mg/litre
(35)	Iron (as Fe)	Not more than 0.1 mg/litre
(36)	Poly nuclear aromatic Hydrocarbons	Not detectable
(37)	Polychlorinated biphenyle (PCB)	Not detectable
(38)	Aluminium (as Al)	Not more than 0.03 mg/litre
(39)	Residual free chlorine	Not more than 0.2 mg/litre
(40)	(i) Pesticide residues considered individually -	Not more than 0.0001 mg/ litre (The analysis shall be conducted by using Internationally established test methods meeting the residue limits specified herein).
	(ii) Total pesticide residue —	Not more than 0.0005 mg/litre. (The analysis shall be conducted by Using Internationally established test methods meeting the residue limits specified herein).
(41)	"Alpha" activity	Not more than 0.1 picocurie/Litre (Bq)
(42)	"Beta" activity	Not more than 1 Bacquerel/Litre (Bq)
(43)	Yeast and mould counts 1 x 250 ml.	Absent
(44)	Salmonella and Shigella 1 x 250 ml	Absent
(45)	E.Coli or thermotolerant bacteria 1 x 250 ml	Absent
(46)	Coliform bacteria 1 x 250 ml	Absent
(47)	Faecal streptococci and Staphylococcus aureus 1 x 250 ml	Absent
(48)	Pseudomonas aeruginosa 1 x 50 ml	Absent
(49)	Sulphite reducing anaerobes 1x50	Absent
(50)	Vibrio cholera and V. parahaemolyticus 1 x 250 ml	Absent
(51)	Aerobic Microbial Count	The total viable colony count shall not exceed 100 per ml at 200C to 220C in 72 h on agar- agar or on agar - gelatin mixture, and 20 per ml at 370C in 24 h on agar-agar.

## 2.11 OTHER FOOD PRODUCT AND INGREDIENTS

2.11.1 BAKING POWDER: means a combination capable, under conditions of baking, of yielding carbon dioxide and consists of sodium bicarbonate, and acid-reacting material, starch or other neutral material.

The acid-reacting material of baking powder shall be :—

- (a) tartaric acid or its salts, or both
- (b) acid salts of phosphoric acid, or
- (c) acid compounds of aluminium, or
- (d) any combination of the foregoing.





Alkalinity of total ash	Not more than 6.0 per cent as K <sub>2</sub> O (on moisture and fat free basis)
Cocoa butter	
(i) for low fat	Not less than 10.0 percent (on moisture free basis)
(ii) for high fat	Not less than 20.0 percent (on moisture free basis)

2.11.7: CAROB POWDER means the powder obtained from the roasted pods of carob (fibbled carob) of *Ceratonia Siliqua* (L) Taub. (fam. Leguminosae) and shall be free from husk. It shall be free from any artificial colouring, flavouring, extraneous matter or glazing substance and shall be in sound, dry and fresh condition, free from rancid or obnoxious flavours. It shall also conform to the following standards, namely:—

Total ash	Not more than 1.2 per cent by weight.
Acid insoluble matter	Not more than 5 per cent by weight.
Tannin content	Not less than 0.1 per cent and not more than 0.15 percent.

## 2.12: Proprietary Food

### 2.12.1

- 1) Proprietary food means a food that has not been standardized under these regulations
- 2) In addition to the provisions including labelling requirements specified under these regulations, the proprietary foods shall also conform to the following requirements, namely:—
  - (i) the name describing as clearly as possible, the nature or composition of food and/or category of the food under which it falls in these regulations shall be mentioned on the label
  - (ii) the proprietary food product shall comply with all other regulatory provisions specified in these regulations and in Appendices A and B.

## 2.13 IRRADIATION OF FOOD

### 2.13.1: Dose of Irradiation:

- 1) Same as provided in regulation 2.13.1 (2) no food shall be irradiated.
- 2) No article of food permitted for irradiation specified in column 2 of the Table given below shall receive the dose of irradiation in excess of the quantity specified in column 3 of the said Table at the time of irradiation :—

Sl.No.	Name of Foods	Dose of Irradiation (KGY)		
		Minimum	Maximum	Overall average
1.	Onions	0.03	0.09	0.06
2.	Spices	6	14	10
3.	Potatoes	0.06	0.15	0.10
4.	Rice	0.25	1.0	0.62
5.	Semolina (Sooji or Rawa), Wheat, atta and Maida	0.25	1.0	0.62
6.	Mango	0.25	0.75	0.50
7.	Raisins, Figs and Dried Dates	0.25	0.75	0.50
8.	Ginger, Garlic and Shallots (Small Onions)	0.03	0.15	0.09
9.	Meat and Meat Products including Chicken	2.5	4.0	3.25
10.	Fresh Sea foods	1.0	3.0	2.00
11.	Frozen Sea foods	4.0	6.0	5.00
12.	Dried Sea foods	0.25	1.0	0.62
13.	Pulses	0.25	1.0	0.62

3) Routine quantitative dosimetry shall be made during operation and record kept of such measurement as provided under Deptt. of Atomic Energy (Control of Irradiation of Food) Rules 1991.

2.13.2: Requirement for the process of Irradiation:—

1) Approval of facilities - No irradiation facility shall be used for the treatment of food unless such facility

(i) has been approved and licensed under the Atomic Energy (Control of Irradiation of Food) Rules, 1991.

(ii) complies with the conditions for approval, operation, license and process control prescribed under the Atomic Energy (Control of Irradiation of Food) Rules 1991.

(iii) carries out irradiation in accordance with the provisions of the Atomic Energy (Control of Irradiation of Food) Rules, 1991.

2) Foods once irradiated shall not be re-irradiated unless specifically so permitted by the Licensing Authority for the Irradiation process control purposes.

3) No Food/irradiated food shall leave the irradiation facility unless it has been irradiated in accordance with the provisions of Deptt. of Atomic Energy (Control of Irradiation of Food) Rules, 1991 and a certificate of irradiation indicating the dose of irradiation and the purpose of irradiation is provided by the competent authority.

2.13.3: Restrictions on Irradiation of Food:

1) The irradiation shall conform to the dose limit and the radiation source to the specific conditions prescribed for each type or category of Food specified for treatment by irradiation, under the Atomic Energy (Control of Irradiation of Food) Rules, 1991.

2) Food which has been treated by irradiation shall be identified in such a way as to prevent its being subjected to re-irradiation.

3) The irradiation shall be carried out only by personnel having the minimum qualifications and training as prescribed for the purpose under the Atomic Energy (Control of Irradiation of Food) Rules, 1991.

4) Food once irradiated shall not be re-irradiated unless specifically so permitted under these regulations.

2.13.4: Record of Irradiation of Food:

Any treatment of Food by irradiation shall be recorded by an officer authorised by the competent authority as specified under the Deptt. of Atomic Energy (Control of Irradiation of Food) Rules, 1991 as follows :—

(a) Name of the article;

(b) License No.;

(c) Name, address and other details of Licensee;

(d) Purpose of Irradiation;

(e) Source of Irradiation;

(f) Date of Irradiation;

(g) Dose of Irradiation;

(h) Serial Number of Batch;

(i) The nature, quality of Food to be irradiated and the Batch number;

(j) Quantity of Food Irradiated;

(k) Physical appearance of article; before and after irradiation;

(l) Type of packaging used during the irradiation treatment and for packing the irradiated food;

2.13.5: Standards of Irradiated Food :

The irradiated foods shall comply with all the provisions of the Food Safety and Standards Act and the regulations made thereunder specifying standards of such food.

2.13.6: Storage and sale of irradiated food. Save as otherwise provided in these regulations, no person shall irradiate for sale, store for sale, or transport for sale irradiated food.

2.13.7: Restriction on sale of Irradiated Food.- Irradiated food shall be offered for sale only in prepackaged conditions.

Chapter 3:  
SUBSTANCES ADDED TO FOOD

### 3.1: Food Additives

For the purpose of this regulation "Good Manufacturing Practices (GMP) for use of food additives" means the food additives used under the following conditions namely

- (i) the quantity of the additive added to food shall be limited to the lowest possible level necessary to accomplish its desired effect;
- (ii) the quantity of the additive becomes a component of food as a result of its uses in the manufacturing, processing or packaging of a food and which is not intended to accomplish any physical or other technical effect in the food itself; is reduced to the extent reasonably possible; and
- (iii) the additive is prepared and handled in the same way as a food ingredient.

#### 3.1.1:

##### 1) Use of Food Additives in Food Products:

The food products may contain food additives as specified in these Regulations and in Appendix A.

2) Use of food additives in traditional foods. - The traditional foods namely, - Snacks of Savouries (Fried Products), such as Chiwda, Bhujia, Dalmoth, Kadubale, Kharaboondi, Spiced and fried dals, banana chips and similar fried products sold by any name, Sweets, Carbohydrates based and Milk product based, such as Halwa, Mysore Pak, Boondi Ladoo, Jalebi, Khoya Burfi, Peda, Gulab Jamun, Rasogolla and similar milk product based sweets sold by any name, Instant Mixes Powders only of Idli mix, dosa mix, puliyogare mix, pongal mix, gulab jamoon mix, jalebi mix, vada mix, Rice and Pulses based Papads, Ready-to-Serve Beverages (tea/coffee based only) may contain food additives permitted in these regulations and in Table 2 of Appendix A.

3) Use of additives in Bread, Biscuits - The food products such as Bread and Biscuits, may contain food additives permitted in these regulations and in Table 1 of Appendix A.

4) Use of Food Additives in different foods. - The following food products may contain food additives permitted in these regulations and in Table 3 of Appendix A, namely:-

- (i) Dairy based drinks, flavoured and or fermented (e.g. chocolate milk) cocoa, eggnog-UHT Sterilised shelf life more than three months), Synthetic soft drink concentrate, mix/fruit based beverage mix, soups, bullions and taste makers, dessert jelly, custard powder, jelly crystal, flavour emulsions and flavour paste (for use in carbonated and non-carbonated beverages);
- (ii) Sausages and sausage meat containing raw meat, cereals and condiments.
- (iii) Fruit pulp or juice (not dried) for conversions into jam or crystallized glazed or cured fruit or other product;
- (iv) Corn Flour and such like starches;
- (v) Corn syrup;
- (vi) Canned Rasogolla (the cans shall be internally) lacquered with sulphur dioxide resistant lacquer;
- (vii) Gelatine;
- (viii) Beer;
- (ix) Cider;
- (x) Alcoholic Wines;
- (xi) Non-alcoholic wines;
- (xii) Ready-to-Serve beverage;
- (xiii) Brewed ginger beer;
- (xiv) Coffee Extract;
- (xv) Danish tinned caviar;
- (xvi) Dried ginger;

- (xvii) Flour confectionery;
- (xviii) Smoked fish (in wrappers);
- (xix) Dry mixes of Rasgollas;
- (xx) Preserved Chapaties;
- (xxi) Fat Spread;
- (xxii) Prunes;
- (xxiii) Baked food confections and baked foods;
- (xxiv) Flour for baked food;
- (xxv) Packed Paneer;
- (xxvi) Cakes and Pastries; and
- (xxvii) Prepackaged Coconut Water, Canned Rasogulla.

### 3.1.2 Colouring Matter

1) Unauthorized addition of colouring matter prohibited - The addition of colouring matter to any article of food except as specifically permitted by these regulations is prohibited.

2) Natural colouring matters which may be used - Except as otherwise provided in these Regulations and Appendices, the following natural colouring principles whether isolated from natural colours or produced synthetically may be used in or upon any article of food.

- (a) Carotene & Carotenoids including
  - (i) Beta-carotene;
  - (ii) Beta-apo 8'- carotenal;
  - (iii) Methylene ester of Beta-apo 8' carotenoic acid,
  - (iv) Ethylester of Beta-apo 8' carotenoic acid,
  - (v) Canthaxanthin;
- (b) Chlorophyll;
- (c) Riboflavin (Lactoflavin).
- (d) Caramel.
- (e) Annatto
- (f) Saffron
- (g) Curcumin or turmeric

Explanation - In the preparation of the solution of annatto colour in oil, any edible vegetable oil listed in Chapter 2 to these regulations may be used either singly or in combination and the name of the oil or oils used shall be mentioned on the label as provided in Regulation 2.4.2(10) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

3) Addition of inorganic colouring matters and pigments prohibited - Inorganic colouring matters and pigments shall not be added to any article of food unless otherwise provided in these Regulations and Appendices

4) Synthetic food colours which may be used

No Synthetic food colours or a mixture thereof except the following shall be used in food.

<i>Sl No.</i>	<i>Colour</i>	<i>Common name</i>	<i>Colour index (1956)</i>	<i>Chemical class</i>
1.	Red	Ponceau 4R		
		Carmoisine		
		Erythrosine	16255	Azo
			14720	Azo
2.	Yellow		45430	Xanthene
		Tartrazine	19140	Pyrazolone
		Sunset Yellow FCF	15985	Azo
3.	Blue	Indigo Carmine		
		Brilliant Blue FCF	73015	Indigoid
			42090	Triarylmethane
4.	Green	Fast Green FCF	42053	Triarylmethane

5) Use of Lake Colours as colourant in foods

Aluminium Lake of Sunset Yellow FCF may be used in powdered dry beverages mix (powdered soft drink concentrate) upto a maximum limit of 0.04 percent by weight. The maximum limit of colour content in final beverage for consumption shall not exceed 8.3 ppm and that of aluminium content shall not exceed 4.4 ppm of the final beverage for consumption:

Provided that the powdered dry beverages mix (powdered soft drink concentrate) label shall give clear instruction for reconstitution of product for making final beverage

(6) Use of permitted synthetic food colours prohibited - Use of permitted synthetic food colours in or upon any food other than those enumerated below is prohibited :—

- (i) Ice-cream, milk lollies, frozen desserts, flavoured milk, yoghurt, ice-cream mix-powder;
- (ii) Biscuits including biscuit wafer, pastries, cakes, confectionery, thread candies, sweets, savouries (dalmoth, mongia, phululab, sago papad, dal biji only);
- (iii) Peas, strawberries and cherries in hermetically sealed containers, preserved or processed papaya, canned tomato juice, fruit syrup, fruit squash, fruit crushes, fruit cordial, jellies, jam, marmalade, candied crystallised or glazed fruits;
- (iv) Non-alcoholic carbonated and non-carbonated ready to serve synthetic beverages including synthetic syrups, sharbats, fruit bar, fruit beverages, fruit drinks, synthetic soft-drink concentrates;
- (v) Custard powder;
- (vi) Jelly crystal and ice-candy;
- (vii) Flavour emulsion and flavour paste for use in carbonated or non-carbonated beverages only under label declaration as provided in regulation 2.4.5 (35) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

7) Maximum limit of permitted synthetic food colours - The maximum limit of permitted synthetic food colours or mixture thereof which may be added to any food article enumerated in regulation 3.1.2(6) and Appendix A of these Regulations shall not exceed 100 parts per million of the final food or beverage for consumption, except in case of food articles mentioned in clause (c) of regulation 3.1.2 (6) where the maximum limit of permitted synthetic food colours shall not exceed 200 parts per million of the final food or beverage for consumption.

8) Colours to be pure - The colours specified in these Regulations, when used in the preparation of any article of food shall be pure and free from any harmful impurities.

### 3.1.3 Artificial Sweeteners

#### 1) Use and sale of artificial Sweeteners

Artificial sweeteners mentioned in column 2 of the table below, may be used only in the food articles mentioned in column 3 and in quantities not exceeding the limits mentioned in column 4 and as per provision contained in these

regulations and Appendices and shall bear the label declarations as provided in the regulation 2.4.5 (24, 25, 26, 27, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Sl. No.	Name of Artificial Sweetener	Article of food	Maximum limit of Artificial		
1	2	3	4		
I.	Saccharin Sodium	Carbonated Water	100 ppm		
		Soft Drink Concentrate	*100 ppm		
		Supari	4000 ppm		
		Pan Masala	8000 ppm		
		Pan Flavouring Material	8.0 percent		
		Synthetic Syrup for dispenser	450 ppm		
		Sweets (Carbohydrates based and Milk products based) : Halwa, Mysore Pak, Boondi Ladoo, Jalebi, Khoya Burfi, Peda, Gulab Jamun, Rasogolla and similar milk product based sweets sold by any name.	500 ppm		
		Chocolate (White, Milk, Plain, Composite And Filled)	500 ppm		
		Sugar based/ Sugar free confectionery	3000 ppm		
		Chewing gum /Bubble gum	3000 ppm		
		II.	Aspartame (methylester)	Carbonated Water	700 ppm
				Soft Drink concentrate	*700 ppm
				Biscuits, Bread, Cakes and Pasteries	2200 ppm
				Sweets (Carbohydrates based and Milk products based) : Halwa, Mysore Pak, Boondi Ladoo, Jalebi, Khoya Burfi, Peda, Gulab Jamun, Rasogolla and similar milk product based sweets sold by any name	200 ppm
Jam, Jellies, Marmalades	1000 ppm				
Chocolate (White, Milk, Plain, Composite And Filled)	2000 ppm				
Sugar based/ Sugar free confectionery	10000 ppm				
Chewing gum/ Bubble gum	10000 ppm				
Synthetic Syrup for dispenser	3000 ppm				
Custard powder mix	1000 ppm				
Vegetarian jelly crystals	3000 ppm				
Fruit Nectar	600 ppm				
Vegetable Nectar	600 ppm				
Ice Cream, Frozen Dessert and Pudding	1000 ppm				
Flavoured Milk	600 ppm				
Ready to Serve Tea and Coffee based Beverages	600 ppm				
Yoghurt	600 ppm				
Ready to eat Cereals	1000 ppm				
Non-Carbonated water based beverages (non-alcoholic)	600 ppm				
III.	Acesulfame Potassium	Carbonated water	300 ppm		
		Soft Drink concentrate	*300 ppm		
		Biscuits, Bread, Cakes and Pasteries	1000 ppm		
		Sweets (Carbohydrates based and Milk products based) : Halwa, Mysore Pak, Boondi Ladoo, Jalabi, Khoya Burfi, Peda, Gulab Jamun, Rasogolla and similar milk product based sweets sold by any name	500 ppm		

1	2	3	4
		Chocolate (White, Milk, Plain, Composite and Filled)	500 ppm
		Sugar based/ Sugar free confectionery	3500 ppm
		Chewing gum/ Bubble gum	5000 ppm
		Synthetic Syrup for dispenser	1500 ppm
		Ready to serve tea and coffee based Beverages	600 ppm
		Ice lollies / ice candy	800 ppm
		cereal based beverages	500 ppm
		Fruit Nectars	300ppm
		Concentrate for fruit nectars	300 ppm (in final Beverage for consumption)
		Non carbonated water based beverages (non alcoholic)	300 ppm
IV	Sucralose	Carbonated water	300 ppm
		Soft drink concentrate	*300 ppm
		Biscuits, breads, cakes and Pastries	750 ppm
		Sweets (Carbohydrates based and Milk products based) :	
		Halwa, Mysore Pak, Boondi Ladoo, Jalebi, Khoya Burfi, Peda, Gulab Jamun, Rasogolla and similar milk product based sweets sold by any name	750 ppm
		Yoghurts	300 ppm
		Sweetened butter milk	300 ppm
		Ice Cream	400 ppm
		Jam, Jellies and Marmalades	450 ppm
		Frozen fruit	150 ppm
		Chutney	800 ppm
		Confectionery	1500 ppm
		Chewing gum	1250 ppm
		Cookies	750 ppm
		Doughnuts /scones /muffins	800 ppm
		Cake mixes	700 ppm
		Ready to serve tea and coffee beverages	600 ppm
		Ice lollies/Ice candy	800 ppm
		Vegetable juice	250 ppm
		Vegetable nectar	250 ppm
		Concentrates for vegetable juice	1250 ppm
		Concentrate for vegetable nectar	1250 ppm
		Lozenges	1500 ppm
		Non-carbonated water based beverages (non-alcoholic)	300 ppm
		Jelly Crystals	*300 ppm
		Custard powder/ ready to eat custard dessert	*260 ppm
		Chocolate	800 ppm
		Dried ice cream mixes	**400 PPM
		Frozen Dessert	400 PPM
		Milk lollies and milk ices	400 PPM
V	Neotame	Carbonated water	33 ppm
		Soft drink concentrate	*33 ppm

*Explanation I*: Pan flavouring material refers to the flavouring agents permitted for human consumption to be used for pan. It shall be labelled as—

"PAN FLAVOURING MATERIAL"

*\*Explanation II*: Maximum limit of artificial sweetener in the product shall be as in reconstituted beverage or food or in final beverage or food for consumption, as the case may be. The product label shall give clear instruction for reconstitution of products for making final beverage or food for consumption as the case may be.

Provided where the artificial sweetener(s) is/are used in carbonated water / sweetened aerated water / fruit beverage / carbonated fruit beverage / fruit nectar, the requirement of minimum total soluble solids shall not apply

Provided further that Saccharin Sodium or Aspartame (Methyl ester) or Acesulfame Potassium or Sucralose or Neotame may be sold individually as Table Top Sweetener and may contain the following carrier or filler articles with label declaration as provided in Regulation 2.4.5 (24, 25, 26, 27, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011. namely:—

- (i) Dextrose
- (ii) Lactose
- (iii) Maltodextrin
- (iv) Mannitol
- (v) Sucrose
- (vi) Isomalt
- (vii) Citric Acid
- (viii) Calcium silicate
- (ix) Carboxymethyl Cellulose
- (x) Cream of Tartar, IP
- (xi) Cross Carmellose sodium
- (xii) Colloidal silicone dioxide
- (xiii) Glycine
- (xiv) L-leucine
- (xv) Magnesium stearate IP
- (xvi) Purified Talc
- (xvii) Poly vinyl pyrrolidone
- (xviii) Providone
- (xix) Sodium hydrogen carbonate
- (xx) Starch
- (xxi) Tartaric acid
- (xxii) Erythritol .

Provided further also that where sucralose is marketed as Table Top Sweetener, the concentration of sucralose shall not exceed six mg per tablet or hundred mg of granule.

*\*\* Explanation III*: Maximum limit of artificial sweetener in Dried Ice cream Mixes shall be as in reconstituted ice-cream for consumption and the Dried Ice-cream Mixes label shall give clear instruction for reconstitution of products for making final ice cream"

2) No mixture of artificial sweeteners shall be added to any article of food or in the manufacture of table top sweeteners.

Provided that in case of carbonated water, softdrink concentrate and synthetic syrup for dispenser, wherein use of aspartame and acesulfame potassium have been allowed in the alternative, as per Table under Regulation 3.1.3 (1), these artificial sweeteners may be used in combination with one or more alternative if the quantity of each artificial sweetener so used does not exceed the maximum limit specified for that artificial sweetener in column (4) of



the said Table as may be worked out on the basis of proportion in which such artificial sweeteners are combined. The products containing mixture of artificial sweeteners shall bear the label as provided in regulation 2.4.5 (28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided that in carbonated water, the combination of Sucralose and Acesulfame K may be used on ratio not to exceed proportionate levels of the permissible levels allowed for these individual artificial sweeteners in carbonated water under label declaration in Regulation 2.4.5 (29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Provided further that mixture of Aspartame (methylester) and Acesulfame K (in ratio 2:1) may be marketed as table top sweetener and may contain the carrier or filler articles as mentioned in the proviso given under the table in Regulation 3.1.3 (1) and under label declaration as provided in regulation 2.4.5 (24, 25, 26, 28 & 29) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Illustration:- In column (3) of the said Table, in carbonated water, Aspartame (Methyl Ester) or Acesulfame Potassium may be added in the proportion of 700 ppm or 300 ppm respectively. If both artificial sweeteners are used in combination and the proportion of aspartame (Methyl Ester) is 350 ppm, the proportion of Acesulfame Potassium shall not exceed the proportion of 150 ppm;

3) No person shall sell table top sweetener except under label declaration as provided in these Regulations.

Provided that aspartame may be marked as a table top sweetener in tablet or granular form in moisture proof packages and the concentration of aspartame shall not exceed 18 mg per 100 mg of tablet or granules.

4) Use of Polyols in Foods:

No polyols shall be added to any article of food except those mentioned in the table below, in quantities not exceeding the limits shown against them as per provision contained in Appendix A of these Regulations and shall bear the label declaration as per regulation 2.4.5 (46) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011.

Sl. No	Name of Polyols	Article of Food	Maximum limit
1.	Isomalt	(i) Traditional Indian sweets (carbohydrate based and milk based), halwa, mysore paag, boondi laddoo, jalebi, khoya burfi, peda, gulab jamun, rasgulla, and similar milk based sweets sold by any name (ii) Instant sweetmeat mixes (e.g. pongal mix, gulab jamun mix, jalebi mix) (iii) Bakery products (iv) Jams, jellies and Marmalades (v) Edible Ice (vi) Ice cream, frozen dessert, sweetened yoghurt	GMP
2.	Erythritol	Dairy drinks (chocolate and flavoured milk), Carbonated Beverages, Non-Carbonated Water based Beverages (non-alcoholic), Ice Cream, Yoghurt, Puddings, Non Dairy Toppings, Bakery Mixes, Cakes, cookies & pastries, Ready to eat breakfast cereals, soft candies, chocolate and hard candies	GMP
3.	Maltitol / Maltitol syrup	Bakery products, Ice Cream, Frozen Desserts, Jams, Jellies and Marmalades	GMP

5) Use of Polydextrose in Foods

Polydextrose may be used in following food articles as per GMP levels and proper label declaration as provided in regulation 2.4.5 (47).

Ice Cream, Frozen Desserts, Cakes, Biscuits, Yoghurt, Whip topping, Sugar boiled Confectionery, Lozenges, Jam, fruit jelly, Traditional Indian sweets (carbohydrate based and milk based), halwa, mysore pak, boondi laddoo, jalebi, khoya Burfi, peda, gulab jamun, rasgulla, and similar sweets sold by any name.

3.1.4: Preservatives - "Preservative" means a substance which when added to food, is capable of inhibiting, retarding or arresting the process of fermentation, acidification or other decomposition of food.

1) Classification of Preservatives:

Preservatives shall be divided into following classes :

a. Class I preservative shall be :-

- (i) Common salt.
- (ii) Sugar.
- (iii) Dextrose.
- (iv) Glucose Syrup.
- (v) Spices.
- (vi) Vinegar or acetic acid.
- (vii) Honey
- (viii) Edible vegetable oils

Addition of Class I preservatives in any food is not restricted, unless otherwise provided in the regulations including Appendix A.

Provided that the article of food to which a Class I preservative has been added conforms to the specifications laid down in Chapter 2 of these regulations.

b. Class II preservatives shall be :-

- (i) Benzoic acid including salts thereof,
- (ii) Sulphurous acid including salts thereof,
- (iii) Nitrates or Nitrites of Sodium or Potassium in respect of food like ham, pickled meat,
- (iv) Sorbic acid including its sodium, potassium and calcium salts, propionates of calcium or sodium, lactic acid, and acid calcium phosphate.
- (v) Nisin
- (vi) Sodium and calcium propionate.
- (vii) Methyl or propyl Parahydroxy-Benzoate.
- (viii) Propionic acid, including esters or salt thereof,
- (ix) Sodium diacetate, and
- (x) Sodium, potassium and calcium salts of lactic acid.

2) Use of more than one Class II preservative prohibited.

(i) No person shall use in or upon a food more than one Class II preservative:

Provided that where in column (2) of the table given in the regulation 3.1.4 (3) the use of more than one preservative has been allowed in the alternative, those preservatives may, notwithstanding anything contained in regulation 3.1.4 (3) of these Regulations, be used in combination with one or more alternatives, provided the quantity of each preservative so used does not exceed such number of parts out of those specified for that preservative in column (3) of the aforesaid table as may be worked out on the basis of the proportion in which such preservatives are combined.

Illustration.-In the group of foods specified in Item 6 of the table given in regulation 3.1.4 (3) of these Regulations, sulphur dioxide or Benzoic acid can be added in the proportion of 40 parts per million or 200 parts per million respectively. If both preservatives are used in combination and the proportion of sulphur dioxide is 20 parts per million, the proportion of Benzoic acid shall not exceed the proportion of 100 parts per million.

3) Use of Class II preservatives restricted.

The use of Class II preservatives shall be restricted to the following group of foods in concentration not exceeding the proportions given below against each.

<i>Sl. No.</i>	<i>Article of Food</i>	<i>Preservative</i>	<i>Parts per million</i>
(1)	(2)	(3)	(4)
1.	Sausages and sausage meat containing raw meat , cereals and condiments	Sulphur dioxide	450
2.	Fruit, fruit pulp, juice (not dried) for conversion into jam or crystallized glace or cured fruit or other products :	-do-	2,000
	a) Cherries		
	b) Strawberries and raspberries	-do-	2,000
	c) Other fruits	-do-	1,000
3.	Fruit juice concentrate	-do-	1,500
4.	Dried Fruits		
	a) Apricots, peaches, apples, pears and other fruits	-do-	2000
	b) Raisins and Sultanas	-do-	750
5.	Other non alcoholic wines, squashes, crushes, fruit syrups, cordials, fruit juices and barley water to be used after dilution	Sulphur dioxide or Benzoic acid	350  600
6.	Jam , marmalade, preserve canned cherry and fruit jelly	Sulphur dioxide Or Benzoic acid	40  200
7.	Crystallized glace or cured fruit (including candid peel)	Sulphur dioxide	150
8.	Fruit and fruit pulp not otherwise specified in the schedule	Sulphur dioxide	350
9.	Plantation white sugar , cube sugar, dextrose, gur, jaggery, misri	Sulphur dioxide	70
10.	Khandsari (Sulphur) and Bura	-do-	150
11.	Refined sugar	-do-	40
11.	Corn flour and such like starches	-do-	100
12.	Corn syrup	-do-	450
13.	Canned Rasgolla (The cans shall be internally lacquered with sulphur dioxide resistant laquer)	-do-	100
14.	Gelatine	-do-	1000
15.	Beer	Sulphur dioxide	70
16.	Cider	-do-	200
17.	Alcoholic Wines	-do-	450
18.	Ready to serve beverages	Sulphur dioxide or Benzoic Acid	70 120
19.	Brewed ginger beer	Benzoic Acid	120
20.	Coffee extract	-do-	450
21.	Pickles and chutneys made from fruits or vegetables	Benzoic Acid or Sulphur dioxide	250 100
22.	Tomato and other sauces	Benzoic Acid	750

(1)	(2)	(3)	(4)
23.	Pickled meat and bacon	Sodium and/or Potassium Nitrite expressed as Sodium Nitrite	200
24.	Corned Beef	Sodium and/or Potassium Nitrite expressed as Sodium Nitrite	100
25.	Meat Food Products	Sodium and /or Potassium Nitrite expressed as Sodium Nitrite	200
26.	Danish tinned caviar	Benzoic acid	50
27.	Dehydrated vegetables	Sulphur dioxide	2,000
28.	Tomato puree and paste	Benzoic acid	750
29.	Syrups and sharbats	Sulphur dioxide	350
		or	
		Benzoic acid	600
30.	Dried ginger	Sulphur dioxide	2,000
31.	Cheese or processed cheese	Sorbic acid including its sodium, potassium and calcium salt (calculated as sorbic acid )	3,000
		Nisin	12.5
32.	Flour confectionery	Sorbic acid including its sodium, potassium and calcium salt (calculated as sorbic acid )	1,500
33.	Smoked fish (in wrappers)	Sorbic acid	Only wrappers may be impregnated with sorbic acid
34.	Dry mixes of rasgollas	Sulphur dioxide	100
35.	a ) Soups (other than canned )	Sulphur dioxide	150
	b) Dried Soups	Sulphur dioxide	1,500
	c) Dehydrated soup mix when packed in containers other than cans	Sulphur dioxide	1,500
36.	Fruits, vegetables , flakes, powder, figs	Sulphur dioxide	600
37.	Flour for baked food	Sodium diacetates or propionates or methyl propyl hydroxy benzoate	2,500 3,200 500
38.	Preserved chappatis	Sorbic acid	1,500
39.	Paneer or channa	Sorbic acid and its sodium potassium or calcium salts (calculated as sorbic acid)	2,000
		Or	

(1)	(2)	(3)	(4)
		Propionic acid and its sodium or potassium salts (calculated as propionic acid)	2,000
40.	Fat spread	Sorbic acid and its sodium potassium and calcium salts (calculated as sorbic acid) Or Benzoic acid and its sodium or potassium salts (calculated as benzoic acid) or both	1,000 1,000 1,000
41.	Jams, jellies, marmalades, preserve, crystallized glazed or candid fruits including candid peels fruit bars	Sorbic acid and its sodium potassium or calcium salts (calculated as sorbic acid)	500
42.	Fruit juice concentrates with preservatives for conversion in juices, nectars for ready to serve beverages in bottles/ pouches selling through dispensers	-do-	100
43.	Fruit juices (tin , bottles or pouches )	-do-	200
44.	Nectars, ready to serve beverages in bottles/pouches selling through dispensers	-do-	50
45.	Prunes	Potassium Sorbate (calculated as sorbic acid)	1000

#### 4) Use of Class II preservatives in mixed foods

In a mixture of two or more foods or groups of foods mentioned against each item in the Table under regulation 3.1.4 (3) of these Regulations the use of Class II preservative or preservatives shall be restricted to the limit up to which the use of such preservative or preservatives is permitted for the foods or groups of foods contained in such mixture.

Illustration.-In the food specified in item 23 of the table given in regulation 3.1.4 (3) sulphur dioxide can be added to dehydrated vegetables in the proportion of 2,000 parts per million. If this food is mixed with the food specified in item 24 given in the said table, that is to say tomato puree and paste, where benzoic acid is permitted to an extent of 250 p.p.m., then in the mixture containing equal parts of these two foods, the proportion of Sulphur dioxide and Benzoic acid, shall be 1,000 p.p.m. and 125 p.p.m. respectively.

#### 5) Restriction on use of nitrate and nitrite.

No nitrate or nitrite shall be added to any infant food.

#### 6) Use of Natamycin for surface treatment of cheese (hard).

Natamycin may be used for surface treatment of cheese (hard) under label declaration as specified in Regulation 2.4.5 (33) of packaging and labeling regulations., subject to the following conditions, namely :—

(i) Maximum level of application of Natamycin shall not exceed 2mg/dm<sup>3</sup>

(ii) The penetration depth of Natamycin in cheese (hard) shall not exceed 2mm.

(iii) The maximum residue level of Natamycin in the finished cheese (hard) shall not exceed 1mg/dm<sup>3</sup>

#### 3.1.5: Anti-oxidants,

1) "Anti-oxidant' means a substance which when added to food retards or prevents oxidative deterioration of food and does not include sugar, cereal, oils, flours, herbs and spices;

2) Restriction on use of anti-oxidants.

No antioxidant other than lecithin, ascorbic acid and tocopherol shall be added to any food unless otherwise provided in Chapter 2 and Appendix A of these Regulations

Provided that the following anti-oxidants, not exceeding in concentration mentioned against each, may be added to edible oils and fats except ghee and butter, namely :—

1	Ethyl Gallate		
2	Propyl gallate	or mixture thereof	0.01 percent
3	Octyl gallate		
4	Dodecyl gallate		
5	Ascorbyl palmitate		0.02 percent
6	Butylated hydroxyanisole (BHA)		0.02 percent
7	Citric Acid		0.01 percent
8	Tartaric acid		
9	Gallic acid		
10	Resin Guaiace		0.05 percent
11	Tertiary Butyl Hydro Quinone (TBHQ)		0.02 percent

Provided that dry mixes of Rassgollas and vadas may contain Butylated hydroxyanisole (BHA) not exceeding 0.02 per cent calculated on the basis of fat content:

Provided further that anti-oxidants permitted in the 3.1.5 (2) of these Regulations may be used in permitted flavouring agents in concentration not exceeding 0.01 per cent.

Provided further that wherever Butylated hydroxyanisole (BHA) is used in conjunction with the anti-oxidants mentioned at item Nos. 1 to 4 of the preceding proviso, the quantity of the mixture shall not exceed the limit of 0.02 per cent:

Provided further that Ghee and Butter may contain Butylated hydroxyanisole (BHA) in a concentration not exceeding 0.02 per cent.

Provided further that fat spread may contain Butylated hydroxyanisole (BHA) or Tertiary butyl hydro quinone (TBHQ) in a concentration not exceeding 0.02 per cent by weight on fat basis.

Provided further that ready-to-eat dry breakfast cereals may contain Butylated Hydroxanisole (BHA) not exceeding 0.005 percent (50ppm).

Provided further that in ready to drink infant milk substitute, lecithin and ascorbyl palmitate may be used upto maximum limit of 0.5 gm./100ml. and 1mg./100ml. respectively.

Provided further that chewing gum/ bubble gum may contain Butylated hydroxyanisol (BHA) not exceeding 250 ppm.

3) Use of anti-oxidants in Vitamin D Preparation: Vitamin D preparation may contain anti-oxidants prescribed in Regulation 3.1.4 (2) of these Regulations not exceeding 0.08 per cent.

### 3.1.6: Emulsifying and Stabilising agents

1) Emulsifying agents' and "stabilising agents" means substances which when added to food, are capable of facilitating a uniform dispersion of oils and fats in aqueous media or vice versa, and/or stabilising such emulsions and include the agents specified below and in Chapter 2 and Appendix A of these regulations:

Agar, alginic acid, calcium and sodium alginates, carrageen, edible gums (such as guar, karaya, arabic, carobean, furcellaran, tragacanth, gum ghatti), dextrin, sorbitol, pectin, sodium and calcium pectate, sodium citrate, sodium phosphates, sodium tartrate, calcium lactate, lecithin, albumen, gelatin, quillaia, modified starches, hydrolysed proteins, monoglycerides or diglycerides of fatty acids, synthetic lecithin, propyleneglycol stearate, propyleneglycol alginate, methyl ethyl cellulose, methyl cellulose, sodium carboxy-methyl cellulose, stearyl tartaric acid, esters of monoglycerides and diglycerides of fatty acids monostearin sodium sulphoacetate, sorbitan esters of fatty acids or in combination [poly-oxy-ethylene sorbitan, monostearate] sodium stearyl-2-lactylate and calcium stearyl-2-lactylate Polyglycerol Esters of fatty acids and polyglycerol Ester of interesterified Ricinoleic acid and Glycerol esters of wood rosins (Ester Gum)



### 3.1.7: Anticaking Agents

#### 1) Restriction on use of anticaking agents.

No anticaking agents shall be used in any food except where the use of anticaking agents is specifically permitted.

Provided that table salt, onion powder, garlic powder, fruit powder and soup powder may contain the following anticaking agents in quantities not exceeding 2.0 per cent either singly or in combination namely :—

- a. carbonates of calcium and magnesium.
- b. phosphates of calcium and magnesium .
- c. silicates of calcium, magnesium, aluminium or sodium or silicon dioxide;
- d. myristates, palmitates or stearates of aluminium ammonium, calcium, potassium or sodium.

Provided that that calcium potassium or sodium ferrocyanide may be used as crystal modifiers and anti-caking agent in common salt, iodised salt and iron fortified salt in quantity not exceeding 10 mg/kg singly or in combination expressed as ferrocyanide.

### 3.1.8: Antifoaming agents in edible oils and fats.

1) Dimethyl Polysiloxane, food grade, may be used as an antifoaming agent in edible oils and fats for deep fat frying upto a maximum limit of 10 parts per million.

Provided that mono and diglycerides of fatty acids of edible oil may be used as antifoaming agent in jam, jellies and marmalade

Explanation-For the purpose of this Regulation,"Anti foaming agent" means substance which retards deteriorative changes and foaming height during heating.

### 3.1.9: Use of release agents in confectionery.

1) Spreadasil silicon spray (Dimethyl Polysiloxane) if used, as release agent in confectionery, shall not exceed 10 ppm of the finished product.

### 3.1.10: FLAVOURING AGENTS AND RELATED SUBSTANCES

#### 1) Flavouring agents:

Flavouring agents include flavour substances, flavour extracts or flavour preparations, which are capable of imparting flavouring properties, namely taste or odour or both to food. Flavouring agents may be of following three types :—

(i) Natural Flavours and Natural Flavouring substances means flavour preparations and single substance respectively, acceptable for human consumption, obtained exclusively by physical processes from vegetables, for human consumption

(ii) Nature-Identical Flavouring Substances means substances chemically isolated from aromatic raw materials or obtained synthetically; they are chemically identical to substances present in natural products intended for human consumption, either processed or not.

(iii) Artificial Flavouring Substances means those substances which have not been identified in natural products intended for human consumption either processed or not;

#### 2) Use of anti-oxidants, emulsifying and stabilising agents and food preservatives in flavour.

The flavouring agents may contain permitted anti-oxidants, emulsifying and stabilising agents and food preservatives.

3) Use of Anticaking agent in flavours: Synthetic Amorphous Silicon Dioxide may be used in powder flavouring substances to a maximum level of 2 percent

#### 4) Restriction on use of flavouring agents :—

The use of the following flavouring agents are prohibited in any article of food, namely :—

- (i) Coumarin and dihydrocoumarin;



- (ii) Tonkabean (Dipteryl adorat);
  - (iii) ?-asarone and cinamyl anthracilate".
  - (iv) Estragole
  - (v) Ethyl Methyl Ketone
  - (vi) Ethyl-3-Phenylglycidate
  - (vii) Eugenyl methyl ether
  - (viii) Methyl ? naphthyl Ketone
  - (ix) P.Propylanisole
  - (x) Saffrole and Isosaffrole
  - (xi) Thujone and Isothujone ? & ? thujone.
- 5) Solvent in flavour.

Diethylene Glycol and Monoethyl ether shall not be used as solvent in flavours.

### 3.1.11: Use of Flavour Enhancers

#### 1) Monosodium Glutamate -

Monosodium Glutamate may be added to foods as per the provisions contained in Appendix A, subject to Good Manufacturing Practices (GMP) level and under proper label declaration as provided in Regulation 2.4.5 (18) of Food Safety and Standards (Packaging and Labeling) Regulations, 2011. It shall not be added to any food for use by infant below twelve months and in the following foods:—

List of foods where Monosodium Glutamate is not allowed

- (i) Milk and Milk Products including Buttermilk.
- (ii) Fermented and renneted milk products (plain) excluding dairy based drink.
- (iii) Pasteurized cream.
- (iv) Sterilised, UHT, whipping or whipped and reduced fat creams.
- (v) Fats and Oils, Foodgrains, Pulses, Oil seeds and grounded/ powdered foodgrains.
- (vi) Butter and concentrated butter.
- (vii) Fresh fruit.
- (viii) Surface treated fruit.
- (ix) Peeled or cut fruit.
- (x) Fresh vegetables, Surface treated fruit, Peeled or cut fruits.
- (xi) Frozen vegetables.
- (xii) Whole, broken or flaked grains, including rice.
- (xiii) Flours of cereals, pulses and starches.
- (xiv) Pastas and noodles (only dried products).
- (xv) Fresh meat, poultry and game, whole pieces or cuts or comminuted.
- (xvi) Fresh fish and fish products, including mollusks, crustaceans and echinoderms.
- (xvii) Processed fish and fish products, including mollusks, crustaceans and echinoderms.
- (xviii) Fresh eggs, Liquid egg products, Frozen egg products.

(xix) White and semi-white sugar (sucrose and saccharose, fructose, glucose (dextrose), xylose, sugar solutions and syrups, also (partially) inverted sugars, including molasses, treacle and sugar toppings.

(xx) Other sugars and syrups (e.g. brown sugar and maple syrup).

(xxi) Honey

(xxii) Salt

(xxiii) Herbs, spices and condiments, seasoning (including salt substitutes) except seasoning for Noodles and Pastas, meat tenderizers, onion salt, garlic salt, oriental seasoning mix, topping to sprinkle on rice, fermented soyabean paste, Yeast.

(xxiv) Infant food and Infant milk substitute including infant formulae and follow-on formulate.

(xxv) Foods for young children (weaning foods).

(xxvi) Natural Minerals water and Packaged Drinking water.

(xxvii) Concentrates (liquid and solid) for fruit juices.

(xxviii) Canned or bottled (pasteurized) fruit nectar.

(xxix) Concentrates (liquid and solid) for fruit juices.

(xxx) Canned or Bottled (pasteurized) fruit nectar.

(xxxi) Coffee and coffee substitutes, tea, herbal infusions, and other cereal beverages excluding cocoa.

(xxxii) Wines.

(xxxiii) Margarine

(xxxiv) Fat Spread

(xxxv) Fruits and Vegetables products except those where Monosodium Glutamate is permitted under Appendix A of these Regulations.

(xxxvi) Carbonated Water

(xxxvii) Baking Powder

(xxxviii) Arrowroot

(xxxix) Sago

(xl) Plantation Sugar, Jaggery and Bura.

(xli) Ice-Candies.

(xlii) Ice cream and Frozen desserts.

(xliii) Cocoa Butter

(xliv) Saccharine

(xlv) Malted Milk Food and Milk based foods

(xlvi) Bread

(xlvii) Vinegar

(xlviii) Sugar Confectionery, Toffee, Lozenges.

(xlix) Chocolate

(l) Pan Masala

(li) Alcoholic Beverages.

### 3.1.12: SEQUESTERING AND BUFFERING AGENTS (ACIDS, BASES, AND SALTS)

(i) "Sequestering agents" means substances which prevent adverse effect of metals catalysing the oxidative break-down of foods forming chelates; thus inhibiting decolourisation, off taste and rancidity;

(ii) "Buffering agents" means materials used to counter acidic and alkaline changes during storage or processing steps, thus improving the flavour and increasing the stability of foods;

## 1) Restrictions on the use of sequestering and buffering agents.

Unless otherwise provided in these regulations the sequestering and buffering agents specified in column (1) of the Table below, may be used in the groups of food specified in the corresponding entry in column (2) of the said Table, in concentration not exceeding the proportions specified in the corresponding entry in column (3) of the said Table :

TABLE

Sl. No.	Name of sequestering And buffering agents	Groups of food	Maximum level of use (parts per Million) (ppm) (mg./kg.)
(1)	(2)	(3)	(4)
1.	Acetic Acid	(i) Acidulant, buffering and neutralizing agents in beverages soft drinks (ii) in canned baby foods	Limited by G.M.P. 5,000
2.	Adipic acid	Salt substitute and dietary food	250
3.	Calcium Gluconate	In confections	2,500
4.	Calcium Carbonate	As a neutralizer in number of foods	10,000
5.	Calcium oxide	As a neutralizer in specified dairy product	2,500
6.	Citric acid malic acid	Carbonated beverage and as an acidulant in miscellaneous foods	Limited by G.M.P.
7.	DL Lactic Acid (food grade)	As acidulant in miscellaneous foods	Limited by G.M.P.
8.	L(+) Lactic Acid (food grade)	As acidulant in miscellaneous foods	Limited by GMP
9.	Phosphoric acid	Beverages, soft drinks	600
10.	Polyphosphate containing less than 6 Phosphate moieties	(a) Processed cheese, bread (b) Milk Preparations (c) Cake Mixes (d) Protein foods	40,000 4,000 10,000 4,000
11.	L(+) Tartaric acid	Acidulants	600
12.	Calcium Disodium, Ethylene, Diamine tetra acetate	(i) Emulsions containing refined vegetable oils, eggs, vinegar, salt, sugar and spices; (ii) Salad dressing; (iii) Sandwich spread or fat Spread	50
13.	Fumaric acid	As acidulant in Miscellaneous foods	3000ppm

NOTE :- DL Lactic acid and L(+) Tartaric acid shall not be added to any food meant for children below 12 months (The lactic acid shall also conform to the specification laid down by the Indian Standards Institution.)

## 3.1.13: Use of Glycerol Esters of Wood Resins (Ester Gum)—

The maximum limit of glycerol esters of wood resins(ester gum) when used in flavour emulsions, soft drink concentrate and carbonated water shall not exceed 100 ppm. of the final beverage for consumption.

3.1.14: Use of Sucrose Acetate Isobutyrate - The maximum concentration of Sucrose Acetate Isobutyrate when used in non-alcoholic beverages as a clouding agent shall not exceed 300 ppm;

## 3.1.15: Use of Lactulose Syrup in foods:

1) Lactulose syrup may be used in special milk based infant food formulations, which is to be taken under medical advice upto a maximum level of 0.5 per cent of final food subject to label declaration.

2) Lactulose syrup may be used in bakery products upto 0.5 per cent maximum by weight.

## 3.1.16: Use of Dimethyl Dicarbonate:

Dimethyl Dicarbonate may be used in fruit drinks, ready to drink tea beverages, isotonic/sports drinks and flavoured water upto 250 mg/litre subject to a maximum methanol content in final product as 200 mg/litre

## 3.1.17: Other substances to be used in Specified limits

The use of substances specified in column (1) in the food mentioned in column (2) of the Table given below shall not exceed the limit specified in column (3) of the said table, namely :—

TABLE

S.No.	Substances	Food	Maximum level of use (ppm) mg/kg
1	2	3	4
1.	Ammonium Carbonate	Baked food confections	5,000
2.	Ammonium bicarbonate	-do-	GMP
3.	Baking powder	Baked foods	GMP
4.	Ammonium Phosphate Monobasic	Bread	2,500
5.	Ammonium persulphate	-do-	2,500
6.	Calcium Phosphate	-do-	2,500
7.	Calcium Carbonate	-do-	5,000
8.	Potassium Bromate and /or Potassium Iodate	-do-	50
9.	Ammonium Chloride	-do-	500
10.	Fungal Alpha-amylase	-do-	100
11.	Sodium Stearoyl-2 Lactylate or Calcium Stearoyl-2 Lactylate (Singly or in combination)	-do-	5,000
12.	L-Cystein Mono Hydrochloride	-do-	90
13.	Benzoyl Peroxide	Flour for bakery	40
14.	Potassium bromate	-do-	20
15.	Ascorbic acid	-do-	200
16.	Gluconodelta Lactone	Cured meat or meat products	5,000
17.	Chlorine	Flour for bakery	2,000
18.	Ascorbic acid/Iso Ascorbic acid and its salts singly or in combination	Corned beef, Luncheon Meat, Cooked Ham, Chopped Meat, Canned Chicken, Canned Mutton and Goat Meat.	500
19.	Phosphates (Naturally present and added) expressed as P <sub>2</sub> O <sub>5</sub>	Luncheon Meat, Cooked Ham, Chopped Meat.	8000

## 3.1.18: Carry Over Of Food Additives

For the purpose of the standards specified in chapter 2 of these regulation the "Carry Over" principle applies to the presence of additives such as colours, flavouring agents, anti-oxidants anti-caking agents, emulsifying and stabilising agents, and preservatives in food, as a result of the use of raw material or other ingredients in which these additives were used. The presence of contaminants is not covered by this purpose.

The presence of an additive in food through the application of the carry over principle is admissible in general unless otherwise specifically prohibited in the regulations provided the total additive including the carry over through the raw material or other ingredients does not exceed the maximum amount so permitted.

### 3.2: Standards of Additives

3.2.1 Food Colours: Standards of various Food Colours with characteristics are specified in the table below:

#### 1 Tartrazine

Common Name	Tartrazine
Synonyms	FD and C Yellow No.5, E.E.C. Serial No.E 102, L-Gebb 2, C.I. Food Yellow 4.
Colour of the 0.1 Per cent (M/V) solution in distilled water.	Yellow
Colour Index Number (1975)	No 19140
Class	Monoazo.
Chemical Name	Trisodium salt of 5-hydroxy-1-p- sulphopheny1-4-(p-sulphophenylazo) pyrazol-3-carboxylic acid.
Empirical formula	C16 H9 N4 O9 S2 Na3
Molecular Weight	534.37
Solubility	Soluble in water. Sparingly soluble in Ethanol.
General Requirements	The material shall conform to the requirements prescribed in Table below:—

TABLE

<i>Sl. No. Characteristic</i>	<i>Requirement</i>
1. Total dye content, corrected for Sample dried at 105±1°C for 2 hours, per cent by mass, Min.	87
2. Loss on drying at 135°C and Chlorides and Sulphates expressed as sodium salt, percent by mass, Max.	13
3. Water insoluble matter, percent by mass, Max.	0.2
4. Combined ether extracts, percent by mass,max	0.2
5. Subsidiary dyes, percent by mass, Max.	1.0
6. Dye intermediates, percent by mass, Max.	0.5
7. Lead, mg/kg, Max.	10
8. Arsenic, mg/kg, Max.	3
9. Heavy metals, mg/kg, Max.	40

It shall be free from mercury, copper and chromium in any form; aromatic amines, aromatic nitro compounds, aromatic hydrocarbons, and cyanides.;

## 2. SUNSET YELLOW

Common Name	Sunset Yellow
Synonyms	FD and C Yellow No.6, Janus Orange S, C.I. Food Yellow 3, -Orange 2, Janune soil, EEC Serial No.E.10
Colour of the 0.1 Percent (M/V) solution in distilled water	Orange Colour Index Number (1975) No 15985
Class	Monoazo
Chemical Name	Disodium salt of 1.(4-sulphophenylazo) 2-naphthol-6-sulphonic acid
Empirical formula	$C_{20}H_6O_5I_4Na_2$
Molecular Weight	452.37
Solubility	Soluble in water. Sparingly soluble in Ethanol
General Requirements	

The material shall conform to the requirements prescribed in Table below:—

TABLE

## Requirements for Sunset Yellow, FCF

<i>Sl. No.</i>	<i>Requirements for Sunset Yellow, FCF Characteristic</i>	<i>Requirement</i>
1.	Total dye content, corrected for Sample dried at 105±1°C for 2 hours, per cent by mass, Min.	87
2.	Loss on drying at 135°C, percent by mass and Chlorides and Sulphates expressed as sodium salt, percent by mass, Max	13
3.	Water insoluble matter, percent by mass, Max.	0.2
4.	Combined ether extracts, percent by mass. Max.	0.2
5.	Subsidiary dyes, (lower sulphonated dyes including traces of orange II) percent by mass, Max.	3.0
6.	Dye intermediates, percent by mass, Max.	0.5
7.	Lead, mg/kg, Max.	10
8.	Arsenic, mg/kg, Max.	3
9.	Heavy metals, mg/kg, Max.	40

It shall be free from mercury, copper and chromium in any form; aromatic amines, aromatic nitro compounds, aromatic hydrocarbons, and cyanides;

## 3. ERYTHROSINE

Common Name	Erythrosine
Synonyms	FD and C Red No.3 C.I. Food Red 14, LB-Rot-I
Colour of the 0.1 Percent (M/V) solution in distilled water	Red
Colour Index Number (1975)	No 45430
Class	Xanthene
Chemical Name	Disodium or dipotassium salt of 2',4', 5', 7', tetraiodo-fluorescein

Empirical formula	$C_{20}H_6O_5I_4Na_2 \cdot H_2O$
Molecular Weight	879.87 (Disodium Salt)
Solubility	Soluble in water. Sparingly soluble in Ethanol
General Requirements	

The material shall conform to the requirements prescribed in Table below:—

TABLE

<i>Sl. No.</i>	<i>Requirements for Sunset Yellow, FCF Characteristic</i>	<i>Requirement</i>
1.	Total dye content, corrected for Sample dried at 105 $\pm$ 1 $^{\circ}$ C for 2 hours, per cent by mass, Min.	87
2.	Loss on drying at 135 $^{\circ}$ C percent by mass and Chlorides and Sulphates expressed as sodium salt percent by mass, Max.	13
3.	Water insoluble matter, percent by mass, Max.	0.2
4.	Ether extractable matter,(alkaline), percent by mass. Max.	0.2
5.	Inorganic Iodide, percent by mass as sodium iodide, Max.	0.1
6.	Subsidiary colouring matters except flourescein, percent by mass, Max.	4
7.	Flourescein, mg/kg, Max.	20
8.	Organic compounds other than colouring matter	0.2
	(a) Tri-iodoresorcinol, percent by mass, Max.	0.2
	(b) 2-(2,4-dihydroxy-3,5-di-iodobenzoyl) benzoic acid, percent by mass, Max.	0.2
9.	Lead, mg/kg, Max.	10
10.	Arsenic, mg/kg, Max.	3
11.	Zinc, mg/kg, Max.	50
12.	Heavy metals, mg/kg, Max.	40

It shall be free from mercury, copper and chromium in any form; aromatic amines, aromatic nitro compounds, aromatic hydrocarbons, and cyanides.

#### 4. INDIGO CARMINE

Common Name	Indigo carmine
Synonyms	Indigotine, FD and C Blue No.2, CI Food Blue 1, EEC Serial No. E132 L-Blue 2
Colour of the 0.1 Percent (M/V) solution in distilled water	Blue
Colour Index Number (1975)	No 73015
Class	Indigoid
Chemical Name	Disodium Salt of indigotine-5, 5'-Disulphonic acid
Empirical formula	$C_{16}H_8N_2O_8S_2Na_2$
Molecular Weight	466.36
Solubility	Soluble in water. Sparingly soluble in Ethanol

#### General Requirements

The material shall conform to the requirements prescribed in Table below:—

TABLE Requirement for Indigo Carmine

<i>Sl. No. Characteristic</i>	<i>Requirement</i>
1. Total dye content, corrected for Sample dried at 105±1°C for 2 hours, per cent by mass, Min.	85
2. Loss on drying at 135°C, percent by mass and Chlorides and Sulphates expressed as sodium salt, percent by mass, Max.	15
3. Water insoluble matter, percent by mass, Max.	0.2
4. Combined ether extracts, percent by mass, Max.	0.2
5. Subsidiary dyes, percent by mass, Max.	1.0
6. Isatin Sulphonic acid, percent by mass, Max.	0.5
7. Lead, mg/kg, Max.	10
8. Arsenic, mg/kg, Max.	3
9. Heavy metals, mg/kg, Max.	40

It shall be free from mercury, copper and chromium in any form; aromatic amines, aromatic nitro compounds, aromatic hydrocarbons, and cyanides.

#### 5. β-CAROTENE.

β-Carotene is obtained as dark violed hexagonal prisms when crystallised from benzene methanol solution; or as red rhombic, almost quardratic plates, from petroleum ether.

Synonyms	C.I. natural yellow 26
Colour Index Number (1976)	No.75130
Class	Carotenoids
Chemical Name	all trans β-Carotene
Empirical formula	C <sub>40</sub> H <sub>56</sub>
Molecular Weight	536.89
Melting Point	183°C ± 1°C

Solubility.- Soluble in carbon disulphide, benzene and chloroform, moderately soluble in normal hexane, cyclohexane, ether, petroleum ether and oils; practically insoluble in methanol ; insoluble in water.

Spectrophotometric Requirement.-The wavelengths of absorption maxima of all trans β-Carotene in cyclohexane (0.2 mg per 100 ml. approximately) and in-1cm cell shall be 456 mμ to 484 mμ region. There shall be no cis-peak in the 330 mμ to 355 mμ region.

A solution of β-carotene in chloroform on addition of antimony trichloride solution shall give a dark blue colour having maximum absorption at a wavelength of 590 mμ.

Colour Reaction- When 2ml. of concentrated sulphuric acid is added to 2m. of 0.2 per cent solution of β-Carotene in chloroform, the acid layer shall turn blue.

The material shall have a minimum purity of 96.0 per cent.

Maximum limit of metallic impurities shall be:—

Arsenic (as As)	3 ppm
Lead (as Pb)	10 ppm.
Heavy metal	40 ppm.

And shall also meet the following requirements:—

(i) Subsidiary colouring matter, percent by weight, Max	3
(ii) Sulphated ash, percent of total colouring matters, Max	0.1



**6-CHLOROPHYLL:**

Chlorophyll, the green pigment of plants, is extracted and widely used as a colouring matter for various food items.

Synonyms	C.I. Natural Green 3; Lebensmittel Green No.1
Colour Index Number (1956)	No.75810
Colour Index Number (1924)	No. 12499
Color	Green
Class	Phorbin (dihydrophorbin)
Chemical Name	Chlorophyll a - magnesium complex of 1,3,5,8-tetramethyl 4-ethyl-2-vinyl-9-keto-10 carbomethoxy phorbinphytyl-7-propionate. Chlorophyll b magnesium complex 1,5,8 trimethyl-3-formyl-4-ethyl-2- vinyl-9-keto-10 carbomethoxyphorbinphytyl-7-propionate
Empirical formula	Chlorophyll a - $C_{55}H_{72}O_5N_4Mg$ Chlorophyll b- $C_{55}H_{70}O_6N_4Mg$
Molecular Weight	Chlorophyll a- 893.54 Chlorophyll b - 907.52

General- The material shall be an intensely dark green, aqueous, ethanolic, or oily solution of chlorophyll degradation products. It shall be soluble in ethanol, ether, chloroform and benzene. It shall be insoluble in water.

Identification test- A solution of chlorophyll in ethanol shall be blue with deep red fluorescence.

Brown-phase Reaction-When green ether or petroleum ether solution of chlorophyll is treated with a small quantity of a 10 per cent solution of potassium hydroxide in methanol, the colour shall become brown quickly returning to green.

Note.- This test is applicable only when chlorophyll has not been treated with alkalis.

Maximum limits for metallic impurities shall be:—

Arsenic (as As)	3 ppm
Lead (as Pb)	10 ppm
Copper (as Cu)	30 ppm
Zinc (as Zn)	50 ppm

The material shall also conform to the following requirements:—

**CHLOROPHYLL - MAGNESIUM COMPLEX**

<i>Sl. No.</i>	<i>Characteristic</i>	<i>Requirement</i>
1	Total combined phaeophytines and their magnesium complexes, percent by weight, max.	10
2	Residual solvents, mg/kg, Max. Acetone, methanol, ethanol, propan-2-ol, hexane Dichloromethane	50 10

**7 - CAMEL**

Caramel shall be prepared from the food grade carbohydrates or their combinations in the presence of food grade acids, alkalis or salts. It shall be of four types, namely:—

Type-I- Plain Caramel-It shall be prepared by heating carbohydrates with or without acids or alkalis, or their salts. No. ammonium or sulphite compounds are used.

Type-II-Caustic sulphite caramel- It shall be prepared by heating carbohydrates with or without acids or alkalis or their salt in the presence of sulphite compounds; no ammonium compounds are used.

Type - III - Ammonia Process Caramel- It shall be prepared by heating carbohydrates with or without acids or alkalis or their salts in the presence of ammonium compounds; no sulphites are used.

Type-IV- Ammonia Sulphite Caramel- It shall be prepared by heating carbohydrates with or without acids or alkalis or their salts in the presence of both sulphite and ammonium compounds.

#### RAW MATERIALS

1. Carbohydrates - Caramel shall be prepared from the following carbohydrates or their mixtures:—

Sucrose, glucose, fructose, invert sugar, lactose, malt syrup, molasses, starch hydrolysates and fractions there of and/or polymer thereof.

2. Acids and alkalis- The acids used are sulphuric acid, phosphoric acid, acetic acid, or citric acid and the alkalis used are sodium, potassium or calcium hydroxide or mixture thereof.

Where the ammonium compounds are used, they are one or more of the following:—

Ammonium hydroxide

Ammonium Carbonate and Bicarbonate

Ammonium phosphate

Ammonium sulphate

Ammonium sulphite, Bisulphite, Metasulphite

Where the sulphite compounds are used, they are one or more of the following:—

Sulphurous acid, Potassium, Sodium or ammonium Sulphite or Bisulphite.

It shall be a dark brown to black liquid or solid materials having the characteristic odour of burnt sugar and a pleasant, bitter taste. Its solution, when spread in a thin layer on a glass plate should appear homogeneous, transparent and have reddish-brown colour. It shall be miscible with water. It shall be free from any other extraneous colouring matter. It may contain permitted emulsifying and stabilising agents.

It shall conform to the requirements prescribed in Table 1 below. All requirements shall be on solids basis, except metallic impurities.

TABLE 1 - ROUTINE TEST REQUIREMENTS FOR CAMEL

<i>Sl. No.</i>	<i>Characteristic</i>	<i>Type I Plain</i>	<i>Type II Caustic Sulphite</i>	<i>Type III Ammonia Process</i>	<i>Type IV Sulphite Ammonia</i>
1.	Solid content, per cent by mass	62-77	65-72	53-83	40-75
2.	Colour intensity,	0.01-0.12	0.06-0.10	0.08-0.36	0.10-0.60
3.	Ammonical nitrogen per cent by mass, max.	0.01	0.01	0.4	0.5
4.	4-Methylimidazole	-	-	Max.300 mg/kg & Max.200 mg/kg on equivalent colour basis	Max.1000 mg/kg & Max.250 mg/kg on equivalent colour basis
5.	Lead (as Pb), mg/kg,	Max.	5	5	5 5
6.	Arsenic(as AS) mg/kg.	3	3	3	3

Note: Requirement of ammoniacal nitrogen is based on a product colour having a minimum colour intensity prescribed at Sl. No. (2) proportionately higher values of ammoniacal nitrogen apply for products of higher colour intensity.

#### Type Test

The material shall also conform to the requirements prescribed in Table 2 below.

All requirements shall be on solid basis except metallic impurities.

TABLE 2 - TYPE TEST REQUIREMENTS FOR CAMEL

Sl. No.	Characteristic	Type I Plain	Type II Caustic Sulphite	Type III Ammonia Process	Type IV Sulphite Ammonia
1.	Total sulphur Per cent by mass.	Max.03	1.3-2.5	Max.0.3	1.4-10.0
2.	Sulphur dioxide (as SO <sub>2</sub> )	—	Max. 0.2%	—	Max.0.5%
3.	Total nitrogen, Per cent by mass	Max.0.1	Max.0.2	1.3-6.8	0.5-7.5
4.	Heavy metals mg/kg (Max.)	25	25	25	25
5.	2-Acetyl-4- tetra hydroxy butylimidazole (THI)--	—	—	Max.40 mg/kg & Max. 25 mg/kg on an equivalent colour basis	—
6.	Mercury (as Hg) mg/kg, Max.	0.1	0.1	0.1	0.1
7.	Copper (as Cu) mg/kg, Max.	20	20	20	20

The material shall be filled in amber coloured glass or high density polythylene containers or any other well closed suitable containers with as little air space as possible. The containers shall be such as to preclude contamination of the contents with metals or other impurities.

#### 8. ANNATTO

Class	Carotenoids
Code Number	CI(1975)No. 75120', CI(1975) Natural Orange 4 EEC No.E-160 b
Chemical Name	Annatto extract in oil contains several coloured components, the major single one being bixin which may be present in both Cis and Trans forms. Thermal degradation products of bixin may also be present
Solubility	Water soluble annatto contains norbixin, the hydrolysis product of bixin, in the form of sodium or potassium salt, as the major colouring principle. Both cis and trans forms may be present
Chemical Formula	Bixin C <sub>25</sub> H <sub>30</sub> O <sub>4</sub> Norbixin C <sub>24</sub> H <sub>28</sub> O <sub>4</sub>
Molecular Weight	Bixin 394.50 Norbixin 380.48

The material shall be of the following two types:

- (a) Solution in oil for use in butter and other food products, and
- (b) Solution in water for use in cheese and other food products.

#### General

The material shall be derived only from the plant *Bixa orellana* L. and shall not contain any extraneous colouring matter. It shall be processed, packed, stored and distributed under hygienic conditions in licensed premises.

#### (1) Solution of Annatto Colour in Oil for Use in Butter and Other Food Products:—

Annatto extract in oil, as solution or suspension, is prepared by extraction of the outer coating of seeds with vegetable oils. In the preparation of the solution of annatto colour in oil, only the edible vegetable oils shall be used, either singly or in a mixture.

The solution of annatto colour in oils shall be clear and shall remain so on storage in suitable containers at 15°C except for a slight deposit of stearine or shall be in the form of a suspension. The suspension on dilution with hot oil to bring the bixin content to 0.24 per cent shall be a clear solution.

#### Colour

The colour of solution in amyl acetate at a dilution of 1:1000 (m/v) when measured in a Lovibond Tintometer with a 1 cm Cell Spectrophotometrically/Calorimetrically shall be not less than the following:

Yellow units	5.0
Red units	0.4

or be not less than the colour of the following inorganic solution at a liquid depth of one centimeter which may be employed for matching the stated dilution in a plunger type colorimeter using incident light closely approximating the normal day light:

Potassium Bichromate	0.320 g
Cobalt ammonium sulphate (CoSO <sub>4</sub> (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 6H <sub>2</sub> O)	2.02 g
Sulphuric acid, Sp-gr 1.84	2ml
Distilled water	To make solution to one litre

These reagents shall be of the analytical reagent grade. Although the solution retains its tinctorial value for a considerable time, after prolonged storage, its optical clarity shall be examined before use, to ensure that no alteration has taken place.

Note 1 - Diluted solution of annatto colour in amyl acetate is not stable in colour quality, particularly if exposed to light, and measurement shall be carried out on the diluted solution without undue delay.

#### (ii) Solution of Annatto Colour in Water for use in Cheese and Other Food Products:

Water soluble annatto colour is prepared by extraction of the outer coating of the seeds with aqueous alkali (sodium or potassium hydroxide). In the preparation of the solution, potable water shall be used. A little quantity (0.5 to 3 per cent) of alkali may be added.

The solution shall be clear and shall remain so on storage in suitable containers at a temperature of 15°C.

#### Colour

The colour of the solution in 0.1 N sodium hydroxide or potassium hydroxide at a dilution of 1:1000 (m/v) measured in a 1-cm shall be the same as that specified in (i) above.

The material shall conform to the requirements prescribed in Table below:

TABLE  
Requirement for Annatto

<i>Sl. No. Characteristic</i>	<i>Requirement</i>
1. Carotenoid	
(a) Annatto extract in oil, expressed as bixin, per cent by mass, Min.	0.24
(b) Water-soluble annatto, expressed as norbixin, percent by mass, Min.	0.24
2. Arsenic, mg/kg, Max.	3
3. Lead, mg/kg, Max.	10
4. Copper, mg/kg, Max.	30
5. Heavy metal, mg/kg, Max.	40

#### 9-RIBOFLAVIN

Riboflavin is a yellow to orange-yellow crystalline powder. Melting point about 280°C with decomposition.

Solubility-slightly soluble in water, more soluble in saline solution and in a 10 per cent (w/v) solution of urea, sparingly soluble in alcohol, practically insoluble in chloroform and in solvent ether and soluble in dilute solution of alkali hydroxides.

Synonyms	Vitamin B2, Lactoflavin and Lactroflavine
Color	Yellow to orange-yellow
Class	Isoalloxazine
Chemical Name	6.7-dimethyl-9-(d-1-ribityl)- isoalloxazine
Empirical formula	C <sub>17</sub> H <sub>20</sub> N <sub>4</sub> O <sub>6</sub>
Molecular Weight	376.38

Identification.-A solution of 1 mg of Riboflavin in 100 ml water is pale greenish yellow in transmitted light, and has an intense yellowish green fluorescence which disappears on the addition of sodium dithionite and mineral acids or alkalies.

Spectrophotometry-Absorption maxima of aqueous solution shall be at 220 to 225, 266, 371 and 444 mμ.

Specific Rotation-It shall be determined in a 0.5 per cent w/v solution in a mixture of 1.5 ml of 0.1 N alcoholic solution of potassium hydroxide (free from carbonate) and sufficient freshly boiled and cooled water to produce 10 ml. The specific rotation, when calculated with reference to the substance dried to constant weight in the dark at 105°C, shall be, - 122°C.

The material shall have minimum purity of 97.0 per cent.

Maximum limit of metallic impurities shall be:—

Arsenic (as As)	5 ppm
Lead (as Pb)	20 ppm.

#### 10 - PONCEAU 4R

Common Name	Ponceau 4R
Synonyms	CI Food Red 7, L-Rot No.4, Coccine Nouvelle, Cochineal Red A; EEC Serial No.E 124
Colour of the 0.1 Percent (m/v) solution in distilled water	Red
Colour Index Number (1975)	No. 16255
Class	Monoazo
Chemical Name	Trisodium salt of 1-(4-sulpho-1-naphthylazo) naphthol-6, 8-disulphonic acid
Empirical formula	C <sub>20</sub> H <sub>11</sub> N <sub>2</sub> O <sub>10</sub> S <sub>3</sub> Na <sub>2</sub>
Molecular Weight	604.5
Solubility	Soluble in water. Sparingly soluble in Ethanol

The material shall conform to the requirements prescribed in Table below:—

TABLE  
Requirements for Ponceau 4R

Sl. No.	Characteristic	Requirement
1.	Total dye content, corrected for Sample dried at 105±1°C for 2 hours, per cent by mass, Min.	85
2.	Loss on drying at 135°C, percent by mass, Max. and Chlorides and Sulphates expressed as sodium salt, per cent by mass, Max	18
3.	Water insoluble matter, percent by mass, Max.	0.2
4.	Combined ether extracts, percent by mass. Max.	0.2
5.	Subsidiary dyes, percent by mass, Max.	1.0
6.	Dye intermediates, per cent by mass, Max.	0.5
7.	Lead, mg/kg, Max.	10
8.	Arsenic, mg/kg, Max.	3
9.	Heavy metals, mg/kg, Max.	40

It shall be free from mercury, selenium and chromium in any form; aromatic amines, aromatic nitro compounds, aromatic hydrocarbons, and cyanides.;

## 11-CARMOISINE

Common Name	Carmoisine
Synonyms	Azorubine, C.I. Food Red 3, EEC. Serial No.E 122
Colour of the 0.1 Percent (M/V) solution in distilled water	Red
Colour Index Number (1975)	No.14720
Class	Monoazo
Chemical Name	Disodium salt of 2-(4-sulpho-1-naphthylazo)-1-hydroxy-naphthalene-4-sulphonic acid
Empirical formula	$C_{20}H_{12}N_2O_7S_2Na_2$
Molecular Weight	502.44

General Requirements: The material shall be free from mercury, selenium and chromium in any form, aromatic amines, aromatic nitro compounds, aromatic hydrocarbons and cyanides.

Carmoisine shall also comply with requirements prescribed in Table below:—

TABLE

## Requirements for Carmoisine

<i>Sl. No.</i>	<i>Characteristic</i>	<i>Requirement</i>
1.	Total dye content, corrected for Sample dried at $105 \pm 1^\circ\text{C}$ for 2 hours, per cent by mass, Min.	87
2.	Loss on drying at $135^\circ\text{C}$ , percent by mass, Max. and Chlorides and Sulphates expressed as sodium salt, per cent by mass, Max.	13
3.	Water insoluble matter, percent by mass, Max.	0.2
4.	Combined ether extracts, percent by mass, Max.	0.2
5.	Subsidiary dyes, percent by mass, Max.	1.0
6.	Dye intermediates, per cent by mass, Max.	0.5
7.	Lead, mg/kg, Max.	10
8.	Arsenic, mg/kg, Max.	3
9.	Heavy metals, mg/kg, Max.	40

## 12-SYNTHETIC FOOD COLOUR - PREPARATION AND MIXTURES.

## Colour Preparation

A Preparation containing one or more of the permitted synthetic food colours conforming to the prescribed standard alongwith diluents and/or filler materials and meant to be used for imparting colour to food. It may contain permitted preservatives and stabilizers.

The colour preparation would be either in the form of a liquid or powder. Powder preparations shall be reasonably free from lumps and any visible extraneous/foreign matter. Liquid preparations shall be free from sediments.

Only the following diluents or filler materials shall be permitted to be used in colour preparations conforming to the prescribed standards:—

1. Potable water
2. Edible common salt
3. Sugar
4. Dextrose Monohydrate

5. Liquid glucose
6. Sodium sulphate
7. Tartaric acid
8. Glycerine
9. Propylene glycol
10. Acetic acid, dilute
11. Sorbitol
12. Citric acid
13. Sodium carbonate and sodium hydrogen carbonate
14. Lactose
15. Ammonium, sodium and potassium alginates
16. Dextrins
17. Ethyl acetate
18. Starches
19. Diethyl ether
20. Ethanol
21. Glycerol mono, di and tri acetate
22. Edible oils and fats
23. Isopropyl alcohol
24. Bees wax
25. Sodium and ammonium hydroxide
26. Lactic acid
27. Carragenan and gum arabic
28. Gelatin
29. Pectin

#### Colour Mixtures

A mixture of two or more permitted synthetic food colour conforming to prescribed standards without diluents and filler material and meant to be used for imparting colour to food.

It may contain permitted preservatives and stabilizers.

General Requirements-For Colour Preparation & Colour Mixture. The total Synthetic dye content, per cent by mass (m/v) in the colour preparation or in the mixture shall be declared on the label of the container. In powder preparations the declared value shall be on moisture free basis and in case of liquid preparations on as in basis. The total dye content shall be within the tolerance limits given below on the declared value:

- |                        |               |
|------------------------|---------------|
| (a) Liquid preparation | +15 per cent  |
|                        | -5 per cent   |
| (b) Solid preparations | ±7.5 per cent |

The limits of impurities shall be as prescribed in Table below:—

TABLE

#### Limits for Impurities

1. Water insoluble matter, per cent by mass, Max. (on dry basis), Max.	1.0
2. Lead, (as Pb), mg/kg, Max.	10
3. Arsenic, (as As) mg/kg, Max.	3.0
4. Heavy metals, mg/kg, Max.	40

It shall be free from mercury, copper and chromium in any form; aromatic amines, aromatic nitro compounds, aromatic hydrocarbons, polycyclic aromatic hydrocarbon, 2-naphthyl aminobenzidine, amino-4-diphenyl (xenylamine) or their derivatives and cyanides.

The total coal tar dye content percent by mass (m/v) in colour preparation or in mixture shall be declared on the label of the container. In powder preparation, the declared value shall be on moisture free basis and in case of liquid preparation on 'as is basis' and the total dye content shall within  $\pm 15$  percent of the declared value. Colour preparation and colour mixture shall also comply with the following requirements namely: -

<i>Sl. No. Characteristics</i>	<i>Requirements</i>
1 Water insoluble matter, percent by mass	Not more than 1.0
2 Arsenic as (As), parts per million	Not more than 3
3 Lead as (Pb) parts per million	Not more than 10

### 13 BRILLIANT BLUE FCF

Brilliant Blue FCF is hygroscopic in nature and its shade changes with different pH. Suitable precautions should, therefore, be taken in packing the colour.

Colour Brilliant Blue FCF is described below, namely:—

Common Name	Brilliant Blue FCF
Synonyms	C.I. Food Blue FD and C Blue No.1 Blue brilliant FCF
Colour	Blue
Colour Index Number (1975)	No.42900
Class	Triarymethane
Chemical Name	Disodium salt of alpha 4-(N-ethyl-beta sulfobenzylamino)-phenyl] alpha [4-(N-ethyl-3-Sulfonatobenzylimino)cyclohexa-2, 5-dienylidene] toluene-2-sulfonate
Empirical formula	$C_{17}H_{14}N_2Na_2O_9S_2$
Molecular Weight	792.86

General requirements: The material shall conform to the requirement prescribed in Table below, namely:—

TABLE FOR BRILLIANT BLUE FCF

<i>Sl. No. Characteristics</i>	<i>Requirements</i>
(i) Total dye content, corrected for Sample dried at $105 \pm 1^\circ\text{C}$ for 2 hours, percent by Mass, Minimum	85
(ii) Loss on drying at $135^\circ\text{C}$ , and Chlorides and Sulphates expressed as sodium salt, per cent by Mass, Maximum	15
(iii) Water insoluble matter, percent by Mass, Maximum	0.2
(iv) Combined ether extracts, percent by Mass, Maximum	0.2
(v) Subsidiary dyes, percent by Mass, Maximum	3
(vi) Dye intermediates, percent by Mass, Max.	
(a) O, sulfo-benzaldehyde, Maximum	1.5
(b) N-N' ethyl-benzyl-aniline-3-sulphonic acid, Maximum	0.3
(c) Leuco base, percent by Mass, Maximum	5
(vii) Heavy metals, (as Pb), mg/kg, Maximum	40
Lead, mg/kg, Maximum	10
Arsenic, mg/kg, Maximum	3
Chromium, mg/kg, Maximum	50



Note:- The material shall be free from aromatic amines, aromatic nitro compounds, aromatic hydrocarbons and cyanides.

14. Fast Green FCF:

Fast Green FCF is hygroscopic in nature and its shade changes with different pH. Suitable precautions should, therefore, be taken in packing the colour.

Fast Green FCF is described below, namely:—

Common Name	Fast Green FCF
Synonyms	C.I. Food Green 3, FD and C
Green No.3, Vert Solide FCF	
Class	Triary methane
Colour	Green
Colour Index	(1975) No.42053
Chemical Name	Disodium salt of 4-[4-(N-ethyl-p-sulfobenzylamino)-phenyl-(4-hydroxy-2-sulphonumphenyl)-methylene]-(N-ethyl-N-p-sulphobenzyl 2, 5-cyclohexadienimine).
Empirical Formula	$C_{37}H_{34}O_{10}N_2S_2Na_2$
Molecular Weight	808.86

Requirements The material shall conform to the requirement prescribed in Table below, namely:—

TABLE FOR FAST GREEN FCF

<i>Sl. No.</i>	<i>Characteristic</i>	<i>Requirement</i>
(i)	Total dye content, corrected for Sample dried at $105 \pm 1^\circ\text{C}$ for 2 hours, percent by mass, Minimum	85
(ii)	Loss on drying at $135^\circ\text{C}$ , and, percent by Mass, Maximum and chlorides and Sulphates expressed as sodium salt, percent by mass, Maximum	13
(iii)	Water insoluble matter, percent by Mass, Maximum	0.2
(iv)	Combined ether extracts, percent by Mass. Max	0.2
(v)	Subsidiary dyes, percent by mass, Maximum	1.0
(vi)	Organic compound other than colouring matter uncombined intermediates and products of side reactions	
	(a) Sum of 2-, 3-, 4-formyl benzene sulphonic acid, sodium salts, percent by Mass, Maximum	0.5
	(b) Sum of 3- and 4-[ethyl (4-sulfophenyl) amino methyl benzene sulphonic acid, disodium salts, Percent by Mass, Maximum	0.3
	(c) 2-formyl-5-hydroxybenzene sulphonic acid sodium salt, percent by Mass, Maximum	0.5
	(d) Leuco base, percent by Mass, Maximum	5.0
	(e) Unsulphonated primary aromatic amines (calculated as aniline), percent by Mass, Maximum	0.01
(vii)	Lead, mg/kg, Maximum	10
(viii)	Arsenic, mg/kg, Maximum	3
(ix)	Chromium, mg/kg, Maximum	50
(x)	Mercury, mg/kg, Maximum	Absent
(xi)	Heavy metals, mg/kg, Maximum	40

Note:- The material shall be free from aromatic nitro compounds, aromatic hydrocarbons and cyanides

15. Aluminium Lake of Sunset Yellow FCF Food Yellow No.5 Aluminium Lake is a fine orange yellow water soluble, odourless powder. It is prepared by precipitating Sunset Yellow FCF (conforming to specification under 10.02 of Appendix C of these Regulations) on to a substratum of Alumina.

Chemical Name - Sunset Yellow FCF Aluminium Lake -6, hydroxy-5 (4-sulfophenylazo)-2 Naphthalenesulphonic acid, Aluminium Lake.

Synonym - CI Pigment Yellow, 104, FD and C Yellow No. 6, Aluminium Lake (USA), Food Yellow No. 5 Aluminium Lake (Japan).

(1) Sunset yellow dye used in preparation of lake colour shall conform to specifications laid down under table 2 of these Regulations.

(2) Pure dye content of Aluminium Lake weight by weight	not less than 17 percent
(3) Substratum of Aluminium oxide	not more than 83 percent.
(4) Aluminium content in the lake weight by weight	not more than 44 percent
(5) Sodium chlorides and sulphates (as sodium salts)	not more than 2.0 percent
(6) Inorganic matter (HCl insoluble)	not more than 0.5 percent
(7) Lead (as Pb)	not more than 10 ppm
(8) Arsenic (as As)	not more than 3 ppm

Alumina used in colour shall conform to following, namely:—

(a) Identity: Alumina (dried as aluminium hydroxide) is a white, odourless, tasteless, amorphous powder consisting essentially of Aluminium hydroxide ( $Al_2O_3 \times H_2O$ ).

(b) Specifications: Alumina (dried aluminium hydroxide) shall conform to the following specifications, namely:-

(i) Acidity or alkalinity	Agitate 1 gm with 25ml of water and filter. The filtrate shall be neutral to litmus paper
(ii) Lead (as Pb)	not more than 10 parts per million
(iii) Arsenic (as As)	not more than 1 parts per million
(iv) Mercury (as Hg)	not more than 1 parts per million
(v) Aluminium oxide ( $Al_2O_3$ )	not less than 50 percent

Solubility: Lakes are insoluble in most solvents. They are also insoluble in water in pH range from 3.5-9.0 but outside this range and lake substrate tends to dissolve releasing the captive dye.