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SPECIFICATION FOR PROCESSED CEREAL - BASED FOODS FOR INFANTS AND YOUNG CHILDREN

(Second Revision)

SRI LANKA STANDARDS INSTITUTION

Sri Lanka Standard

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SLS 1036: 2020
(Incorporated Corrigendum No.1)

Gr.13

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Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This Standard does not purport to include all the necessary provisions of a contract

Sri Lanka Standard
SPECIFICATION FOR
PROCESSED CEREAL - BASED FOODS FOR INFANTS AND YOUNG CHILDREN
(Second Revision)

FOREWORD

This Standard was approved by the Sectoral Committee on Food Products and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2020-05-27.

Processed cereal-based foods for infants and young children are used as part of a diversified diet and do not constitute the sole source of nourishment of infants and young children.

This revised Standard covers food stuffs for particular nutritional use fulfilling the particular requirements of infants and young children in good health in the community and are intended for use by infants while they are being weaned and by young children as a supplement to their diet and/ or for their progressive adaptation to ordinary food.

This Standard was first published in 1995 and revised in 2011. This second revision has been undertaken to update it in the light of further experience and technological developments made in the industry and to align with international practices.

This Standard is subject to the restrictions imposed under the Sri Lanka Food Act No.26 of 1980 and the regulations framed thereunder.

For the purpose of deciding whether a particular requirement of this Standard is complied with, the final value, observed or calculated, expressing the result of a test or an analysis shall be rounded off in accordance with **SLS 102**. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this Standard.

In the preparation of this standard, the assistance derived from the following publications is gratefully acknowledged:

Codex Stan 074 - 2006 Codex standard for processed cereal-based foods for infants and young children
2006/125/EC European Directive on processed cereal based foods for infants and young children

1 SCOPE

1.1 This Standard prescribes the requirements, methods of sampling and test for processed cereal-based foods intended for feeding infants as a complementary food from the age of six months onwards, taking into account infants, individual nutritional requirements, and for feeding young children as part of a progressively diversified diet.

1.2 This Standard does not cover infant formula **(SLS 651),** foods for special medical purposes intended for infants, follow up formulas **(SLS 1381),** canned weaning foods **(SLS 1039)** and canned baby foods.

1.3 The products covered by this Standard are not breast-milk substitutes and shall not be presented as such.

2 REFERENCES

EN 12821 Foodstuffs. Determination of vitamin D by high performance liquid chromatography. Measurement of cholecalciferol (D_3) or ergocalciferol (D_2)

EN 12822 Foodstuffs. Determination of vitamin E by high performance liquid chromatography. Measurement of α-, β-, γ- and δ-tocopherol

EN 14152 Foodstuffs. Determination of vitamin B2 by high performance liquid chromatography

EN 15652 Foodstuffs - determination of niacin by HPLC

EN 14131 foodstuffs - determination of folate by microbiological assay

ISO 20647 Infant formula and adult nutritionals -- Determination of total iodine Inductively coupled plasma mass spectrometry (ICP-MS)

SLS 80 Food grade salt (Powder foam)

SLS 102 Rules for rounding off numerical values

SLS 143 Code of practice for general principles of food hygiene

SLS 428 Random sampling methods

SLS 516 Microbiological test methods
Part 1: General guidance for enumeration of microorganisms – colony cou technique
Part 2: Enumeration of yeasts and moulds
Part 3: Detection and enumeration of coliforms, faecal coliforms and *Escherich coli*
Part 5: General guidance for detection of *Salmonella*

SLS 910 Maximum residue limits for pesticides in food

SLS 962 Part 1 Determination of aflatoxin B_1, and the total content of aflatoxins B_1, B_2, G_1 and G_2 in cereals, nuts, and derived products- high performance liquid chromatography method.

SLS 1549 Methods of test for cereals and derived products
Part 1: Pulses- Determination of moisture content – air-oven method
Part 2: Determination of the nitrogen content and calculation of the crude prote content – Kjeldhahl method
Part 3: Cereals, cereal based products and animal feeding stuffs – Determination of crude fat and total fat content by the randall extraction method

Official Methods of Analysis of the Association of Official Analytical Chemists (AOAC), 20th Edition, 2016

3 DEFINITIONS

For the purpose of this Standard, the following definitions shall apply:

3.1 infants: Children under the age of 12 months (from the age of 6 months and not more than 12 months of age)

3.2 processed cereal-based foods: Products prepared primarily from one or more milled cereals, which shall not be less than 25 per cent of the final mixture on a dry weight ~~for weight~~ basis and intended to fulfill the particular requirements of infants in good health while they are being weaned and of young children in good health as a supplement to their diet and/ or for their progressive adaption to ordinary food

3.3 young children: Children from the age of more than 12 months up to the age of three years (36 months)

4 TYPES

Processed cereal-based foods shall be of following types:

4.1 Pre-cooked products consisting of cereals which are/ or have to be reconstituted (prepared for consumption) with milk or other appropriate nutritious liquids.

4.2 Pre-cooked cereals with an added protein food which are/ or have to be reconstituted (prepared for consumption) with water or other appropriate protein-free liquids.

4.3 Cereal products which are to be consumed after cooking with milk or other appropriate nutritious liquids.

4.4 Cereal products with an added protein food which are to be consumed after cooking in boiling water or other appropriate protein free liquids.

4.5 Rusks and biscuits which are to be consumed either directly or, after pulverization, with the addition of water, milk or other suitable liquids.

4.6 Pasta which are to be used after cooking in boiling water or other appropriate liquids.

NOTE:
Pasta is recommended only for young children.

5 INGREDIENTS

Processed cereal - based foods for infant and young children shall be manufactured from ingredients which the suitability for particular nutritional use by infants and young children has been established by generally accepted scientific data.

5.1 Essential ingredients

5.1.1 The product shall be prepared primarily from one or more milled cereal products, such as rice, millet, barley, oats, rye, maize, sorghum, wheat or buckwheat.

5.2 Optional ingredients

5.2.1 *Legumes (pulses)*

5.2.2 *Coconut,*

5.2.3 *Starchy roots (such as arrow root, yam or cassava) or starchy stems or*

5.2.4 *Edible oil seeds (such as groundnut, sesame and soya)*

5.2.5 *sucrose, fructose, glucose, glucose syrup,*

5.2.6 *Honey, treacle or maple syrup*

NOTE:
Products containing honey, treacle or maple syrup shall be processed in such a way as to destroy spores of Clostridium botulinum, if present.

5.2.7 *Milk and milk products*

5.2.8 *Malt*

5.2.9 *Fruits and vegetables*

5.2.10 *Food grade salt,* conforming to **SLS 80**

5.2.11 *L (+) lactic acid producing cultures and pro biotics*

5.2.12 *Oligosaccharides limited by GMP*

5.2.13 *Fish and meat products*

5.2.14 *Vitamins*

5.2.15 *Minerals*

5.2.16 *Protein isolates, protein concentrates, and amino acids,*

5.2.17 *Essential fatty acids*

5.2.18 *Carnitine and Taurine*

5.2.19 *Nucleotides*

5.2.20 *Choline and inositol*

5.2.21 *Chocolate and cocoa powder*

5.2.22 *Flavours*

5.2.22.1 Natural fruit extracts and vanilla extract: Limited by GMP

5.2.22.2 Ethyl vanillin and vanillin: 7 mg/ 100 g RTU

5.2.23 *Food additives*

Food additives listed in Annex **I** shall be used for manufacturing of processed cereal-based foods for infants and young children.

6 REQUIREMENTS

6.1 General requirements

6.1.1 All ingredients, including optional ingredients shall be clean, safe, suitable and of good quality.

6.1.2 If soya is used as an ingredient, Trypsin inhibitor activity shall be reduced to acceptable level by subjecting to high temperature and high pressure.

6.1.3 The product shall be manufactured, packaged, stored and distributed under hygienic conditions as prescribed in **SLS 143.**

6.1.4 All processing and drying activities shall be carried out in a manner that minimizes loss of nutritive value, particularly protein quality.

6.1.5 The product shall be free from extraneous matter.

6.2 Specific prohibition

The product and its components shall not have been treated by ionizing radiation and shall not contain partially hydrogenated fats.

6.3 Consistency and particle size

6.3.1 When prepared according to the instructions given in the label for use, processed cereal-based foods shall have a texture appropriate for the spoon feeding of infants or young children of the age for which the product is intended.

6.3.2 Rusks and biscuits shall be used in the dry form so as to permit and encourage chewing or they shall be used in a semi solid form, by mixing with water or other suitable liquid, that would be similar in consistency to the reconstituted cereal product.

6.4 Compositional and nutritional requirements

The product shall comply to following energy and nutrients requirements refer to the product ready for use (type **4.5**) as marketed or prepared according to the instructions of the manufacturer (**4.1, 4.2, 4.3, 4.4** and **4.6**) unless otherwise specified.

6.4.1 *Energy density*

The energy density of cereal – based foods shall not be less than 0.8 kcal/ g (3.3 kJ/g).

6.4.2 *Protein*

6.4.2.1 For products described in **4.2** and **4.4** the protein content shall not exceed 5.5 g/100. kcal (1.3 g /100 kJ).

6.4.2.2 The chemical index of the added protein shall be equal to at least 80% of that of the reference protein casein or the Protein Efficiency Ratio (PER) shall be equal to at least 70% of that of the reference protein casein. For the purpose of improving the nutritional value of the protein mixture, the addition of amino acids shall be permitted. Only natural forms of L-amino acids shall be used.

6.4.2.3 The protein content of the product shall not be less than 2 g/100 kcal (0.48 g /100 kJ).

6.4.2.4 For biscuits described in **4.5** made with the addition of a high protein food, and presented as such, the added protein shall not be less than 1.5 g/ 100 kcal (0.36 g / 100 kJ) and shall not exceed 5.5 g/ 100 kcal (1.3 g/100 kJ).

Determination of the protein content shall be carried out as per the method described in **SLS 1549 : Part 2.**

NOTE
Cereal products with added milk, the Nitrogen Conversion factor shall be 6.25*. If milk is not added, the Nitrogen Conversion factor shall be* **5.8**.

6.4.3 *Carbohydrates*

6.4.3.1 If sucrose, fructose, glucose, glucose syrup, treacle, maple syrup or honey are added to products described in **4.1, 4.3** and **4.5**.

a) the amount of added carbohydrates from these sources shall not exceed 7.5 g/ 100 kcal (1.8 g /100 kJ);

b) the amount of added fructose shall not exceed 3.8 g/ 100 kcal (0.9 g/ 100 kJ).

6.4.3.2 If sucrose, fructose, glucose, glucose syrup, treacle or honey are added to products described in **4.2** and **4.4** :

a) the amount of added carbohydrates from these sources shall not exceed 5 g/ 100 kcal (1.2 g/ 100 kJ);

b) the amount of added fructose shall not exceed 2.5 g/ 100 kcal (0.6g/ 100 kJ).

6.4.4 *Lipids*

6.4.4.1 For products described in **4.2** and **4.4** the lipid content shall not exceed 4.5 g/100 kcal (1.1 g/ 100 kJ).

If the lipid content exceeds 3.3 g/100 kcal (0.8 g/ 100 kJ):

a) the amount of linoleic acid (in the form of triglycerides= linoleates) shall not be less than 300 mg/ 100 kcal (70 mg/ 100 kJ) and shall not exceed 1200 mg/100 kcal, 285mg/ 100 kJ);
b) the amount of lauric acid shall not exceed 15% of the total lipid content; and

c) the amount of myristic acid shall not exceed 15% of the total lipid content.

6.4.4.2 For products described in **4.1, 4.3** and **4.5** the lipid content shall not exceed 3.3 g/100 kcal (0.8 g / 100 kJ).

6.4.4.3 Determination of lipid content shall be carried out as per the methods described in **SLS 1549 : Part 3.**

6.4.5 *Minerals*

6.4.5.1 The Sodium content of the products marked as ready to use or reconstituted products (as per the instructions given by the manufacturer) shall not exceed 100 mg/100 kcal (25 mg / 100 kJ).

6.4.5.2 The Calcium content of the products described in **4.2** and **4.4** shall not be less than 80 mg/ 100 kcal (20 mg / 100 kJ).

6.4.5.3 The Calcium content shall not be less than 50 mg/ 100 kcal (12 mg /100 kJ) for products described in **4.5** manufactured with the addition of milk and presented as such.

6.4.6 *Vitamins*

6.4.6.1 For processed cereal-based products, vitamin B_1 (Thiamin) shall not be less than 100 µg / 100 kcal (25 µg / 100 kJ).

6.4.6.3 For products described in **4.1** to **4.5,** vitamin A and vitamin D shall comply with the limits given in Table **1** when tested in accordance with the methods given in Table 2.

Table 1 – Limits for vitamin A and vitamin D

SI No. (1)	**Vitamin** (2)	**per 100 kcal** (3)		**per 100 kJ** (4)	
		minimum	maximum	minimum	maximum
i)	Vitamin A (µg RE)**	60	180	14	43
ii)	Vitamin D (µg)***	1	3	0.25	0.75

** *RE = all trans retinol equivalents*
*** *In the form of cholecalciferol, ergocalciferol of which 10 µg = 400 i.u. of vitamin D.*

6.4.7 *Added vitamins, minerals and trace elements.*

6.4.7.1 Substances permitted for adding vitamins, minerals, and elements shall be in accordance with the Annex **II**.

6.4.7.2 The requirements concerning nutrients refer to the products ready for use, marketed as such or reconstituted as instructed by the manufacturer, except for potassium and calcium for which the requirements refer to the product as sold shall comply with the limits given in Column **3** of Table **2** when tested in accordance with the methods given in column 4 of the table.

Table 2 - Limits for added vitamins, minerals and trace elements

Sl No.	**Nutrient**	**Maximum per 100 kcal**	**Method of test**	
			Non water soluble	**Water soluble**
(1)	(2)	(3)	(4)	(5)
i)	Vitamin A (µgRE)	180	AOAC 992.04 - retinol isomers AOAC 992.06 - retinol AOAC 941.15 - foods in which carotenes have been added as a source of vitamin A	--
ii)	Vitamin E (mgα-TE)[1)]	3	--	AOAC 992.03 - Milk based formula AOAC 999.15 (LC Method), EN 12882
iii)	Vitamin D (µg)	3	AOAC 971.30, AOAC 992.26 AOAC995.05 EN 12821	--
iv)	Vitamin C (mg)	12.5/35[2)]	--	AOAC 985.34
v)	Thiamin (mg), Vitamin B_1	0.3	--	AOAC 985.31, AOAC 2015.14,AOAC 986.27,
vi)	Riboflavin (mg) Vitamin B_2	0.4		AOAC 985.32, AOAC 985.31, EN 14152
vii)	Niacin (mgNE)[3)] Vitamin B_3	4.5	--	AOAC 985.34 EN 15652
viii)	Vitamin B_6 (mg)	0.35	--	AOAC 985.32, AOAC 985.31, AOAC 2015.14, AOAC 2004.07
ix)	Folic acid (µg)	50	--	AOAC 985.33, AOAC 992.05, EN 14131

x)	Vitamin B_{12} (µg)	0.35	--	AOAC 992.07, AOAC 986.23, AOAC 2014.02
xi)	Pantothenic acid (mg) Vitamin B_5	1.5	--	AOAC 992.05, AOAC 2011.06, AOAC 992.07
xii)	Biotin (µg)	13	AOAC 999.15 , EN 15607	--
xiii)	Potassium (mg)	180	AOAC 984.27	--
xiv)	Calcium (mg)	80/180[4)]/ 100[5)]	AOAC 984.27	--
xv)	Magnesium (mg)	40	AOAC 984.27	--
xvi)	Iron (mg)	4	AOAC 992.24	--
xvii	Zinc (mg)	2	AOAC 984.27	--
xviii	Copper (µg)	40	AOAC 984.27	--
xix)	Iodine (µg)	35	AOAC 984.27	--
xx)	Manganese (mg)	0.6	AOAC 984.27	--

NOTES

1) *α –TE = d- α-tocopherol equivalent.*
2) *Limits applicable to products fortified with iron.*
3) *NE = Niacin equivalents* = mg *nicotinic acid* + mg *tryptophan/* 60.
4) *Limit applicable to products mentioned in* **4.1, 4.2, 4.3, 4.4 and 4.6**
5) *Limit applicable to products mentioned in* **4.5**.

6.5 Other requirements

The product shall comply with the requirements given in Table 4 when tested in accordance with Column **4** of the table.

Table 3 - Other requirements

SI No. (1)	**Characteristic** (2)	**Requirement** (3)	**Method of test** (4)
i)	Moisture, per cent by mass, max.	5.0	**SLS 1549 Part 1**
ii)	Acid insoluble ash, on dry basis per cent by mass, max.	0.1	**SLS 1549 Part 4**

6.6 Microbiological limits

The product shall confirm to the microbiological limits given in Table **4** when tested in accordance with Column **8** of the Table.

Table 4 - Microbiological limits

Sl No. (1)	Type of the Product (2)	Test organism (3)	n (4)	c (5)	m (6)	M (7)	Method of test in SLS 516 (8)
i)	Coated or filled dried biscuits or rusks	Aerobic Plate Count per gram	5	1	1×10^4	5×10^4	Part 1: Section 2
		Coliforms per g	5	2	1 x 10	1×10^2	Part 3 : Section 1
		E. coli per g	5	0	0	-	Part 12
		Salmonella per 25 g	10	0	0	-	Part 5
ii)	Dried and Instant Pre-cooked products requiring reconstitution	Aerobic Plate Count per gram	5	1	1×10^4	5×10^4	Part 1: Section 2
		Coliforms per g	5	0	0	1×10^1	Part 3 : Section 1
		E. coli per g	5	0	0	-	Part 12
		Salmonella per 25 g	10	0	0	-	Part 5
		Yeasts and moulds count per gram.	5	2	1 x 10	1×10^2	Part 2: Section 2
iii)	Products required cooking before consumption	Aerobic Plate Count per gram	5	3	1×10^5	1×10^6	Part 1: Section 2
		Coliforms per g	5	3	1 x 10	1×10^2	Part 3 : Section 1
		E. coli per g	5	0	0	-	Part 12
		Salmonella per 25 g	10	0	0	-	Part 5

NOTE

Aerobic plate count (APC) in products with added lactic acid producing cultures must not exceed the microbiological limits set in Table **4** *prior to the addition of the lactic acid cultures to the food.*

where,

n is the number of samples to be tested;
c is the maximum allowable number of samples yielding values between m and M;
m is the limit below which a count is acceptable for any sample; and
M is the limit above which a count is unacceptable for any sample.

7 CONTAMINANTS

7.1 Pesticide residues

Processed cereal-based foods infants and young children shall be processed with special care under Good Agricultural Practices and Good Manufacturing Practice **SLS 143**, so that residues of those pesticides which may be required in the cultivation and production do not remain or if

practically unavoidable, are reduced to the maximum extent possible. The product shall comply with the maximum pesticide residue limits given in **SLS 910**.

NOTE
It is not necessary to carry out this determination as a routine for all the samples. This should be tested in case of dispute and when required by the purchaser or vendor or when there is any suspicion of pesticide contamination.

7.2 Other contaminants

The product shall be free from residues of hormones, antibiotics as determined by means of agreed methods of analysis and practically free from other contaminants, especially pharmacologically active substances.

NOTE
It is not necessary to carry out this determination as a routine for all the samples. This should be tested in case of dispute and when required by the purchaser or vendor or when there is any suspicion of other contamination.

7.3 Potentially toxic elements

The product shall not exceed the limits given in Table **5**, when tested in accordance with the methods given in Column **4** of the table.

Table 5 – Limits for potentially toxic elements

SI No. (1)	**Heavy metal** (2)	**Limit** (3)	**Method of test** (4)
i)	Lead, as Pb mg/ kg, max.	0.1	**AOAC 994.02**
ii)	Cadmium, as Cd mg/kg, max.	0.4	**AOAC 999.11**
iii)	Asenic inoganic, as As mg/kg, max	0.2	**AOAC 986.15**

7.4 Mycotoxin

The product shall not exceed the limits for mycotoxins given in Table **6**, when tested in accordance with the methods given in Column **4** of the table.

TABLE 6 - Limits for mycotoxins

Sl No. (1)	**Mycotoxin** (2)	**Limit** (3)	**Method of test** (4)
i)	Total aflatoxins, µg/ kg, max	4	**SLS 962 : Part 1**
ii)	Aflatoxins B_1, µg/ kg, max.	2	**SLS 962 : Part 1**

8 PACKAGING

The containers, including packaging material, shall be made of food grade substances which are safe and suitable for their intended use.

The packaging material which comes into contact directly with the product shall be sufficiently inert to preclude substances from being transferred to food in quantities large enough to endanger human health or to bring about an unacceptable change in the composition of the product or deterioration in its organoleptic properties.

9 MARKING AND/ OR LABELLING

The following shall be marked and/ or labelled legibly and indelibly on each container destined for the final consumer.

a) The name of the product;

The name of the product shall be "processed cereal for infants (and/or young children)", or "cereal with milk for infants (and/or young children), or "cereal for infants (and/ or young children)", or "rusks for infants (and/or young children)", or "biscuits (or "milk biscuits") for infants (and/or young children)", "pasta for young children"

b) Brand name or trade name, if any;
c) Net content in 'g' or 'kg
d) Any permitted food additive's name or class and INS number;
e) Name and address of the manufacturer and packer/ distributor in Sri Lanka;
f) Batch or code number or a decipherable code marking;
g) Date of manufacture;
h) Date of expiry;
j) Country of origin, in case of imported products;
k) List of ingredients;

A complete list of ingredients shall be declared on the label in descending order of proportion except that in the case of added vitamins and minerals, these may be arranged as separate groups for vitamins and minerals, respectively, and within these groups the vitamins and minerals need not be listed in descending order of proportion.

m) Declaration of nutritive value;

The declaration of nutrition information shall contain the following information:

I.) The energy value, expressed in kilocalories (kcal) and/ or kilojoules (kJ), and the amount of protein, carbohydrate and fat expressed in grams (g) per 100 g or 100 ml of the food as sold, and where appropriate, as per specified quantity of the food as suggested for consumption;

II.) The average amount of each vitamin and mineral per 100 g or 100 ml of the food as sold and where appropriate, as per specified quantity of the food as suggested for consumption.

n) Storage instructions, if any;
p) Information for use;

I.) Directions as to the preparation and use of the food, and its storage and keeping after the container has been opened, shall appear on the label and may also appear on the accompanying leaflet. Directions as to the preparation and use of the food shall be given; preferably accompanied by graphical presentations.

II.) For products covered by **4.1** and **4.3,** directions on the label shall state "Milk or infant or follow up formula but no water shall be used for dilution or mixing" or an equivalent statement.
III.) Not recommended for infants less than six months of age
IV.) In the case that addition of water is needed, the directions for the preparation shall include a precise statement that:

(A) where the food contains non-heat-processed basic ingredients, the food must be adequately boiled in a prescribed amount of water;
(B) where the food contains heat-processed basic ingredients:
(i) the food requires boiling, or
(ii) can be mixed with boiled water that has been cooled

q) For the product to which fats, sugars or other digestible carbohydrates should be added during preparation, the instructions for use shall identify appropriate sources and indicate the amounts of the ingredients to be added. In such situations, fats and oils with an appropriate essential fatty acid ratio should be recommended.

r) Directions for use shall include a statement that only an amount of food sufficient for one feeding occasion should be prepared at one time. Foods not consumed during the feeding occasion should be discarded, unless consumed within a period as recommended by the manufacturer under the instructions for use.

s) The suggested number of feedings per day should be indicated

t) The label should also include a statement that "The label should include a statement that implies "products considered in this Standard are not Breast-milk substitute"

9.2 The marking and labeling shall also be in accordance with **SLS 467**.

10 SAMPLING

Representative samples of the product shall be drawn as prescribed in Appendix **A**.

11 METHODS OF TEST

Tests shall be carried out as prescribed in **EN 12821, EN 12822, EN 14122, EN 14152**, **EN 15607, EN 15652 section 2/ part 1, section 3/ part 3, Part 5 a**nd **part 12 of SLS 516, Part 2, Part 3** and **Part 4** of **SLS 1549, ISO 20647**, Official Methods of Analysis of the Association of Official Analytical Chemists (**AOAC**), 20th Edition, 2016.

12 CRITERIA FOR CONFORMITY

A lot shall be declared as conforming to the requirements of this Standard if the following conditions are satisfied:

12.1 Each container or package examined as in **A.6.1** satisfies the packaging and marking and/ or labelling requirements.

12.2 Each individual sample tested as in **A.6.2** satisfy the relevant requirements given in **6.1.5**.

12.3 Test results on the composite sample tested as in **A.6.3** satisfy the relevant requirements given in **6.2, 6.3, 6.4, 6.5, 7.3** and **7.4**.

12.4 Each of the samples tested as in **A.6.4** satisfies the microbiological requirements given in **6.6**.

APPENDIX A
SAMPLING

A.1 LOT

In any consignment, all the containers or packages of the same type and size belonging to one batch of manufacture shall constitute a lot.

A.2 GENERAL REQUIREMENTS OF SAMPLING

In drawing, preparing, storing and handling samples, following precautions and directions shall be observed;

A.2.1 Samples shall be drawn in a protected place not exposed to damp, air, dust or soot.

A.2.2 The sampling instruments shall be clean and dry when used. When drawing samples for microbiological examination, the sampling instruments shall be sterilized.

A.2.3 The samples shall be protected against adventitious contamination.

A.2.4 The samples shall be placed in clean and dry containers. The size of the sample containers shall be such that they are almost completely filled by the sample. When drawing samples for microbiological examination, the sample containers shall be sterilized.

A.2.5 The sample containers shall be sealed air-tight after filling and marked with necessary details of sampling.

A.2.6 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the room temperature.

A.3 SCALE OF SAMPLING

A.3.1 Samples shall be tested from each lot for ascertaining its conformity to the requirements of this specification.

A.3.2 The number of containers or packages to be selected from a lot shall be in accordance with Table **7**.

TABLE 7 - Table of sampling

No. of containers/ packages in the lot (1)	**No. of containers/ packages to be selected** (2)
Up to 1000	15
1001 to 3000	18
3001 to 10000	20
10001 and above	25

A.3.3 The containers or packages shall be selected at random. In order to ensure randomness of selection, random number tables as given in **SLS 428** shall be used.

A.4 PREPARATION OF SAMPLES

A.4.1 Microbiological examination

Ten containers or packages shall be selected from the containers or packages selected as in **A.3.2.** Sufficient quantity of material shall be drawn from the top, middle and bottom portions of each container or package so selected using an appropriate sampling instrument. The material obtained from each container or package shall be mixed separately under aseptic conditions to form individual samples. The individual samples so obtained shall be transferred separately into sterile sample containers and marked with necessary details of sampling.

A.4.2 Examination of general requirements

A sufficient quantity of material shall be drawn from the top, middle and bottom portions of each remaining container or package (after selecting for microbiological examination) selected as in **A.3.2** using an appropriate sampling instrument. The material obtained from each container shall be mixed separately to form individual samples and transferred to separate sample containers.

A.4.3 Tests for compositional, nutritional and other requirements

An equal quantity of material shall be drawn from the top, middle and bottom portions of each remaining container or package (after selecting for microbiological examination) selected as in **A.3.2**. using an appropriate sampling instrument. The material so obtained shall be mixed together to form a composite sample and transferred to a sample container.

A.5 REFERENCE SAMPLE

If reference samples are required for tests other than microbiological examination, the number of containers / packages to be selected shall be as given in Column **2** of Table **7**. The containers / packages so selected shall be separated into three parts. One of these shall be marked for the purchaser, one for the vendor and the third for reference.

A.6 NUMBER OF TESTS

A.6.1 Each container or package selected as in **A.3.2** shall be examined for packaging, marking and/or labelling requirements.

A.6.2 Individual samples prepared as in **A.4.2** shall be examined for the requirements given in **6.1.4** and **6.1.5**.

A.6.3 The composite sample prepared as in **A.4.3** shall be tested for the requirements given in **6.2, 6.3, 6.4, 6.5, 7.3** and **7.4**.

A.6.4 Each of the ten samples prepared as in **A.4.1** shall be tested for *Salmonella*. Five samples shall be selected from the samples prepared as in **A.4.1** and shall be tested for other microbiological requirements given in **6.6**.

ANNEX 1
(Clause 6)
FOOD ADDITIVES

The following additives are permitted in the preparation of processed cereal – based foods for infants and young children, with the restrictions given in Column **3** of the Table.

Table 8 Emulsifiers

INS Number (1)	**Additive** (2)	**Maximum level in 100 g of product, ready for consumption** (3)
322	Lecithins	1500 mg
471	Mono-and diglycerides	500 mg singly or in combination
472 a	Acetic and fatty acid esters of glycerol	
472 b	Lactic and fatty acid esters of glycerol	
472 c	Citric and fatty acid esters of glycerol	

Table 9 Acidity Regulators

INS Number (1)	Additive (2)	Maximum level in 100 g of product, ready for consumption (3)
500 ii	Sodium hydrogen carbonate	Limited by GMP
501 ii	Potassium hydrogen carbonate	
170 i	Calcium carbonate	
270	L(+) Lactic acid	
330	Citric acid	
260	Acetic acid	
261	Potassium acetate	
262 i	Sodium acetate	
263	Calcium acetate	
296	Malic acid (DL) – L(+) – form only	
325	Sodium lactate (solution) L(+) – form only	
326	Potassium lactate (solution) – L(+) – form only	
327	Calcium lactate – L(+)- form only	
331 i	Monosodium citrate	
331 ii	Trisodium citrate	
332 i	Monopotassium citrate	
332 ii	Tripotassium citrate	
333	Calcium citrate	
507	Hydrochloric acid	
524	Sodium hydroxide	
525	Potassium hydroxide	
526	Calcium hydroxide	
334	L(+)-Tartaric acid – L(+) form only	500 mg Singly or in combination Tartrates as residue in biscuits and rusks
335 i	Monosodium tartrate	
335 ii	Disodium tartrate	
336 i	Monopotassium tartrate – L(+) form only	
336 ii	Dipotassium tartrate – L(+) form only	
337	Potassium sodium L(+) tartrate – L(+) form only	
338	Orthophosphoric acid	Only for pH adjustment 440 mg Singly or in combination as phosphorous
339 i	Monosodium orthophosphate	
339 ii	Disodium orthophosphate	
339 iii	Trisodium orthophosphate	
340 i	Monopotassium orthophosphate	
340 ii	Dipotassium orthophosphate	
340 iii	Tripotassium orthophosphate	
341 i	Monocalcium orthophosphate	
341 ii	Dicalcium orthophosphate	
341 iii	Tricalcium orthophosphate	

Table 10 Antioxidants

INS Number (1)	Additive (2)	Maximum level in 100 g of product, ready for consumption (3)
306 307	Mixed tocopherols concentrate Alpha – tocopherol	30 mg fat or oil basis, Singly or in
304	L-Ascorbyl palmitate	20 mg fat
300 301 303	L-Ascorbic acid Sodium ascorbate Potassium ascorbate	50 mg, expressed as ascorbic acid
302	Calcium ascorbate	20 mg, expressed as ascorbic acid

Table 11 Raising agents

INS Number (1)	Additive (2)	Maximum level in 100 g of product, ready for consumption (3)
503 i 503 ii 500 i 500 ii	Ammonium carbonate Ammonium hydrogen carbonate Sodium carbonate Sodium hydrogen carbonate	Limited by GMP

Table 12 Thickeners

INS Number (1)	Additive (2)	Maximum level in 100 g of product, ready for consumption (3)
410 412 414 415 440	Carob bean gum Guar gum Gum Arabic Xanthan gum Pectins (Amidated and Non-Amidated)	1000 mg Singly or in combination 2000 mg in gluten – free cereal – based foods
1404 1410 1412 1413 1414 1422 1420 1450 1451	Oxidized starch Monostarch phosphate Distarch phosphate Phosphated distarch phosphate Acetylated distarch phosphate Acetylated distarch adipate Starch acetate esterified with acetic anhydride Starch sodium octenyl succinate Acetylated oxidized starch	5000 mg Singly or in combination

Table 13 Anticaking agent

INS Number (1)	Additive (2)	Maximum level in 100 g of product, ready for consumption (3)
551	Silicon dioxide (amorphous)	200 mg for dry cereals only

Table 14 Packaging gases

INS Number (1)	Additive (2)	Maximum level in 100 g of product, ready for consumption (3)
290	Carbon dioxide	} Limited by GMP
941	Nitrogen	

ANNEX II
SUBSTANCE PERMITTED FOR VITAMINS AND MINERALS

Vitamin A	Retinol Retinyl acetate Retinyl palmitate Beta-carotene
Vitamin D	Ergocalciferol cholecalciferol
Vitamin E	D-alpha- tocopherol DL-alpha-tocopherol D-alpha- tocopheryl acetate DL-alpha- tocopheryl acetate D-alpha-tocopheryl acid succinate DL-alpha- tocopheryl polyethylene glycol 1000 succinate Phylloquinone (phytomenadione) Menaquinone
Vitamin C	L-ascorbic acid Sodium-L-ascorbate Calcium-L-ascorbate Potassium-L-ascorbate 6-palmitate – L ascorbile acid (Ascobyle palmitate)
Thiamin	Thiaminchloride hydrochloride Thiamin mononitrate
Riboflavin	riboflavin riboflavin 5'- phosphate sodium
Niacin	Nicotinic acid Nicotinic acid amide (nicotinamide)
Vitamin B_6	Pyridoxine hydrochloride Pyridoxal 5- phosphate Pyridoxine dipalmitate
Folate	N-Pteroyl-L-glutamic acid Calcium-L-methyl-folate
Vitamin B_{12}	Cyanocobalamin Hydroxo-cobalamin
Biotin	D-biotin
Pantothenic Acid	Calcium-D-pantothenate Sodium D-pantothanate D-panthenol
Potassium	Potassium hydrogen carbonate (Potassium bicarbonate) Potassium carbonate Potassium chloride Potassium citrate Potassium gluconate Potassium glycerol-phosphate Potassium L- lactate Potassium hydroxide Potassium salt of orthophosphoric acid
Calcium	Calcium carbonate Calcium chloride

	Calcium salt of citric acid Calcium gluconate Calcium glycerophosphate Calcium L- lactate Calcium salt of orthophosphoric acid Calcium oxide Calcium sulphate Calcium bisglycinate Calcium citrate malate Calcium malate Calcium l- pidolate
Magnesium	Magnesium acetate Magnesium carbonate Magnesium chloride Magnesium salts of citric acid Magnesium gluconate Magnesium glycerol-phosphate Magnesium salts of orthophos-phoric acid Magnesium lactate Magnesium hydroxide Magnesium oxide Magnesium sulphate Magnesium L- aspartate Magnesium bisglycinate Magnesium L- pidolate Magnesium potassium citrate
Iron	Ferrous carbonate Ferrous citrate Ferrous ammonium citrate Ferrous gluconate Ferrous fumarate Ferrous sodium diphosphate Ferrous lactate Ferrous sulphate Ferrous ammonium phosphate Ferrous sodium EDTA Ferrous diphosphate (ferric pyrophosphate) Ferrous saccharate Elemental iron (carbonyl + elec-trolytic + hydrogen reduced Ferrous bisglycinate Ferrous L-pidolate Ferrous L-pidolate
Zinc	Zinc acetate Zinc chloride Zinc citrate Zinc gluconate Zinc lactate Zinc oxide Zinc carbonate Zinc sulphate

	Zinc bisglycinate
Copper	Cupric carbonate Cupric citrate Cupric gluconate Cupric sulphate Copper lysine complex
Manganese	Manganese carbonate Manganese chloride Manganese citrate Manganese gluconate Manganese sulphate
Fluoride	Potassium fluoride Sodium fluoride
Selenium	Sodium selenite Sodium hydrogen selenite Selenium enriched yeast ([2])
Chromium	Chromium (III) chloride and its hexahydrate Chromium (III) sulphate and its hexahydrate Chromium picolinate
Molybdenum	Ammonium molybdate Sodium molybdate
Iodine	Potassium iodide Potassium iodate Sodium iodide Sodium iodate
Sodium	Sodium bicarbonate (Sodium hydrogen carbonate) Sodium carbonate Sodium chloride Sodium citrate Sodium gluconate Sodium hydroxide Sodium salt of orthophosphoric acid
Boron	Sodium borate Boric acid
Amino acid	L-alanine L-arginine L-aspartic acid L-citrulline L- cysteine Cystine L-histidine L-glutamic acid L-glutamine glycine L-isoleucine L- leucine L-lysine L-lysine acetate L- methionine L-ornithine monohydrochloride

	L-phenylalanine L-proline L-threonine L-tryptophan L-tyrosine L-valine L-serine L-arginine-L-aspartate L-Lysine-L-glutamatedihydrate N-Acetyl-L-cysteine N-acetyl-L-methionine
Carnitine and taurine	L-carnitine hydrochloride Taurine L-carnitine-L-tartrate
Nucleotides	adenosine 5'-phosphoric acid (AMP) Sodium salts of AMP Cytidine 5'-mono-phosphoric acid (CMP) Sodium salt of CMP Guanosine 5'-phosphoric acid (GMP) Sodium salt of GMP Inosine 5'-phos-phoric acid (IMP) Sodium salt of IMP Uridine 5-phos-phoric acid (UMP) Sodium salts of UMP
Choline and inositol	Choline Choline chloride Choline bitartrate Choline citrate Inositol

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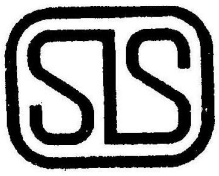

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