World Food Programme

Technical Specifications for the manufacture of:

SUPER CEREAL *plus*
WHEAT SOYA BLEND

Version: **1, adopted 2020**
Replacing: **Version 15.1, adopted 31/08/2015**
Date of issue: **30.12.2020**

The key adjustments are:
- Update requirements on contaminants (mycotoxin, tropane alkaloids)
- Include Codex Code of hygienic practice for low-moisture foods, product nutrition values requirements

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1. INTRODUCTION

1.1 Product purpose

SUPER CEREAL *plus*- Wheat Soya Blend (hereafter called the product) is a product preferred for young children aged 6 -59 months. The product is to be used as a complement to breastfeeding for children 6-23 months, as continued breastfeeding is recommended up to the age of two years. The product is NOT a breast-milk replacer.

1.2 Product type

The product is prepared from heat treated wheat and de-hulled soya beans, sugar, skimmed milk powder, refined soybean oil, vitamins and minerals. The product is consumed as a porridge or gruel, it should be prepared by mixing an appropriate proportion of flour and clean water (i.e. 50g of the product with 250 g of water) followed by a boiling time at simmering point from five to ten minutes. The product shall not be consumed in dry powder form, without preparation and cooking.

1.3 Standards and recommendations

The manufacturer shall be registered under national food law as a manufacturer of supplementary foods for special dietary needs, or manufacturer of baby foods, or equivalent for either, as per country regulation. The product shall comply, in terms of raw materials, composition or manufacture, except when specified otherwise in this contract, with the latest versions of the following guidelines or standards. Additionally, the supplier shall comply with local regulations/standards.

- Guidelines on formulated supplementary foods for older infants and young children, CAC/GL 08-1991 of the Codex Alimentarius.
- Codex standard for processed cereal-based foods for infants and young children. CODEX STAN 074-1981, of the Codex Alimentarius.
- Codex Code of hygienic practice for low-moisture foods: CAC-RCP 75-2015
- Recommended International Code of Practice: General Principles of Food Hygiene; CAC/RCP 1-1969 including Annex “Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its application”.

- WHO technical note 2012: Supplementary foods for the management of moderate acute malnutrition in infants and children 6–59 months of age
- General principles for addition of essential nutrients to foods: CAC/GL 09-1987 of the Codex Alimentarius.
- General standard for contaminants and toxins in food and feed: CODEX STAN 193- 1995.
- Global Food Safety Initiative (GFSI) scheme standards (FSSC 22000, IFS, BRC, SQF or equivalent)
- Recommendations from joint FAO/WHO expert meeting on tropane alkaloids, 2020
- WFP Super Cereal plus Technical Expectation[1]

2. RAW MATERIALS

2.1 Main ingredients

Product shall be manufactured from ingredients that are fresh, of good quality, free from foreign materials and substances hazardous to health, that comply with Codex Alimentarius and relevant food laws and standards of the originating and recipient countries. The quality of raw materials should be adequate so that the final product will meet all requirements specified in this document. Specific requirements for the raw materials are:

Wheat

- Conform to Codex STAN 199-1995 (latest version).

Soya beans

- Conform to Codex STAN 171-1989 (latest version).
- Be obtained from non-genetically modified varieties (*if required by the contract*).

Note: Wheat and soya beans shall be free from the following toxic or noxious seeds, toxic plants or their metabolites in amount which may represent a hazard to human health.

– Crotolaria (Crotalaria spp.), Corn cockle (Agrostemma githago L.), Castor bean (Ricinus communis L.), Jimson weed (Datura spp.), Mexican Prickly Poppy (Argemone mexicana) and other seeds that are commonly recognized as harmful to health.

Wheat and soya beans shall be stored under dry, ventilated and hygienic conditions. Only safe insecticides (i.e. phosphine) may be used for fumigation control. Where needed, fumigation shall be performed by certified operators. It shall be done as specified in the GAFTA Standard for Fumigation[2].

Sugar

- Conform to Codex STAN 212-1999 (latest version).
- To meet particle size specification 100% through a 1000 microns screen, 95% through a 600 microns screen.

Skimmed Milk Powder

- Conform to Codex STAN 207-1999 (latest version)
- To meet particle size specification 100% through a 1000 microns screen, 95% through a 600 microns screen.
- Maximum level aflatoxin M1: < 0.5 mcg/kg milk (recommended methods ISO 14501/IDF 171:2007 or ISO 14674/IDF 190:2005). Melamine maximum 1mg/kg

Refined Soybean Oil

- Conform to Codex STAN 210-1999(latest version). Only refined deodorised bleached oils are acceptable.

[1] https://foodqualityandsafety.wfp.org
[2] https://www.gafta.com/write/MediaUploads/Trade%20Assurance/Gafta_Standard_for_Fumigation_WEB.PDF

2.2 Vitamins and minerals

The product shall be fortified with the micronutrient premix FBF-V-13, Potassium Chloride and Dicalcium Phosphate Anhydrous or Tricalcium Phosphate as specified in table 1. Unless otherwise specified in contracts, all ingredients related to fortificants (vitamins and minerals) shall be suitable for vegetarians[3]. Micronutrient premix shall be used at appropriate rates in such a way that the supplier should comply with the finished product nutritional requirements indicated in table 3 and 6. Micronutrient premixes are used at the following rate per metric ton of finished product:

- 2.0 kg of vitamin premix (FBF-V-13).
- 12.3 kg of Dicalcium Phosphate Anhydrous or 11.6kg of Tricalcium Phosphate
- And 2.7 kg of Potassium Chloride.

Table 1: Micronutrient rate and chemical form

Micronutrient	**Target/100g flour**	**Chemical form**
Vitamin/Mineral premix FBF-V-13		
Vitamin A	3460 IU	Dry Vitamin A Palmitate 250 Cold Water Dispersible Stabilized
Vitamin D3	441.6 IU	Dry Vitamin D3 100 Water Dispersible Stabilized
Vitamin E TE	8.3 mg	Dry Vitamin E Acetate 50% Water Dispersible
Vitamin K1	30 µg	Dry Vitamin K1 5% Water Dispersible
Vitamin B1	0.2 mg	Thiamine mononitrate
Vitamin B2	1.4 mg	Riboflavin fine powder
Vitamin B6	1 mg	Pyridoxine hydrochloride
Vitamin C	90 mg	Ascorbic acid
Pantothenic acid	1.6 mg	Calcium D Panthotenate
Folate, (DFE)	110 µg	Folic acid*
Niacin	8 mg	Niacinamide
Vitamin B12	2 µg	Vitamin B12 0.1% or 1% Spray Dried
Biotin	8.2 µg	Biotin 1%
Iodine	40 µg	Potassium Iodide*
Iron (a)	4 mg	Ferrous fumarate fine powder
Iron (b)	2.5 mg	Iron-sodium EDTA
Zinc	5 mg	Zinc Sulphate Monohydrate
Carrier		Corn maltodextrin
		* Adequate dilution shall be used in order to guarantee premix homogeneity
Other minerals (Potassium Chloride and Dicalcium Phosphate Anhydrous or Tricalcium Phosphate) [4]		
Potassium	140 mg	Potassium Chloride with 0.5% silicon dioxide as anticaking agent, compliant with food chemical codex, min 100% <600 micron
Calcium	362 mg	Dicalcium Phosphate Anhydrous or Tricalcium Phosphate, compliant with food chemical codex, min 95%<250 micron, total aerobic viable count <1000 CFU/g, yeast<10 CFU/g, mould <100 CFU/g, and enterobacteria negative in 1 g.
Phosphorous	280 mg	

Note: Variable levels of micronutrients (i.e iron, zinc, etc.) naturally present in Wheat and soya may lead to variable amount of micronutrients in finished product.

[3] The definition of the terms "Food suitable for vegetarians" can be found here https://www.fooddrinkeurope.eu/uploads/best_practices/Joint_Position_FoodDrinkEurope_and_EVU.pdf

[4] The minerals are considered as food additives.

Suppliers should implement an effective food safety and quality management system for the premix, including supplier approval and premix quality control. Additionally, the premix shall:

- Be purchased from GAIN Premix Facility or any of the GAIN approved suppliers, as per the list available at the following link: http://gpf.gainhealth.org
- Be delivered to the manufacture with a complete Certificate of Analysis. This document shall be presented to WFP with other documents for payment.
- Micronutrient premixes shall be stored as recommended by premix manufacturer.

If the manufacturer would like to adapt the premix, this will have to be discussed and agreed with WFP and will have to be based on supporting data that show that the combination of raw materials, prescribed premix and specific processing steps results in a product of which the specific nutrient content is consistently outside the range of nutritional values specified in this document.

3. PROCESSING

3.1 Formula

The product is manufactured according to the following formula:

Table 2: The product formula

No	Ingredients	Percentage (*by weight*)
1	Extrudate of wheat and de-hulled soya beans[5] (wheat to dehulled soya beans ratio - max 7 wheat: min 3 soya beans)	77.3%
2	Skimmed milk powder	8.00
3	Sugar	9.00
4	Refined soybean oil	4.00
5	Vitamin/Mineral **FBF-V-13**	0.20
6	Dicalcium Phosphate Anhydrous or Tricalcium Phosphate[6]	1.23
7	Potassium chloride	0.27

Note: Premix is mixed with extruded product, not directly with wheat and soybeans. Soybeans have varying levels of protein and fat depending on origin. To ensure that the nutritional targets of finished product are fully met, the processor should check the quality of incoming materials i.e. fat and protein contents of soya beans and if necessary, adjust the ratio of wheat to soya beans in the formulation. All formulation adjustments shall be documented and reported to WFP.

3.2 Method of processing

The product shall be processed as a pre-cooked food under conditions which permit improvements in the pre-gelatinization of starches, digestibility of proteins and in particular the de-activation of trypsin inhibitors in soya as indicated by the urease test. Preferred heat treatments include wet extrusion, dry extrusion and drum drying[7].

The addition of refined soybean oil should be carried out at or after the thermal treatment. The addition of skimmed milk powder and sugar should be carried out at the same time the vitamins and minerals are being added.

[5] Thermally treated wheat and de-hulled soya can be utilized if other processing technology will be approved by WFP for utilization.

[6] When tricalcium phosphate is utilized, the inclusion rate shall be approximately 1.16%

[7] WFP Food Safety and Quality Unit can exceptionally approve the use of roasting technology if the supplier can demonstrate validation of thermal processing.

Sub-contracting of processing is not allowed, except pre-cleaning and de-hulling of soybeans in exceptional cases. Additionally, recycling or reprocessing of finished product / end-product is not allowed.

3.3 Food safety and risk assessment at manufacturing premises

For compliance with Codex standards, the processor shall be able to demonstrate by principle and practice the adoption, implementation and recording of:

- Good Manufacturing Practice
- Hazard Analysis Critical Control Point Program
- Global Food Safety Initiative (GFSI) Scheme

In this context an appointed WFP staff/ WFP appointed Inspector / Quality Surveyor is entitled to visit the factory without prior notice during any period when WFP product is being manufactured to check that production is done as per WFP contract specification. The Inspector / Quality Surveyor may request to see:

- **Records** (i.e. names of people in charge of the process and quality control, temperatures of the process, mixing times / net contents, cleaning schedules, CCP monitoring, traceability etc.).
- **Procedures** (e.g. cleaning, personnel hygiene, risk assessment and HACCP, environmental monitoring programme, sampling & analysis, product release and control of non-conformance etc.).
- **Instructions** (e.g. process instructions, cleaning instructions, zoning instructions etc.).
- The **quality manual** for the process or factory.
- Conditions in the factory (process rooms, warehouses, laboratories, cloakrooms, factory grounds, utility rooms, etc.)

3.4 Homogeneity of micronutrients

Theoretical calculations indicate that a mixing system with a Coefficient of Variation of 10% using iron as the indicator element, will enable product to meet the above variation target with 95%, provided that all conditions of mixing are rigorously applied. The guidelines for this calculation is shown at http://foodqualityandsafety.wfp.org.

4. PRODUCT SPECIFICATIONS

4.1 General requirements

The product shall meet the following requirements:

- Shall retain its natural properties of pleasant smell and taste and free from rancidity and unacceptable odour or taste. It shall have a uniform fine texture with the particle size as specified in table 6.
- Shall be homogeneous in colour and free from agglomeration. It shall be free from lumping or balling when mixed with water of ambient temperature.
- Shall be suitable for porridge making. Flow rate (Bostwick test) of the porridge should meet the requirements stated in table 6.

4.2 Nutritional requirements

The product shall contain the following nutritional values throughout the shelf life.

Table 3: Nutritional values at all points of time

Nutrient content per 100 g finished product	Unit	Minimum	Label[8]	Maximum
Energy	Kcal	400	x	
Protein	g	17	x	
Dairy protein	g	2.8	x	
Fat	g	9	x	
Retinol (Vit A)	mcg RE	800[9]	800	1250
Thiamine (Vit B1)	mg	0.4	0.4	
Riboflavin (Vit B2)	mg	1.6	1.6	
Niacin (Vit B3)	mg	10	10	
Pantothenic acid (Vit B5)	mg	2.0	2.0	
Vitamin B6	mg	0.8	0.8	
Biotin (Vit B7)	µg	8.0	8.0	
Folate (Vit B9)	µg DFE	160	160	
Cobalamin (Vit B12)	µg	2.0	2.0	
Vitamin C	mg	60	60	
Vitamin D	µg	8.0	8.0	24
Vitamin E	mg aTE	8.0	8.0	
Vitamin K	µg	20	20	
Calcium (Ca)	mg	420	420	660
Iodine (I)	µg	60	60	140
Iron (Fe)	mg	9.0	9.0	14.8
Phosphorus (P)	mg	400	400	560
Potassium (K)	mg	650	650	1050
Zinc (Zn)	mg	8.0	8.0	14
Sodium (Na)	mg	n/a	x	270

4.3 Contaminants

The product shall be free from contaminants in amounts which may represent a hazard to health. The product shall comply with those maximum contaminant limits established by the Codex Alimentarius Commission for this commodity (e.g. following the CODEX STAN 193- 1995, latest revision). Additionally, the product should meet the following requirements:

4.3.1 Tropane alkaloids

The product shall contain a combined hyoscyamine/scopolamine (tropane alkaloids) concentration in dry food of less than 10ppb.

4.3.2 Mycotoxins

The product should not exceed the following maximum limits for mycotoxins, in addition to Codex requirements:

- Ochratoxin A: max 0.5 ppb
- Fumonisin(B1+B2): 200ppb
- Zearalenone: 20 ppb

[8] All X have to be filled by manufacturer, according to the specific formulation used. Please refer to codex standard in section 5.1 below for the full list of nutrients to be declared.

[9] The minimum value refers to product at the end of the shelf life after nutrient loss. Please refer to table 6 for requirements on products at the time of purchase.

4.4 Hygiene

It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the Codex Code of hygienic practice for low-moisture foods: CAC-RCP 75-2015 and Recommended International Code of Practice – General Principles of Food Hygiene (CAC/RCP 1-1969), and other Codes of Practice recommended by the Codex Alimentarius Commission which are relevant to these products. To the extent possible in good manufacturing practice, the products shall be free from objectionable matter.

4.5 Shelf life

The product shall retain above qualities for at least 18 months from date of manufacture when stored dry at 30°C. The supplier should conduct its own shelf life studies using methods in line with WFP shelf life study requirements[10]. Any major change in production processes, suppliers, ingredients should be addressed in the change management protocol and a clear definition of triggers new shelf-life study should be included.

4.6 Fit for human consumption guarantee

Suppliers shall have to check the quality of their products and guarantee that the product is 'fit for human consumption'.

5. PACKAGING

5.1 General requirements

The product covered by the provision of this specification shall be packed in appropriate packaging which safeguard the hygienic, nutritional, technological, and organoleptic qualities of the product. The packaging shall be made of substances which are safe and suitable for their intended use.

Packaging of the product shall be done by use of automatic filling machines, manual filling into primary packaging will not be accepted.

Note: Packaging requirement will be specified in the contract.

5.2 Product net weight

- 1.5 – 3.0 kg Net weight and follow contract requirement for specified net weight,
- Weight and quantity tolerance shall meet The International Organization of Legal Metrology International Recommendation OIML R 87[11].

5.3 Primary packaging

Sachets shall be:

- Food grade materials compliant with the last amendments of national regulations in the country of production (if not existing: compliance with EU or FDA legislations requested).
- Optimized shape to avoid space loss in the sachets and cartons
- Properly sealed with no leakages [12](test example: ASTM F2338 – 09, ASTM D3078 – 02 or equivalent)
- The sachets shall be placed in an appropriate way in the carton box during the packing process to avoid packaging damage

[10] https://foodqualityandsafety.wfp.org
[11] OIML R 78 Quantity of commodity in pre-packages https://www.oiml.org/en/files/pdf_r/r087-e04.pdf, latest edition
12 For vacuum leak testing or bubble leak testing the desired pressure is –20kPa and the value less than desired pressure is –15kPa as WFP products can be stored in warehouses above 2000m.

- The laminate shall include a barrier layer to highly reduce permeability of oxygen and water vapour. The minimum requirements[13] are:
  - WVTR < 1.5 g/m^2.day (38°C/90% RH) (ASTM F1249-06 or equivalent)
  - OTR < 5 cc/m^2.day (23°C/0% RH) (ASTM D-3985 or equivalent)
- Reverse printing is highly recommended

Typically, a laminate composed of "(polyolefin or polyester)* + metallized (polyolefin or polyester)* " - typical thickness: 70-90 microns - or equivalent can be used.

*****e.g. PE, PET, PP

- Nitrogen flushing should be applied during the filling of the powder in sachets. The residual limit of oxygen (O2) should be maximum 5%.

5.4 Secondary packaging

The product shall be packed in cartons suitable for the humanitarian supply chain.

It is under supplier responsibility to select a packaging material that will resist to multiple handling and up to 2 meters stacking.

Cartons shall be:

- New, manufactured from well-constructed double walled corrugated board
- With an edge crush resistance of 60ECT = 60 lbs/in eq 11 kN/m (ISO 3037) and a specific weight of 700 to 1000 grams per square meter
- fully filled for maximum strength and dimensions adjusted to the load
- The fluting shall be vertical, supporting the load
- The carton should be plain brown
- No stapling will be accepted
- firmly closed (top and bottom)

Unless otherwise specified in the contract, two percent (2%) empty, marked cartons (included in the price) shall be sent with the lot.

5.5 Stuffing in Containers

If pallets[14] are used inside containers: it is highly recommended to have 3 first bottom layers placed as column stacking, the rest can be interlocked (cross-stacking) for load stability. Pallet shall be wrapped in a suitable manner (locked to the pallet, enough containment force) and the cartons should be banded when necessary. The cartons shall be secured to pallets in order to prevent any damage to the contents or packaging during shipment. Pallet used should be strong enough to support the charge during transportation. Pallets shall be stackable (minimum double stock) without damage to the cartons during shipment. The pallets are recommended to be heat treated as per ISPM 15 standards (methyl bromide fumigation is not allowed).

If no pallets are used inside container: dunnage (of strong sheets such as carton, plywood…) should be placed inside each container at every three layers of cartons to provide the required stacking strength. In addition, protecting material like air bag, carton, polystyrene, can be used. Also, kraft paper shall be adhered to all internal sides, door, and floor of container. Kraft paper also need to be placed on the top of packaging.

For shipping containers, unless fully shrink-wrapped pallets are used, and unless otherwise specified in the contract, it is highly recommended to place desiccant in container at appropriate location in order to absorb moisture.

[13] Suppliers shall submit packaging Certificate of Analysis indicating WVTR and OTR compliance to WFP with other documents for payment.
[14] Slip sheet can be used instead of pallets upon agreement with WFP.

Supplier needs to use high quality desiccant and calculate the quantity of desiccant based on:

- Efficiency of desiccant
- Length of time in transit in container
- Container capacity

Supplier needs to provide in the offer the type of desiccant and quantity to be used for the consignment.

The following table provides a guideline on the quantity to be used;

Table 4: Guideline on the quantity to be used for calcium chloride-based desiccants:

Estimated days in container	**20 ft container**	**40 ft container**
15-59 days	9.00 kg	17.50 kg
60-89 days	11.25 kg	22.50 kg
90-120 days	13.50 kg	25.00 kg

Better alternative material can be used upon agreement with WFP.

Empty containers/vehicles shall be clean, pest free and free of damage, odours and previous cargo remains. Ventilation holes shall remain clear and unsealed.

6. MARKING

The labelling of the product covered by the provision of this specification shall comply with:
- Codex Stan 146-1985 - General standard for the labelling of and claims for pre-packaged foods for special dietary uses.
- Codex Stan 1-1985 - General standard for the labelling of pre-packaged foods
Labels of bags shall be approved by WFP.

Unless otherwise specified in the contract, information in table 4 shall be printed on the packaging of the product.

Table 5: Generic marking requirements

Description	**Bags**	**Cartons**
Product name	**SUPER CEREAL *plus*- Fortified Wheat Soya Blend**	
Target Group	Special formula for infants and young children 6-59 months	
Net weight	1.5 kg or 3.0 kg or *as per contract*	*as per contract*
Ingredient list*	XX; (including allergens in bold[15])	--
Nutrient table	in line with codex regulation and target defined in table 3	- -
Production date (dd/mm/yyyy)	XX[16]	
Best Before End (mm/yyyy)	XX	
Batch/lot number**	XX	
Manufactured by: Name & address	XX	
Supplied by: Name and address***	XX	
Country of Origin	Product of XX	

[15] Allergen labelling guidelines: All ingredients considered allergens as per EU Regulation1169/2011 – Annex II -shall be labelled in bold letters in the ingredient list. The supplier is responsible for creating and maintaining an updated list of allergens present in the manufacturing facility. All products manufactured in that facility shall be labelled with the entire list of allergens identified in that facility, either as ingredients or as cross-contamination.
For cross contamination labelling, the following terms should be used: "May contain traces of …." The addition of new allergens to a facility needs to be evaluated and communicate beforehand, as an update of packaging artwork will be necessary.
[16]All XX shall be provided by the manufacturer.

Storage instruction	"Store under dry, ventilated and hygienic conditions and away from direct sunlight"	Keep dry; Keep away from heat; Stack limitation; Side up Picto
Other requirements	Dosage rate (1 cup cereal and 3 to 4 cups of water)	--
	Not for Sale	
Preparation instructions	[pictorial of opening the bag] [pictorial of blending with water] [pictorial of cooking] [pictorial of feeding to child] [pictorial of closing the bag] Breastfeeding logo	--
Donor and WFP logo	as per contractual requirement	
Additional marking	as per contractual requirement	

*=*Wheat, De-hulled Soya Beans, Sugar, Skimmed Milk Powder, Refined Soybean Oil, Minerals and Vitamins*

**= *supplier need to clearly describe the batch/lot size for the traceability of the product*

***: *if different from the manufacturer*

Templates for artwork available on: https://foodqualityandsafety.wfp.org/specifications

7. STORING

The product shall be stored under dry, ventilated and hygienic conditions and away from direct sunlight.

8. ANALYTICAL REQUIREMENTS

As per contractual agreement, WFP can appoint an inspection company that will check, that the food matches requirements specified in Table 6. Additional tests may be defined in case further quality assessment is required. The following analytical plans are currently utilized by WFP and shared only for suppliers' information. Suppliers should follow its own food safety and quality management plan. Additionally, WFP reserves the rights to change these plans at any time.

Table 6: List of compulsory tests and reference methods

No	**Tests**	**Requirements**	**Reference method** *(or equivalent validated methods)*
1	Moisture	Max. 7.0%	ISO 712: 2009
2	Protein	Min. 17.0 g/100g flour (N x 6.25)	ISO 20483 AOAC 992.23 EN ISO 16634-2:2016
3	Fat	Min. 9.0 g/100g flour	ISO 11085
4	Crude fibre	Max. 2.9 g/100g flour	ISO 5498 AOAC 962.09
5	Total ash	Max. 5 g/100g flour	ISO 2171 / AOAC 923.03
6	Peroxide value	Max. 10.0[17] meq/kg fat	AOAC 965.33
7	Urease index	Max. 0.20 pH units	AOCS Ba 9-58 (1997)
8	Particle size	- 95% shall pass through a 600 microns sieve. - 100% shall pass through a 1,000 microns sieve	
9	Organoleptic quality (smell, taste, color)	Pleasant smell and palatable taste, typical color	Sensory inspection
10	Consistency (Bostwick flow rate)	Min. 100 mm /30s for 17% dry matter porridge	http://foodqualityandsafety.wfp.org
11	Vitamin A	900-1250 mcg RE/100g flour[18]	AOAC 992.04
12	Iron	9.0-14.8 mg/100g flour	AOAC 944.02
13	Calcium	420-660 mg/100g flour	AOAC 984.27
14	Potassium	650- 1050 mg/100g flour	AOAC 984.27
15	Aflatoxin (total)	Max. 10 ppb (total of B1, B2, G1, G2)	ISO 16050 / EN 12955
16	Aflatoxin B1	Max. 5 ppb	ISO 16050 / EN 12955
17	Deoxynivalenol (DON)	Max. 0.2 mg/kg (dry matter basis)	EN 15891:2010
18	Mesophilic aerobic bacteria	Max. 10,000 cfu/g flour	ISO 4833-1:2013 ICC No 125 AACC 42-11.01
19	Coliforms	Max. 10 cfu/g flour	ISO 4832:2006 AOAC 2005.03 AACC 45-15.02
20	Salmonella	Absent/25g flour	ISO6579-1:2017 AACC 42-25.03
21	Escherichia Coli	0 cfu/g flour	AOAC 991.14 ISO 16649-2:2001
22	Staphylococcus aureus	0 cfu/g flour	EN ISO 6888-2:2004 AACC 42-30.04
23	Bacillus cereus	Max. 50 cfu/g flour	AOAC 980.31 ISO 7932:2004
24	Yeasts and moulds	Max. 100 cfu/g flour	ISO 21527-2:2008 ICC No 146 AACC 42-50.02
25	GMO *(only if required)*	Negative (< 0.9% of GMO material)	ISO 21569 ISO 24276

[17] This requirement is for foods at the time of purchase.
[18] This requirement is for foods at the time of purchase, not considering loss during shelf life