STANDARDIZATION ORGANIZATION (GSO)

GSO 1016/2015 (E)

MICROBIOLOGICAL CRITERIA FOR FOOD

ICS 67.040

Microbiological criteria for food

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INTRODUCTION

The Organization for Standardization (**GSO**) of the Gulf Cooperation Council of the Arab States (GCC) is a regional organization composed of national standards bodies of the GCC member countries. One of the main functions of GSO is the publication of standards / regulations of the Gulf countries through technical committees (CU).

In the framework of the technical program of the committee TC No. (5) "Technical Committee for Standards for Food and Agricultural Products" GSO updated Technical Regulation No. 1016 \ 1998 "MICROBIOLOGICAL CRITERIA FOR FOOD".

The draft Technical Regulation was prepared in Qatar.

These technical regulations were approved by the GSO Board of Directors at a meeting held on 23/01/1437h (11/05/2015). The approved standard should replace and cancel with standard No. GSO 1016 \ 1998.

CONTENT

INTRODUCTION

GSO Technical Regulations deal with microbiological criteria for food and certain food ingredients used as raw materials in food processing. The limits indicated in it are based on standards proposed by the International Commission on Microbiological Food Specifications (ICMSF) and international standards in the field of food safety and quality.

Microbiological criteria for specific foods are selected based on the following factors:

1)Theseverity of this health risk factor when a contaminated product is consumed .

2)Available information about the processing to which the food product was subjected, processing conditions and expected storage conditions .

3)Options for changes or damage to the product.

4)Environmental conditions in which the product was produced or put on sale.

Limit level indicators are designed as a system known as sample processing, including acceptable levels and the number of samples to be analyzed. These criteria are strictly distributed according to the types of products and the purposes for which they are used; for example, for food products intended for consumers with increased susceptibility (children, babies, the elderly) or dietary n Recreatives Products and lightweight products (with a low content of sugar and fat). In these cases, the applicable sampling plans for microbiological studies are followed even more strictly.

Precautions are taken to ensure that the specified limit levels are not exceeded during the working process in a production environment. Safety precautions are possible as part of GMP. This standard of ensuring microbiological quality must be observed for all food products, regardless of the specific parameters specified in other standards for specific food products, i.e. any specific standard for any product must meet the acceptable levels of microbiological quality established in this standard.

MICROBIOLOGICAL CRITERIA FOR FOOD

1. Scope of application

GSO Technical Regulations apply to microbiological limits for certain foods intended for human consumption, for certain food ingredients used in the food industry.

2. Complementary reference documents

GSO 261 Microbiological methods for osm otra food - Part 1: Sample preparation

GSO 1373 Microbiological Food Testing Methods - Part 2: Direct Microbial Counting.

GSO 590 Microbiological methods of inspection of food products - Part 3: Test on Commercial eskuyu sterility of the converted products.

GSO 810 Microbiology - General Guide to Microbiological Research.

GSO CAC \ GL 63 Principles and guidelines for the implementation of microbiological risk management (MRM).

GSO ISO 19458 Water Quality - Sampling for microbiological analysis.

See GSO standards for microbiological food testing methods.

3. DefinitionsMicrobiological criteria

A criterion that determines the acceptability of a product, a batch of products or a process characterized by the presence, absence or quantity of microorganisms and / or fractions of toxins / metabolites per unit mass, volume, area or lot.

Product batch

A certain amount of goods, necessarily produced in the same conditions.

Sampling plan

A prescription that clearly defines the microbiological criteria for admitting a product or refusing to admit it, depending on the results of a study of a sufficient number of sample units using specific analytical methods. It includes the following indicators:

n = number of sample units to be tested.

c = the maximum number of units of the sample, the microbiological indicator of which can exceed the value of "m", but cannot exceed the value of "M".

m = permissible microbiological level per unit of sample; which distinguishes between indicators of acceptable quality and maximum acceptable quality. The product should be considered acceptable if the value is equal to or less
"M", if the indicator is higher than "m", then the product is considered a product of maximum acceptable quality (maximum permissible) or defective.

M = the maximum value of the criterion is not must be exceeded or in a single unit of samples (n), to be tested.

Sample unit = food sample, verified as one unit out of the total number n. Either a single sample, or part of the packaging or a mixture of the product.

3.3.1 Sampling plan for two Prizna Cams

The plan is a fairly simple research method, when two indicators “n” and “c” are needed for sampling. “N” is the number of sample units to be tested to meet plan requirements. “C” is the maximum number of units of the sample with violations. “M” is an indicator of microbiological criteria for determining inconsistencies. For example, a study on the presence of salmonella in 25 g of fresh vegetables; there should be no detection in 10 units of the sample (“n” = 10, “c” = 0, “m” = 0).

3.3.2 Three- point sampling plan

The control values of the plan are determined by the indicators "n", "c", "m" and "M". "M" is the minimum allowable value of microorganisms in test units. “M” sets the differences between the minimum allowable units with violations. For example, the number of colony forming units (CFU) of any of the five tested units of the sample should not exceed 10^6 and be more than $3x10^4$ from three or more of the five tested samples (n = 5, c = 2, m = $3x10^4$, M = 10^6)

3.4 Violation pattern

There is only one sample specimen whose microbiological indices are higher than the “M” index.

3.5. Maximum permissible

Sample units, the microbiological number of which is higher than "m", but not more than "M".

4. REQUIREMENTS

4.1. Microbiological criteria for food and food ingredients should be indicated in the table opposite each item.

5. TECHNICAL COMPLIANCE CRITERIA

5.1. Samples are considered invalid in the following cases:

5.1.1 When the microbiological criterion exceeds “M” in one or more units of the sample “n”.

5.1.2 If the number of maximum permissible samples is higher than the “c” indicator established in the sampling plan .

Microbiological criteria for food products and food ingredients

1. Dairy products

Product	**Microorganisms**	**value per ml or gram**			
		n	c	m	M
Pasteurized milk (with or without flavoring additives)	- general seeding	5	1	$3x10^4$	10^5
	- enterobacteria	5	2	3	5
	- *E.coli*	5	0	0	-
	-*Salmonella* *	5	0	0	-
Ultra-pasteurized milk (with or without flavoring additives)	- incubation at 37ºC / 15 days or 55ºC / 7 days				
	- general seeding	5	0	10	-

	- enterobacteria	5	0	0	-
	-*Salmonella* *	10	0	0	-
Dairy products (with or without flavoring additives)	- yeast and mold	5	1	10	10^2
	- enterobacteria	5	1	5	10
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	2	10	10^2
Condensed and sweet condensed milk	- general seeding	5	2	10^2	10^3
	- enterobacteria	5	1	0	-
	- *Staphylococcus aureus*	5	1	5	10
Condensed Condensed Milk	The requirements for canned products apply (paragraph 8).				
Pasteurized cream (with or without flavoring additives)	- general seeding	5	1	$5x10^4$	10^5
	- yeast and mold	5	1	20	10^2
	- enterobacteria	5	1	10	20
	- *E.coli*	5	0	0	-
	- *Salmonella* *	5	0	0	-
Whipped cream	- general seeding	5	2	$5x10^4$	$5x10^5$
	- enterobacteria	5	1	10	20
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^2
Fermented cream	- yeast and mold	5	1	10	10^2
	- enterobacteria	5	1	10	20
	- *E.coli*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^2
Sterilized cream	The requirements for canned products apply (paragraph 8).				
* only if there is a flavoring additive					

Powdered milk (whole, fat-free, semi-fat-free), whey (dry or concentrated powder)	- general seeding	5	2	$5x10^4$	$3x10^5$
	- enterobacteria	5	1	10	10^2
	- *E.coli*	5	0	0	-
	- *Salmonella*	10	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^2
Dry whipped cream (with or without flavoring)	- general seeding	5	2	10^4	10^5
	- yeast and mold	5	1	10	10^2
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
Soft cheese (from pasteurized milk)	- enterobacteria	5	2	10^2	10^3
	- *E.coli*	5	1	10	10^2
	- *Salmonella*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-

	- *Staphylococcus aureus*	5	1	10^2	10^3
Hard and semi-hard cheese	- enterobacteria	5	1	10^2	10^3
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	2	10^2	10^3
Processed Cheese Packed In non-metallic containers	- general seeding	5	2	10^3	10^4
	- enterobacteria	5	1	10	10^2
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^2
Caseinate	- general seeding	5	2	$3x10^4$	$2x10^5$
	- enterobacteria	5	1	10	10^2
	- *E.coli*	5	0	0	-
	- *Salmonella*	10	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^2
Food ice (ice cream (with nuts) - milk ice cream - sorbet)	- number of aerobic bacteria	5	2	$5x10^4$	10^5
	- types of mold *	5	2	10^2	10^4
	- enterobacteria	5	2	10	10^2
	- *E.coli*	5	0	0	-
	- *Salmonella*	10	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^2
The dehydrated mixture for ice cream	- number of aerobic bacteria	5	2	$5x10^4$	$2x10^5$
	- enterobacteria	5	1	10	10^2
	- *E.coli*	5	0	0	-
	- *Salmonella*	10	0	0	-
Milkshakes	-BGKP	5	2	1	10
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	2	10	10^2

* if ice cream contains nuts

2. With Mesi for babies, baby food, some foods diet

Product	**Microorganisms**	**Limit value per ml or gram**			
		n	c	m	M
Cookies (without fillers, dry)	- enterobacteria	5	1	0	10^2
	- yeast and mold	5	1	fifty	10^2
	- *Salmonella*	5	0	0	-
	- *E.coli O157*	5	0	0	-
	- *Staphylococcus aureu*	5	1	10	10^2
	- *Bacillus cereus*	5	2	10^2	10^3

Long-life dry biscuits (chocolate coated or with chocolate filling or other filling)	- enterobacteria	5	1	10	10^{2}
	- *Salmonella*	thirty	0	0	-
	- *E.coli O157*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^{2}
	-Bacillus cereus	5	1	10^{2}	10^{3}
Dried and sublimated products requiring reconstitution	- General contamination	5	1	10^{4}	10^{5}
	- Enterobacteria	10*	0	0	-
	- *Salmonella*	60	0	0	-
	- *E.coli O157* ***	5	0	0	-
	- *Cronobacter sakazakii* (nutrition for infants 6 months of age and younger)	thirty	0	0	-
	- *Staphylococcus aureus*	5	0	0	-
	-Bacillus cereus ***	5	1	10^{2}	10^{3}
	- *Clostridium perfringens* ****	5	1	10	10^{2}
Grain Based Infant Nutrition	-Total insemination **	5	2	10^{3}	10^{4}
	- *Salmonella*	10	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^{2}
	-Bacillus cereus	5	1	10^{2}	10^{3}
	- *Listeria monocytogenes*	5	0	0	-
	- *Clostridium perfringens*	5	1	10	10^{2}
Dry mixes for babies, including those containing cultures that produce lactic acid	Enterobacteriaceae	10	2	0	10^{2}
	- *Salmonella*	5	0	0	-
	- *Cronobacter sakazakii* (nutrition for infants 6 months of age and younger)	thirty	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^{2}
	-Bacillus cereus	5	1	0	10
	- *Listeria monocytogenes*	5	0	0	-
	- *Clostridium perfringens*	5	2	1	10
Dried foods that	- General contamination	5	3	10^{5}	10^{6}

heat / cook before eating	Enterobacteriaceae	10	2	0	10^{2}
	- *E.coli*	5	0	0	-
	- *Salmonella*	fifteen	0	0	-
	- *Cronobacter sakazakii* (nutrition for infants 6 months of age and younger)	thirty	0	0	-
	-Bacillus cereus ***	10	1	0	-
	- *Clostridium perfringens*	10	1	10	0
Heat treated sealed products	Must comply with microbiological requirements for canned foods specified in this standard (8)				
	-Total insemination	5	1	10^{3}	10^{4}
	- *E.coli*	5	2	0	10

Diet foods intended for consumers at high risk (by product type)	- *Salmonella*	60	0	0	-
	- *E.coli O 157* ****	5	0	0	-
	- *Campylobactetr jejuni*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	10	1	10	10^{2}
	-*Bacillus cereus*	10	1	10^{2}	10^{3}
	- *Clostridium perfringens*	10	1	10^{2}	10^{3}
Bodybuilder Nutrition	-Total insemination	5	0	0	10^{4}
	yeast and mold	5	0	0	$3x10^{2}$
	-BGKP	5	0	0	10
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	0	0	-

* 10 samples for infants less than 6 months, 5 samples for infants older than 6 months
** optional
*** If the product contains milk and / or rice
**** If the products contain meat

3. Meat, poultry and products of their processing

Product	**Microorganisms**	**mit value per ml or gram**			
		n	c	m	M
Raw meat (chilled / frozen); whole carcasses or half carcasses; pieces with or without bones	-Total insemination	5	2	10^{5}	10^{6}
	- *Salmonella*	5	0	0	-
	- *E.coli O 157*	5	0	0	-
Fresh poultry (chilled / frozen)	-Total insemination	5	3	$5x10^{5}$	$5x10^{6}$
	- *Salmonella* **	5	1	0	-
	- *Campylobactetr jejuni* ***	5	0	0	-
Raw minced meat (poultry meat); chilled / frozen	-Total seeder ****	5	2	$5x10^{5}$	$5x10^{6}$
	Enterobacteria *****	5	2	10^{2}	10^{3}
	- *Salmonella*	5	0	0	-
	- *E.coli O 157*	5	0	0	-
	- *Staphylococcus aureus* ***	5	2	10^{2}	10^{3}
	- *Clostridium perfringens* *****	5	2	10^{2}	10^{3}
Raw minced meat / meat pieces (chilled / frozen) with soy or pickled (eg kubbe; meatballs; fresh sausages, meat for burgers)	Total contamination	5	3	10^{6}	10^{7}
	- *Salmonella*	5	0	0	-
	- *E.coli O 157*	5	0	0	-
	- *Staphylococcus aureus*	5	2	$5x10^{2}$	10^{3}
	- *Clostridium perfringens*	5	2	10^{2}	10^{3}
Raw edible offal (chilled / frozen), e.g. liver, kidney, muscle stomach	Total contamination	5	2	10^{5}	10^{6}

	- *Salmonella*	5	0	0	-
Salted and / or smoked meat; mortadella; meatloaf, basturma	Total contamination	5	3	$5x10^5$	$5x10^6$
	- *Salmonella*	10	0	0	-
	- *E.coli O 157*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	2	$5x10^2$	$5x10^3$
	-*Bacillus cereus*	5	2	10^2	10^3
	- *Clostridium perfringens*	5	2	10^2	10^3
Salted and / or smoked poultry meat; mortadella; frankfurter sausage; turkey, smoked turkey breast	Total contamination	5	3	10^4	10^5
	- *Salmonella*	10	0	0	-
	- *Campylobactetr jejuni*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	10	2	10^3	10^4
	-*Bacillus cereus*	5	2	10^2	10^3
	- *Clostridium perfringens*	5	2	10^2	10^3

* Limit value per cm^2 for red meat only

** The sample is rejected if the sample unit according to the test results is positive for *Salmonella typhimurium and Salmonella enteritidis*

*** For chilled minced meat and chilled poultry meat.

**** This criterion should not be applied to minced meat produced in retail conditions when the shelf life of the product is less than 24 hours.

***** Unbelievably.

Product	**Microorganisms**	**Limit value per ml or gram**			
		n	c	m	M
Cooked sausage	-Total insemination	5	2	10^4	10^5
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10^2	10^3
	- *Clostridium perfringens*	5	2	10^2	10^3
Poultry elapsed culinary processing frozen, to be reheated before eating (for example, frozen convenience foods; chicken burgers; chicken / turkey rolls, chicken nuggets, other breaded poultry meat products)	Total contamination	5	3	10^4	10^5
	- *Salmonella*	5	0	0	-
	- *Campylobactetr jejuni* *	5	0	0	-
	- *E.coli O 157*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureuy*	5	1	10^3	10^4
	-*Bacillus cereus* *	5	2	10^2	10^3
	- *Clostridium perfringens* *	5	2	10^2	10^3
	-Total insemination	5	1	10^4	10^5

Soup from meat and poultry (concentrate, powder)	Enterobacteriaceae	5	1	10	10^2
	- *Salmonella*	10	0	0	-
	-*Bacillus cereus* **	5	1	10^3	10^4
	- *Clostridium perfringens*	5	1	10^2	10^3
Dry meat / poultry meat and their components; protein concentrates	- *Salmonella*	10	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	3	10^2	10^3
	-*Clostridium perfringens*	5	2	10^2	10^3
Vacuum packed meat and poultry products (partially canned, perishable)	-Total insemination	5	2	10^6	10^7
	- *Salmonella*	5	0	0	-
	- *Campylobactetr jejuni*	5	0	0	-
	- *Staphylococcus aureus*	5	2	10^2	10^3
	- *Clostridium perfringens*	5	2	10	10^2

* Optional

** For products containing rice or corn flour as ingredients.

4. Fish and shellfish and products thereof

Product	**Microorganisms**	**Limit value per gram or cm ^{2}**			
		n	c	m	M
Raw fish and products from it (chilled / frozen), e.g. fish blocks, minced fish, slices)	Total contamination	5	2	10^5	10^6
	- *E.coli*	5	3	10	$5x10^2$
	- *Vibrio parahaemolyticus*	5	0	10^2	10^3
	-*Clostridium botulinum*	5	0	0	-
	-*Aeromonas spp*	5	0	10^2	10^3
Raw (chilled / frozen) crustaceans (e.g. shrimp, large shrimp, lobster and crab)	Total contamination	5	2	$5x10^5$	10^7
	- *E.coli*	5	3	10	$5x10^2$
	- *Salmonella*	5	0	0	-
	- *Vibrio parahaemolyticus*	5	1	10^2	10^3
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	2	10^2	10^3
Live mollusks: bivalves (oysters, cleme, mussels, etc.); cephalopods (squid, cuttlefish, octopuses, etc.); gastropods (snails, etc.)	- *E.coli*	5	1	$2,3x10^2$	$7x10^2$
	- *Salmonella*	5	0	0	-
	- *Vibrio parahaemolyticus* *	10	1	10^2	10^3
Frozen / chilled breadcrumbs of fish, crustaceans and molluscs (e.g. fish fingers (fingers), fish protein and fish pies)	Total contamination	5	2	$5x10^5$	10^7
	- *E.coli*	5	2	10	$5x10^2$
	- *Salmonella* *	5	0	0	-
	- *Vibrio parahaemolyticus*	5	1	10^2	10^3
	- *Staphylococcus aureus*	5	1	10^3	10^4
Smoked fish, including herring, pre-cooked before eating or eaten without	Total contamination	5	3	10^5	10^6
	- *E.coli*	5	3	10	$5x10^2$

pre-cooking	- *Vibrio parahaemolyticus*	5	0	10^{2}	10^{3}
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	2	10^{3}	10^{4}
Dried Seafood, Dried Fish and Fish Protein	Total contamination	5	2	10^{5}	10^{6}
	Yeast and mold	5	2	10^{2}	10^{4}
	- *Salmonella*	10	0	0	-
	- *Staphylococcus aureus*	5	1	10^{2}	10^{3}
	- *Clostridium perfringens*	5	1	10^{2}	10^{3}
Salted and / or fermented fish	Total contamination	5	2	10^{5}	10^{6}
	- *E.coli*	5	1	10	$4x10^{2}$
	- *E.coli O157*	5	0	0	-
	- *Salmonella*	10	0	0	-
	- *Vibrio parahaemolyticus*	10	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^{2}
	- *Clostridium perfringens*	5	1	10^{2}	10^{4}

Crustaceans, shellfish, cooked (chilled / frozen)	Total contamination	5	2	10^{5}	10^{6}
	- *E.coli*	5	1	10	$5x10^{2}$
	- *Salmonella*	5	0	0	-
	- *Vibrio parahaemolyticus*	10	1	10^{2}	10^{3}
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10^{2}	10^{3}

* optional

5. Eggs and egg products

Product	**Microorganisms**	**Limit value per gram or cm ^{2}**			
		n	c	m	M
Fresh whole eggs	Enterobacteriaceae	5	2	10	10^{2}
	- *Salmonella*	10	0	0	-
	- *Campylobactetr jejuni*	5	2	0	-
Pasteurized egg melange (whole egg, yolk or protein), chilled or frozen	Total contamination	5	2	10^{4}	10^{5}
	Enterobacteriaceae	5	1	10	10^{2}
	- *Salmonella*	5	0	0	-
	- *Campylobactetr jejuni*	5	0	0	-
Any egg product intended for special diet food (nutrition for babies, elderly, medical nutrition, etc.)	Total contamination	5	1	$5x10^{4}$	10^{6}
	Enterobacteriaceae	5	2	10	10^{2}
	- *Salmonella*	thirty	0	0	-
	Total contamination	5	2	10^{4}	10^{5}
	Enterobacteriaceae	5	2	10	10^{2}

Egg Pudding (Powdered)	- *E.coli*	5	2	0	10
	- *Salmonella*	10	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^{3}
	-*Bacillus cereus*	5	2	10^{2}	10^{3}
	- *Clostridium perfringens*	5	2	10	10^{2}
Dry egg mixture	Total contamination	5	2	10^{4}	10^{5}
	Enterobacteriaceae	5	2	10	10^{2}
	- *E.coli*	5	0	0	-
	- *Salmonella*	10	0	0	-
	- *Staphylococcus aureus*	5	0	10	-
Dry egg-rich pastry mixes	Enterobacteriaceae	5	2	10	10^{2}
	- *Salmonella*	10	0	0	1-
	- *Staphylococcus aureus*	5	1	10^{2}	10^{3}
	-*Bacillus cereus*	5	0	10^{2}	-

6. Fats and oils

Product	**Microorganisms**	**Limit value per gram or cm ^{2}**			
		n	c	m	M
Butter (salted and unsalted)	Fat-splitting bacteria	5	1	10^{2}	10^{3}
	Enterobacteriaceae	5	1	10	20
	- Yeast and mold	5	1	10	10^{2}
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	0	0	-
Ghee ghee (milk fats)	Enterobacteriaceae	5	1	0	10
	- Yeast and mold	5	0	10	-
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	1	0	10
Margarine	Total contamination	5	2	10^{4}	10^{5}
	- Yeast and mold	5	1	fifty	10^{2}
	- *E.coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	0	0	-
All kinds of peanut butter	Total contamination	5	2	10^{3}	10^{4}
	- mold	5	2	$5x10^{1}$	$5x10^{2}$
	Enterobacteriaceae	5	2	10	10^{2}
	- *Salmonella*	10	0	0	-

7. By ntsentraty tomatoes, sauces, vinegar, spices and herbs

Product	Microorganisms	Limit per ml or gram			
		n	c	m	M
All kinds of canned tomato products	The requirements for canned products apply (Clause 8)				
All kinds of tomato products	- mold	5	2	0	-
	- *Salmonella* *	5	0	0	-
Mayonnaise, mustard, salad dressing and other sauces	- The number of	5	2	10^3	10^4
	aerobic bacteria	5	2	20	10^2
	- Yeast and mold	5	1	10	10^2
	- Enterobacteria	5	2	2	10
	- *Escherichia coli*	5	0	0	-
	- *Salmonella*	5	1	10	10^2
	- *Staphylococcus aureus*				
Vinegar	- The number of aerobic bacteria	5	1	thirty	10^2
Dry herbs and spices, ready-to-eat herbs and spices	- The number of	5	2	10^5	10^6
	aerobic bacteria	5	2	10^2	10^4
	- mold	5	2	10	10^2
	- Fecal Escherichia coli	10	0	0	-
	- *Salmonella*	5	1	10^2	10^3
	- *Staphylococcus aureus*	5	2	10^3	10^4
	- *Bacillus cereus*	5	2	10^2	10^3
	- *Clostridium perfringens*				
Dry herbs (rosel, chamomile, other)	- The number of	5	2	10^3	10^4
	aerobic bacteria	5	2	10^2	10^3
	- The number of	5	2	0	10^2
	anaerobic bacteria	5	1	10^2	10^4
	- Yeast and mold				
	- BGKP				
All kinds of tea	- BGKP	5	1	10	10^2
Coffee and its derivatives	- Yeast and mold	5	2	10^2	10^3
	- BGKP	5	1	10	10^2

* Optional

8. Canned products and ingredients for preservation

Product	Microorganisms	Limit per ml or gram			
		n	c	m	M
First stage	The number for testing is 24 cans without defects; sealed; hardening or swelling during incubation are indicative of industrial sterilization performance and safety mass production	24	-	0	-

Second phase	- In the presence of 1-2 cans with defects or vzbuhshih cans should select from batch larger number of cans. - In the presence of more than 1% cans with defects in a batch reject, but in the presence of 1% or less, carry out the third stage	-	1%	0	-
Third stage	- 24 cans are examined during incubation for at least 10 days in an incubator at a temperature of 30-37 ° C for canned foods in a non-acidic environment , and at a temperature of 25 ° C for canned foods to an acidic environment. - The product is inappropriate in the event of an increase in the defect of the can jars or densification or swelling after incubation.	24	0	0	
Fourth stage	- It is carried out in the absence of consolidation or defects of adhesion and swelling after the third stage. - Open and cut spikes and explore 10 tin cans. - The party is allowed at no adhesion or leakage.	10	0	0	-

*** Food products used in the manufacture of canned products**

Flour - milk - sugar - pectin - acids - cereals - starch - cereals

Microorganisms	**Limit per ml or gram**			
	n	c	m	M
Thermophilic bacteria	Explore 5 units; 10 g each			
1- Aerobic	5	125/10 g	150/10 g	
2- Bacteria causing acidic spoilage 3- Anaerobes that do not produce H_2S	5	50/10 g	75/10 g	
4- Anaerobes producing H_2S	5	3 samples negative		
	5	4 negative samples (blackening)		

9. Cereals; legumes and products thereof

Product	**Microorganisms**	**Limit per ml or gram**			
		n	c	m	M
Food grain	- mold	5	2	10^2	10^4
	- *Salmonella*	5	0	0	-

Cereals, cereal flour and by-products, such as bran	- mold - *Bacillus cereus* - *Clostridium perfringens*	5 5 5	2 0 0	10^{2} 10^{3} 10^{2}	10^{4} 10^{4} -
Soya flour, concentrates and soya crops	- mold - *Escherichia coli* - *Salmonella* - *Bacillus cereus*	5 5 5 5	2 0 0 0	10^{2} 0 0 10^{2}	10^{4} - - -
Starch and starch-containing products (e.g. custard concentrate)	- The number of aerobic bacteria * - Yeast and mold - *Salmonella* - *Staphylococcus aureus* - *Bacillus cereus* - *Clostridium perfringens*	5 5 5 5 5 5	2 2 0 2 1 0	10^{4} 10^{2} 0 10 10^{3} 10^{2}	10^{5} 10^{3} - 10 ^{2} 10^{5} -
Pasta / pasta and noodles (uncooked, wet and dry) with and without filling	- BGKP * - Yeast and mold - *Escherichia coli* - *Salmonella* - *Bacillus cereus* - Sulfite-reducing *Clostridia*	5 5 5 5 5 5	2 2 0 0 2 2	10 10^{2} 0 0 10^{2} 20	10^{2} 10^{3} - - 10 ^{3} 10^{2}
Pizza, meat pies, frozen pastry with and without filling	- *Salmonella* - *Staphylococcus aureus*	10 5	0 1	0 10^{2}	- 10^{4}
Bread	- Yeast and mold - Enterobacteria	5 5	1 1	2×10^{3} fifty	10^{4} 10^{2}
Special bread (sweet) with egg or milk	- Yeast and mold - Enterobacteria - *Salmonella* - *Staphylococcus aureus*	5 5 10 5	1 1 0 1	10^{3} fifty 0 10	2×10^{3} 10^{2} - 10 ^{2}
Cakes and pastries (ready to eat)	- The number of aerobic bacteria - Enterobacteria - *Escherichia coli* - *Salmonella* - *Listeria monocytogenes* * - *Staphylococcus aureus* - *Bacillus cereus*	5 5 5 20 5 5 5	2 1 0 0 0 1 0	10^{4} 10^{2} 0 0 0 10 10	10^{5} 10^{3} - - - 10 ^{2} -
Aerial, flattened cereal products	- The number of aerobic bacteria - mold - *Salmonella* - *Bacillus cereus* - *Clostridium perfringens*	5 5 5 5 5	1 1 0 1 0	10^{4} 10^{2} 0 10^{4} 0	10^{5} 10^{4} - 10 ^{4} -

* Optional

Product	**Microorganisms**	**Limit per ml or gram**			
		n	c	m	M

Hot snacks (soup) containing rice or corn flour (frozen or dry)	- *Bacillus cereus*	5	1	10^3	10^4
Cakes, desserts and confectionery products (frozen or dehydrated)	- The number of aerobic bacteria - *Escherichia coli* - *Salmonella* - *Staphylococcus aureus*	5 5 5 5	2 2 0 2	10^4 0 0 10	10^6 10 - 10^2
Malt Derivatives malt	- The number of aerobic bacteria - Yeast and mold - *Salmonella* - *Staphylococcus aureus*	5 5 5 5	1 1 0 1	5×10^4 10^3 0 10^2	10^5 5×10^3 - 10^3

10. Fruits and vegetables

Product	Microorganisms	Limit per ml or gram			
		n	c	m	M
Fresh fruits and vegetables (sliced and in salad) for fresh consumption	- *Escherichia coli* - *Salmonella* - *Escherichia coli* O157 - *Listeria monocytogenes* - *Staphylococcus aureus*	5 5 5 5 5	2 0 0 0 2	10 0 0 0 10^2	10^2 - - - 10^3
Dried vegetables	- *Escherichia coli*	5	2	10^2	10^3
Dried fruits; dates (including date paste), figs, apricot, grapes (raisins)	- Yeast - mold - *Escherichia coli* - *Salmonella*	5 5 5 5	2 2 2 0	10 10^2 0 0	10^2 10^3 10 -
Frozen vegetables and fruits, pH is equal to or higher than 4.5	- *Escherichia coli*	5	2	10^2	10^3
Frozen vegetables and frozen fruits, pH below 4.5	PH measured during sampling	The pH should be below 4.5 in all samples tested.			
Vegetable soup (powder)	- The number of aerobic bacteria - Yeast and mold - *Escherichia coli* - *Salmonella* - *Bacillus cereus* - *Clostridium perfringens*	5 5 5 5 5 5	1 1 0 0 1 1	10^4 10^2 0 0 10^3 10^2	10^5 10^3 - - 10^4 10^3
Pickled / Salted	- Yeast	5	0	0	2

vegetables / fruits (e.g. salted cabbage, pickled vegetables food olives, etc.)	- mold	5	0	0	-
Fried potatoes (e.g. chips, sticks , etc.)	- The number of aerobic bacteria	5	1	5×10^4	10^5
	- *Salmonella*	5	0	0	-
	- *Bacillus cereus*	5	1	10^4	10^5
	- *Clostridium perfringens*	5	0	0	-
Concentrated tamarind	- mold	5	0	0	-
	- *Escherichia coli*	5	0	0	-

11. Jelly, jam and marmalade

Product	**Microorganisms**	**Limit per ml or gram**			
		n	c	m	M
Jelly, jam and marmalade	- Yeast and mold	5	1	10^3	10^4
Dry jelly	- *Salmonella*	5	0	0	-
Whole / lump fruits in sugar syrup (canned)	Canned food requirements apply (clause 8)				

12. Chocolate, sweets and their ingredients

Product	**Microorganisms**	**Limit per ml or gram**			
		n	c	m	M
Chocolate (bitter or sweet - with milk, or with a filler, or coated with nuts), iris, nougat, chewing sweets, etc.	- The number of aerobic bacteria		2	10^4	10^6
	- Enterobacteria		2	0	10
	- *Salmonella*	10	0	0	
Dehydrated desserts (candies, caramel and other similar products)	- The number of aerobic bacteria		2	10^4	10^6
	- *Escherichia coli*		0	0	-
	- *Salmonella*		0	0	-
	- *Staphylococcus aureus*		2	10	10^3

Hard and soft candy	- The number of aerobic bacteria		2	0	5×10^3
	- Yeast and mold		2	0	10^2
	- Enterobacteria		0	0	-
	- *Salmonella*		0	0	-
Cocoa	- Yeast and mold		2	10^2	10^4
	- Enterobacteriaceae		2	0	10
	- *Salmonella*	10	0	0	-
Coconut (grated / dried)	- mold		2	10	10^2
	- Enterobacteriaceae		2	10^2	10^4
	- *Salmonella*	10	0	0	-
Nuts	- mold		2	10^2	10^4
	- *Escherichia coli*		2	0	10
Chewing gum	- Yeast and mold		1	5×10^2	10^3
	- *Salmonella*		0	0	-
Honey	- Yeast and mold		1	10^2	10^3
	- Sulfite-reducing anaerobic bacteria		2	10^2	10^3
	- *Clostridium botulinum* *		0	0	-
Eastern sweets	- BGKP		0	0	-
	- *Salmonella*		0	0	-
	- *Escherichia coli* O157		0	0	-
	- *Listeria monocytogenes* *		0	0	-
	- *Staphylococcus aureus*		0	0	-
Molasses, date syrup, hard brown sugar	- Yeast and mold		1	5×10^2	10^3
	- *Escherichia coli*		1	0	10
	- *Salmonella*		0	0	-

Concentrated cane syrup	- Yeast and mold	1	-	10
	- *Escherichia coli*	0	0	-
	- *Salmonella*	0	0	-

* Optional

thirteen. Ingredients for the food industry

Product	Microorganisms	Limit per ml or gram n	c	m	M
Enzymes	- *Escherichia coli*	5	2	0	10
	- *Salmonella*	10	0	0	-
Dyes (food coloring)	- The number of aerobic bacteria	5	2	10^4	10^6
	- *Salmonella*	10	0	0	-
Gum	- The number of aerobic bacteria	5	2	10^4	10^6
	- Enterobacteria	5	2	10	10^3
Egg products	- The number of aerobic bacteria	5	2	10^4	10^6
	- *Salmonella*	10	0	0	-
	- Enterobacteriaceae	5	2	10	10^2
Yeast	- Spores of rod-shaped bacteria	5	1	10^2	10^3
	- *Escherichia coli*	5	2	0	10
	- *Salmonella*	20	0	0	-
Gelatin	- The number of aerobic bacteria	5	3	5×10^3	10^5
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10^2	10^3
	- *Clostridium perfringens*	5	1	10^2	10^4

14. Drinking water

Product	Microorganisms	Limit per ml or gram n	c	m	M
Bottled drinking water a) Without gas (including flavored)	BGKP	5	0	0	-
	E.coli	5	0	0	-
	Pseudomonas aeruginosa	5	0	0	-
b) Sparkling water	pH	5	0	3,5	-

		If in any sample the indicator is above 3.5, fulfill the above sampling plans for non-carbonated water			
Water for human consumption; at the source during bottling	BGKP	0	1	0	10/100 ml
	Fecal Streptococcus Sulphite-reducing clostridia	} None in 100 ml sample			
mineral water	**First study**	**Decision**			
	E.coli or Heat-resistant BGKP 1 × 250 ml	Should not be detected in any sample.			
	General BGKP 1 × 250 ml *Enterococcus fecalies* 1 × 250 ml	If ≥ 1 or ≤ 2, conduct a second study			
	Pseudomonas aeruginosa 1 × 250 ml *Sulphite-reducing anaerobic bacteria* 1 × 250 ml	If> 2, reject			
Second study					
	General BGKP	4	1	0	2
	Fecal Streptococcus	4	1	0	2
	Sulphite-reducing anaerobes	4	1	0	2
	Pseudomonas aeruginosa	4	1	0	2
Packaged food ice	The number of aerobic bacteria	5	1	5×10^2	10^3
	BGKP (100 ml)	5	0	0	-
	E.coli (100 ml)	5	0	0	-
	Pseudomonas aeruginosa (250 ml)	5	0	0	-

If the indicator is> 2, retest at the same point for the second study.

fifteen. Beverages

Product	Microorganisms	Limit per ml or gram			
		n	c	m	M
Carbonated drinks (non-alcoholic)	- The number of aerobic bacteria	5	1	10^2	$3x10^2$
	- Yeast and mold	5	1	2	10
	- BGKP	5	1	0	10
Unpasteurized juices (fresh)	- Yeast and mold	5	2	10^3	10^4
	- *Escherichia coli*	5	2	10^2	10^3
	- *Salmonella*	5	0	0	-
Pasteurized	- The number of aerobic bacteria	5	2	$5x10^3$	10^4

fruit juices and drinks (including	- Yeast and mold	5	2	10^2	10^3
	- BGKP	5	3	5	10^2
Flavored drinks and their concentrates	- The number of aerobic bacteria	5	1	10	10^2
	- Yeast and mold	5	0	0	-
Powder drinks (dry)	- The number of aerobic bacteria	5	2	10^3	10^4
	- Yeast and mold	5	1	10	10^2
	- BGKP	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Escherichia coli* O157	5	0	0	-
	- *Staphylococcus aureus*	5	0	0	-
	- *Bacillus cereus*	5	1	10^2	-
Liquorice extracts; concentrates or drinks	- The number of aerobic bacteria	5	2	0	10^4
	- Enterobacteria	5	2	10	10^2
	- Yeast and mold	5	2	0	10^2
	- *Escherichia coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	0	0	-
Pasteurized Soya Beverages	- The number of aerobic bacteria	5	1	10^4	10^5
	- BGKP	5	1	5	10
	- *Escherichia coli* O157	5	0	0	-
Sterilized Soy Drinks	- The number of aerobic bacteria	5	1	0	10
	- BGKP	5	0	0	-
	- Yeast and mold	5	0	0	-
	- *Staphylococcus aureus*	5	0	0	-
Low Calorie Drinks	- The number of aerobic bacteria	5	2	10	10^2
	- Yeast and mold	5	1	0	2
	- BGKP (100 ml)	5	1	0	1
	- *Escherichia coli*	5	0	0	-

16. Ready to eat food

Product	**Microorganisms**	**Limit per ml or gram**			
		n	c	m	M
	- *Escherichia coli*	5	1	20	10^1

	- *Salmonella*	5	0	0	-
	- *Escherichia coli* O157	5	0	0	-
	- *Listeria monocytogenes* *	5	1	20	10^2
	- *Bacillus cereus*	5	1	10^2	10^3
Sandwiches and stuffed rolls without salad	- The number of aerobic bacteria **	5	1	10^6	10^7
	- Enterobacteria	5	1	10^2	10^4
	- *Escherichia coli*	5	1	20	10^2
	- [1] *Salmonella*	5		0	-
	- *Staphylococcus aureus*	5	1	20	10^2
	- *Bacillus cereus*	5	1	10^3	10^4
Cabbage salad (cabbage)	- The number of aerobic bacteria	5	1	10^4	10^6
	- *Escherichia coli*	5	2	10	10^2
	- *Escherichia coli* O157	5	0	0	-
	- *Listeria monocytogenes*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10^2	10^4
Sandwiches and Stuffed Cheese Rolls - Ready-to-Eat Meals (pasta / pizza, etc.)	- Enterobacteria	5	1	10^2	10^4
	- *Escherichia coli*	5	1	20	10^2
	- [1] *Salmonella*	5		0	-
	- *Staphylococcus aureus*	5	1	20	10^2
	- *Bacillus cereus*	5	1	10^3	10^4
Rice	- The number of aerobic bacteria	5	1	10^5	10^6
	- Enterobacteria	5	1	10^2	10^4
	- *Escherichia coli*	5	1	20	10^2
	- [2] *Salmonella*	5		0	-
	- *Staphylococcus aureus*	5	1	20	10^2
	- *Bacillus cereus*	5	1	10^3	10^4
	- *Clostridium perfringens*	5	1	20	10^2
(1) Bhaji, Falafel	- The number of aerobic bacteria	5	1	10^3	10^4
(2) Soup (all kinds), Samsa, Mashed potatoes, Desserts (pies, custard and sweet cakes)	- The number of aerobic bacteria	5	1	10^4	10^5
(3) Stuffed trifle pancakes (4) Hummus, tzatziki and other sauces.	- The number of aerobic bacteria	5	1	10^5	10^6
	- The number of aerobic bacteria	5	1	10^6	10^7

[1] *Salmonella is* determined if any levels of enterobacteria are detected in the sample

[2] In that case, if the figure contains meat or meat of domestic poultry.

* This limit applies to long-term food products (storage at room temperature or in deep freeze). In the case of refrigerated storage or products for children, the limit is " not detected in 25 g".

** Optional.

Product	**Microorganisms**	**Limit per ml or gram**			

		N	c	m	M
The following parameters apply to all of the above products (1-4):					
	- Enterobacteria	5	1	10^2	10^4
	- *Escherichia coli*	5	1	20	10^2
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	1	20	10^2
	- *Bacillus cereus*	5	1	10	10^4
	- *Clostridium perfringens* *	5	1	20	10^2
Jelly	- The number of aerobic bacteria	5	2	10^2	10^3
	- Enterobacteria	5	0	0	-
	- *Escherichia coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	1	20	10^2
	- Sulfite-reducing anaerobes	5	1	0	10
	- *Clostridium perfringens* *	5	0	0	-

* Optional

17. Various food

Product	Microorganisms	Limit per ml or gram			
		n	c	m	M
Tofu (not WTO)	- *Escherichia coli*	5	0	0	-
	- *Staphylococcus aureus*	5	2	10^2	10^3
	- *Bacillus cereus*	5	2	10^2	10^3
Products with sesame seeds (tahini, halva)	- mold	5	1	10^2	10^3
	- *Escherichia coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^2
Cultivated seeds and cereal (bean sprouts, alfalfa, etc.)	- *Escherichia coli*	5	0	0	-
	- *Salmonella*	5	0	0	-
Essential water (pink and flower water, etc.)	- The number of aerobic bacteria	5	2	10	10^2
	- Yeast	5	2	0	20
	- *Candida*	5	0	0	-
	- BGKP	5	2	0	10
	- *Escherichia coli*	5	0	0	-
	- *Pseudomonas aeruginosa*	5	0	0	-
	- *Bacillus cereus*	5	0	0	-
Nutrient Powders	- The number of aerobic bacteria	5	2	10^3	10^4
	- BGKP	5	1	0	10
	- *Salmonella*	fifteen	0	0	-
	- *Staphylococcus aureus*	5	0	0	-
	- *Bacillus cereus*	5	1	10^2	-
	- The number of aerobic	5	2	10^4	10^6

Cream Caramel Powder	bacteria				
	- *Escherichia coli*	5	2	0	10
	- *Salmonella*	10	0	0	-
	- *Staphylococcus aureus*	5	1	10	10^3

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