Microbiological Requirements for Food Groups[1]

Government of the Republic Regulation No. 166 of 25 May 2000

(RT[2] I 2000, 42, 266),

entered into force 5 June 2000,

amended by the following Regulations:

16.07.2002 entered into force 27.07.2002 - RT I 2002, 65, 230;

16.01.2002 entered into force 31.01.2002 - RT I 2002, 7, 37.

The Regulation is established pursuant to subsection 12 (3) of the Food Act (RT I 1999, 30, 415; 58, 608; 2001, 93, 565; 2002, 61, 375; 63, 387).

§ 1. General Provisions

(1) Food shall conform to the microbiological requirements established in this Regulation. The maximum authorised levels of micro-organisms are presented in the Annex to this Regulation by food group.

(2) Food does not conform to the microbiological requirements if the level of micro-organisms exceeds the level permitted by the Annex to this Regulation or if it contains micro-organisms the pathogenic potential of which has been established.

(3) Based on their pathogenic and infectious potential, micro-organisms present in food are divided into four groups:

Group 1	Micro-organisms characterising the quality and microbiological stability of food	Psychrophilic bacteria
		Lactic bacteria
		Yeasts
		Moulds, except for types producing mycotoxins
		Leuconostoc spp.
		Mesophilic aerobes
		Thermotolerant micro-organisms
		Proteolytic micro-organisms
		Lipolytic micro-organisms
Group 2	Micro-organisms indicating poor	Coliform bacteria

	hygiene, or indicator bacteria	Thermotolerant coliform bacteria
		Escherichia coli
		Enterococcus spp.
		Enterobacteriaceae
		Sulphite-reducing clostridia
Group 3	Potentially pathogenic micro-organisms	*Bacillus cereus*
		Clostridium perfringens
		Staphylococcus aureus
		Aeromonas hydrophila
		Vibrio parahaemolyticus
		Listeria monocytogenes
		Pseudomonas aeruginosa
		Sarcocystis
		Isospora
		Cyclospora
Group 4	Micro-organisms constituting a direct hazard to health, including pathogenic micro-organisms and agents causing parasitic diseases	*Salmonella spp.*
		Shigella spp.
		Campylobacter jejuni
		Campylobacter coli
		Campylobacter laridis
		Campylobacter upsaliensis
		Pathogenic serotypes of *Escherichia coli*
		Pathogenic serotypes O:3; O:5,27; O:8; O:9 of *Yersinia enterocolitica*
		Brucella spp.

Mycobacterium tuberculosis

Vibrio cholerae

Vibrio vulnificus

Bacillus anthracis

Francisella tularensis

Clostridium botulinum

Giardia duodenalis

Toxoplasma gondii

Entamoeba histolytica

Cryptosporidum spp.

Trichinella spiralis

Diphyllopothrium latum

Enterobius vermicularis

Taenia saginata, Taenia solium

(4) In the course of routine examinations, the microbiological criteria of micro-organisms listed in groups 1-3 specified in subsection (3) shall be determined selectively. Of the micro-organisms belonging to group 4, only the presence of *Salmonella* shall be determined if necessary. The presence of other micro-organisms belonging to group 4 shall be determined in the course of studies intended to detect the spread of infections via food.

(5) Analyses shall be carried out using methods in accordance with Estonian or international standards or other equivalent methods.

§ 2. Microbiological criteria

Assessment of the conformity of food to the microbiological requirements shall be based on the following criteria:

1) n is the number of units making up the sample;

2) m is the number of micro-organism colonies per gram or millilitre, and food is deemed to conform to the microbiological requirements if the number of colonies in all sample units is equal to or less than m;

3) M is the maximum value for the number of micro-organism colonies permitted in food per gram or millilitre. Food is deemed not to conform to the microbiological requirements and to be unfit for human consumption if the number of micro-organism colonies is equal to or greater than the value of M in more sample units than permitted by c.

4) c is the number of units in the sample in which the number of micro-organism colonies per gram or millilitre determined in the course of the study may be between m and M. Food is deemed to conform to the microbiological requirements if the number of micro-organism colonies in the remaining samples is equal to or less than the value of m.

[1] The requirements of Directives 89/437/EEC (OJ L 212, 22.07.1989), 91/492/EEC (OJ L 286, 24.09.1991), 91/493/EEC (OJ L 286, 24.09.1991), 92/46/EEC (OJ L 268, 14.09.1992) and 94/65/EC (OJ L 368, 31.12.1994) of the Council of the European Communities and Decision 93/51/EEC (OJ L 13, 21.01.1993) of the Commission of the European Communities have been taken into account.

[2] RT = *Riigi Teataja = State Gazette*

Annex to Government of the Republic Regulation No. 166 of 25 May 2000
"Microbiological Requirements for Food Groups"

Maximum authorised levels of micro-organisms in food by food group

Food group	Micro-organism or group of micro-organisms	Maximum authorised levels of micro-organisms in food on date of production		Maximum authorised levels of micro-organisms in food during non-standard analyses(1)	Maximum authorised levels of micro-organisms in food on "use by" date or at end of minimum durability period		n	c
		m	M		m	M		
1. Milk and milk products								
Drinking milk – raw cow's milk	Total bacteria count – until 01.06.2000 – from 01.06.2000			10^5 (2) $5x10^4$				
	Staphylococcus aureus			$m = 10^2$ $M = 5x10^2$			5	2

	Salmonella spp.(3)			m and M = 0			5	0
	Micro-organism Group 4 specified in subsection 2 (3) of this Regulation (hereinafter Group 4)			0				
– raw goat's and sheep's milk	Total bacteria count			$5x10^5$				
	Staphylococcus aureus			m = $5x10^2$ M = $2x10^3$			5	2
	Group 4			0				
Pasteurised drinking milk	Mesophilic aerobes	$5x10^4$	$5x10^5$	$5x10^5$			5	1
	Coliform bacteria	0	5	5			5	1
	Listeria monocytogenes(4)	0	0	0			5	0
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Ultra high temperature treated (UHT) or sterilised milk	Mesophilic aerobes			10^2				
	Group 4			0				
Cream (pasteurised)	Mesophilic aerobes	$5x10^4$	10^5	10^5			5	1
	Coliform bacteria	0	5	5			5	2
	Listeria monocytogenes	0	0	0			5	0
	Bacillus cereus			10^4				
	Salmonella spp.	0	0	0			5	0

	Group 4			0				
Fermented milk and cream products	Coliform bacteria	0	5	10			5	2
	Listeria monocytogenes	0	0	0			5	0
	Yeasts			10^3				
	Moulds			10^3				
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Kephir	Coliform bacteria			10				
	Listeria monocytogenes	0	0	0			5	0
	Moulds			10^3				
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Butter, dairy spreads, butter mixes	Coliform bacteria	0	10	10			5	2
	Listeria monocytogenes	0	0	0			5	0
	Moulds			10^3				
	Yeasts			10^3				
	Group 4			0				
Cottage cheese, curds and curd pastes, cream desserts	Coliform bacteria	$5x10^2$	$5x10^3$	$5x10^3$			5	2
	Moulds			10^2	10^2	10^3	5	2
	Yeasts			10^3	10^3	10^4	5	2
	Staphylococcus aureus			m =10^2 M = 10^3			5	2

	Listeria monocytogenes	0	0	0			5	0
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Hard and medium-hard cheeses (manufactured from heat-treated milk)	Coliform bacteria			$m = 5x10^2$ $M = 5x10^3$			5	2
	Thermotolerant coliform bacteria			$m = 10$ $M = 10^2$			5	2
	Staphylococcus aureus			$m = 10^2$ $M = 10^3$			5	2
	Listeria monocytogenes(5)	0	0		0	0	5	0
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Soft and medium-soft cheeses (manufactured from heat-treated milk)	Coliform bacteria	10^4	10^5	10^5			5	2
	Thermotolerant coliform bacteria			$m = 10^2$ $M = 10^3$			5	2
	Staphylococcus aureus	10^2	10^3	10^3			5	2
	Listeria monocytogenes(4)	0	0		0	0	5	0
	Escherichia coli	10^2	10^3	10^3			5	2
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Cheeses made from raw or	*Staphylococcus aureus*	10^3	10^4	10^4			5	2

thermised milk	*Listeria monocytogenes*(4)	0	0		0	0	5	0
	Escherichia coli	10^4	10^5	10^5			5	2
	Group 4			0				
Unripened cheeses	Coliform bacteria	$5x10^2$	$5x10^3$	$5x10^3$			5	2
	Staphylococcus aureus	10	10^2	10^2			5	2
	Listeria monocytogenes(4)	0	0	0			5	0
	Salmonella spp.	0	0	0			5	0
Processed cheeses	Total bacteria count			10^4				
	Coliform bacteria			m = 0 M = 10			5	2
	Thermotolerant coliform bacteria			m and M = 0			5	0
	Listeria monocytogenes(4)	0	0	0			5	0
	Group 4			0				
Concentrated milk	Total bacteria count			10^4				
	Coliform bacteria			0				
	Listeria monocytogenes	0	0	0			5	0
	Yeasts			5				
	Moulds			5				
	Salmonella spp.	0	0	0			5	0

	Group 4			0				
Packaged ice-cream made from milk or cream, ice-cream mixes, and other frozen milk-based products	Total bacteria count[6]	10^5	$5x10^5$	$5x10^5$			5	2
	Coliform bacteria	10	10^2	10^2			5	2
	Bacillus cereus			10^4				
	Listeria monocytogenes	0	0	0			5	0
	Staphylococcus aureus	10	10^2	10^2			5	2
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Non-packaged ice-cream, milk shakes	Total bacteria count			m = 10^5 M = 10^6			5	2
	Coliform bacteria			m = 10 M = 10^2			5	2
	Listeria monocytogenes	0	0	0			5	0
	Staphylococcus aureus	10	10^2	10^2			5	2
	Bacillus cereus			m = 10^3 M = 10^4			5	2
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Milk-based fruit and juice ice-creams	Total bacteria count			10^4				
	Coliform bacteria			10				

	Listeria monocytogenes	0	0	0			5	0
	Staphylococcus aureus	10	10^2	10^2			5	2
	Yeasts			10^3				
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Milk and cream powders, ice-cream powders, powdered milk-based products	Total bacteria count			m = $5x10^4$ M = $2x10^5$			5	2
	Coliform bacteria	0	10	10			5	1
	Bacillus cereus			m = 10^3 M = 10^4			5	2
	Listeria monocytogenes	0	0	0			5	0
	Staphylococcus aureus	10	10^2	10^2			5	2
	Salmonella spp.	0	0	0			10	0
	Group 4			0				
2. Eggs and egg products								
Raw eggs	Total bacteria count			$1.5x10^4$				
	Salmonella spp.			m and M = 0			5	0
	Group 4			0				
Egg mass (not heat-treated: chilled or frozen)	Mesophilic aerobes			10^5				
	Coliform bacteria			10^3				
	Staphylococcus			0				

	aureus							
	Enterobacteriaceae			10^2				
	Salmonella spp.			0				
	Group 4			0				
Egg mass (heat-treated and frozen)	Mesophilic aerobes			m = 10^4 M = 10^5			5	2
	Coliform bacteria			m = 10 M = 10^2			5	2
	Staphylococcus aureus			0				
	Enterobacteriaceae			10^2				
	Salmonella spp.	0	0	0			10	0
	Group 4			0				
Egg powder	Mesophilic aerobes			10^5				
	Coliform bacteria			m = 10 M = 10^2			5	2
	Staphylococcus aureus			0				
	Enterobacteriaceae			10^2				
	Salmonella spp.	0	0	0			10	0
	Group 4			0				
Other heat-treated egg products	Mesophilic aerobes			10^5				
	Coliform bacteria			m = 10 M = 10^2			5	2
	Staphylococcus			0				

	aureus							
	Enterobacteriaceae			10^2				
	Salmonella spp.	0	0	0			10	0
	Group 4			0				
3. Meat and meat preparations								
Half, quarter and whole carcases, and cuts and meat offals of slaughter animals: chilled, frozen	Total bacteria count[(7)]							
	Coliform bacteria			10^3				
	Escherichia coli			10^2				
	Yeasts and moulds			10^4				
	Salmonella spp.	0	0	0			10	0
	Group 4			0				
Carcases and parts of carcases of slaughter poultry: chilled, frozen	Total bacteria count			10^6				
	Coliform bacteria	10^2	10^3	10^3			5	2
	Escherichia coli	10	10^2	10^2			5	2
	Staphylococcus aureus	0	10^2	10^2			5	2
	Salmonella spp.	0	0	0			10	0
	Group 4			0				
Mechanically recovered meat	Total bacteria count			$5x10^6$				
	Coliform bacteria			10^3				
	Escherichia coli			0				
	Group 4			0				

Cut and sorted meat for meat preparations: chilled, frozen	Total bacteria count			10^6				
	Coliform bacteria			10^3				
	Escherichia coli			10^2				
	Staphylococcus aureus			10^3				
	Clostridium perfringens			10^2	10^2	10^3	5	2
	Yeasts and moulds(8)			10^3				
	Salmonella spp.			0				
	Group 4			0				
Meat preparations prior to cooking	Total bacteria count			10^7				
	Coliform bacteria			10^4				
	Group 4			0				
Minced meat	Aerobic mesophiles	$5x10^5$	$5x10^6$	$5x10^6$			5	2
	Escherichia coli	50	$5x10^2$	$5x10^2$			5	2
	Staphylococcus aureus	10^2	$5x10^3$	$5x10^3$			5	2
	Salmonella spp.(9)	0	0	0			5	0
	Group 4			0				
Uncooked minced meat preparations (cutlets, burgers, etc.):	Aerobic mesophiles			10^6				
	Staphylococcus aureus			10^2				

chilled, frozen	*Clostridium perfringens*			10^2				
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Preparations from cut meat	Total bacteria count			10^6				
	Staphylococcus aureus	$5x10^2$	$5x10^3$	$5x10^3$			5	1
	Escherichia coli	$5x10^2$	$5x10^3$	$5x10^3$			5	2
	Salmonella spp.(10)	0	0	0			5	0
	Group 4			0				
Offals	Group 4			0				
Meat preparations: 1) meat sausages, other cooked minced meat preparations, cooked preparations from cut meat: unpackaged, packaged, including in vacuum or gas packaging	Total bacteria count			10^3				
	Coliform bacteria			10^2				
	Escherichia coli			0				
	Clostridium perfringens			10^2				
	Staphylococcus aureus			10^2				
	Listeria monocytogenes			0				
	Bacillus cereus			10^2				
	Yeasts and moulds			10^3				
	Group 4			0				
2) smoked products:	Total bacteria count			10^3				

unpackaged, packaged, including in vacuum or gas packaging	Coliform bacteria			10^2				
	Yeasts and moulds			10^3				
	Group 4			0				
3) sliced meat preparations, including smoked products: in vacuum or gas packaging	Total bacteria count			10^3				
	Coliform bacteria	50	$5x10^2$	$5x10^2$			5	2
	Listeria monocytogenes	0	0	0			5	0
	Staphylococcus aureus			10^2				
	Clostridium perfringens			10^2				
	Bacillus cereus			10^3				
	Group 4			0				
4) liver sausages, patés, blood products and other offal products	Total bacteria count			10^3				
	Coliform bacteria			10^2				
	Thermotolerant coliform bacteria				10	10^2	5	2
	Escherichia coli			0				
	Clostridium perfringens			10^2				
	Staphylococcus aureus			10^2				
	Listeria monocytogenes			0				
	Bacillus cereus			10^2				

	Yeasts and moulds			10^3				
	Group 4			0				
5) salted and dried (a_w < 0.90)[11] products	Total bacteria count			10^5				
	Staphylococcus aureus			10^3				
	Clostridium perfringens			0				
	Group 4			0				
6) raw sausages, marinated meat	Total bacteria count			m = 10^5 M = 10^6			5	2
	Coliform bacteria			m = $5x10^2$ M = $5x10^3$			5	2
	Staphylococcus aureus			10^2				
	Clostridium perfringens			10^2				
	Group 4			0				
7) fermented meat preparations:								
a) uncooked	*Escherichia coli*			$2x10^3$				
	Staphylococcus aureus			10^2				
	Group 4			0				
b) cooked	*Escherichia coli*			10^2				
	Staphylococcus aureus			10^2				

	Group 4			0				
Broth powders	Total bacteria count			10^5				
	Coliform bacteria			0				
	Escherichia coli			0				
	Clostridium perfringens			0				
	Staphylococcus aureus			10^2				
	Group 4			0				
Brine for salting meat preparations	Total bacteria count			m = 10^5 M = 10^7			5	2
	Coliform bacteria			m = 10^2 M = 10^3			5	2
Fresh, frozen or dried blood and blood plasma	Total bacteria count			m = 10^4 M = 10^5			5	3
	Coliform bacteria			m = 10^2 M = 10^3			5	2
	Clostridium perfringens			m = 10^2 M = 10^3			5	1
	Staphylococcus aureus			m = 10^2 M = 10^3			5	1
	Salmonella spp.			m and M = 0			10	0
	Group 4			0				
Tinned meat	Tinned meat shall be industrially sterile(12)							

4. Fishery products and other marine products								
Live molluscs	Coliform bacteria[13]			$3x10^2$				
	Escherichia coli[13]			$2.3x10^2$				
	Group 4			0				
Fresh or frozen fish, fish fillets and minced fish; fresh or frozen fishery products coated with breadcrumbs (including in batter)	Total bacteria count			$m = 5x10^5$ $M = 10^7$			5	3
	Coliform bacteria			10^3				
	Staphylococcus aureus			$m = 10^2$ $M = 10^3$			5	3
	Clostridium perfringens			10				
	Group 4			0				
Smoked fishery products 1) smoked fish, cooked before or during the smoking process	Total bacteria count			10^3				
	Coliform bacteria			0				
	Staphylococcus aureus			0				
	Listeria monocytogenes	0	0		0	0	5	0
	Group 4			0				
2) fish not cooked before or during the smoking process, including lightly smoked or	Total bacteria count			10^5				
	Coliform bacteria			10^3				
	Staphylococcus aureus	10^2	10^3		10^2	10^3	5	3
	Listeria	0	0		0	0	5	0

dried fish	*monocytogenes*							
	Group 4			0				
Salted fish, salted fish with spices, and marinated fish (including preparations used for making fishery products) with oil, flavourings, etc. added	Total bacteria count			10^6				
	Coliform bacteria			10^3				
	Staphylococcus aureus			m =10^2 M =10^3			5	3
	Listeria monocytogenes	0	0		0	0	5	0
	Sulphite reducing clostridia (14)			10^2				
	Group 4			0				
Surimi products	Total bacteria count			10^3				
	Coliform bacteria			10				
	Salmonella spp.	0	0	0			10	0
	Group 4			0				
Food preparations, including in vacuum or gas packaging								
1) of heat-treated fish or minced fish (fried, baked, roasted, boiled, etc.) in marinades, dressings (flavoured), jelly, etc.	Total bacteria count			10^4				
	Coliform bacteria			0				
	Staphylococcus aureus			0				
	Group 4			0				

2) of non-heat-treated fish (salted, marinated) in marinades, dressings (flavoured), oil, etc.	Total bacteria count			10^5				
	Coliform bacteria			10^3				
	Escherichia coli			0				
	Staphylococcus aureus			10^2				
	Group 4			0				
3) in mayonnaise dressings	Total bacteria count			10^5				
	Coliform bacteria			10^2				
	Staphylococcus aureus			10^2				
	Yeasts			10^3				
	Moulds			10				
	Group 4			0				
Shelled or shucked cooked crustaceans and molluscs: in brine, natural juice, marinade, etc.	Mesophilic aerobes	10^4	10^5	10^5			5	2
	Thermotolerant coliform bacteria	10	10^2	10^2			5	2
	Staphylococcus aureus	10^2	10^3	10^3			5	2
	Escherichia coli	10	10^2	10^2			5	1
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Cooked crustaceans and molluscs, unshucked	Mesophilic aerobes	$5x10^4$	$5x10^5$	$5x10^5$			5	2
	Thermotolerant coliform bacteria	10	10^2	10^2			5	2

and unshelled, except crabmeat	*Staphylococcus aureus*	10^2	10^3	10^3			5	2
	Escherichia coli	10	10^2	10^2			5	1
	Salmonella spp.	0	0	0			5	0
	Group 4		0	0				
Crabmeat	Mesophilic aerobes	10^5	10^6	10^6			5	2
	Staphylococcus aureus	10^2	10^3	10^3			5	2
	Thermotolerant coliform bacteria	10	10^2	10^2			5	2
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Fresh or frozen oysters	Mesophilic aerobes			m = $5x10^4$ M = $5x10^5$			5	2
	Thermotolerant coliform bacteria			m = 0 M = 10			5	2
	Salmonella spp.			m and M = 0			10	0
	Group 4			0				
Fresh, salted or frozen fish roe	Total bacteria count	10^5	10^6	10^6			5	2
	Thermotolerant coliform bacteria	0	10	10			5	2
	Group 4			0				
Imitation caviar (black)	Total bacteria count			10^4				
	Group 4			0				

Tinned fishery or marine products	Tinned fishery products or marine products shall be industrially sterile							
Non-pasteurised preserves								
1) non-pasteurised preserves of whole and gutted fish either spiced or with special salt flavourings	Total bacteria count			$m = 10^5$ $M = 10^6$			5	3
	Coliform bacteria			10^3				
	Staphylococcus aureus			10^2				
	Sulphite-reducing clostridia			10^2				
	Group 4			0				
2) preserves of gutted fish with oil, dressings, flavourings, etc. added	Total bacteria count			10^6				
	Coliform bacteria			10^3				
	Staphylococcus aureus			10^2				
	Sulphite-reducing clostridia			10^2				
	Group 4			0				
5. Products of the milling industry, ordinary and fine bakers' wares								
Cereal flours	Coliform bacteria			10^3				
	Escherichia coli			10^2				
	Moulds			10^4				

	Group 4			0				
Cereal groats and flakes, semolina, whole grain products	Total bacteria count			10^5				
	Coliform bacteria			10				
	Escherichia coli			0				
	Enterobacteriaceae			10^2				
	Moulds			$3x10^2$				
	Group 4			0				
Brans for human consumption	Total bacteria count			10^4				
	Coliform bacteria			1				
	Escherichia coli			0				
	Enterobacteriaceae			10^2				
	Moulds			10^3				
	Group 4			0				
Pasta products (macaroni, spaghetti, lasagne, etc.)	*Salmonella spp.*			m and M = 0			5	0
	Group 4			0				
Ordinary bakers' wares	Total bacteria count			10^5				
	Escherichia coli			10				
	Staphylococcus aureus			10				
	Bacillus cereus			10^3				

	Moulds			10^2				
	Group 4			0				
Pizzas and pies	Total bacteria count			10^5				
	Escherichia coli			10				
	Staphylococcus aureus			10^2				
	Bacillus cereus			10^3				
	Moulds			10^2				
	Group 4			0				
Fine bakers' wares 1) biscuits	Total bacteria count			10^3				
	Coliform bacteria			10				
	Escherichia coli			0				
	Bacillus cereus			0				
	Staphylococcus aureus			0				
	Moulds			10^2				
	Group 4			0				
2) tarts, cakes								
– with decorative creams, except creams containing protein or made from fermented milk products	Total bacteria count			$5x10^4$				
	Coliform bacteria			10^2				
	Staphylococcus aureus			10^2				
	Yeasts			10^2				

(creams made of sour cream butter, curds, sour cream, kephir, yoghurt, etc.)	Moulds			50				
	Group 4			0				
– with creams containing protein	Total bacteria count			10^4				
	Coliform bacteria			10^2				
	Staphylococcus aureus			10^2				
	Yeasts			50				
	Moulds			10^2				
	Group 4			0				
– filled with fruit or berries, or with mixture of sugar, syrup, and flavourings	Total bacteria count			10^4				
	Coliform bacteria			10^2				
	Staphylococcus aureus			10				
	Yeasts			50				
	Moulds			10^2				
	Group 4			0				
– with chocolate coating	Total bacteria count			10^4				
	Coliform bacteria			10^2				
	Staphylococcus aureus			10				
	Yeasts			50				
	Moulds			10^2				

	Group 4			0				
– with creams made from fermented milk products (creams made of sour cream butter, curds, sour cream, kephir, yoghurt, etc.)	Coliform bacteria			10^2				
	Staphylococcus aureus			10				
	Yeasts			50				
	Moulds			10^2				
	Group 4			0				
3) wafer cakes – filled with fat-based cream	Total bacteria count			$5x10^3$				
	Coliform bacteria			10				
	Yeasts			50				
	Moulds			50				
	Group 4			0				
– filled with praline or with chocolate and nuts	Total bacteria count			$5x10^4$				
	Coliform bacteria			10^2				
	Yeasts			50				
	Moulds			50				
	Group 4			0				
6. Confectionery products								
Cocoa and chocolate products	Total bacteria count			$5x10^4$				
	Coliform bacteria			10^2				
	Escherichia coli			0				
	Staphylococcus			0				

	aureus							
	Salmonella spp.			m and M = 0			10	0
	Yeasts and moulds			10^2				
	Group 4			0				
Chewing gum	Total bacteria count			$5x10^2$				
	Coliform bacteria			0				
	Yeasts and moulds			50				
	Group 4			0				
Fresh and frozen creams and fillings, including those used in fine bakers' wares	Total bacteria count	10^5	10^6		10^5	10^6	5	3
	Coliform bacteria	10	10^2	10^2			5	2
	Bacillus cereus	10^3	10^4		10^3	10^4	5	2
	Salmonella spp.	0	0		0	0	10	0
	Group 4			0				
Sugar confectionery 1) products without sugar-coating	Total bacteria count			10^4				
	Coliform bacteria			10^2				
	Yeasts and moulds			50				
	Group 4			0				
2) sugar-coated products	Total bacteria count			$5x10^4$				
	Coliform bacteria			10^2				
	Yeasts and moulds			50				
	Group 4			0				

3) dragees	Total bacteria count			10^4				
	Coliform bacteria			10				
	Yeasts and moulds			50				
	Group 4			0				
4) caramels	Total bacteria count			10^3				
	Coliform bacteria			10				
	Yeasts and moulds			50				
	Group 4			0				
5) toffees	Total bacteria count			10^3				
	Coliform bacteria			0				
	Yeasts and moulds			10				
	Group 4			0				
6) jelly confectionery	Total bacteria count			$5x10^3$				
	Coliform bacteria			10				
	Yeasts and moulds			10^2				
	Group 4			0				
7) Halva: – sugar-coated	Total bacteria count			10^4				
	Coliform bacteria			10^2				
	Yeasts and moulds			50				
	Group 4			0				
– without	Total bacteria			$5x10^4$				

sugar-coating	count							
	Coliform bacteria			10^2				
	Yeasts and moulds			50				
	Group 4			0				
7. Fruit and vegetables, berries, and products manufactured therefrom								
Fresh vegetables	Total bacteria count			10^5				
	Escherichia coli			10				
	Group 4			0				
Dried vegetables	Total bacteria count			m = 10^4 M = 10^5			5	3
	Escherichia coli			m = 10^2 M = 10^3			5	3
	Staphylococcus aureus			10^2				
	Clostridium perfringens			0				
	Bacillus cereus			10^3				
	Salmonella spp.			m and M = 0			5	0
	Group 4			0				
Frozen vegetables	Total bacteria count			10^4				
	Escherichia coli			m = 10^2 M = 10^3			5	3
	Staphylococcus aureus			10^2				

	Clostridium perfringens			0				
	Enterobacteriaceae			10^3				
	Group 4			0				
Dried potato powders	Total bacteria count			$5x10^4$				
	Coliform bacteria			10^2				
	Escherichia coli			0				
	Staphylococcus aureus			0				
	Salmonella spp.			0				
	Group 4			0				
Fresh or frozen fruit and berries	Total bacteria count			$5x10^5$				
	Escherichia coli			$m = 10^2$ $M = 10^3$			5	3
	Staphylococcus aureus			10^2				
	Enterococcus spp.			10^3				
	Group 4			0				
Dried fruit and berries	Total bacteria count			10^5				
	Coliform bacteria			10^2				
	Escherichia coli			0				
	Yeasts			10^2				
	Moulds			10^2				

	Group 4			0				
Nuts, almonds, etc.	*Salmonella spp.*			m and M = 0			10	0
	Group 4			0				
Raw vegetable salads	Total bacteria count			10^4				
	Coliform bacteria			10^3				
	Staphylococcus aureus			10^2				
	Group 4			0				
Blanched frozen vegetables	Total bacteria count			m = 10^5 M = 10^6			5	3
	Coliform bacteria			m = 10^2 M = 10^3			5	3
	Enterobacteriaceae			m = 10^2 M = 10^3			5	3
	Listeria monocytogenes			0				
	Yeasts			m = 10^2 M = 10^3			5	3
	Moulds			m = 10^2 M = 10^3			5	3
	Group 4			0				
Jams and purées from fruit or berries	Total bacteria count			$5x10^3$				
	Coliform bacteria			0				
	Yeasts			50				

	Moulds			50				
	Group 4			0				
Tinned fruit and vegetables	Tinned fruit and vegetables shall be industrially sterile							
8. Juices, drinks, nectars and concentrates from fruit, vegetables or berries								
Juices, drinks and nectars from fruit, vegetables, or berries	Total bacteria count			10^2				
	Escherichia coli			0				
	Yeasts and moulds			10^2				
	Group 4			0				
Concentrates from fruit, vegetables or berries: 1) frozen	Total bacteria count			10^4				
	Escherichia coli			0				
	Yeasts and moulds			10^3				
	Group 4			0				
2) aseptically bottled	Products shall be industrially sterile							
3) pasteurised and frozen	Total bacteria count			10^3				
	Escherichia coli			0				
	Yeasts and moulds			10^2				
	Group 4			0				
9. Non-alcoholic beverages								
Beverages based on	Total bacteria count			$2x10^2$				

essences or concentrates	Coliform bacteria			0				
	Escherichia coli			0				
	Yeasts			50				
	Moulds			50				
	Group 4			0				
Table water, mineral water, including artificial mineral water	Thermotolerant coliform bacteria(15)			0				
	Coliform bacteria(15)			0				
	Escherichia coli(15)			0				
	Clostridium perfringens(15)			0				
	Pseudomonas aeruginosa(15)			0				
	Shigella spp.(15)			0				
	Group 4			0				
10. Fats, oils								
Mayonnaise and salad dressings containing mayonnaise	Total bacteria count	$5x10^4$	10^5	10^5			5	2
	Coliform bacteria	10	10^2	10^2			5	2
	Escherichia coli			0				
	Staphylococcus aureus			$m = 10^2$ $M = 10^3$			5	2
	Yeasts			10^2				
	Moulds			10				

	Group 4			0				
Non-emulsified dressings (ketchup, etc.)	Total bacteria count			10^4				
	Coliform bacteria			10^2				
	Sulphite-reducing clostridia			0				
	Staphylococcus aureus			0				
	Yeasts			10^2				
	Group 4			0				
Margarines	Coliform bacteria			m =10 M = 10^2			5	2
	Escherichia coli			0				
	Staphylococcus aureus			0				
	Moulds			m = 10^2 M = 10^3			5	2
	Yeasts			m = 10^2 M = 10^3			5	2
	Group 4			0				
Edible fats and oils	*Staphylococcus aureus*(16)			5				
	Moulds			10^2				
	Yeasts			10^2				
	Group 4			0				
11. Broth powders; powder mixes for soups, dressings and casseroles; other food								

preparations in powder form								
Powder mixes soluble in cold or hot water	Total bacteria count			$m = 10^5$ $M = 10^6$			5	3
	Coliform bacteria			$m = 10$ $M = 10^2$			5	2
	Clostridium perfringens			$m = 10^2$ $M = 10^3$			5	2
	Staphylococcus aureus			10^2				
	Bacillus cereus			$m = 5x10^2$ $M = 10^4$			5	2
	Salmonella spp.			m and M = 0			5	0
	Group 4			0				
Powder mixes requiring additional heating	Total bacteria count			$5x10^5$				
	Coliform bacteria			$5x10^2$				
	Clostridium perfringens			10^2				
	Staphylococcus aureus			10^2				
	Bacillus cereus			10^3				
	Salmonella spp.			0				
	Group 4			0				
12. Sugars and honey								
Sugars	Total bacteria count			$5x10^4$				

	Escherichia coli			0				
	Yeasts and moulds			$5x10^2$				
	Group 4			0				
Honey	Total bacteria count			10^4				
	Coliform bacteria			0				
	Escherichia coli			0				
	Shigella spp.			0				
	Yeasts			10^4				
	Moulds			10^2				
	Group 4			0				
13. Condiments, herbs, and mixtures of spices and herbs								
Condiments, herbs, mixtures of spices and herbs	Total bacteria count			$5x10^7$				
	Coliform bacteria			$5x10^4$				
	Escherichia coli			10^2				
	Clostridium perfringens			10^3				
	Staphylococcus aureus			10^3				
	Group 4			0				
14. Tea and coffee								
Tea	*Escherichia coli*			10				
	Bacillus cereus			10^3				
	Moulds			10^4				

	Group 4			0				
Coffee	Coliform bacteria			10				
	Escherichia coli			0				
	Yeasts and moulds			10^2				
	Group 4			0				
15. Baby food and food for young children								
Infant formulae and dry porridge prepared with milk	Total bacteria count			$3x10^3$				
	Coliform bacteria			0				
(to be heated before use)	*Escherichia coli*(17)			0				
	Staphylococcus aureus(17)			0				
	Clostridium perfringens			0				
	Bacillus cereus			m = 10^2 M = 10^3			5	2
	Proteus spp.			0				
	Salmonella spp.(18)			m and M = 0			5	0
	Moulds			0				
	Group 4			0				
Other food preparations to be heated before use	Total bacteria count			m = 10^4 M = 10^5			5	2
	Coliform bacteria			m = 10 M = 10^2			5	2

	Escherichia coli			0				
	Staphylococcus aureus			0				
	Clostridium perfringens			0				
	Proteus spp.			0				
	Moulds			0				
	Group 4			0				
Infant formulae and dry porridge prepared with milk (not heated before use)	Total bacteria count			m = 10^3 M = 10^4			5	2
	Coliform bacteria			0				
	Escherichia coli			0				
	Staphylococcus aureus			0				
	Clostridium perfringens			0				
	Bacillus cereus			m = 10^2 M = 10^3			5	2
	Proteus spp.			0				
	Salmonella spp.			m and M = 0			60	0
	Moulds			0				
	Group 4			0				
Other food preparations not heated before use	Total bacteria count			m = 10^4 M = 10^5			5	2
	Coliform bacteria			m = 10 M = 10^2			5	2

	Escherichia coli			0				
	Staphylococcus aureus			0				
	Clostridium perfringens			0				
	Proteus spp.			0				
	Moulds			0				
	Group 4			0				
Food preparations based on fruit or vegetables	Total bacteria count			10^2				
	Yeasts			10				
	Moulds			0				
	Group 4			0				
Tinned fruit and vegetables	Tinned fruit and vegetables shall be industrially sterile							
16. Other foodstuffs								
Fruit and berry ices, other edible ices	Mesophilic aerobes			$m = 5x10^4$ $M = 2.5x10^5$			5	2
	Coliform bacteria			$m = 10^2$ $M = 10^3$			5	2
	Salmonella spp.			m and M = 0			10	0
	Group 4			0				
Salt	Total bacteria count			10^3				
Soya milk (dry)	Total bacteria count			10^5				

	Group 4			0				
Heat treated food preparations (chilled or frozen)	Total bacteria count	10^5	10^6		10^6	$5x10^7$	5	3
	Coliform bacteria	10^2	10^3		10^2	10^3	5	2
	Staphylococcus aureus	10^2	10^3		10^2	10^3	5	2
	Bacillus cereus	$5x10^2$	10^4		$5x10^2$	10^4	5	2
	Clostridium perfringens	10^2	10^3		10^2	10^3	5	2
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Heat treated food preparations containing one or more ingredients not subjected to heat treatment (chilled or frozen)	Total bacteria count	10^4	10^5		10^6	$5x10^7$	5	3
	Coliform bacteria	10	10^2		10	10^2	5	2
	Staphylococcus aureus	10^2	10^3		10^2	10^3	5	2
	Bacillus cereus	$5x10^2$	10^4		$5x10^2$	10^4	5	2
	Clostridium perfringens	10^2	10^3		10^2	10^3	5	2
	Salmonella spp.	0	0	0			5	0
	Group 4			0				
Food preparations and snack foods which do not require additional heating before use	Total bacteria count			10^4				
	Coliform bacteria			0				
	Escherichia coli			0				
	Staphylococcus aureus			0				

	Clostridium perfringens			50				
	Pseudomonas aeruginosa			10^4				
	Bacillus cereus			10^4				
	Group 4			0				
Food preparations and snack foods requiring additional heating before use	Total bacteria count			10^5				
	Coliform bacteria			10^3				
	Escherichia coli			10^2				
	Staphylococcus aureus			10^2				
	Clostridium perfringens			10^2				
	Bacillus cereus			10^2				
	Group 4			0				
Salads, including salads containing ingredients of animal origin	Total bacteria count			10^5				
	Coliform bacteria			10^2				
	Escherichia coli			0				
	Staphylococcus aureus			10^2				
	Group 4			0				

(16.01.2002 entered into force 31.01.2002 - RT I 2002, 7, 37; 16.07.2002 entered into force 27.07.2002 - RT I 2002, 65, 230)

(1) The period for carrying out non-standard analyses is the period until the "use by" date of the product, plus 6 hours in the case of perishable food products and 24 hours in the case of other foodstuffs. Perishable food products are products specified in clause 46 of

Government of the Republic Regulation No. 329 of 2 November 1999 “Approval of Food Hygiene Requirements” (RT I 1999, 84, 755; 2000, 97, 625)

(2) In the absence of values for m and M, the maximum authorised levels of micro-organisms in food shall be hereinafter expressed as the number of colonies per gram or millilitre

(3) Unless specified otherwise, hereinafter the content of Salmonella spp. shall be per 25 g of product

(4) Maximum level applies per 25 g of product

(5) Maximum level applies per 25 g of product (with the exception of hard cheeses)

(6) Maximum level does not apply to yoghurt ice creams

(7) If the contact plate method is used, not more than $2x10^2$ colonies; if the swab method is used, not more than 10^5 colonies

(8) Maximum level applies to frozen meat

(9) Maximum level applies per 10 grams of product

(10) Maximum level applies per 1 gram of product

(11) a_w – water activity characterised by the presence of free water in a product, expressed as a ratio of the pressure of the water vapour in the immediate environment of the product to the pressure of vapour from distilled water

(12) Hereinafter, industrially sterile tinned products are tinned products which retain normal appearance after being thermostatically controlled and which fit the organoleptic and physico-chemical characteristics presented in the technical specification of the product, but which may contain mesophilic aerobic and facultatively aerobic sporogenic micro-organisms

(13) Maximum level applies per 100 g of product

(14) Maximum level applies to vacuum packaged products

(15) Maximum level applies per 100 ml of product

(16) Maximum level applies to vegetable fats and oils

(17) In all milk-based baby foods and foods for young children the maximum level applies per 10 g of product

(18) In all milk-based baby foods and foods for young children the maximum level applies per 100 g of product