APPROVED
by Resolution of
the Customs Union Commission
as of August 16, 2011 No. 769

TECHNICAL REGULATIONS

OF THE CUSTOMS UNION

TR CU 005/2011

On Packaging Safety

Contents

ON PACKAGING SAFETY

TR CU 005/2011

Foreword

1. These technical regulations are developed in accordance with the Convention on Uniform Principles and Rules of Technical Regulation in the Republic of Belarus, the Republic of Kazakhstan and the Russian Federation as of November 18, 2010.

2. These technical regulations are developed with the purpose of setting uniform requirements for packaging (closures), mandatory for application and execution in the customs area of the Customs Union, ensuring free circulation of packaging (closures), issued in the customs area of the Customs Union.

3. In case other Customs Union's technical regulations setting requirements for packaging (closures) are approved in respect to packaging (closures), packaging (closures) shall meet requirements of all Customs Union's technical regulations, covering them.

Article 1. Scope of Application

1. These technical regulations shall be applied to all types of packaging, including closures, constituting ready-made products, released in circulation in the customs area of the Customs Union, notwithstanding the country of origin.

2. Only requirements of Article 2, 4, 5, Clauses 1, 2 of Article 6, Article 9 of these technical regulations shall be applied to all types of packaging (closures) manufactured by the products' manufacturer, packaged during the manufacturing process of such products released in circulation in the customs area of the Customs Union.

3. These technical regulations shall set requirements for packaging (closures) mandatory for application and execution in the customs area of the Customs Union and connected with them requirements for storage, transportation and recycling processes, for the purpose of protection of human life and health, property, environment, life and health of animals and plants, as well as prevention of actions misguiding packaging (closures) consumers in respect of its designated purpose and safety.

4. Packaging shall be classified according to the used materials into following types:

metal;

polymeric;

paper and cardboard;

glass;

wooden;

composite;

textile;

ceramic.

5. Closures shall be classified according to the used materials into:

metal, cork, polymeric, composite and cardboard.

6. These technical regulations shall not be applied to packaging for medical devices, medical products, pharmaceutical products, tobacco products and hazardous cargo.

Article 2. Definitions

The following terms and definitions shall be used in these technical regulations of the Customs Union:

identification is the process of packaging (clauses) reference to the scope of application of these technical regulations and establishing correspondence between the actual packaging (closures) characteristics and the data contained in the technical documentation (including supporting documents) to it;

manufacturer (producer) is a legal entity or a natural person acting as an individual entrepreneur, performing on its behalf production and/or release in free circulation of packaging (closures), and responsible for compliance thereof with the safety requirements of these technical regulations;

importer is a resident of the Customs Union member-state, who entered into foreign trade agreement on transfer of packaging (closures) with a non-resident of the Customs Union member-state, who sells and (or) uses packaging (closures) and is responsible for compliance thereof with the safety requirements of these technical regulations of the Customs Union;

marking of packaging (closures) is information in the form of signs, labels, pictographs, symbols, printed on the packaging (closures) and (or) supporting documents for provision of identification, information of consumers;

multiway packaging is a packaging designated for multiple application;

simulative sphere is a sphere, simulating characteristics of food products;

market circulation is a processes of packaging (closures) transfer from the manufacturer to the consumer (user), which the packaging (closures) undergoes after its manufacture completion;

consumer packaging is a packaging, designated for sale or primary packaging of products sold to the final consumer;

intended application is a packaging (closures) application in accordance with its designation, determined by the manufacturer;

packaging (closures) type is a classification unit, classifying packaging (closures) according to material and structure;

type sample is a packaging (closures) sample, selected from a group of homogeneous products manufactured from the same materials, using the same technology, of the same structure and meeting the same safety requirements;

shipping packaging is a packaging, designated for storage and shipping of products with the purpose of their protection from damages while transporting, constituting an independent transport unit;

closure is an item designated for packaging closuring and storage of its content;

packaging is an item used for placement, protection, transportation, loading and unloading, delivery and storage of raw material and ready-made products.

packaging material is material, designated for packaging manufacturing.

Article 3. Market Circulation Rules

1. Packaging (closures) shall be released in free circulation in the customs area of the Customs Union provided they have undergone the required procedures of assessment (approval) of their compliance, established by these technical regulations as well as by other technical regulations of the Customs Union covering packaging (closures).

2. Packaging (closures), the compliance of which with the requirements of these technical regulations is not confirmed, shall not be marked with a uniform market circulation mark of the Customs Union member-states and shall not be released in circulation in the customs area of the Customs Union.

Article 4. Ensuring Compliance with Safety Requirements

1. Packaging (closures) compliance with these technical regulations shall be ensured by direct meeting of their requirements or by fulfillment of the standards requirements, the application of which on a voluntary basis ensures meeting the requirements of these technical regulations, and standards containing rules and methods of examination (tests) and measurements, including rules of sample selection necessary for application and fulfillment of requirements of these technical regulations and compliance assessment (approval) of products (hereinafter referred to as the standards).

Fulfillment of these standards' requirements on a voluntary basis testifies to the packaging (closures) compliance with the requirements of these technical regulations.

2. The list of standards specified in Clause 1 of this Article shall be approved by the Commission of the Customs Union.

Article 5. Safety Requirements

1. Packaging (closures) and processes of its storage, transportation and recycling shall correspond to the safety requirements of this Article.

2. Packaging (closures) shall be designed and manufactured so as to ensure minimal risks conditioned by the packaging (closures) structure and applied materials when being used as intended.

3. Packaging safety shall be assured by a number of requirements for:

applied materials, having direct contact with food products, according to sanitary and hygienic indices;

mechanical indices;

chemical resistance;

hermiticity.

4. Packaging contacting with food products, including infant food, shall correspond to the sanitary and hygienic indices specified in Appendix 1.

Terms and conditions of simulating sanitary and chemical examinations of packaging are specified in Appendix 2.

5. Packaging, designated for packaging of food products, including infant food, perfumes and cosmetics, toys, infant products, shall not emit substances into the simulating and air spheres contacting with it, the quantity of which is harmful for people, exceeding the maximum permissible levels of chemical substances migration.

6. Packaging shall satisfy the safety requirements specified in Clauses 6.1 – 6.8 of this Article according to the mechanical indices and chemical resistance (if they are preconditioned by structure and intended application of packaging):

6.1. Metal packaging :

- shall provide hermiticity at the internal excess air pressure;

- shall stand the compression force in the vertical axis direction of the packaging body;

- the inner coating shall be resistant to the packaged products and (or) stand the sterilization or pasteurization in simulating spheres;

- shall be corrosion-resistant.

6.2. Glass packaging:

- shall stand the inner hydrostatic pressure depending on the general characteristics and intended application;

- shall stand temperature difference without being damaged;

- shall stand the compression force in the vertical axis direction of the packaging body;

- glass water resistance shall be not lower than 3/98 class (for food products, including infant food, perfumes and cosmetics);

- shall be acid-resistant (for jars and bottles for conservation, food acids and infant food);

- shall not be repeatedly used for contact with alcohol and infant food.

6.3. Polymeric packaging:

- shall provide hermiticity;

- shall stand the set quantity of hits when free falling from the height without being damaged (for closured items, except for perfumes and cosmetics);

- shall stand the compression force in the vertical axis direction of the packaging body (except for packets and sacks);

- shall not be distorted and cracked when contacting with hot water (except for packets and sacks);

- the packaging handles shall be safely fixed to it and stand the set loading;

- the packaging weld and glue joints shall not leak water;

- shall stand the set static loading when being stretched (for the packets and sacks);

- the packaging inner surface shall be resistant to the packaged products.

6.4. Paper and cardboard packaging:

- shall stand the set quantity of hits when free falling from the height without being damaged;

- shall stand the compression force in the vertical axis housing direction of the packaging body

6.5. Composite packaging:

- shall be hermetical (when closures are available) and ensure the set strength of the joints;

- shall be damp-proof;

- the inner coating surface shall not be acidized;

- the packaging inner surface shall be resistant to the effect of the packaged products.

6.6. Textile packaging:

- shall stand the set quantity of hits when free falling from the height without being damaged.
- shall stand the set breaking load;

6.7. Wooden packaging:

- shall stand the set quantity of hits when free falling from the height without being damaged;
- shall stand the set quantity of hits on the horizontal and inclined planes;
- shall stand the compression force in the vertical axis direction of the packaging body;
- wood moisture level shall correspond to the set level.

6.8. Ceramic packaging:

- shall be water resistant.

7. The closures safety shall be ensured by a number of requirements for:

applied materials, contacting with food products, according to sanitary and hygienic indices;

hermiticity;

chemical resistance;

safe opening;

physical and mechanical indices.

8. Closures contacting with food products, including infant food, shall correspond to the sanitary and hygienic indices specified in Appendix 1.

Terms and conditions of simulating of sanitary and chemical tests of closures are specified in Appendix 2.

Closures, contacting with food products, including infant food, perfumes and cosmetics, shall not emit substances into the simulating spheres contacting with it the quantity of which are harmful for people's health, exceeding the maximum permissible levels of chemical substances migration.

9. Closures shall satisfy the safety requirements provided for by Clauses 9.1 – 9.4 of this Article according to their physical and mechanical indices and chemical resistance:

9.1. metal closures:

- shall provide the hermeticity of the packaging (except for caps for perfumes and cosmetics, muzzle, clamps);
- lids for conservation shall be heat resistant;
- torque effect when opening screw closures shall satisfy the set requirements;
- glue joint of crimping and rolling caps shall be strong;
- crown caps shall stand the inner hydrostatic pressure;
- shall be corrosion-resistant;
- lacquer coating of the inner surface of the cap and the sealing gasket shall be resistant to the simulating spheres during the processes of pasteurizing and sterilization.

9.2. polymeric and composite closures:

- shall provide hermeticity of the packaging (except for caps of thermosetting, rolling valves, dispensers-stoppers, dissectors, sealing gaskets, closing lids) in the set exploitation conditions;

- torque effect when opening screw lids and caps shall satisfy the set requirements ;

- closures designated for closuring of sparkling (champaign) and carbonated wines shall stand the inner hydrostatic pressure;

- glue joint of crimping and rolling caps shall be strong;

- sealing gaskets shall not laminate;

- the quantity of polymer fluff shall not exceed the allowed amount;

- lids for conservation shall be heat resistant;

- lids for conservation shall be resistant to acid solutions.

9.3. Cork closures:

- shall provide hermeticity of the packaging;

- the moisture level of corks and sealing gaskets shall satisfy the set requirements;

- tensile strength at the torsion of agglomerated and assembled corks shall satisfy the set requirements;

- agglomerated and assembled corks shall stand water boiling without being damaged and cracked;

- capillarity of the side surface shall satisfy the set requirements;

- the quantity of the polymer fluff of natural, colmataged, agglomerated and assembled corks shall not exceed the allowed amount.

9.4. Cardboard closures:

- shall be resistant to simulating spheres effect;

- shall not laminate into their components.

10. Test protocols, confirming compliance of the packaging types (closures) of the packaged products manufactured by the packaged products producer in the process manufacturing of such products with the requirements of Clauses 1-9 of this Article, shall be included in the set of the confirmation documents, completed when compliance of the packaged products is being confirmed.

11. Requirements for handling of packaging (closures) at the market (of storage, transportation, recycling):

11.1. packaging (closures) shall be stored in accordance with the requirements of regulatory and (or) technical documents for certain types of packaging (closures).

11.2. packaging (closures) shall be transferred by all types of transport in accordance with shipping rules;

11.3. the previously used packaging (closures) shall be recycled according to procedures set by the legislation of the Customs Union member-state in order to ensure cost-effective use of resources and prevent environmental contamination;

11.4. in case it is impossible to recycle the packaging (closures), consumers shall be duly informed thereof by means of respective marking.

Article 6. Requirements for Marking of Packaging (Closures)

1. Marking shall contain information required for identification of material from which the packaging (closures) is produced of, and information about the possibility of recycling thereof and informing the consumers.

2. Marking shall contain digital and (or) letter notation (acronym) of material from which the packaging (closure) is produced of in accordance with Appendix 3, and shall contain pictograms and symbols in accordance with Appendix 4: figure 1 - packaging (closures) designed for contact with food products; figure 2 - packaging (closures) for perfumes and cosmetics; figure 3 - packaging (closures) not designed for contact with food products; figure 4 – possibility of recycling of the used packaging (closures) - Möbius strip.

3. Information on packaging (closures) shall be given in supporting documents and shall contain:

name of the packaging (closures);

information on designation of packaging (closures);

conditions of storage, transportation, possibility of recycling;

processing method (for multiway packaging);

name and location of the manufacturer (producer), contact information;

name and location of the authorized person of the manufacturer, importer, contact information (if any);

manufacture date (month, year);

storage life (if established by the manufacturer (producer).

4. Information shall be given in Russian and in state language(s) of the Customs Union member-state in the presence of the respective requirements of the legislation(s) of the Customs Union member-state(s).

Article 7. Compliance Confirmation

1. Packaging (closures) shall be confirmed to comply with the requirements of these technical regulations before release in free circulation in the customs area of the Customs Union.

2. Confirmation of compliance of packaging (closures) with the requirements of these technical regulations is binding and shall be made as a declaration of compliance according to the following schemes:

2.1 3 D, 4D, 5D schemes - for the packaging (closures) designed for packing of food products, including infant food, perfume and cosmetics having direct contact with the packed products, toys and goods for children, having direct contact with the child's mouth (in case of packaging (closures) of different materials, standard sizes, thickness of the used materials, tests can be performed on standard patterns with specific features of the packaging (closures) type;

2.2 1D and 2D schemes - for the packaging (closures) not specified in Sub-clause 2.1. hereof (in case of packaging (closures), having different materials, standard sizes, thickness of the used materials, tests can be performed on standard patterns with specific features of the packaging (closures) type.

3. Declaration of compliance of commercially produced packaging (closures) shall be performed either by the manufacturer or by a person authorized by the manufacturer.

Declaration of compliance of a batch of packaging (closures) shall be performed by the manufacturer (a person authorized by the manufacturer), importer.

4. Identification of the packaging (closures) during declaration of compliance with the requirements of these technical regulations shall be made by the manufacturer (a person authorized by the manufacturer), importer.

5. Acceptance of the declaration of compliance includes the following procedures:

- formation and analysis of regulatory and technical documentation;
- performance of tests;
- formation of a set of confirmation documents;
- acceptance and registration of the declaration of compliance;
- application of the unified market circulation marking of the Customs Union member-states.

6. During the process of declaring the compliance the manufacturer (a person authorized by the manufacturer), importer shall prepare confirmation documents independently in order to confirm the compliance of the packaging (closures) with the requirements of these Technical Regulations.

7. Confirmation documents for the acceptance of the declaration of compliance shall include:

- protocol(s) of tests performed by the manufacturer (a person authorized by the manufacturer), importer and (or) the accredited testing laboratory (center) included into the Unified Register of Certification Authorities and Testing Laboratories (Centers) of the Customs Union, confirming compliance with the declared requirements (provided that not more than one year passed after execution of the protocol(s);

- list of standards the requirements of which shall be complied with by the packaging (closures), from the List of standards specified in Clause 2, Article 4;

- description of the made technical decisions confirming fulfilment of the requirements of these technical regulations in case the standards specified in Clause 2, Article 4 are missing or were not applied;

- other documents confirming compliance of the packaging (closures) with the requirements of these technical regulations, including compliance certificate for the management system or the management system assessment certificate (protocol) (if any), compliance certificate(s) for a certain type of packaging (closures) (if any), compliance certificate(s) or protocols of tests for materials (if any).

8. Declaration of compliance shall be executed according to the uniform form approved by resolution of the Customs Union Committee.

Declaration of compliance shall be subject to registration in accordance with the legislation of the Customs Union.

9. Declaration of compliance shall be executed for a certain name of packaging (closures) or for a group of packaging (closures) manufactured from the same materials and having the same design and meeting the same safety requirements.

10. The set of confirmation documents stipulated by Clause 7 of this Article, together with the declaration of compliance shall be stored with the manufacturer (a person authorized by the manufacturer), importer within the period set by the legislation of the Customs Union.

11. Declaration of compliance of packaging (closures) shall be accepted for more than 5 years for commercially produced products. Declaration of compliance for a batch of packaging (closures) shall be accepted without indication of its period of validity.

Declaration of compliance for a batch of packaging (closures) shall be valid only for the packaging (closures) of the certain batch.

Article 8. Marking with the Uniform Mark of Products Circulation on the Market of the Customs Union Member-States

1. Packaging (closures), which complies with the requirements of these technical regulations and which has received confirmation of compliance in accordance with Article 7 of these technical regulations, shall have marking with the uniform mark of products circulation on the market of the Customs Union member-states which is provided in the supporting documentation.

2. Marking with the uniform mark of products circulation on the market of the Customs Union member-states shall be made by the manufacturer, a person authorized by the manufacturer, importer, before the product placing on the market.

3. Packaging (closures) shall be marked with the uniform mark of products circulation on the market of the Customs Union member-states in case of its compliance with these technical regulations, and other technical regulations of the Customs Union, not applicable thereto.

Article 9. Disclaimer Clause

1. The Customs Union member-states shall take all measures for the restriction, ban on release of the packaging (closures) into free circulation in the customs area of the Customs Union, and withdrawal from the market of the packaging (closures), not complying with the requirements of these Technical regulations and other technical regulations of the Customs Union, applicable to the packaging (closures).

Appendix 1
to Technical Regulations
of the Customs Union
on Packaging Safety

Sanitary and Hygienic Safety Indices and Ratios of Substances Evolved from Packaging (Closures), Having Immediate Contact with Food Products

Schedule 1

Name of the Material of Products	Controlled Indices	Permissible Quantity of Chemical Substance Migration, mg/l	Maximum Permissible Concentrations in Drinking Water, mg/l	Class of Danger *****	Maximum Permissible Concentrations, Daily Average, mg/m^3 in atm. air	Class of Danger ******
	2	3	4	5	6	7
1.Polymer materials and plastics produced on their basis						
1.1. Polyethylene (high-pressure polyethylene, low density polyethylene), polypropylene, copolymer of propylene with ethylene, polybutylene, polyisobutylene, combined materials based on polyolefins	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Ethyl acetate	0.100	--	2	0.100	4
	Hexane	0.100	--	4	--	--
	Heptane	0.100	--	4		
	Hexane	--	--	--	0.085	3
	Heptane	--	--	--	0.065	3
	Acetone	0.100	--	3	0.350	4
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	propyl	0.100	--	4	0.300	3
	isopropyl	0.100	--	4	0.600	3
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
1.2. Polystyrene plastic:						
1.2.1. Bulk-polymerized polystyrene, impact-resistant	Styrole	0.010	--	2	0.002	2
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	butyl	0.500	--	2	0.100	3
	Formaldehyde	0.100	--	2	0.003	2
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
	Ethylbenzene	--	0.010	4	0.020	3
1.2.2. Copolymer of styrole with acrylonitrile	Styrole	0.010	--	2	0.002	2
	Acrylonitrile	0.020	--	2	0.030	2

	2	3	4	5	6	7
	Formaldehyde	0.100	--	2	0.003	2
	Benzaldehyde	--	0.003	4	0.040	3
1.2.3. ABS resin (acrylonitrile butadiene styrole plastic)	Styrole	0.010	--	2	0.002	2
	Acrylonitrile	0.020	--	2	0.030	2
	Alpha-methylstyrene	--	0.100	3	0.040	3
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
	Ethylbenzene	--	0.010	4	0.020	3
	Benzaldehyde	--	0.003	4	0.040	3
	Xylols (isomer mixture)	0.010	--	2	0.002	2
1.2.4. Copolymer of styrole with methylmethacrylate	Styrole	0.010	--	2	0.002	2
	Methylmethacrylate	0.250	--	2	0.010	3
	Methanol	0.200	--	2	0.500	3
	Formaldehyde	0.100	--	2	0.003	2
1.2.5. Copolymer of styrole with methylmeth-acrylate and acrylonitrile	Styrole	0.010	--	2	0.002	2
	Methylmethacrylate	0.250	--	2	0.010	3
	Acrylonitrile	0.020	--	2	0.030	2
	Methanol	0.200	--	2	0.500	3
	Formaldehyde	0.100	--	2	0.003	2
1.2.6. Copolymer of styrole with alpha-methylstyrene	Styrole	0.010	--	2	0.002	2
	Alpha-methylstyrene	--	0.100	3	0.040	3
	Benzaldehyde	--	0.003	4	0.040	3
	Acetophenone	--	0.100	3	0.003	3
1.2.7. Copolymers of styrole with butadiene	Styrole	0.010	--	2	0.002	2
	Butadiene	--	0.050	4	1.000	4
	Acetaldehyde	--	0.200	4	0.010	3
	Acetone	0.100	--	3	0.350	4
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	butyl	0.500	--	2	0.100	3
	Xylols (isomer mixture)	--	0.050	3	0.200	3
1.2.8. Foamed poly styroles	Styrole	0.010	--	2	0.002	2
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
	Ethylbenzene	--	0.010	4	0.020	3
	Cumene (isopropyl benzol)	--	0.100	3	0.014	4
	Methanol	0.200	--	2	0.500	3
	Formaldehyde	0.100	--	2	0.003	2
1.3. Polyvinyl chloride plastic	Acetaldehyde	--	0.200	4	0.010	3
	Acetone	0.100	--	3	0.350	4
	Vinyl chloride	0.01	--	2	0.01	1
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	propyl	0.100	--	4	0.300	3
	isopropyl	0.100	--	4	0.600	3
	butyl	0.500	--	2	0.100	3

	2	3	4	5	6	7
	isobutyl	0.500	--	2	0.100	4
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
	Zinc (Zn)	1.000	--	3	--	--
	Tin (Sn)	--	2.000	3	--	--
	Dioctylphthalate	2.000	--	3	0.020	--
	Dibutylphthalate	Not allowed				
1.4. Polymers on the basis of vinyl acetate and derivants: polyvinyl acetate, polyvinyl alcohol, copolymer break-up of vinyl acetate with dibutyl maleate	Vinyl acetate	--	0.200	2	0.150	3
	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Hexane	0.100	--	4	--	--
	Heptane	0.100		4		
1.5. Polyacrylates	Hexane	0.100	--	4	--	--
	Heptane	0.100	--	4	--	--
	Acrylonitrile	0.020	--	2	0.030	2
	Methylacrylate	--	0.020	4	0.010	4
	Methylmethacrylate	0.250	--	2	0.010	3
	Butyl acrylate	--	0.010	4	0.0075	2
1.6. Polyorganosiloxane (silicone)	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Phenol	0.050	--	4	0.003	2
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	butyl	0.500	--	2	0.100	3
	Benzene	--	0.010	2	0.100	2
1.7. Polyamides						
1.7.1. Polyamide 6 (polycaproamide, capron)	E-caprolactam	0.500	--	4	0.060	3
	Benzene	--	0.010	2	0.100	2
	Phenol	0.050	--	4	0.003	2
1.7.2. Polyamide 66 (polyhexamethylenedypamide, nylon)	Hexamethylene-diamine	0.010	--	2	0.001	2
	Methanol	0.200	--	2	0.500	3
	Benzene	--	0.010	2	0.100	2
1.7.3. Polyamide 610 (polyhexamethylenesebacamide)	Hexamethylenediamine	0.010	--	2	0.001	2
	Methanol	0.200	--	2	0.500	3
	Benzene	--	0.010	2	0.100	2
1.8. Polyurethanes	Ethylene glycol	--	1.000	3	1.000	--
	Acetaldehyde	--	0.200	4	0.010	3
	Formaldehyde	0.100	--	2	0.003	2
	Ethyl acetate	0.100	--	2	0.100	4
	Butyl acetate	--	0.100	4	0.100	4

	Acetone	0.100	--	3	0.350	4
	Alcohols:					
	2	**3**	**4**	**5**	**6**	**7**
	methyl	0.200	--	2	0.500	3
	propyl	0.100	--	4	0.300	3
	isopropyl	0.100	--	4	0.600	3
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
1.9. Polyethers:						
1.9.1. Polyethylene oxide	Formaldehyde	0.100	--	2	0,003*	2
	Acetaldehyde	--	0.200	4	0.010	3
1.9.2 Polypropylene oxide	Methyl acetate	--	0.100	3	0.070	4
	Acetone	0.100	--	3	0.350	4
	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
1.9.3.Polytetramethylene oxide	Propyl alcohol	0.100	--	4	0.300	3
	Acetaldehyde	--	0.200	4	0.010	3
	Formaldehyde	0.100	--	2	0.003	2
1.9.4. Polyphenylene oxide	Phenol	0.050	--	4	0.003	2
	Formaldehyde	0.100	--	2	0.003	2
	Methanol	0.200	--	2	0.500	3
1.9.5. Polyethylene theraphthalate and copolymer on the basis of terephthalic acid	Acetaldehyde	--	0.200	4	0.010	3
	Ethylene glycol	--	1.000	3	1.000	--
	Dimethyl terephthalate	--	1.500	4	0.010	--
	Formaldehyde	0.100	--	2	0.003	2
	Alcohols:					
	methyl	0.200	--	2	0.500	
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
	Acetone	0.100	--	3	0.350	4
1.9.6. Polycarbonate	Phenol	0.050	--	4	0.003	2
	Methylene chloride	--	7.500	3	--	--
	Chlorobenzene	--	0.020	3	0.100	3
1.9.7. Polysulphon	Benzene	--	0.010	2	0.100	2
	Phenol	0.050	--	4	0.003	2
1.9.8. Polyphenylene sulphide	Phenol	0.050	--	4	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Methanol	0.200	--	2	0.500	3
	Dichlorobenzene	--	0.002	3	0.030	--
	Borium (B)	0.500	--	2	--	--
1.9.9. In case of using as a cohesive:						
Phenol-formaldehyde resin	Phenol	0.050	--	4	0.003	2
	Formaldehyde	0.100	--	2	0.003	2
silicone resin	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Phenol	0.050	--	4	0.003	2
	Alcohols:					

	methyl	0.200	--	2	0.500	3
	butyl	0.500	--	2	0.100	3
	Benzene	--	0.010	2	0.100	2
Epoxide resins	Epichlorohydrin	0.100	--	2	0.200	2
	Phenol	0.050	--	4	0.003	2

	2	**3**	**4**	**5**	**6**	**7**
	Formaldehyde	0.100	--	2	0.003	2
1.10. Fluoropolymers: fluoropolymer -3 fluoropolymer -4, teflon	fluorine ion	0.500	--	2	--	--
	Formaldehyde	0.100	--	2	0.003	2
	Hexane	0.100	--	4	--	--
	Heptane	0.100	--	4	--	--
1.11. Plastic on the basis of phenol-formaldehyde resins (phenolic resin)	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Phenol	0.050	--	4	0.003	2
1.12. Polyformaldehyde	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
1.13. Aminoplast resins (carbamide- and melamine-formaldehyde)	Formaldehyde	0.100	--	2	0.003	2
1.14. Polymer materials on the basis of epoxide resins	Epichlorohydrin	0.100	--	2	0.200	2
	Phenol	0.050	--	4	0.003	2
	Formaldehyde	0.100	--	2	0,003*	--
1.15. Ionomeric resins, including resin	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	2
	Formaldehyde	0.100	--	2	0,003*	3
	Methanol	0.200	--	2	0.500	2
	Zinc (Zn)	1.000	--	3	--	3
1.16. Cellulose	Ethyl acetate	0.100	--	2	0.100	--
	Formaldehyde	0.100	--	2	0.003	4
	Benzene	--	0.010	2	0.100	2
	Acetone	0.100	--	3	0.350	2
1.17. Ether-cellulose plastics	Ethyl acetate	0.100	--	2	0.100	4
	Acetaldehyde	--	0.200	4	0.010	4
	Formaldehyde	0.100	--	2	0.003	3
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	isobutyl	0.500	--	2	0.100	4
	Acetone	0.100	--	3	0.350	4
1.18. Collagen (biopolymer)	Formaldehyde*	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Ethyl acetate	0.100	--	2	0.100	4
	Butyl acetate	--	0.100	4	0.100	4
	Acetone	0.100	--	3	0.350	4

	Alcohols:					
	methyl	0.200	--	2	0.500	3
	propyl	0.100	--	4	0.300	3
	isopropyl	0.100	--	4	0.600	3
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
	2	**3**	**4**	**5**	**6**	**7**
1.19 Rubber and rubber-plastic materials (gaskets, densifier of canisters, packing rings of lids for canning and etc.),	Acrylonitrile	0.02	--	--	--	
	Thiuram D	0.03	--	--	--	
	Captax	0.15	--	--	--	
	Zinc	1.0	--	--	--	
	Dioctylphthalate	2.0	--	--	--	
	Dibutylphthalate	Not allowed				
2. Paraffins and waxes						
2.1. Paraffins and waxes (cheese coating, etc.)	Hexane	0.100	--	4	--	--
	Heptane	0.100	--	4	--	--
	Benz(a)pyrene	Not allowed		1		
	Acetaldehyde	--	0.200	4	0.010	3
	Formaldehyde	0.100	--	2	0.003	2
	Acetone	0.100	--	3	0.350	4
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	butyl	0.500	--	**2**	0.100	3
	Toluene	--	0.500	4	0.600	3
3. Paper, paperboard, parchment, imitation parchment						
3.1. Paper	Ethyl acetate	0.100	--	2	0.100	4
	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Acetone	0.100	--	3	0.350	4
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	butyl	0.500	--	2	0.100	3
	Toluene	--	0.500	4	0.600	3
	Benzene	--	0.010	2	0.100	2
	Lead (Pb)	0.030	--	2	--	--
	Zinc (Zn)	1.000	--	3	--	--
	Arsenic (As)	0.050		2		
	Chrome (Cr 3+)	cumulatively 0,100	--	3	--	--
	Chrome (Cr 6+)		--	3	--	--

3.2. Paraffin paper	To be additionally defined					
	Hexane	0.100	--	4	--	--
	Heptane	0.100	--	4	--	--
	Benz(a)pyrene	Not allowed		1		
3.3. Paperboard	Ethyl acetate	0.100	--	2	0.100	4
	Butyl acetate	--	0.100	4	0.100	4
	Acetaldehyde	--	0.200	4	0.010	3
	Formaldehyde	0.100	--	2	0.003	2
	Acetone	0.100	--	3	0.350	4
	2	**3**	**4**	**5**	**6**	**7**
	Alcohols:					
	methyl	0.200	--	2	0.500	
	isopropyl	0.100	--	4	0.600	3
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
	Xylols (isomer mixture)	--	0.050	3	0.200	3
	Lead (Pb)	0.030	--	2	--	--
	Zinc (Zn)	1.000	--	3	--	--
	Arsenic (As)	0.050	--	2	--	--
	Chrome (Cr 3+)	cumulatively	--	3	--	--
	Chrome (Cr 6+)	0.100	--	3	--	--
	To be additionally defined:					
Coated paperboard	Titanium (Ti)	0.100	--	3	--	--
	Aluminium (Al)	0.500	--	2	--	--
	Barium (Ba)	0.100	--	2	--	--
3.4. Paperboard chipboard**	Butyl acetate	--	0.100	4	0.100	4
	Ethyl acetate	0.100	--	2	0.100	4
	Acetaldehyde	--	0.200	4	0.010	3
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	butyl	0.500	--	2	0.100	3
	Acetone	0.100	--	3	0.350	4
	Formaldehyde	0.100	--	2	0.003	2
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
	Xylols (isomer mixture)	--	0.050	3	0.200	3
	Lead (Pb)	0.030	--	2	--	--
	Zinc (Zn)	1.000	--	3	--	--
	Arsenic (As)_	0.050	--	2	--	--
	Chrome (Cr 3+)	cumulatively	--	3	--	--
	Chrome (Cr 6+)	0.100	--	3	--	--
	Cadmium (Cd)	0.001	--	2	--	--
	Barium (Ba)	0.100	--	2	--	--

3.5. Vegetable parchment	Ethyl acetate	0.100	--	2	0.100	4
	Formaldehyde	0.100	--	2	0.003	2
	Alcohols:					
	Methyl	0.200	--	2	0.500	3
	propyl	0.100	--	4	0.300	3
	isopropyl	0.100	--	4	0.600	3
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
	Acetone	0.100	--	3	0.350	4
	Lead (Pb)	0.030	--	2	--	--
	Zinc (Zn)	1.000	--	3	--	--
	Arsenic (As)	0.050	--	2	--	--
	2	**3**	**4**	**5**	**6**	**7**
	Copper (Cu)	1.000	--	3	--	--
	Iron (Fe)	0.300	--	--	--	--
	Chrome (Cr 3+)	cumulatively	--	3	--	--
	Chrome (Cr 6+)	0.100	--	3	--	--
3.6. Imitation parchment (paper with additives, imitating properties of vegetable parchment)	Ethyl acetate	0.100	--	2	0.100	4
	Formaldehyde	0.100	--	2	0.003	2
	Acetaldehyde	--	0.200	4	0.010	3
	Phenol	0.050	--	4	0.003	2
	Epichlorohydrin	0.100	--	2	0.200	2
	E-caprolactam	0.500	--	4	0.060	3
	Alcohols:					
	Methyl	0.200	--	2	0.500	3
	propyl	0.100	--	4	0.300	3
	isopropyl	0.100	--	4	0.600	3
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
	Acetone	0.100	--	3	0.350	4
	Benzene	--	0.010	2	0.100	2
	Toluene	--	0.500	4	0.600	3
	Xylols (isomer mixture)	--	0.050	3	0.200	3
	Zinc (Zn)	1.000	--	3	--	--
	Lead (Pb)	0.030	--	2	--	--
	Chrome (Cr 3+)	cumulatively	--	3	--	--
	Chrome (Cr 6+)	0.100	--	3	--	--
	Arsenic (As)	0.050	--	2	--	--
	Titanium (Ti)	0.100	--	3	--	--
	Cadmium (Cd)	0.001	--	2	--	--
4. Glass ***						
4.1. Glassware						
colourless and semiwhite glasses	Boron (B)	0.500	--	2	--	--
	Aluminium (Al)	0.500	--	2	--	--
	Arsenic (As)	0.050	--	2	--	--

green glasses	Aluminium (Al)	0.500	--	2	--	--
	Chrome (Cr 3+)	cumulatively	--	3	--	--
	Chrome (Cr 6+)	0.100	--	3	--	--
	Copper (Cu)	1.000	--	3	--	--
	Boron (B)	0.500	--	2	--	--
brown glasses	Aluminium (Al)	0.500	--	2	--	--
	Manganese (Mn)	0.100	--	3	--	--
	Boron (B)	0.500	--	2	--	--
- crystal glass	Lead (Pb)	***	--	2	--	--
	Aluminium (Al)	0.500	--	2	--	--
	Boron (B)	0.500	--	2	--	--
	Cadmium (Cd)	***	--	2	--	--
additionally for barium crystal glass	Barium (Ba)	0.100	--	2	--	--

	2	3	4	5	6	7
To be additionally determined when dyeing:						
Blue	Chrome (Cr 3+)	cumulatively 0,100	--	3	--	--
	Chrome (Cr 6+)		--	3	--	--
	Copper (Cu)	1.000	--	3	--	--
dark blue	Cobalt (Co)	0.100	--	2	--	--
Red	Copper (Cu)	1.000	--	3	--	--
	Manganese (Mn)	0.100	--	3	--	--
Yellow	Chrome (Cr 3+)	cumulatively 0,100	--	3	--	--
	Chrome (Cr 6+)		--	3	--	--
	Cadmium (Cd)	***	--	2	--	--
	Barium (Ba)	0.100	--	2	--	--
5. Ceramics* **						
5.1. Ceramic ware	Boron (B)	0.500	--	2	--	--
	Zinc (Zn)	1.000	--	3	--	--
	Titanium (Ti)	0.100	--	3	--	--
	Aluminium (Al)	0.500	--	2	--	--
	Cadmium (Cd)	***	--	2	--	--
	Barium (Ba)	0.100	--	2	--	--
6. Faience and porcelain ***						
6.1. porcelain and faience ware	Lead (Pb)	***	--	2	--	--
	Cadmium (Cd)	***	--	2	--	--
To be additionally defined when adding and using:						
cobalt oxides	Cobalt (Co)	0.100	--	2	--	--
lead-free glaze	Aluminium (Al)	0.500	--	2	--	--
	Boron (B)	0.500	--	2	--	--
	Zinc (Zn)	1.000	--	3	--	--
	Lithium (Li)	--	0.030	2	--	--

barytic glaze	Aluminium (Al)	0.500	--	2	--	--
	Barium (Ba)	0.100	--	2	--	--
	Boron (B)	0.500	--	2	--	--
To be additionally defined when using pigmented glaze:						
of pink colour	Manganese (Mn)	0.100	--	3	--	--
of blue colour	Cobalt (Co)	0.100	--	2	--	--
	Copper (Cu)	1.000	--	3	--	--
of yellow colour	Chrome (Cr 3+)	cumulatively 0,100	--	3	--	--
	Chrome (Cr 6+)		--	3	--	--
	Cadmium (Cd)	***	--	2	--	--
7. Polymer materials used for packaging cover (closures)						
7.1.silicate enamel (frits)	Aluminium (Al)	0.500	--	2	--	--
	Boron (B)	0.500	--	2	--	--
	2	**3**	**4**	**5**	**6**	**7**
	Iron (Fe)	0.300	--	--	--	--
	Cobalt (Co)	0.100	--	2	--	--
	Nickel (Ni)	0.100	--	3	--	--
	Chrome (Cr 3+)	Cumulatively	--	3	--	--
	Chrome (Cr 6+)	0.100	--	3	--	--
	Manganese (Mn)	0.100	--	3	--	--
7.2.Titanium enamel	Aluminium (Al)	0.500	--	2	--	--
	Boron (B)	0.500	--	2	--	--
	Iron (Fe)	0.300	--	--	--	--
	Cobalt (Co)	0.100	--	2	--	--
	Nickel (Ni)	0.100	--	3	--	--
	Lead (Pb)	0.030	--	2	--	--
	Arsenic (As)	0.050	--	2	--	--
	Zinc (Zn)	1.000	--	3	--	--
	Titanium (Ti)	0.100	--	3	--	--
To be additionally determined when dyeing the cover:						
of grey colour	Titanium (Ti)	0.100	--	3	--	--
of dark blue colour	Cobalt (Co)	0.100	--	2	--	--
of brown colour	Iron (Fe)	0.300	--	--	--	--
of green colour	Chrome (Cr 3+)	Cumulatively	--	3	--	--
	Chrome (Cr 6+)	0.100	--	3	--	--
of pink colour	Manganese (Mn)	0.100	--	3	--	--
When applying the coating on:						
carbon and low-alloyed steel	Iron (Fe)	0.300	--	--	--	--
	Manganese (Mn)	0.100	--	3	--	--
aluminium and aluminium alloys	Aluminium (Al)	0.500	--	2	--	--
	Copper (Cu)	1.000	--	3	--	--

8.Polymer materials used for lacquered packaging (closures)						
8.1.epoxyphenol varnishes	Epichlorohydrin	0.100	--	2	0.200	2
	Formaldehyde	0.100	--	2	0.003	2
	Phenol	0.050	--	4	0.003	2
	Zinc (Zn)	1.000	--	3	--	--
	Lead (Pb)	0.030	--	2	--	--
	Xylols (isomer mixture)	--	0.050	3	0.200	3
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	propyl	0.100	--	4	0.300	3
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
	Acetone	0.100	--	3	0.350	4
	Ethylbenzene	--	0.010	4	0.020	3
8.2. phenolic and oil varnishes	Formaldehyde	0.100	--	2	0,003*	2
	Phenol	0.050	--	4	0.003	2
	Lead (Pb)	0.030	--	2	--	--
8.3.protein-resistant	Epichlorohydrin	0.100	--	2	0.200	2

enamels,containing zincpaste	**2**	**3**	**4**	**5**	**6**	**7**
	Formaldehyde	0.100	--	2	0.003	2
	Zinc (Zn)	1.000	--	3	--	--
	Lead (Pb)	0.030	--	2	--	--
8.4. vinylorgansolic coating	Formaldehyde	0.100	--	2	0,003*	2
	Acetaldehyde	--	0.200	4	0.010	3
	Phenol	0.050	--	4	0.003	2
	Acetone	0.100	--	3	0.350	4
	vinyl acetate	--	0.200	2	0.150	3
	vinyl chloride	0.010	--	2	0.010	1
	Alcohols:					
	methyl	0.200	--	2	0.500	3
	isopropyl	0.100	--	4	0.600	3
	butyl	0.500	--	2	0.100	3
	isobutyl	0.500	--	2	0.100	4
	Xylols (isomer	--	0.050	3	0.200	3
	mixture)					
	Lead (Pb)	0.030	--	2	--	--
To be additionally determined when using:						
aluminium powder for varnish pigmentation	Aluminium (Al)	0.500	--	2	--	--
packing materials from aluminium, aluminium alloys	Aluminium (Al)	0.500	--	2	--	--
9. Wood and wood products, organic and compressed cork						
Wood and wood products	Formaldehyde	0.100	--	2	0.003	2
Natural and compressed cork	Formaldehyde	0.100	--	2	0.003	2

Note: migration of hazardous substances evolved from packaging (closures) which are made from composite materials shall be examined only from the layer having direct contact with food products, including infant food.

* - for all types of artificial protein coatings the cumulative quantity of aldehydes (including formaldehyde) the Permissible Migration Amount is 0,8 mg/l.

** - paper and paperboard containing paper waste may be used only for packaging of food products with humidity of not more than 15%.

*** - the Permissible Migration Amount of lead and cadmium for packaging made from glass, faience and porcelain, ceramics is specified in Table 2.

**** - when estimating materials and products intended for packaging of infant food products for children under 3 years old, migration of chemical substances falling into 1 and 2 class of hazard is not allowed.

***** - migration of hazardous substances into water simulative environment shall be inspected for the packaging intended for storage of products with humidity of more than 15%, into air simulative environment - for storage of products with humidity of less than 15%.

****** - for packaging and from closures which are produced from polymer materials and plastics on their basis, modification of the acid number shall be calculated additionally.

Table 2

Sanitary and Hygienic Regulations for Lead and Cadmium Evolved from Glass, Faience and Porcelain, and their Products, Ceramics

Type of Packaging	Controlled Indices	Measuring Unit	Permissible Migration Amount
Packaging under 1.1 l	cadmium	mg/l	0.5
	lead	mg/l	2.0
Packaging above 1.1 l	cadmium	mg/l	0.5
	lead	mg/l	2.0

Table 3

Sanitary and Hygienic Safety Indices and Ratios for Substances Evolved from Metals and Alloys Used in Production of Packaging (Closures)

Name of Material of the Product	Controlled Indices	Permissible Quantity of Chemical Substance Migration, mg/l	Maximum Permissible Concentrations in Drinking Water, mg/l	Class of Hazard *
1	2	3	4	5
1. Primary aluminium				
of special purity	Aluminium (Al)	0.500	--	2
of high purity	Aluminium (Al)	0.500	--	2
	Iron (Fe)	0.300	--	--
	Silicium (Si)	--	10.000	2

1	2	3	4	5
	Copper (Cu)	1.000	--	3
of technical purity	Aluminium (Al)	0.500	--	2
	Iron (Fe)	0.300	--	--
	Silicium (Si)	--	10.000	2
	Copper (Cu)	1.000	--	3
	Zinc (Zn)	1.000	--	3
	Titanium (Ti)	0.100	--	3
2.Aluminium alloys:				
deformable	Aluminium (Al)	0.500	--	2
	Manganese (Mn)	0.100	--	3
	Iron (Fe)	0.300	--	--
	Copper (Cu)	1.000	--	3
	Zinc (Zn)	1.000	--	3
	Titanium (Ti)	0.100	--	3
	Vanadium (V)	0.100	--	3
casting	Aluminium (Al)	0.500	--	2
	Copper (Cu)	1.000	--	3
	Silicium (Si)	--	10.000	2
	Manganese (Mn)	0.100	--	3
	Zinc (Zn)	1.000	--	3
	Titanium (Ti)	0.100	--	3
3. All types of steel, including carbon high-quality ,chromium chromium-manganese steel	Iron (Fe)	0.300	--	--
	Manganese (Mn)	0.100	--	3
	Chrome (Cr 3+)	28	--	3
	Chrome (Cr 6+)	cumulatively 0.100	--	3
3.1. To be additionally defined for other types of steel:				
carbon low-alloyed steel	Nickel (Ni)	0.100	--	3
	Copper (Cu)	1.000	--	3
chromium-silicon steel	Silicium (Si)	--	10.000	2
chromium-vanadium steel	Nickel (Ni)	0.100	--	3
	Copper (Cu)	1.000	--	3
chromium-manganese-titanium steel	Titanium (Ti)	0.100	--	3
silicon-manganese and chromium-manganese steel	Silicium (Si)	--	10.00	2
chromium-molybdenum steel	Molybdenum (Mo)	0.250	--	2
chromium-nickel-tungsten and chromium-nickel-molybdenum steel	Nickel (Ni)	0.100	--	3
	Tungsten (W)	0.050	--	2
	Molybdenum (Mo)	0.250	--	2
chromium-molybdenum-aluminium and chromium-aluminium steel	Aluminium (Al)	0.500	--	2
	Molybdenum (Mo)	0.250	--	2
chromium-nickel-tungsten-vanadium steel	Nickel (Ni)	0.100	--	3
	Vanadium (V)	0.100	--	3
	Tungsten (W)	0.050	--	2
corrosion-resistant and heat-resistant, high-quality hot-rolled steel	Nickel (Ni)	0.100	--	3
low-alloyed heat-resistant pearlitic steel	Nickel (Ni)	0.100	--	3
	Molybdenum (Mo)	0.250	--	2
	Vanadium (V)	0.100	--	3

1	2	3	4	5
	Copper (Cu)	1.000	--	3
heat-resistant martensitic and martensitic-ferrite steel	Nickel (Ni)	0.100	--	3
	Molybdenum (Mo)	0.250	--	2
	Vanadium (V)	0.100	--	3
	Tungsten (W)	0.050	--	2
heat-resistant austenitic steel	Nickel (Ni)	0.100	--	3
	Molybdenum (Mo)	0.250	--	2
	Tungsten (W)	0.050	--	2
	Niobium (Nb)	--	0.010	2
	Titanium (Ti)	0.100	--	3
4. Solders on the basis of lead alloys:				
-tin-lead	Tin (Sn)	--	2.000	3
	Lead (Pb)	0.030	--	2
5. Zinc and zinc alloys	Zinc (Zn)	1.000	--	3
	Lead (Pb)	0.030	--	2
	Iron (Fe)	0.300	--	--
	Cadmium (Cd)	0.001	--	2
	Copper (Cu)	1.000	--	3
	Aluminium (Al)	0.500	--	2
	Chrome (Cr 3+)	cumulatively 0,100	--	3
	Chrome (Cr 6+)		--	3
	Molybdenum (Mo)	0.250	--	2
	Manganese (Mn)	0.100	--	3
	Vanadium (V)	0.100	--	3
	Iron (Fe)	0.300	--	--

Appendix 2

List of Simulative Spheres Used when Examining Packaging (Closures)

Name of Food Products for Contact with which the Packaging (Closures) is Intended	Simulative Spheres Imitating Food Products
Fresh meat and fish	Distilled water, 0.3% lactic acid solution
Salted and smoked meat and fish	Distilled water, 5% sodium chloride solution
Milk, fermented milk products and preserved milk products	Distilled water, 0.3% lactic acid solution, 3.0% lactic acid solution
Cooked sausage; preserves: meat, fish vegetable; pickled and salted-fermented foods vegetables, tomato paste, etc.	Distilled water, 2% acetic acid solution containing 2% sodium chloride; unpurified sunflower oil.
Fruits, berries, fruit and vegetable juices, fruit and berry preserves, alcohol-free beverages, beer.	Distilled water, 2% lemon acid solution.
Alcoholic beverages, wines	Distilled water, 20% ethanol solution, 2% lemon acid solution.
Vodka, cognac	Distilled water, 40% ethanol solution.
Potable alcohol, liqueurs, rum	Distilled water, 96% ethanol solution.

Note:

1. Packaging (closures) used in conditions different from the above indicated shall be processed in the environment maximally similar to the operation conditions with some aggravation.

2. When examining packaging (closures) from plastics containing nitrogen and aldehydes, 0.3% и 3% lemon acid solution shall be used as simulative sphere instead of lactic acid.

3. When examining packaging (closures) for tinned fish in own juice, distilled water shall be used as simulative sphere.

4. When defining lead and cadmium in packaging (closures) from glass, faience and porcelain, ceramics, 4% acetic acid solution shall be used as simulative sphere.

Simulation of duration of packaging (closures) contact with simulative spheres

Duration of packaging (closures) contact with simulative spheres shall be established on the basis of its operation conditions with aggravation.

a) if duration of the assumed contact of food products with packaging (closures) does not exceed 10 minutes, the examination exposure shall be 2 hours;

b) if duration of contact of food products with packaging (closures) does not exceed 2 hours, the examination exposure shall be 1 day;

c) if duration of contact of food products with packaging (closures) is from 2 to 48 hours, the examination exposure shall be 3 days;

d) if duration of contact of food products with packaging (closures) exceeds 2 days, the examination exposure shall be 10 days;

e) metal cans covered with varnish shall be filled with simulative sphere, hermetically sealed, autoclaved within an hour and left at room temperature for 10 days;

e) packaging (closures) intended for contact with food products subject to sterilization shall be filled with simulative spheres, hermetically sealed, autoclaved within 2 hours and left at room temperature for 10 days.

Temperature Conditions when Examining Packaging (Closures)

a) packaging (closures) intended for contact with food products at environmental temperature shall be filled with simulative spheres of room temperature and held within the time specified above;

b) packaging (closures) intended for contact with hot food products shall be filled with simulative spheres heated to 80^0C and held at room temperature within the time specified above;

c) packaging (closures) intended for packaging food products in hot form (melted butter, hard cheese and cheese spread, etc.) shall be filled with simulative spheres heated to 80^0C and held at room temperature within the time specified above.

Appendix 3

Numerical, Letter Denotation (Abbreviation) of Material from which Packaging (Closures) is Produced

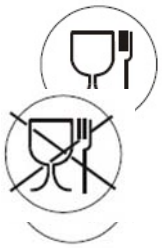
Packaging Materials	Letter Denotation*	Numerical Code
1	2	3
Plastics		
Polyethyleneterephthalate	PET	1
High-density polyethylene	HDPE	2
Polyvinylchloride	PVC	3
Low-density polyethylene	LDPE	4
Polypropylene	PP	5
Polystyrene	PS	6
Vacant numbers		7-19
Paper and paperboard		
Corrugated paperboard	PAP	20
Other paperboard	PAP	21
Paper	PAP	22
Vacant numbers		23-39
Metals		
Steel	FE	40
Aluminium	ALU	41
Vacant numbers		42-49
Wood and wood-based material		
Wood	FOR	50
Cork	FOR	51
Vacant numbers		52-59
Fabric		
Cotton	TEX	60
Jute	TEX	61
Vacant numbers		62-69
Glass		
Colourless glass	GL	70
Green glass	GL	71
Brown glass	GL	72
Vacant numbers		73-79
Combined materials **		
Paper and paperboard/different materials		80
Paper and paperboard/ plastics		81
Paper and paperboard/ aluminium		82

Paper and paperboard/tinned plate		83
Paper and paperboard/ plastics / aluminium		84
Paper and paperboard/ plastics/aluminium/tinned plate		85
Vacant numbers		86-89
Plastics / aluminium		90
Plastics / tinned plate		91
Plastics / various metals		92
Vacant numbers		93-94
Glass / plastics		95
Glass / aluminium		96
Glass / tinned plate		97
Glass / various metals		98
Vacant numbers		99-100

*Only capital letters are used.

**To be marked as follows: Latin letter C and through a slash - denotation of the primary material in the composite (e.g. C/ALU).

Appendix 4



Pictographs and Symbols Printed on the Marking of Packaging (Closures)

Figure 1
For food products

Figure 2
For perfume and cosmetics

Figure 3
For non-food products

Figure 4 - it is possible to recycle the used packaging (closures) - Möbius strip