Chapter II
Part 23. Safety Requirements for Processing Aids

1. Scope, General Provisions

1. Sanitary and epidemiological and hygienic safety requirements for processing aids (hereinafter referred to as the “Uniform Sanitary Requirements”) shall be applied to processing aids (hereinafter referred to as the “Processing Aids”), and also to food products to the extent of application of processing aids during production of food products.

2. This part of Uniform Sanitary Requirements is developed based on the legislation of the Customs Union member states, as well as the international documents establishing requirements for safety and application of processing aids.

2. Terms and Definitions

3. In this part of Uniform Sanitary Requirements the following terms and definitions are used with a view of the given document:

1) "safety of processing aids and food products containing residues thereof" means a set of properties and characteristics of processing aids and food products containing their residual quantities complying with regulations of these Uniform Requirements and confirming absence of inadmissible risk of causing harm to life or health of a person and future generations associated with their application by a person as part of food products;

2) "maximum permissible level (maximum level, permissible level) of the processing aids" means sanitary-hygienic standard that establishes the maximum allowable residual quantity of processing aids in food products, which guarantees its safety for a person;

3) "new processing aids" mean processing aids not regulated for application in food products manufacturing in accordance with these Uniform Requirements;

4) "according to technical documentation" (according to TD) means regulation for application of processing aids set by the manufacturer in technical documentation (technical specifications, instruction manuals, formulations, specifications, etc.) in cases when their residual quantity is significantly below the established level or when processing aids are removed during technological process and are not detected by modern research methods;

5) “processing aid” means any substance or material (except equipment and utensils), other than a food ingredient, intentionally used in the processing of raw materials and manufacturing of food products to fulfill a certain technological purpose; processing aids (or their derivatives) are removed during the technological process, however residues thereof may still be present in the final product, provided that these residues do not present any health risk and do not have any technological effect on the finished product;

6) “enzyme preparations" mean purified and concentrated products containing certain enzymes or enzyme complex typical for biological media (plants, animals, microorganisms) of producers and necessary for implementation of specific biochemical processes that take place during production of products."

3. General Provisions

4. These Uniform Requirements are designed for:

1) individual entrepreneurs and legal entities engaged in economic activity in the sphere of manufacture and handling of processing aids, as well as in the sphere of manufacture and handling of food products (food additives), which were produced with the help of processing aids;

2) bodies of state control (supervision) of the Customs Union states, exercising the functions of control and supervision in the field of sanitary and epidemiological welfare of population, consumer protection and consumer market.

5. New processing aids that are not regulated by these Uniform Requirements are allowed to be used in the manner provided for by the Customs Union states.

In addition to the standard and technical documents (standards, technical specifications, regulations, technological instructions, specifications, formulations, information on the composition) the following information, indicating the safety of processing aids for human health, shall be given:

1) characteristics of a substance (preparation): its origin and chemical formula (composition), physical and chemical properties, production process, content of the ground substance, existence and content of intermediate products, impurities, degree of purity, mechanism to achieve the desired technological effect and possible products obtained due to interaction with nutrient materials;

2) toxicological properties; for individual substances - metabolism in an animal organism;

3) technological justification for the use of new processing aids, benefits compared with the aids already used, a list of food products, in manufacturing of which such processing aids are suggested to be used, the dosage required to achieve the technological effect;

4) technical documents containing the established safety indicators, methods for detecting residues of new processing aids.

6. Normative and technical documentation for enzyme preparations shall specify the source of the preparation and its characteristics, including primary and secondary activity.
For strains of microorganisms that produce enzymes the following information shall be additionally provided:

1) information on the taxonomic status (generic and specific strain name, the number and the original name, information on deposit in the collection of cultures and on modifications);
2) materials concerning the study of cultures for toxigenicity and pathogenicity (for strains of the genera, which may include conditionally pathogenic microorganisms);
3) declaration on the use of enzyme preparations of strains of genetically modified microorganisms in production process.

7. Processing aids, including enzymes, shall not be listed in the labels of food products in the production of which they were used.

4. Safety Requirements for Processing Aids

8. In terms of safety, processing aids (except enzyme preparations) shall comply with the legislation of the Customs Union member states.
In terms of safety enzyme preparations shall meet the following requirements:

1) the content of toxic elements shall not exceed: Lead - 5.0 mg / kg;

2) concerning microbiological indicators enzyme preparations shall meet the following requirements: the quantity of mesophilic aerobic and facultative anaerobic microorganisms (QMAFAnM), CFU / g, not more than $5 \cdot 10^4$ (for enzyme preparations of plant, bacterial and fungal origin), $1 \cdot 10^4$ (for enzyme preparations of animal origin, including milk-clotting); coliform bacteria (Escherichia coli group bacteria – CGB, coliforms) in 0.1 g shall not be permitted; pathogenic microorganisms, including salmonella, in 25 g are not permitted; E. coli in 25 g are not allowed;
3) enzyme preparations shall not contain viable forms of enzymes producers;
4) enzyme preparations of bacterial and fungal origin shall not have antibiotic activity;
5) enzyme preparations of fungal origin shall not contain mycotoxins (aflatoxin B1, T-2 toxin, zearalenone, ochratoxin A, sterigmatocystin).

In the course of monitoring the content of mycotoxins in enzyme preparations it should be taken into account that producers of mycotoxins are most likely to be the following toxigenic strains of fungi: Aspergillus flavus and Aspergillus parasiticus - for aflatoxins and sterigmatocystin; Aspergillus ochraceus and Penicillium verrucosum, less frequently - Aspergillus sclerotiorium, Aspergillus melleus, Aspergillus alliaceus, Aspergillus sulphureus - for ochratoxin A; Fusarium graminearum, less frequently other types of Fusarium - for zearalenone, deoxynivalenol and T-2 toxin.

9. For safety purposes, the use of processing aids during production of food products and food additives shall comply with the following requirements:

1) the use of processing aids shall not increase the risk of possible adverse effects of food products on human health;
2) food products shall comply with the regulations set forth in these Uniform Requirements, concerning maximum allowable content of residual amounts of processing aids;
3) use of processing aids shall not lead to deterioration of organoleptic characteristics of food products;
4) processing aids and food products containing residual amounts thereof imported into the territory of the Customs Union states shall comply with regulations prescribed by these Uniform Requirements;
5) processing aids shall be prepacked and packed in a way that ensures their safety and application properties indicated on labels during the shelf life (fitness) subject to maintaining storage conditions;
6) during packing of processing aids, such materials shall be used that meet safety requirements for the materials that come in contact with food products (Chapter II, Part 16);
7) processing aids that are in circulation in the territory of the Customs Union states shall be accompanied by documents that prove their safety (state registration certificate) and documents that provide traceability (shipping documents), as well as information about storage conditions and storage time (shelf life) of products;
8) processing aids that are in circulation in the territory of the Customs Union states manufactured with the use of genetically modified organisms (GMO) and / or nanotechnologies and other biotechnologies shall meet the Uniform Requirements for Safety and Nutrition Value of Food Products (Chapter II, Part 1).
10. During processing of raw materials and food products in order to improve the technology processing aids shall be used in accordance with the regulations prescribed by these Uniform Requirements.
Processing aids shall be classified according to their main functional classes:

1) fining and filtering agents, flocculants and absorbents;
2) extraction and technological solvents;
3) catalysts;
4) nutrients (extra nutrition) for yeast;

5) enzyme preparations;
6) materials and media for immobilization of enzymes;
7) other processing aids (with other functions not specified above).
Food additives permitted for use in food industry in accordance with the Uniform Safety Requirements for Food Additives and Flavoring Agents (Chapter II, Part 22) are allowed to be used as processing aids for production of food products.

11. Fining and filtering agents, flocculants and absorbents are allowed to be used in sugar industry, wine industry and other sectors of food industry in accordance with Annex No.1.
Catalysts may be used in the course of production of edible oils and other products according to Annex No.2.
Extraction and processing solvents may be used in the course of production of fat and other food products and certain food additives (flavoring agents, colorants, etc.) in accordance with Annex No.3.
Nutrients (extra nutrition, substrate) for yeast may be used in production of bread and bakery products, nutritional yeast in accordance with the regulations set forth in Annex No.4.

Processing aids with other technological functions may be used during processing of raw materials and food products in accordance with the regulations set forth in Annex No.5.
12. Enzyme preparations are allowed to be used in the manufacturing technology in food industry.
The enzyme activity in processed foods shall not be detected.
In order to obtain enzyme preparations as sources and producers it is allowed to use organs and tissues of healthy farm animals, cultivated plants, as well as non-pathogenic and non-toxigenic special strains of microorganisms and bacteria, lower fungi, in accordance with the regulations set forth in Annex No.6.
To standardize activity and increase stability of enzyme preparations it is allowed to include food additives (potassium chloride, sodium phosphate, glycerol, etc.) in their composition in accordance with the established manner.

13. Processing aids are allowed to be used as immobilized materials and solid materials for production of enzyme preparations in accordance with Annex No.7.
14. Responsibility for the safety of processing aids and food products during production of which they were used shall be borne by their manufacturer (seller).
15. Marking of processing aids shall contain:
1) The name of the product; for enzyme preparations shall be additionally specified: type(s) of enzyme activity (proteolytic, amylolytic, etc.), type(s) of microorganism-producer, a source of animal or vegetable origin;
2) composition (list of ingredients in descending order, except for products consisting of a single ingredient);
3) indication "not for retail sale";
4) name and address of manufacturer or seller;
5) net weight (or volume of product);
6) date of manufacture;
7) terms and conditions of storage;
8) lot number or mark identifying the batch of products.
The information specified in sub-paragraphs 1) (except the product name), 5), 6) and 8) may be indicated in the technical (accompanying) documentation.

ANNEX No.1

HYGIENIC REGULATIONS FOR USE OF FINING, FILTERING AGENTS, FLOCCULANTS AND ADSORBENTS

Processing Aids	Food Products, Technology	Maximum Residual Quantity
Modified acrylamide resins	Sugar industry; Water boiling	According to TD
Acrylate-akrilainic resin	Sugar industry	10 mg/kg
Aluminosilica (aluminosilicate)	Juice products	1.0 g/l
Aluminophosphate (soluble complexes)	Nonalcoholic beverage	According to TD
Alimentary albumin	According to TD	According to TD
Anthranilic acid	Cottonseed oil (to remove gossypol)	According to TD
Magnesium acetate	Treacle, sugar solutions	According to TD
Bentonite	Starch-treacle, sugar, juice industry, butter-making, winemaking, alcoholic beverages, fat-and-oil industry	According to TD
Copolymer of vinyl acetate and vinylpyrrolidone	According to TD	According to TD
Copolymer of N-vinylpyrrolidone with TEG dimethacrylic ester	Nonalcoholic beverages, alcoholic beverages	According to TD residues in final products shall not be allowed
Clay sorbents (bleached, natural, active soil or rock, activated tripoli)	Starch-treacle, sugar industry, butter-making, winemaking	According to TD
Diatomite	Treatment of wine-making materials, sugar and treacle solutions, fruit juices, vegetable oils and other products	According to TD
Divinylbenzene ethylvinylbenzene copolymer	Treatment of aqueous food solutions (except carbonated drinks)	According to TD
Dimethylamine epichlorohydrin copolymers	Sugar industry	5.0 mg/kg
Edible gelatin	Winemaking, alcoholic beverages	According to TD
Earth filters (calcium analogues of sodium montmorillonite)	According to TD	According to TD
Ion exchange resins	According to TD	According to TD
Kaolin	Starch-treacle, sugar, juice industry, butter-making, winemaking, alcoholic beverages, fat-and-oil industry	According to TD

	Treatment of wine-making materials, sugar and treacle solutions, fruit juices, vegetable oils and other products	
Cardboard-filter	According to TD	According to TD
Kieselgur	Beer filtration Alcoholic beverages Fat-and-oil industry	According to TD
Clinoptilolite (zeolite)	Wort, juice and wine-making materials	According to TD
Sodium monohydrogen phosphate	According to TD	According to TD
Trisodium salt of nitrile-trimethyl-phosphonic acid	Juices (iron removal)	According to TD residues in juices shall not exceed 10 mg/kg
Calcium oxide, lime	Sugar industry	According to TD
Perlite	Wine-making materials Alcoholic beverages Fat-and-oil industry	According to TD
Dry blood plasma	According to TD	According to TD
Polyacrylamide	Sugar (beet) Alcoholic beverages	According to TD
Sodium polyacrylate	Sugar (beet)	According to TD
Polyacrylic acid	Sugar industry	According to TD
Polyvinylcaprolactam	Beer wort Wine-making materials	According to TD
Polyvinyltriazole	Grape juice, wort	500 mg/kg
Polydiallyldimethylammonium chloride	Sugar Vegetable oils	0.01 mg/kg (l)
Polymers of malic acid and sodium malate	Sugar industry	5 mg/kg
Polyoxyethylene	Wine-making materials	According to TD
Polystyrene	Sugar Juices Wine, beer	According to TD
Fish glue	Wine, beer	According to TD
Styrene-divinylbenzene chloromethylated and amidated polymeric resin	Sugar industry	1 mg/kg
Tannin	Wines Alcoholic beverages	According to TD
Fabric, silk-and-cotton and synthetic filters	According to TD	According to TD
Activated vegetable carbon	Treatment of wine-making materials, sugar and treacle solutions, fruit juices, vegetable oils and other products; Vodka	According to TD
Phytin	Wine-making materials (iron removal)	According to TD
Trisodium orthophosphate	According to TD	According to TD
Zirconium phosphate	Wine-making materials	0.1 mg/l

Phosphoric acid	According to TD	According to TD
Chitin, chitosan	According to TD	According to TD
Enomelanin	Juice and wine-making materials	According to TD

ANNEX No.2

HYGIENIC REGULATIONS FOR APPLICATION OF CATALYSTS[1]

Processing Aids	Food Products, Technology	Maximum Residual Quantity
Aluminum	According to TD	According to TD
Potassium metal	Transesterification of edible oils	1 mg/kg
Potassium methylate (methoxide)	Transesterification of edible oils	1 mg/kg
Potassium ethylate	Transesterification of edible oils	According to TD
Manganese	Hydrogenation of edible oils	0.4 mg/kg
Copper	Hydrogenation of edible oils	0.1 mg/kg
Copper chromate	According to TD	According to TD
Copper chromite	According to TD	According to TD
Molybdenum	Hydrogenation of edible oils	0.1 mg/kg
Sodium metal	Transesterification of edible oils	1 mg/kg
Sodium amide	Transesterification of edible oils	1 mg/kg
Sodium methylate	Transesterification of edible oils	1 mg/kg
Sodium ethylate	Transesterification of edible oils	1 mg/kg
Nickel	Hydrogenation of edible oils and hardening of fats;	0.7 mg/kg
	Sugar and ethyl alcohol production	1 mg/kg
Oxides of different metals	Hydrogenation of edible oils	<0,1 mg/kg
Palladium	Hydrogenation of edible oils	1 mg/kg
Platinum	Hydrogenation of edible oils	0.1 mg/kg
Argentum	Hydrogenation of edible oils	0.1 mg/kg
Trifluoromethanesulfonic acid	Substitutes of cocoa butter	0.01 mg/kg
Chrome	Hydrogenation of edible oils	0.1 mg/kg
Zirconium	According to TD	According to TD

Note: ¹- Alloys of two or more of the abovementioned metals may be used as catalysts.

ANNEX No.3

HYGIENIC REGULATIONS FOR APPLICATION OF EXTRACTION AND TECHNOLOGICAL SOLVENTS

Processing Aids	Food Products, Technology	Maximum Residual Quantity
Acetone	Flavouring agents	30 mg/kg
	Colorants	2 mg/kg
	Edible oils	0.1 mg/kg
Amyl acetate	Flavouring agents Colorants	According to TD
Benzyl alcohol	Flavouring agents Colorants Fatty acids	According to TD
Butane	Flavouring agents	1 mg/kg
	Edible oils	0.1 mg/kg
1,3 - butandiol	Flavouring agents	According to TD
N-butanol-1	Flavouring agents, fatty acids, colorants	1 g/kg
N-butanol-2	Flavouring agents	1 mg/kg
Butyl acetate	According to TD	According to TD
Tert-butyl alcohol	According to TD	According to TD
Hexane	Flavouring agents, edible oils	1 mg/kg
Heptane	Flavouring agents, edible oils	1 mg/kg
Carbon dioxide (liquid CO2)	Flavouring agents Extracts	According to TD
Dibutyl ether	Flavouring agents	2 mg/kg
Dichlorodifluoromethane	Flavouring agents, colorants	1 mg/kg
Dichloromethane (methylene chloride)	Coffee, tea decaffeination	5 mg/kg
Dichlorotetrafluoroethane	Flavouring agents	1 mg/kg
Dichlorofluoromethane	Flavouring agents	1 mg/kg
Dichloroethane	Coffee decaffeination	5 mg/kg
Diethyl ether	Flavouring agents, colorants	2 mg/kg
Diethyl propyl ketone	According to TD	According to TD
Diethylcitrate	Flavouring agents, colorants	According to TD
Nitrous oxide	According to TD	According to TD
Isobutane	Flavouring agents	1 mg/kg
Isopropyl myristate	Flavouring agents Colorants	According to TD
Isopropyl alcohol (propane-2-ol)	Flavouring agents Colorants	According to TD
Methyl acetate	Coffee decaffeination	20 mg/kg
	Flavouring agents	1 mg/kg
	Sugar refinement	1 mg/kg
Methyl propanol-1	Flavouring agents	1 mg/kg
N-octyl ether	Citric acid	According to TD
Pentane	Flavouring agents, edible oils	1 mg/kg
Petroleum ether	Flavouring agents, edible oils	1 mg/kg

Propane	Flavouring agents	1 mg/kg
	Edible oils	0.1 mg/kg
Propylene glycol (pronan 1,2-diol)	Fatty acids Flavouring agents Colorants	According to TD
Propyl alcohol (n-propanol-1)	Fatty acids Flavouring agents Colorants	According to TD
Toluene	Flavouring agents	1 mg/kg
Glycerol tributyrate	Flavouring agents Colorants	According to TD
Tridodecylamine	Citric acid	According to TD
Glycerol tripropionat	Flavouring agents Colorants	According to TD
Trichlorofluoromethane	Flavouring agents	1 mg/kg
1,1,2-Trichloroethylene	Flavouring agents, edible oils	2 mg/kg
Isoparaffinic hydrocarbon oil	Citric acid	According to TD
Cyclohexane	Flavouring agents, edible oils	1 mg/kg
Ethanol	According to TD	According to TD
Ethyl acetate	According to TD	According to TD
Ethyl methyl ketone (Butanone)	Fatty acids, flavouring agents, colorants	2 mg/kg
	Coffee, tea decaffeination	2 mg/kg

ANNEX No.4

HYGIENIC REGULATIONS FOR APPLICATION OF
NUTRIENTS (EXTRA NUTRITION) FOR YEAST[1]

Processing Aids	Application Technology
Biotin	According to TD
Vitamin B complex	According to TD
Yeast autolysate	According to TD
Inositol	According to TD
Potassium carbonate	According to TD
Calcium carbonate	According to TD
Niacin	According to TD
Panthothenic acid	According to TD
Ammonium sulphate	According to TD
Ferrous sulpate	According to TD
Ammonium ferric sulphate	According to TD
Calcium sulfate	According to TD
Magnesium sulphate	According to TD
Copper sulphate	According to TD
Zink sulphate	According to TD
Ammonium phosphate	According to TD
Calcium phosphate	According to TD
Ammonium chloride	According to TD
Potassium chloride	According to TD

Note: [1] - The specified processing aids may be used in combination

ANNEX No.5

HYGIENIC REGULATIONS FOR APPLICATION OF PROCESSING AIDS
WITH OTHER TECHNOLOGICAL FUNCTIONS

Processing Aids	Technological Function	Maximum Residual Quantity; Food Products and Application Technology
Sodium alkylbenzene sulphonate (sulphanol, sulphonol)	Detergents and cleansers	According to TD
N-alkyl (C12-C16) dimethyl-benzene-chloride	Antimicrobial substances	According to TD
Potassium bromide	Detergents and cleansers	According to TD Fruit and Vegetables
Gibberellin, gibberellic acid	Malting stimulant	According to TD
Hypochlorites	Antimicrobial substances	According to TD edible oils
	Detergents and cleansers	According to TD (except treatment of chicken carcass)
Saturated alcohol glycol ethers	Defoaming agents	According to TD juice production
Dialkanolamines	Detergents and cleansers	1 mcg/kg sugar beet (in sugar - is not allowed)
Dimethyl dicarbonate	Antimicrobial substances	Production of wine - residues are not allowed
Sodium salt of dimethyl-dithiocarbamic acid	Antimicrobial substances	According to TD
Sodium dioctyl sulfosuccinate	Detergents	10 mg/kg fruit drinks
Dichlorodifluoromethane	Contact freezing and cooling agents	100 mg / kg frozen food products (except chicken carcass)
Dichlorofluoromethane	Contact freezing and cooling agents	100 mg / kg frozen food products (except chicken carcass)
Diethyl dicarbonate	Antimicrobial substances	Production of wine - residues are not allowed
Sodium salt of dodecylbenzene sulfonic acid	Detergents and cleansers	2 mg / kg fruits and vegetables, meat and poultry
Oak, beech wood chips (stave, chips, etc.)	Blend during production of brandy (wine spirits), flavored wines and special beer	According to TD
Carbamates	Detergents and cleansers	According to TD sugar beet
Keto-alcohol C9-C30	Defoaming agents	According to TD
Sodium salt of xylene sulfonic acid	Detergents	1 mg / kg Edible fats and oils

Lactoperoxidase system (lactoperoxidase, glucose oxidase, thiocyanates)	Antimicrobial substances	According to TD
Sodium lauryl sulfate	Detergents	1 mg / kg edible fats and oils
Fatty acids methyl esters	Defoaming agents	According to TD
Sodium salt of mono-and dimethyl- naphthalene - sulfonic acid	Detergents and cleansers	0,2 mg / kg Fruit and vegetables
Monoethanolamine	Detergents and cleansers	1 mg/kg Fruit, vegetables, sugar beet (in sugar - is not allowed)
Peracetic acid	Antimicrobial substances	Treatment of chicken carcass and eggs – residues are not allowed
Hydrogen peroxide	Antimicrobial substances Detergents and cleansers Bleaching agent	Manufacture of sugar, fruit and vegetable juices - residues are not allowed; semi-manufactured intermediate goods – conservations from carrots, white vegetables and onions for canning industry, treatment with solution of 2.4 g / kg - residues are not allowed; treatment of eggs - residues are not allowed; slaughter blood (bleaching with catalase) - residues are not allowed
Polyacrylamide	Detergents and cleansers	1 mg/kg Fruit, vegetables, sugar beet
Polyacrylic acid, sodium salt	Defoaming agents	According to TD
Polyalkyleneglycol esters of fatty acids	Defoaming agents	According to TD
Polyoxypropylene (polyoxyethylene) esters of glycerol (Laprol)	Defoaming agents	According to TD
Polyoxypropylene esters of C8-C30 fatty acids	Defoaming agents	According to TD
Polyoxypropylene esters of C9-C30 keto alcohols	Defoaming agents	According to TD
Polyoxyethylene ethers of C8-C30 fatty acids	Defoaming agents	According to TD
Polyoxyethylene ethers of C8-C30 keto alcohols	Defoaming agents	According to TD
Polysorbates (60, 65, 80)	Defoaming agents	According to TD

Polyethylene glycol	Defoaming agents	According to TD
Polyethylene glycol (400, 600) dioleate	Defoaming agents	According to TD
Propylene oxide	Antimicrobial substances	According to TD
Sulfuric acid	Acidity regulator in the production of alcohol	According to TD
Sodium silicate	Detergents and cleansers	According to TD
Saturated alcohols C8-C30	Defoaming agents	According to TD
Sodium tripolyphosphate	Detergents and cleansers	According to TD
Triethanolamine	Detergents and cleansers	0.05 mcg /kg sugar beet (in sugar - is not allowed)
Linear undecylbenzenesulfonic acid	Detergents and cleansers	1 mcg/kg sugar beet (in sugar - is not allowed)
Formaldehyde	Antimicrobial substances Defoaming agents	0.05 mg / kg processing of sugar beets, production of yeast
Freon	Contact freezing and cooling materials	According to TD
Sodium chlorite	Antimicrobial substances	According to TD (except for the treatment of chicken carcass)
Cetylpyridinium chloride	Antimicrobial substances	4 mg/kg (chicken carcass)
Disodium salt of tsianditioamidocarboxylic acid	Antimicrobial substances	According to TD
Quaternary ammonium compounds	Antimicrobial substances	According to TD edible oils
	Detergents	According to TD
2-ethylhexylsulphuric acid sodium salt	Detergents and cleansers	20 mg / kg fruit and vegetables
Disodium salt of ethylenbisdithiocarbamic acid	Antimicrobial substances	According to TD
Ethylene glycol monobutylate	Detergents and cleansers	0.03 mcg/kg sugar beet (in sugar - is not allowed)
Ethylenediamine	Antimicrobial substances	According to TD
4-sodium salt of ethylenediaminetetraacetic acid	Detergents and cleansers	0.003 mcg /kg sugar beet (in sugar - is not allowed)
Ethylene dichloride	Detergents and cleansers	0.01 mcg /kg sugar beet (in sugar - is not allowed)
Ethoxyquin (santochin)	Antimicrobial substances	Apples (surface treatment, 0.05-0.3% aqueous solution) remains after storage - 0.1 mg / kg

ANNEX No.6

ENZYME PREPARATIONS APPROVED FOR APPLICATION
DURING MANUFACTURE OF FOOD PRODUCTS

Enzyme Preparations	Source of Obtaining, Producer
Enzyme preparations of animal origin	
Alpha amylase	pancreas of cattle, pigs
Catalase	liver of cattle, horses
Lysozyme	chicken eggs white
Lipase	stomachs, proventriculus, abomasums, salivary glands of cattle
Pepsin	stomachs of pigs
Pepsin poultry	chicken proventriculus
Rennin	stomachs, abomasums of cattle, calves, goats, goats, sheep, lambs
Trypsin	pancreas of cattle, pigs
Phospholipase	pancreas of calves, lambs, goats
Chymosin	pancreas of calves, lambs, goats
Enzyme preparations of plant origin	
Bromelain	ananas (Ananas spp.)
Lipozidaza, lipoxygenase	soya bean
Malt carbohydrase	barley, barley malt
Papain	papaya (Carica papaya)
Chymopapain	papaya (Carica papaya)
Ficin	figs (Ficus spp.)
Enzyme preparations of microbial origin	
Alcohol dehydrogenase	Saccharomyces cerevisiae
Alpha amylase	Aspergillus niger Aspergillus oryzae Bacillus amyliquefaciens Bacillus licheniformis Bacillus megaterium Bacillus stearothermophilus Bacillus subtilis Rhizopus arrhizus Rhizopus oryzae
Beta-amylase	Bacillus cereus Bacillus megaterium Bacillus subtilis
Arabinofuranosidase	Aspergillus niger
Alpha-galactosidase	Aspergillus niger Mortierella vinacea Saccharomyces cerevisiae

Beta-galactosidase	Aspergillus niger Curvalaria inaegualis Penicillium canescens Saccharomyces fragilis Saccharomyces sp.
Hemicellulase	Aspergillus aculeatus Aspergillus niger Aspergillus oryzae Bacillus subtilis Rhizopus arrhizus Sporotrichum dimorphosporum Trichoderma longibrachiatum (reesei)
Beta-glucanase	Aspergillus awamori Aspergillus batate Aspergillus niger Bacillus subtilis Humicola insolens Rhizopus pigmaues Trichoderma harzianum
Endo-beta-glucanase	Aspergillus niger Aspergillus oryzae Bacillus circulans Bacillus subtilis Disporotrichum dimorphosporum Penicillium emersonii Rhizopus arrhizus Rhizopus oryzae Trichoderma longibrachiatum (reesei)
Glucoamylase or amyloglucosidase	Aspergillus amaurii Aspergillus awamori Aspergillus niger Aspergillus oryzae Rhizopus arrhizus Rhizopus niveus Rhizopus oryzae Trichoderma longibrachiatum (reesei)
Beta-glucosidase	Endmycopsis sp. Penicillium vitale Rhizopus pigmaues Trichoderma harzianum
Exo-alpha-glucosidase	Aspergillus niger Penicillium vitale
Glucose isomerase	Actinoplanes missouriensis Arthrobacter sp. Bacillus coagulans Streptomyces albus Streptomyces olivaceus Streptomyces olivochromogenes Streptomyces rubiginosus Streptomyces sp.

	Streptomyces violaceoniger
Glucose oxidase	Aspergillus niger
Alpha- decarboxylase	Bacillus brevis
Dextranase	Aspergillus sp. Bacillus subtilis Klebsiella aerogenes Penicillium funiculosum Penicillium lilacinus
Isomerase	Bacillus cereus
Invertase	Aspergillus niger Bacillus subtilis Kluyveromyces fragilis Saccharomyces carlsbergensis Saccharomyces cerevisiae Saccharomyces sp.
Inulinase	Aspergillus niger Kluyveromyces fragilis Sporotrichum dimorphosporum Streptomyces sp.
Catalase	Aspergillus niger Micrococcus luteus (lysodeicticus) Penicillium vitale
Xylanase	Aspergillus niger Aspergillus aculeatus Humicola insolens Sporotrichum dimorphosporum Streptomyces sp. Trichoderma longibrachiatum (reesei) Trichoderma viride
Lactase, Beta-galactosidase	Aspergillus niger Aspergillus oryzae Kluyveromyces fragilis Kluyveromyces lactis Saccharomyces sp.
Lipase	Aspergillus flavus Aspergillus niger Aspergillus oryzae Brevibacterium linens Candida lipolytica Candida rugosa Mucor javanicus Mucor miehei Mucor pusillus Rhizopus arrhizus Rhizopus nigrican (stolonifer) Rhizopus niveus

Malate decarboxylase	Leuconostoc oenos
Maltase, alpha-glucosidase	Aspergillus niger Aspergillus oryzae Rhizopus oryzae Trichoderma longibrachiatum (reesei)
Melibiase	Mortierella vinacea Saccharomyces cerevisiae
Nitrate reductase	Micrococcus violagabriella
Pectinase	Aspergillus awamori Aspergillus foetidus Aspergillus niger Aspergillus oryzae Bacillus macerans Botrytis cinerea Penicillium simplicissimum Rhizopus oryzae Trichoderma longibrachiatum (reesei)
Pektinliase	Aspergillus niger
Pectinesterase	Aspergillus niger
Pentosanase	Humicola insolens
Polygalacturonase	Aspergillus aculeatus Aspergillus niger Penicillium canescens

Protease (including milk-clotting enzymes)	Aspergillus awamori Aspergillus melleus (quercinus) Aspergillus niger Aspergillus oryzae Aspergillus terricola Bacillus amyliquefaciens Bacillus cereus Bacillus licheniformis Bacillus mesentericus Bacillus subtilis Brevibacterium linens Endothia parasitica Lactobacillus casei Micrococcus caseolyticus Mucor miehei Mucor pusillus Streptococcus cremoris Streptococcus lactis Streptomyces fradiae
Pullulanase	Bacillus acidopullulyticus Bacillus subtilis Klebsiella aerogenes
Serine proteinase	Bacillus licheniformis Streptomyces fradiae
Tannase	Aspergillus niger Aspergillus oryzae
Chymosin	Aspergillus awamori Aspergillus niger Escherichia coli Kluyveromyces lactis
Cellobiase	Aspergillus niger Trichoderma longibrachiatum (reesei)
Cellulase	Aspergillus niger Aspergillus oryzae Geotrichum candidum Penicillium funiculosum Rhizopus arrhizus Rhizopus oryzae Sporotrichum dimorphosporum Thielavia terrestris Trichoderma longibrachiatum (reesei) Trichoderma roseum Trichoderma viride
Esterase	Muccor miehei

ANNEX No.7

PROCESSING AIDS (MATERIALS AND SOLID MEDIA) FOR IMMOBILIZATION OF ENZYME PREPARATIONS ALLOWED FOR APPLICATION DURING MANUFACTURE OF FOOD PRODUCTS

Materials and solid media
Sodium alginate
Glutaric aldehyde
Diatomite (diatomic earth)
Diethylaminoethyl cellulose
Gelatin
Ion exchange resins permitted for use in food industry
Carrageenan
Ceramic
Polyethyleneimine
Glass