
CHEMICAL COMPOSITION OF SOME FOOD ADDITIVES

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ABSTRACT

The article provides information about the types, chemical composition and some of the harmful properties of food additives. Some of them can cause gastrointestinal problems, skin rashes, high blood pressure, and carcinogenic effects. The use of the most harmful compounds in the food industry is prohibited. This substance is used in the food industry as a preservative to prevent the growth of fungi and microorganisms. Standard values for SO₃ have not yet been developed. Increasing its concentration poses a danger to human health.

KEYWORDS: *Food Additives, Dyes, Preservatives, Antioxidants, Stabilizers.*

INTRODUCTION

Food additives are known to be approved for use and are added to consumer products. But some of them are toxic. That is why people need to know about the properties of nutritional supplements to prevent their health. Harmful substances can cause various diseases in the human body. For example, it increases the risk of allergies and can lead to chronic diseases. Some of them can cause gastrointestinal problems, skin rashes, high blood pressure, and carcinogenic effects. The use of the most harmful compounds in the food industry is prohibited [1,2]. Reducing the intake of harmful food additives means preventing the development of various diseases. Food additives are divided into the following classes:

E100- E199	<i>Dyes</i>	E200-E299	<i>preservatives</i>	
E300-E399	<i>Antioxidants</i>	E500-E599	<i>Emulsifiers,</i>	<i>pH</i>
			<i>regulators</i>	
E400-E499	<i>Stabilizer</i>	E700-E799	<i>Antibiotics</i>	
E600-E699	<i>Odorant taste enhancers</i>	E900-E999	<i>blowing agents</i>	

E800-E899

stockislands

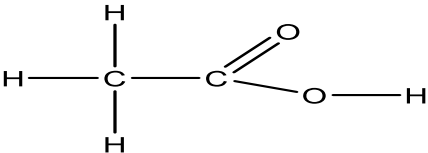
E1000-E1999

Biocatalysts

The following are the technical names and chemical formulas of some food additive preservatives:

TABLE 1 CHEMICAL FORMULAS OF SOME NUTRITIONAL SUPPLEMENTS

Chemical name	Index	Formula
Sorbicacid	E 200	<chem>O=C(O)C=CC=CC</chem>
Sodiumsorbate	E 201	<chem>[Na]OC(=O)C=CC=CC</chem>
Potassiumsorbate	E 202	<chem>[K]OC(=O)C=CC=CC</chem>
Calciumsorbate	E 203	<chem>[Ca]OC(=O)C=CC=CCOC(=O)C=CC=CC</chem>
Sodiumbenzoate	E 211	<chem>[Na]OC(=O)c1ccccc1</chem>
Sodiumnitrite	E 250	<chem>[Na]O=[N]=O</chem>

Aceticacid	E 260	
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The following table provides information on the effects of some nutritional supplements on the body:

TABLE 2 DANGEROUS FOOD ADDITIVES

Verydangerous	E123, E510, E513, E527
Dangerous	E102, E201, E400, E503, E110, E220, E401, E620, E120, E222, E402, E636, E124, E223, E403, E637, E127, E224, E404, E129, E228, E405, E155, E233, E501, E180, E242, E502
Carcinogenicsubstances	E131, E316, E283, E142, E219, E310, E153, E230, E954, E210, E240, E212, E249, E213, E280, E214, E281, E215, E282
Substances that strongly affect the stomach	E338, E463, E339, E465, E340, E466, E341, E343, E450, E461, E462
Substances that cause skin diseases	E151, E907, E160, E951, E231, E1105, E232, E239, E311, E312, E320
Substances that inhibit the intestinal microflora	E154, E633, E626, E634, E627, E635, E628, E629, E630, E631, E632
Substances that affect blood pressure	E154, E250, E252

Food manufacturers are required to list the food additives used in a given product on its packaging. Before buying, it is advisable for the consumer to study the composition of the product. The following are some of the features of the E220 food supplement.

E220 - sulfur dioxide SO₃ or sulfuric anhydride is contained in 99% of wine products, has an unpleasant odor. This substance is used in the food industry as a preservative to prevent the growth of fungi and microorganisms. Standard values for SO₃ have not yet been developed. Increasing its concentration poses a danger to human health. Symptoms of E220 poisoning include headache, cough, sore throat, nausea and vomiting. The high content of E220 in wine destroys B vitamins and leads to allergic diseases of the skin, hair and nails, and causes disorders of the digestive system. E220 is used in the processing of almost all dried fruits [3,4].

We studied a number of food preservative additives used in the preparation of some drinks. For this, homemade juices, compotes and fermented milk products were chosen. By adding preservatives in various amounts to these products, we studied their organoleptic properties for several days, and the data obtained were entered in the table [5].

The following table shows the effect of some food preservatives on food. We prepared apricot juice in a natural way and recorded in the table the effect on it of different concentrations of citric acid. The same experimental samples were carried out at a temperature of 20⁰ C.

TABLE 3 THE RESULTS OF EXPERIMENTS CARRIED OUT WITH CITRIC ACID

1 day					
№	Samples	Organoleptic indicators			
		Smell	Taste	Coloring	Turbidity
1	Natural juice	Hasn't changed	Hasn't changed	Hasn't changed	Hasn't changed
2	1 sample	Hasn't changed	Hasn't changed	Hasn't changed	Hasn't changed
3	2 sample	Hasn't changed	Hasn't changed	Hasn't changed	Hasn't changed
2day					
1	Natural juice	Has changed	The taste of fermentation	Has changed	There is clouding
2	1 sample	Hasn't changed	Hasn't changed	Hasn't changed	Hasn't changed
3	2 sample	Hasn't changed	Hasn't changed	Hasn't changed	Hasn't changed
3day					
1	Natural juice	There was a pungent odor	Came to an unusable state	muddy	Became cloudy
2	1 sample	Has changed	The taste of fermentation	Has changed	A white film appeared on the surface
3	2 sample	Hasn't changed	Hasn't changed	Hasn't changed	Hasn't changed
4day					
1	Natural juice	There was a pungent odor	Came to an unusable state	muddy	Became cloudy
2	1 sample	There was a pungent odor	Came to an unusable state	muddy	A white film appeared on the surface
3	2 sample	Has changed	The taste of fermentation	Has changed	clouding

Note: 1 is sample. Addition of 1% citric acid solution; Sample 2. 5% citric acid solution is added.

The results of the experiment showed that substances with preservative properties in various concentrations had a significant effect on food products. [6]

In conclusion, it should be noted that the greater the content of food additives (preservatives) in drinks, the longer their shelf life. However, increasing the concentration of food additives can adversely affect the human body. Therefore, the amount of food additives in food should be strictly controlled in the amounts specified in the technical specifications.

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