

## I . General Provisions

- (1) The suitability of food additives in this notification is determined in accordance with General Provision, Standard for Manufacturing and Preparation, General Standard for Food Additives Use in Foods, Specification and Standard of the Concerned Item and General Test Methods. However, the suitability of description applies to color, odor and taste only.
- (2) Material name with parenthesis 「 」 indicates that the food additive is prescribed in standards and specification.
- (3) Flavoring substances that listed 424. synthetic flavoring substances in part A. Synthetic Additives, II, 3. Specifications and Standards in the Korea Food Additives Code and Codex, FEMA (Flavor and Extract Manufacturer's Associations), or IOFI (International Organization of the Flavor Industry) can be used based on the flavoring substances of international common use. However, it cannot be used in case of safety concern.
- (4) In the food additives which is made from manufacture equipment as the items listed in Korea Food Additives, the manufacture equipments of these items should be made, assembled and constituted by using appropriate mechanic equipment or parts in accordance with the Electric Appliance Safe Management Code, Industry Standardization Code and the related Codes. The material of parts, which is directly contacted to final food additives, should be appropriate for the standard specification of the implement, container and package in the Korea Food Code.
- (5) The petitioner can submit the revision of Specification and Standard for food additives in accordance with 「Guideline for applying for the revision of Specification and Standard for food additives」

### **[Weight, Volume and Temperature]**

- (6) Units of measure shall follow the metric system and the following symbols shall be used.

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- Length : m, dm, cm, mm,  $\mu\text{m}$ , nm
- Volume : L, mL,  $\mu\text{L}$
- Weight : kg, g, mg,  $\mu\text{g}$ , ng
- Area :  $\text{dm}^2$ ,  $\text{cm}^2$

1 L is 1,000 cc and 1 cc can be used interchangeably 1 ml, respectively.

(7) Symbol "%" is used for weight percentage. However, w/v% is used for material content (g) in 100 ml of a solution and v/v% is used for material content (ml) in 100 ml of a solution. A ppm symbol is used for parts per million in weights.

(8) Temperature is designated with the Celsius (centigrade) scale by adding " °C " to the upper right of the Arabic numerals. When temperature is indicated for numerical value except standard levels such as melting point and solidifying point, etc, tolerable error should be  $\pm 5^\circ\text{C}$  respectively.

(9) Standard temperature is  $20^\circ\text{C}$ , normal temperature is  $15\sim 25^\circ\text{C}$ , room temperature is  $1\sim 35^\circ\text{C}$ , and slightly warm temperature is  $30\sim 40^\circ\text{C}$ . Warm bath is at a temperature range of  $60\sim 70^\circ\text{C}$  and hot bath is approximately at  $100^\circ\text{C}$ . Unless otherwise specified, "heating in/on a water bath" means being heated at temperature of approximate  $100^\circ\text{C}$  or steam bath of approximate  $100^\circ\text{C}$  can be used as an alternative.

(10) Unless otherwise specified, "cold place" designates a place at a temperature range of  $0\sim 15^\circ\text{C}$ .

### [Tests]

(11) A substance designated with a molecular formula, such as acetic acid ( $\text{C}_2\text{H}_4\text{O}_2$ ), means a pure material.

(12) Unless otherwise specified, distilled water or purified water is used for tests.

(13) When a solvent is not specified for a "solution", it is an aqueous solution.

(14) Unless otherwise specified, the term of "reduced pressure" means pressure is not higher than 15 mmHg.

- (15) Unless otherwise specified, blue or red litmus paper is to be used for testing whether a material is acidic, alkaline, or neutral. pH range of acidity or alkalinity is outlined for "slightly acidic", "weakly acidic", "strongly acidic", "slightly alkaline", "weakly alkaline", and "strongly alkaline" as follows.

slightly acidic : approximately 5~6.5    slightly alkaline : approximately 7.5~9

weakly acidic : approximately 3~5    weakly alkaline : approximately 9~11

strongly acidic : approximately below 3    strongly alkaline: approximately above 11

- (16) Where the concentration of a solution is expressed as "(1→5)", "(1→10)", "(1→100)", etc., it means 1 g of a solid chemical or 1 ml of liquid chemical is dissolved in a solvent and is brought up to be 5 ml, 10 ml, 100 ml, respectively. For example, sodium hydroxide(1→5) is a solution where 1 g of sodium hydroxide is dissolved in water and then the total volume of the solution is brought up to be 5 ml and diluted hydrochloric acid(2→5) is a solution where 2 ml of hydrochloric acid is diluted and is brought up to be 5 ml.

- (17) Where apparatus is used in test by number of drops, its total weight of 20 drops of distilled water at 20°C should be within a range 0.9~1.1 g.

- (18) Nestler tube in its form of flat bottom with a ground glass stopper made of clear glass, with 20mm in inner diameter and 24mm in outer diameter, 20cm in length between its base and the bottom of the stopper and holding 50ml in volume is used. Height difference between scale marks of each tube should not be greater than 2 mm.

- (19) When decision is made on suitability by comparing a value acquired from a test (hereinafter referred to as an experimental value) with a value prescribed in item's specification(hereinafter referred to as a specification value), experimental value obtained one digit greater to that of a specification value is used, where the last digit of experimental value is rounded up. The expression "a~b" indicates that the value is not less than a and not more than b.

- (20) Atomic weights should conform to the International Periodic Table of the Elements (See appendix). Molecular weights should be calculated based on this table and up to two decimal points of the value needs to be shown by rounding up.

- (21) "Precision weighing" means to weigh specified amount of a sample using a

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chemical balance. For example, "precisely weighing approximately 5 g" means to take approximately 5 g of a sample and weigh it by using a chemical balance.

(22) Unless otherwise specified, a test is to be carried out at normal temperature and observed within 30 seconds after the experiment. However, a test, which is temperature sensitive, is to be carried out at standard temperature.

(23) For the titer of an additive, the unit specified in its specification is used.

(24) Identification method is needed to identify an additive, where tests are done on reactions among ions, reactions among functional groups, and physical constants.

(25) Purity test is to examine impurities in an additives, and these tests usually prescribe kinds of possible contaminants and their quantitative limits.

(26) Quantitative test is to measure ingredient content or titer of an additive, where the standard limit of ingredient content or activity for the corresponding additive materials indicates the limit of the value obtained from the quantitative test. If the limit is not specified, it is set to be 100.5%.

(27) An expression "white" indicates a color of white or almost white and an expression "colorless" indicates a state of being colorless or almost colorless. Unless otherwise specified, the following observation methods are used for solid and liquid samples. For color observation, 1~3 g of solid sample is placed on a watch glass on a white background. For the observation of color or clarity of a liquid, sample transfer into a test tube with an inner diameter of 1.5 cm. When sample is in liquid form, test sample filled 3cm thick in tube is observed under a white background from either the top or the side. An expression "should not be turbid" indicates that the turbidity is less than the high level of turbidity.

(28) Expressions such as "clear", "almost clear" "very slightly turbid", "slightly turbid", and "turbid" are according to the following criteria.

- Undiluted Turbidity Standard Solution : Add water to 14.1 ml of 0.1 N hydrochloric acid so that the total volume becomes 50 ml. 1 ml of this solution contains 1 mg of Cl.
- Turbidity Standard Solution : Add water to 10 ml of undiluted turbidity standard

solution so that the total volume becomes 1000 ml. 1 ml of this solution contains 0.01 mg of Cl.

(A) Clear

Add water to 0.2 ml of turbidity standard solution so that the total volume becomes 20 ml. To this solution, 1 ml of dilute nitric acid (1→3), 0.2 ml of 2 w/v% dextrin solution, and 1 ml of 2 w/v% silver nitrate solution are added. Clear is considered equal or clearer to the turbidity of the resulting solution after 15 minutes. Care must be taken to prevent introducing floating and foreign matters into the solution.

(B) Almost Clear

Add water to 0.5 ml of turbidity standard solution so that the total volume becomes 20 ml. To this solution, 1 ml of dilute nitric acid (1→3), 0.2 ml of 2w/v% dextrin solution, and 1 ml of 2 w/v% silver nitrate solution are added. The turbidity of the resulting solution after 15 minutes is considered to be almost clear. Care must be taken to prevent introducing floating and foreign matters into the solution.

(C) Very Slightly Turbid

Add water to 1.2 ml of turbidity standard solution so that the total volume becomes 20 ml. To this solution, 1 ml of dilute nitric acid (1→3), 0.2 ml of 2 w/v% dextrin solution, and 1 ml of 2 w/v% silver nitrate solution are added. The turbidity of the resulting solution after 15 minutes is considered to be very slightly turbid.

(D) Slightly turbid

Add water to 6 ml of turbidity standard solution so that the total volume becomes 20 ml. To this solution, 1 ml of dilute nitric acid (1→3), 0.2 ml of 2 w/v% dextrin solution, and 1 ml of 2 w/v% silver nitrate solution are added. The turbidity of the resulting solution after 15 minutes is considered to be slightly turbid.

(E) Turbid

Add water to 0.3 ml of undiluted turbidity standard solution so that the total volume becomes 20 ml. To this solution, 1 ml of dilute nitric acid (1→3), 0.2 ml of 2 w/v% dextrin solution, and 1 ml of 2 w/v% silver nitrate solution are added. The turbidity of the resulting solution after 15 minutes is considered to be turbid.

(29) An expression "odorless" indicates that the sample is odorless or almost odorless.

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Unless otherwise specified, approximately 1 g of sample is placed on an evaporation dish for this observation.

(30) Unless otherwise specified, an identification should be carried out with 2~5 ml of a solution in a test tube with an inner diameter of 1~1.5 cm.

(31) Unless otherwise specified, solution characteristics are observed after stir-mixing a sample in a solvent for 30 seconds~5 minutes.

(32) An expression "until the weight becomes constant" upon heating or drying indicates the following. The weight difference before and after heating or drying for 1 hour is not more than 0.5 mg when a chemical balance is used. If a micro chemical balance is used, this means heat treatment is continued until the weight difference is not more than 0.01 mg. If the total weight is greater than 1 g, this means that the weight difference is not more than 0.1%.

(33) When an expression "approximately" is used for a sample size of a sample, it means that 90~110% of the specified amount is to be taken.

(34) Test methods, which are not prescribed in the specifications and standards, may be used if they are proven to be more precise. However, if the test result is considered to be doubtful or affecting the decision, a test should be done and a decision should be made in accordance with the methods prescribed here.

### [Container]

(35) "Hermetic Container" is a container that protects the contents by preventing penetration of air or other gases during handling or storage.

(36) "Light-resistant container" is a container that does not transmit light or protects the contents from deterioration due to light. If a container does not shield light, it can be wrapped appropriately and used as a light-shielding container.

### [Definition of Terms]

(37) "Natural additive" means useful substances, which are obtained by the extraction,

concentration, separation and purification of certain component from animals, plants, and minerals resources, etc. To control color, titer and quality, diates, stabilizers and solvents could also be included.

(38) "Preserved fruits or vegetables" are canned or bottled products processed by drying and salting.

(39) "Dried Fruits" is processed by drying main ingredients such as persimmon, pear, and plum to make water content become not more than 40%, and it has forms of slices, chips, etc.

(40) "Dried Vegetables" is processed by drying vegetables such as spinach, radish and pumpkin to make water content become not more than 40%.

(41) "Dried potatoes" are powder, particle and thin layer of dried potatoes or fresh potatoes, which is cut and then heated and dried.

(42) "Fish and Shellfish" refers to 2)animal ingredients (3)fish, (4)abyssal fish, (5)tunas and billfish, (6)shellfish, listed in 3. Food Raw Material Classification, 1. General Provision, in Korea Food Standard Codex.

(43) "Frozen fish and shellfish" is product in container packing, which is made by manufacturing fish and shellfish or freezing processed fish and shellfish (excluding whale meat product and processed fish and meat) and cut fresh fish and shellfish (excluding a raw oyster).

(44) "Dried fish and shellfish" is processed by drying fish and shellfish, which are fresh or treated by salting, boiling, steaming, or baking to make the water content become not more than 50%. It contains smoked cuttlefish or octopus, dried fish and shellfish flavored by common salt, soy bean products, sugar, and flavored dried cod.

(45) "Salted fish and shellfish" is processed by putting common salt, immersing in saline solution, or wetting. Fresh fish (salinity in fish is not more than 3%), which is not for long-term preservation, is excluded.

(46) "Konjac Flour" is Konjac jelly, which is made from Konjac root.

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- (47) "Pickled Radish" is product made by immersing and salting dried radish or salted radish in salt and seasoning solution and its salinity is not more than 6%.
- (48) "Mango Chutney" is product sliced, diced, or crushed after peeling mango, which is mixed with sugar, fruit vegetables, vinegars, garlic, etc and processed by heating.
- (49) "Popped Grains" is confectionary processed by compressing, heating, and swelling after adding food or food additives to ingredients such as flaked cereals and potatoes and pulses.
- (50) "Sugar Substitute Product" substitutes with sugar by directly putting in coffee or black tea
- (51) "Processed olive products" refer to products manufactured by mixing or pickling olive with edible salts, fermented soybean or red pepper sauces and pastes, vinegars or oil or others
- (52) "Cola type beverages" refers to cola, which is manufactured by mixing other foods and food additives with undiluted cola solution containing ingredients extracted from cola nut, and carbonated drinks similar to cola in appearance (taste, color, etc.).
- (53) "Flour pastes" is made by the process that sugar, fats and oils, beef tallow, lard, powdered milk, or eggs are added to main ingredients such as wheat flour, starch, nuts, or its processed products, cocoa, chocolate, coffee, fruit juice, potatoes and pulses, legumes, or vegetables. Above foods are pasteurized and formed into a paste type.
- (54) "Other Foods" refers to food and health functional food except for those in the standards for the use of individual food additives.