Specifications and Standards for Foods, Food Additives, etc. Under the Food Sanitation Act (Abstracts) 2008

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PREFACE

This publication has been prepared to present an outline of Japanese food sanitation and safety regulations for foods, food additives, materials for implements, containers and packaging, and other related articles. Since it contains merely excerpts and summaries of related regulations, reference should be made to the original regulations to confirm compliance.

Herein is presented the regulatory status in Japan, as of December 31, 2008, concerning specifications and standards designated by Minister of Health, Labour and Welfare with reference made to the "Food Sanitation Act" (formerly, the "Food Sanitation Law"), the "Ordinance for Enforcement of the Food Sanitation Act", the "Ministerial Ordinance Concerning Compositional Standards, etc. for Milk and Milk Products" and the related notices and announcements from the Ministry of Health, Labour and Welfare (MHLW).

Of these, the "Ministerial Ordinance Concerning Compositional Standards, etc. for Milk and Milk Products" has been designated for milk and milk products as an independent ordinance.

The Food Sanitation Act also applies to toys which could come into contact with children's mouths, as well as detergents intended for use in washing vegetables, fruits, or tableware.

The categories of foods and food additives which are required to have designated specifications and standards are set out in Table 3 of the Ordinance for Enforcement of the Food Sanitation Act. Table 1 in the same Ordinance shows a list of all the designated food additives.

The notice, "Specifications and Standards for Food and Food Additives etc." (MHLW Notice No. 370, 1959: Revised version No.416, 2008) covers all the specifications and standards for (1) foods, (2) food additives, (3) implements, containers, and packaging, (4) toys, and (5) detergents.

As to the labeling of foods and food additives, Article 21(Standards for Labeling) of the "Ordinance for Enforcement of the Food Sanitation Act" stipulates the basic requirements.

An important reference concerning labeling of food additives in foods, is MHLW Director-General Notice, "Labeling for Food Additives based on the Food Sanitation Act" (Director Notice No.56, 1996: Revised version No.0704001, 2008)

Article 7 of the "Ministerial Ordinance Concerning Compositional Standards, etc. for Milk and Milk Products" stipulates the labeling for milk and milk products.

There are several regulations other than the "Food Sanitation Act" which concern

various aspects of food regulations such as the “Law Concerning Standardization and Proper Labeling of Agricultural and Forestry Products” (“JAS Law”), the “Agricultural Chemicals Regulation Law”, the “Health Promotion Act”, and the “Food Safety Basic Law”. This publication refers to these laws only in the relevant cases.

As to the international harmonization of specifications and standards regarding foods and food additives, Japan has been extensively involved in the activities of CODEX,

The proceedings of regulatory amendments in the past two years (January 1, 2007 to December 31, 2008) would be summarized as follows:

(1) Revisions to the Ordinance for Enforcement of the Food Sanitation Act

▪New food additives approved to be added to the “Table 1”

2007- all-rac-α-tocopherol acetate, D-α-tocopherol acetate, isobutylaldehyde, 2-methlybutanol, butylaldehyde, neotame

2008- calcium-L-ascorbate, calcium silicate, polysorbate 20, polysorbate 60, polysorbate 65, polysorbate 80, magnesium hydroxide, (modified starches 11 substances) acetylated distarch adipate, acetylated distarch phosphate, acetylated oxidized starch, distaruch phosphate, hydroxypropyl distarch phosphate, hydroxypropyl starch, monostarch phosphate, oxidized starch, phosphated distarch phosphate, starch acetate, and starch sodium octenyl succinate

▪New definition for toys designated by the Minister of Health, Labour and Welfare and subsequent changes of the specifications

(2) Revision of Ministerial Ordinance Concerning Compositional Standards, etc. for Milk and Milk Products

▪Addition of Polyethylene terephthalate (PET) as a raw resin for use in containers and packaging for liquid milks for drinking

▪Specifications and standards for PET containers and packaging and their raw materials set by a MHLW notice

(3) Amendments of Articles or Provisions of the Specifications and Standards for Food and Food Additives, etc.

▪New individual standards set for implements, containers, and packaging made from resins with polylactic acid as a main component

▪New specifications for glass, ceramic and enameled materials in implements, containers, and packaging for the purpose of lowering the maximum migration levels of cadmium and lead

▪New specifications for metal materials used for making or repairing implements, containers, and packaging

▪New residue limits set for many pesticides and several feed additives/animal drugs.

(4) Japan's Specifications and Standard for Food Additive (8th Edition) was published by Ministry of Healtk, Labour and Welfare in 2007.

References

The references for each section, including websites in English will be found at the end of each section.

(Ministry of Health, Labour and Welfare: MHLW)

English translations for 1) through 3) are available from the Cabinet Secretariat's website:
http://www.cas.go.jp/jp/seisaku/hourei/data2.html
and from the Ministry of Health, Labour and Welfare's website for 4) and 5):
http://www.mhlw.go.jp/english/topics/foodsafety/index.html

1) The Food Sanitation Act (Act No.233, 1947: Latest Revision No.53, June 7, 2006)
2) Order for Enforcement of the Food Sanitation Act
(Ordinance No.229, 1953: Latest Revision No.189, April 28, 2006)
3) The Ordinance for Enforcement of the Food Sanitation Act
(Regulation No.23, 1948: Latest Revision No.126, July 4, 2008)
4) Ministerial Ordinance on Milk and Milk products Concerning Compositional Standards, etc.
(MHLW Ordinance No.52, 1951: Latest Revision No.132, October 30, 2007)
5) Specifications and Standards for Food and Food Additives, etc.
(MHLW Notice No.370, 1959: Latest Revision No.416, July 31,2008)
6) The Health Promotion Act (Act No.103, 2002: Latest Revision No.73, June 18, 2008)
7) Pharmaceutical Affairs Law (Law No. 145, 1960).
8) Eighth Edition Japan's Specifications and Standards for Food Additive
(Published by The Ministry of Health,Labour and Welfare)
March 30, 2007 Announcement on the Gazette.

(Prime Minister's Office)

9) The Food Safety Basic Law (Law No.48, 2003)
10) Food Safety Commission
(English) http://www.fsc.go.jp/english/index.html

(Ministry of Agriculture, Forestry and Fisheries)

11) The Law Concerning Standardization and Proper Labeling of Agricultural and Forestry Products ("JAS Law") (Law No.175, 1950:, Latest Revision No.8, March 30, 2007)

(English)
http://www.maff.go.jp/soshiki/syokuhin/hinshitu/e_label/file/Law/overview_jas_low.pdf

12) The Agricultural Chemicals Regulation Law (Law No.82, 1948)
13) The Law Concerning Safety Assurance and Quality Improvement of Feeds (Law No.35, 1953)

I. FOOD

1. General Standards for Food

Specifications and standards for food under the Food Sanitation Act have been set out in MHLW Notice No. 370, 1959 (Latest Revision, No.416, 2008) under the title of "Specifications and Standards for Food and Food Additives etc."

(The Notice applies not only to foods and food additives, but also materials for implements, containers and packaging, toys and detergents and will be referred to frequently in this publication.)

Specifications and Standards for Food and Food Additives, etc.

(MHLW Notice No. 370, 1959: Revised; No.416, 2008)

Content	(No. of items)
Section 1. Food	
A General Compositional Standards for Food	9
B General Food Production, Processing and Preparation Standards	8
C General Food Storage Standards	3
D Specific Items	22 food items
Section 2. Food Additives	
A General Standards	43
B General Test Methods	44 test methods
C Reagents and Test Solutions, etc.	11
D Specifications and Storage Standards for Individual Items	560 food additives
E Production Standards	6
F Standards for the Use of Food Additives	Gen.2, Indiv.252
Section 3. Implements, Containers, and Packaging	
A Standards for General Implements, Containers, Packaging, and their Component Materials	7
B Testing Methods for General Implements, Containers, and Packaging	9 test methods
C Reagents and Solutions	4
D Material-specific Specifications for Implements, Containers, Packaging, and Raw Materials	glass, synthetic resin, rubber, metal
E Application-specific Specifications for Implements, Containers, and Packaging	5
F Implements, Containers, and Packaging Production Standards	5
Section 4. Toys	Spec. 11 Standards 1
Section 5. Detergents	Spec. 5 Standards 3

The combined general compositional standards for food (A), general food production, processing and preparation standards (B), and general food storage standards (C) in Section 1 (Food) above are summarized in the attached table. .....Table F01

Specifications and storage standards for individual items (D) for various individual food categories are summarized in the attached table. .....Table F02

2. Maximum Residue Limits for Agricultural Chemicals, Feed, Additives and Veterinary Drugs in Food

Foods having a higher level of pesticide, feed additive or veterinary drug than the regulatory maximum residue limit shall be prohibited for sales. Japan adopted the positive list system in 2006.

Each limit of a particular pesticide in a particular food, e.g. apples or milk, has been determined and set forth in a part of the general compositional standards for food (A). The number of pesticides for which limits have been determined is more than 760.

The uniform base limit, which is the amount unlikely to cause damage to human health based on the provision of Article 11, Paragraph 3 of the Food Sanitation Act, has been set at 0.01ppm (MHLW Notice No.497, 2005).

Details in English are available from the MHLR home page:

http://www.mhlw.go.jp/english/topics/foodsafety/positivelist060228/index.html

MHLW has designated 65 substances, e.g. paraffin and lecithin, based on the provision of Article 11, Paragraph 3 of the same Act, as substances unlikely to cause damage to human health (MHLW Director Notice No. 498, 2005). They are exhibited in the attached table. ..... Table F03

3. Provisional Regulatory Limitations of Contaminants in Food

Provisional limits have been set for such food contaminants from the environment as PCB, mercury, radionuclide, aflatoxin, deoxynivalenol, patulin, and shellfish poisons.
The provisional limits are summarized in the attached table..... Table F04.

4. Foods Produced by Recombinant DNA Techniques

Under the Food Sanitation Act, since 2001, safety assessment has been mandatory before a food or an additive produced by recombinant DNA techniques (GM food) can be approved.

The "Food Safety Commission", which was established under the Food Safety Basic Law (Prime Minister's office, Law No.48, 2003), individually evaluates the safety of plants, foods, and food additives (enzyme) produced by recombinant DNA technology. The "Standards for the Safety Assessment of Genetically Modified Foods (Seed Plants)" (2004) is available in English from the Food Safety Commission at:

http://fsc.go.jp/senmon/idenshi/gm_kijun_english.pdf

The "Standard for Manufacturing Foods and Food Additives Produced by Use of Recombinant DNA Techniques" stipulates specified requirements for the manufacture of GM food (MHLW Notice No.234, 2000).

The standards are incorporated into the Specifications and Standards for Food and Food Additives etc. already referred to above.

As of December 31, 2008, 97 varieties of food (crops) including soybean and corn, and 14

food additives (enzymes) including amylase, rennet and lipase are listed as products that have undergone safety assessment and been announced in the Official Gazette. The attached table shows the list. ..... Table F05

5. Foods for Specified Health Uses and Foods with Nutrient Function Claims

In 2001, a system for foods with health claims (the Food with Health Claims [FHC] system) was established for foods that comply with a set of designated criteria. The system is divided in two categories: One is Food for Specified Health Uses (FOSHU), and the other is Food with Nutrient Function Claims (FNFC).

FOSHU is defined as foods, "for which it is declared that consumption can be expected to contribute to the maintenance and promotion of health of the people who consume those foods for a specific health maintenance purpose" (Food Sanitation Act Article 29, Paragraph 1), which are permitted pursuant to the Health Promotion Act (Article 26, Paragraph 1) and for which the effectiveness and safety are judged permissible pursuant to the Food Sanitation Act.

Originally, applications were assessed individually item by item, but in 2005, a simplified application system was established to cope with the increasing number of similar applications. As of the end of 2008, more than 820 products had been approved and registered.

FNFC, defined as, "foods for which it is declared that consumption can be expected to provide a specified nutritional component, in compliance with the standards designated by MHLW, for people who consume those foods for the purpose of acquiring said specified nutritional component." (Article 26, Paragraph 1 of the Health Promotion Act) are the foods which can claim to have a nutrient function. Foods which comply with these specifications and standards are permitted to be sold without filing an application or registration.

Twelve vitamins (Vitamin A, Vitamin D, Vitamin E, Vitamin B1, Vitamin B2, Vitamin B6, Vitamin B12, niacin, folic acid, biotin, pantothenic acid, and Vitamin C) and five minerals (Zinc, Calcium, Iron, Copper and Magnesium) have been approved.

6. Food Labeling

The basic requirements for labeling of food and food additives are set forth in the Article 21 of the Ordinance for Enforcement of the Food Sanitation Act.

The general requirements in the Act include such basic mandatory labeling as using Japanese language, product name, use-by-date or best-before-date, product origin, names of food additives in food products, and storage instructions. Other requirements are specific to those individual food categories such as mineral water, foods containing Vitamin A derivatives or aspartame, tinned foods, fish sausages, frozen foods, raw fish, irradiated foods, sterilized packed foods, oyster, instant noodles, allergy-related products, GM foods, FOSHU or FNFC.

An important reference to the details concerning labeling for food additives in foods is the

MHLW notice, “the Labeling for Food Additives based on the Food Sanitation Act” (MHLW Director-General Notice No.56, 1996: Revised Version No.0704001, 2008).

The Article 7 of the Ministerial Ordinance Concerning Compositional Standards, etc. for Milk and Milk Products. stipulates the labeling for milk and milk products.

Foods and Food Additives which require labeling

(The Ordinance for Enforcement of the Food Sanitation Act Article 21, Table 3)

1. Margarine
2. Alcoholic beverages (meaning alcoholic liquor which contains 1% or more alcohol by volume (including drinking products in powder form for drinking which contain 1% or more of alcohol by volume when dissolved))
3. Soft drink beverages
4. Processed meat products
5. Fish meat ham, fish meat sausage, whale meat bacon, and the like
6. Pulses which contain cyanide compounds
7. Frozen food (meaning produced or processed food (excluding carbonated drinks, processed meat products, whale meat products, fish-paste products, boiled octopus and boiled crabs) and cut or shelled fresh fish and seafood (excluding raw oysters) which are frozen and packaged in containers and packaging)
8. Irradiated food
9. Food packed in containers and sterilized by pressurization and heating
10. Poultry eggs
11. Food packed in containers and packaging (excluding those listed in the preceding items) which are listed below:
    (a) Processed meat, raw oysters, fresh noodles (including boiled noodles), instant noodles, ready-made lunches, prepared bread (i.e., bread between which a ready-to-eat food, such as ham, croquette, or salad, is sandwiched), fish-paste products, moist confectionaries, cut or shelled fresh fish and seafood (excluding raw oysters), and boiled crabs
    (b) Processed foods other than those listed in (a)
    (c) Citrus fruits, bananas
12. Food of farm products listed in the left columns of appended table 7, and processed food made from such food (including any food made from said processed food)
13. Food for special dietary use
14. Food additives

6-1. Food Consumption Date Limits

Two different systems are in use for the labeling of date limits, a “use-by-date” for food whose quality may deteriorate rapidly, and a “best-before-date” for a food whose quality may deteriorate comparatively slowly.

The labeling is to be done as in the following examples.

(1) “use-by-date”

“use-by-date: Heisei 21, Feb. 01”, “use-by-date: 21.02.01”,
or “use-by-date: 09.02.01”

However, where it is recognized that such indications are difficult to print, it may be labeled using 6 digits: 2 digits representing the year (the last 2 digits when using the western calendar) followed by two digits indicating the month and two digits indicating the day, as in “use-by-date 090201”

As for box lunches, it has also been established that even the time of day must be stated. In the case of milk, cream, fermented milk, fermented beverages containing lactic acid bacteria and milk drinks contained in paper, aluminum foil or other sealed containers, the labeling of date limits can be replaced by merely indicating the date.

(2) “best-before-date”

“best-before-date: Heisei 21, April 10”, “best-before-date: 21.04. 10”,
“best-before-date: 09.04.10”

“Best-before-date: 090410” can also be used.

When the lot number, plant code and other codes are printed in parallel, confer the use-by-date.

6-2. Food Produced by Recombinant DNA Techniques and Foods Causing Food Allergies

[Food Produced by Recombinant DNA Techniques]

The Ordinance for Enforcement of the Food Sanitation Act Article 21 (Labeling Standards) stipulates the following requirements for the labeling of foods produced by recombinant DNA technologies (GM crops and processed GM foods).

(1) Labeling of GM crops and processed GM food shall be performed in the following way:

a) In the case of farm products from GM crops or processed food made from GM crops for which Identity Preserved Handling (meaning a management system where GM and non-GM crops are managed separately in each process for production, distribution, and processing with the due care of a prudent manager and such fact is clearly certified with written documents) is confirmed to have been conducted, the fact that said food of farm products is food from GM crops shall be labeled as “GMO” or “GMO segregated from Non-GMO” (mandatory). Processed GM food shall also carry the name of the farm products listed in the left column of Table 7 below which are used as raw materials for said processed food, and the fact that said farm products are from GM crops.

b) Food of farm products, in any process where the production, distribution, and

processing of farm products from GM and non-GM crops are not separated, or processed food made from such farm products (including food made from said processed food) shall be labeled as “Not segregated from GMO” .

c) Non-GM crops for which Identity Preserved Handling is confirmed to have been conducted or processed food made from those may carry “Non-GMO“ or “Non-GMO segregated from GMO” (voluntary)

(2) The following foods may be exempted from GM labeling.

a) A processed food that does not use the crops shown in the left column of Table 7, or a processed food that does not contain farm products from a GM crop as a principal ingredient (“principle” meant here is that the material is one of the three major ingredients by weight and accounts for more than 5% of the product weight.).

b) Other processed foods than those shown in the right column of the Table 7.
(These processed foods have been listed here due to the calculated possibility of remaining recombinant DNA residues or specific proteins related to the DNA.)

c) Foods which are not sold directly to consumers.

(3) In spite of the proper practices of controlling segregated handling during production and distribution, it is possible for unintended migration of either GM or non-GM crops to occur to a certain extent. It shall be considered that the control of segregated production and distribution has been performed successfully when the migration of GM soybean or corn is not more than 5%).

List of crops and the processed food thereof

(which might require labeling as GM Foods)

(The Ordinance for Enforcement of the Food Sanitation Act Article 21, Table 7)

Crop	Processed Food
Soybean (including immature soybeans and bean sprout)	1 *Tofu* (soybean curd) and *aburaage* (fried soybean curd) 2 *Koori-dofu* (frozen soybean curd), *okara* (dried *tofu* lees) and *yuba* (dried soybean milk membrane) 3 *Natto* (fermented soybeans) 4 Soybean milk 5 *Miso* (fermented soybean paste) 6 Soybean *nimame* (cooked soybean) 7 Canned soybeans and bottled soybeans 8 *Kinako* (roasted soybean flour) 9 Roasted soybeans 10 Food made mainly from ingredients listed in item 1 to item 9 11 Food made mainly from soybean for cooking 12 Food made mainly from soybean flour 13 Food made mainly from soybean protein 14 Food made mainly from immature soybean 15 Food made mainly from soybean sprouts
Corn	1 Corn snack confectionary 2 Corn starch 3 Popcorn 4 Frozen corn 5 Canned corn and bottled corn 6 Food made mainly from corn flour 7 Food made mainly from corn grits 8 Food made mainly from corn for cooking 9 Food made mainly from ingredients listed in item 1 to item 5
Potato	1 Potato snack confectionary 2 Dried potato 3 Frozen potato 4 Potato starch 5 Food made mainly from potato for cooking 6 Food made mainly from ingredients listed in item 1 to item 4
Rapeseed	
Cottonseed	
Alfalfa	Food made mainly from alfalfa
Sugar beet	Food made mainly from sugar beet for cooking

[Food Allergies]

The Ordinance for Enforcement of the Food Sanitation Act Article 21 (Labeling Standards) stipulates the following requirements for the labeling of food and food additives

containing or being produced from certain “specified materials” which have links to food allergies.

The designated seven kinds of food (“specified raw material”) are lobster (or prawn, shrimp etc.), crab, wheat, buckwheat, eggs, milk, and peanuts. A food containing any specified raw material shall carry a label stating that it contains them. A food additive containing any specified raw material shall carry a declaration to the effect that it is derived from such materials, together with the word “food additive”.

It has been recommended by the MHLW that names of other foods that have been found through experience and scientific studies to contain minor amounts of allergens be indicated on packages. These foods include abalone, cuttlefish, salted salmon roe, kiwi fruit, beef, walnuts, salmon, mackerel, soybeans, chicken, banana, pork, *matsutake* mushroom, mushroom, peaches, yams, apples and gelatin.

6-3. Food for Specified Health Uses and Food with Nutrient Function Claims

The Health Promotion Act in Article 29, Paragraph 1 requires the labeling of FOSHU products to include information on the amount of nutrients, calories, recommended consumption per day, and wording to recommend a well-balanced daily diet. Similar labeling is required for labeling of FNFC.

More specific requirements for practical uses can be found in the table in the “Standards of Nutrition Labeling” (MHLW Director Notice 176, 2003) and in the table in the “Standards of labeling of Food with Nutrient Function Claims” (MHLW Director Notice 97, 2001).

II. MILK AND MILK PRODUCTS

Among food regulations, the specifications and standards for milk and milk products are uniquely dealt with an independent ordinance under "Ministerial Ordinance on Milk and Milk Products Concerning Compositional Standards, etc." (MHLW Ordinance No.52, 1951: Latest Revision No.132, October 30, 2007).

The Ordinance includes specifications or standards for cow' milk, goat's milk and sheep's milk, but the far dominant kind of milk used in Japan is cow's milk.

Specifications and standards for manufacturing milk and milk products are set out in Article 3 of the Ordinance. Its summary is presented in the table below.

The specifics are presented in the attached tables for each category of milk and milk products.

Specifications for materials for implements, containers, and packaging and the materials used for manufacturing milk and milk products are presented in Section IV IMPLEMENTS, CONTAINERS, AND PACKAGING of this publication.

Summary of the table referred to in Article 3 of Ministerial Ordinance on Milk and Milk products Concerning Compositional Standards, etc.

(MHLW Ordinance No.52, 1951: Latest Revision No.132, October 30, 2007)

1. Regarding Paragraph 1, Article 9 of the Ordinance:
   Milk from diseased animals is prohibited for sale. A list of animal diseases is given.
2. Compositional Standards and Standards of the Manufacturing, Cooking, and Storing condition of milk, etc.

[1] Compositional Standards and Standards of the Manufacturing and Storing condition of milk, etc., in General

(1) Milk etc. shall be free from antibiotics or antimicrobial substances which are chemical compounds.

(2) Milk shall not be taken from cow, goat or sheep corresponding to each of the following Nos.:

i. Those within 5 days after delivery.

ii. Those either having been fed or injected with medicine that has an effect on milk and being within the period when medicine remains in milk.

iii. Those showing a significant reaction after the injection of biological products.

(3) Specifications for raw milk and raw goat's milk (specific gravity, acidity and ,bacterial count)

(4) In the manufacturing of cow:s milk, special milk, pasteurized goat's milk composition modified milk, low fat milk, skimmed milk, processed milk,, cream, fermented milk, fermented milk drink, and milk drink; filtration, pasteurization, division and sealing operations ("processing") shall be performed. Provided, however, that for special milk, the pasteurization operation may be omitted.

(5) Permission and registration required for running business of Milk Processor, Special Milk Milking and Processing Operation, or Milk Products Manufacturer.

[2] Compositional Standards and Standards of Manufacturing and Storing Condition of cow's milk, special milk, pasteurized goat's milk, composition modified milk, low fat milk, skimmed milk and processed milk

[3] Compositional Standards and Standards of Manufacturing and Storing Condition of milk products

[4] Compositional Standards and Standards of Manufacturing and Storing Condition of food using milk, etc. as principal ingredients

[5] Other Standards or Specifications Related to Compositions and Manufacturing or Storing Condition of

milk, etc

[6] Standards of Cooking Method of Fermented Milk Drink Cooked by Cup-sales Type Vending Machines

[7] Testing Methods of Compositional Standards of Milk, etc.

3. The Standard of General Hygiene-Controlled Manufacturing or Processing of Milk, etc. and the Hygiene Control Method

4 The Standards of Equipment or Containers/Packages of Milk, etc. or Their Raw Materials and the Standards of Manufacturing.

Attached tables are:

1. Raw milk ..... Table M01
2. Liquid Milk for Drinking, and Milk Beverages..... Table M02
3. Milk Products ..... Table M03
4. Yogurts and Fermented Milk Drinks ..... Table M04
5. Products Storable at Room Temperature ..... Table M05

III FOOD ADDITIVES

The Food Sanitation Act defines a "food additive" as any substance used in food in the process of its manufacture, or any substance used for the purpose of processing or preserving food (Article 4), and designates such additives as those which have been determined to be safe to human health (Article 10), and lists them in the "Table 1" (the Ordinance for Enforcement of the Food Sanitation Act, Article 12).

Specifications and Production Standards for are stipulated in the "Specifications and Standards for Food and Food Additives etc." for "Designated Food Additives" below.

Specifications and Standards for Food and Food Additives, etc.

(MHLW Notice No. 370, 1959: Revised; No. 416, 2008)

Section 2. Food Additives	(items)
A General Standards	43
B General Test Methods	44
C Reagents and Test Solutions, etc.	11
D Specifications and Storage Standards for Individual Items	550
E Production Standards	additives
1. General	
2. Individual	3
F Standards for the Use of Food Additives	4
1. General	

2. Individual	2

["Designated food additives" and three other categories are exempted from the designation system]

Because of several major regulatory amendments, the additives are presently classified into four categories as follows:

(1) "Designated Food Additives" (so-called "main" category)
(2) "Existing Food Additives" (including such substances as pectin and quick lime)
(3) "Natural Flavoring Agents" (intended only for the purpose of flavoring)
(4) Ordinary food used as a food additive (including gluten and gelatin)

1. Designated Food Additives

The names of the designated food additives are listed in "Table 1" of the Enforcement Regulations (Article 12). Presently 388 substances are listed and the "Table 1" is attached in the separate table. ..... Table FA01

New food additives recently approved to be added to "Table 1" and described in the preface are all included in this "Table 1". The most recent additions are 11 substances belonging to a modified starch group in October 1, 2008.

The food additives produced by using recombinant DNA techniques have been described in Section I Food subsection 6-2 of this publication.

2. Production Standards

The content of subsection E (Production Standards) is shown here.

(MHLW Notice No. 370, 1959: Revised; No.416, 2008)

Production Standards for : General
1. Acid clay, bentonite, diatomaceous earth, kaolin, magnesium carbonate, sand, silicon dioxide, or talc, or any water-insoluble mineral substance which is similar to these substances shall not be used in manufacturing or processing any food additive, except when the substance is indispensable for manufacturing or processing the additive. 2. Unless otherwise specified, preparations of additives shall be manufactured using only permitted additives, foods and potable water. 3. When manufacturing food additives using microorganisms produced by recombinant DNA techniques, the standards required by the Minister shall be maintained. 4. The spinal columns of specified cattle shall not be used as material to manufacture food additives.
Standards to manufacture *kansui* (an alkaline agent for the preparation of Chinese noodles) using chemically synthesized substances
(Specifications for usable chemicals or their combinations)
Standards for processing the following colors, extracts, natural flavors: Turmeric oleoresin and 6 other individual colors, oregano extract and 19 other individual extracts, and natural flavors
1. Usable solvents to extract the above-mentioned colors, extracts or natural flavors are the following: acetone, butane, 1-butanol, 2-butanol, carbon dioxide, cyclohexane, dichloromethane, diethylether, ethanol, ethyl acetate, ethyl methyl ketone, edible fats & oils, glycerin, hexane, methanol, methyl acetate, nitrous oxide, propane, 1-propanol, 2-propanol, propylene glycol, 1,1,1,2-tetrafluoroethane, 1-1-2 trichloroethane, and water. 2. Among the listed solvents, neither methanol or 2-propanol shall remain in a finished product at the level of more than 50μg/g. A similar limitation applies for acetone (30μg/g), the sum of dichloromethane and 1-1-2 trichloroethane (30μg/g), and hexan (25μg/g).

(As for the pages of test methods in subsections B and C, and those of specifications for individual food additives in subsection D, they are so voluminous that they are omitted.)

3. Standards for the Use of Food Additives

1. Unless otherwise specified, when standards for use of the additives contained in a preparation of additives are prescribed, the standards for those additives are regarded as standards for the use of the preparation.
2. When foods given in column 2 of the following table, which contain food additives in column 1 of the table, are used in the process of manufacture or processing of foods in column 3, the additive given in column 1 is regarded as used in food in column 3.

Column 1	Column 2	Column 3
Potassium Pyrosulfite, Sodium Hydrosulfite, Sodium Pyrosulfite, Sodium Sulfite, Sulfur Dioxide (Collective name "sulfite" may be used)	Candied cherries (candied cherries mean candied and pitted cherries or such cherries with crystal of sugar applied on the surface or such immersed in the packaging media of syrup), Dijon mustard, dried fruits (excluding raisin), dried potatoes, *Kampyou* (dried gourd shavings), *Amanatto* (dry candied beans), food molasses, frozen raw crab, gelatin, miscellaneous alcoholic beverages, natural fruit juice (to be served in 5-fold or more dilution), *Konjak* flour (Devil's tongue root flour), prawn, simmered beans, starch syrup, tapioca starch for saccharification, and wine.	All foods excluding foods listed in column 2.
Sodium Saccharin	Flour Pastes	Confectionary
Potassium Sorbate, Sorbic Acid	*Miso* (soybean paste)	*Miso* pickled foods
All food additives	All food	Milk, milk products (excluding ice cream products) and fermented milk drinks prescribed in Article 2 of the Ministerial Ordinance concerning Specifications of Composition of Milk and Milk Products, etc.

4. Food Additives with Standards for Use, and Food Additives with No Standards for Use

A group of Food Additives with Standards for Use and another group of Food Additives with No Standards for Use have been arranged in the separate two tables. Table FA02 Table FA03

5. "Existing Food Additives"

"The Act Amending the Food Sanitation Act and the Nutrition Improvement Act" (Act No.101, 1995) in Article 2 defines the "Existing Food Additives".

The amended list was published by the MHLW Notice (Latest Version: Notice No.282, August 3, 2007). Because of its historical nature, no new additive will be added to the list. Rather, it is likely that any substance that has not been used for a long time would be deleted from the list in the future. Some substances in this category have their compositions specified in the same way as designated food additives.

The list of 489 substances, including, for example, pectin and quick lime, is shown in a separate table. ..... Table FA04

6. "Natural Flavoring Agents"

"Natural Flavoring Agents" are defined as food additives intended for use in flavoring food, and which are substances obtained from animals or plants, or mixtures thereof (The Food Sanitation Act, in Article 4, Paragraph 3).

The specifications are not set, and labeling on foods is done by naming the original animal or plant, such as strawberry or coffee, rather than by naming the chemical substance. Specific information about labeling regulations is published in the "Food Additive Labeling under the Food Sanitation Act" (MHLW Director-General Notice No.56, 1996: Latest Version July 4, No.0704001, 2008). The latest Director Notice includes Attached Table 2 which lists the origins of 612 natural flavoring agents. The list is shown in a separate table. Table FA05

7. "Ordinary Food Used as a Food Additive"

This category, including, for example, gluten and gelatin, is also exempted from the designated food additive system. Specific information about how to label foods containing them is published in "Food Additive Labeling under the Food Sanitation Act" mentioned above. The latest Director-General Notice includes Attached Table 3 which lists 106 items (food). The list is shown in a separate table. ..... Table FA06

Many additives in this category are used as coloring agents, and others include thickeners (gluten etc.) or agents for quality improvement (gelatin, egg white, etc.) Specifications have been set for some of these substances.

8. Labeling of Food Additives Contained in Food

The basic requirements for labeling of food additives in food are set forth in Article 21 of the Ordinance for Enforcement of the Food Sanitation Act in the same way as they are established for food.

[Food additives which are required to be declared on food labels]

Regardless of the category as a designated food additive, existing food additive or other, all food additives shall be declared on a label for any food which is listed in Table 3 of the Ordinance for Enforcement (See Section I Food subsection 6) or any milk and milk products under the Ministerial Ordinance on Milk and Milk products Concerning Compositional Standards, etc. There are some exceptions, which will be described later.

[Declaration of food additives]

The principle is to declare a food additive on the food packaging by its substance name. However, a declaration by combined substance name/category name or by collective name may be made. Specifics of how to write a declaration have been established by Director-General Notice:

(1) Declaration by substance name

(a)Designated food additive:

Shall be declared by the substance name or the name provided in "Table 1" of the Ordinance for Enforcement of the Food Sanitation Act. The abbreviated name stated in the MHLW Director-General Notice No.56 may also be used.

(b)Existing food additive:

Shall be declared by substance name listed in the List of Existing Food Additives.

Collective name, or the name, abbreviated name or classification name stated in the Attached Table 1 in Director-General Notice No.56 may also be used.

(c)Natural flavoring agent:

Shall be declared by the name of the source substance or the name as stated in Director-General Notice No.56 (Attached Table 2).

Agents not included in Table 2 shall be declared by the scientifically appropriate names by which they can be identified.

The characters "香料" (flavoring agent) are required to be written after the name of the source substance.

(d) Ordinary food used as a food additive:

Shall be declared by name or by the abbreviated name as stated in Director-General Notice No.56 (Attached Table 3).

Substances not included in Table 3 shall be declared by the scientifically appropriate names by which they can be identified.

(2) Declaration by combined substance name/category name

A food additive shall be declared by combined substance name/category name for use when

it is used for one of the following eight purposes:

Anti-molding agent, antioxidant, bleaching agent, color, color fixative, preservative, sweetener, or thickener/stabilizer/gelling agent.

Name for Use (Ordinance for Enforcement of the Food Sanitation Act Article 21 Table 5)

Name for use	Declaration
Sweetener	Sweetener, artificial sweetener, or synthetic sweetener
Color	Food coloring or artificial coloring
Preservative	Preservative or artificial preservative
Thickening agent, stabilizer, gelling agent or thickener	Thickening agent or thickener, where the substance is used mainly for thickening Stabilizer or thickener, where the substance is used mainly for stabilizing Gelling agent or thickener, where the substance is used mainly for gelling
Antioxidant	Antioxidant
Color fixative	Color fixative
Bleaching agent	Bleaching agent
Anti-molding agent	Anti-molding agent

(3) Declaration by collective name

A flavoring agent which generally performs its function by combining more than one component or such food additives as organic acids or amino acids, etc., which are ubiquitously distributed in food, may be declared by the following collective names or category names which collectively describe such functions:

Acidifier, acidity regulator, bittering agent, coagulant for *tofu* (bean curd), emulsifier, enzyme, flavoring agent, glazing agent (additive for glossy or protective coatings), gum base, *kansui* (alkaline agent used in the preparation of Chinese noodles), raising agent, seasoning, softener for chewing gum, and yeast food.

The definitions and scope of food additives falling under these 14 categories are prescribed in Director-General Notice No.56.

Collective name (Ordinance for Enforcement of the Food Sanitation Act Article 21 Table 8)

Collective name	Declaration
yeast food	yeast food
gum base	gum base
kansui (alkaline preparations for Chinese noodles)	*kansui*
enzyme	enzyme
glazing agent	glazing agent
flavoring agent	flavoring agent
Acidifier	acidifier
softener for chewing gum	softener
seasoning (excluding seasoning under sweeteners or acidifiers)	Seasoning (amino acid), where the substance is composed exclusively of amino acids Seasoning (amino acids etc.), where the substance is composed mainly of amino acids (excluding the case where the substance is composed exclusively of amino acids) Seasoning (nucleic acid), where the substance is composed exclusively of nucleic acids Seasoning (nucleic acid, etc.), where the substance is composed mainly of nucleic acids (excluding the case where the substance is composed exclusively of nucleic acids) Seasoning (organic acids), where the substance is composed exclusively of organic acids Seasoning (organic acids, etc.), where the substance is composed mainly of organic acids (excluding the case where the substance is composed exclusively of organic acids) Seasoning (inorganic salts),where the substance is composed exclusively of inorganic salts Seasoning (inorganic salts, etc.), where the substance is composed mainly of inorganic salts (excluding the case where the substance is composed exclusively of inorganic salts)
coagulant for *tofu* (soybean curd)	coagulant for *tofu* or coagulant
bittering agent	bittering agent
emulsifier	emulsifier
acidity regulator	acidity regulator
raising agent	raising agent, baking powder, or baking soda

[Exemption from labeling]

(1) Processing aids (2) Carry-over (3) Food additives for dietary supplements

[Notice in the labeling]

(1) It is strictly forbidden to claim “natural” or any expression implying “natural”.
(2) In the case that citrus fruits and bananas are sold loose, imazalil, *O*-phenyl phenol, sodium *O*–phenyl-phanate, diphenyl or thiabendazole used shall be indicated at the sales place.
(3) Indication by substance name, abbreviated name or class name shall be done in the manner mentioned above, however, it may be done either in *hiragana*, *katakana* or Chinese

characters, so long as the indication will not be misunderstood by consumers.

(4) For aspartame preparation of food containing aspartame, a statement to the effect that the product contains an L-phenylalanine compound shall be done as in the examples below.

1) Sweetener (aspartame L-phenylalanine compound)
2) Sweetener (aspartame; L-phenylalanine compound)
3) Sweetener (aspartame (L-phenylalanine compound))

References

17) "The Act Amending the Food Sanitation Act and the Nutrition Improvement Act" (Act No.101, 1995)

18) "Food Additive Labeling Under the Food Sanitation Act" (MHLW Director-General Notice No.56, 1996: Latest Version July 4, No.0704001, 2008)

IV IMPLEMENTS, CONTAINERS, AND PACKAGING

The Food Sanitation Act (Article 18, Paragraph 1) stipulates that the Minister of Health, Labour and Welfare may establish specifications for implements, containers and packages, or the raw materials thereof, or may establish standards for manufacturing implements, containers, and packaging.

Specifications and Standards for Food and Food Additives etc.

(MHLW Notice No. 370, 1959: Revised; No.416, 2008)

Section 3. Implements, Containers, and Packaging

- A Standards for General Implements, Containers, Packaging, and their Component Materials
- B Testing Methods for General Implements, Containers, and Packaging
- C Reagents and Solutions
- D Material-specific Specifications for Implements, Containers, Packaging, and Raw Materials
- E Application-specific Specifications for Implements,

As for milk and milk products, the Ministerial Ordinance Concerning Compositional Standards, etc. for Milk and Milk Products, in its appended table (Section 4), stipulates "The Standards of Equipments or Containers/Packages of Milk, etc. or Their Raw Materials and the Standards of Manufacturing."

The separate tables summarize the following specifications and standards:

General standards for raw materials..... Table AP01
Specifications and standards according to type of material..... Table AP02
Specifications and standards according to intended use ..... Table AP03
Manufacturing standards ..... Table AP04
Specifications and standards for milk and milk products..... Table AP05

V TOYS

Specifications and Standards for Food and Food Additives etc.
(MHLW Notice No. 370, 1959: Revision No.416, 2008)

Section 4. Toys

The Food Sanitation Act (Article 62 Paragraph 1) stipulates that the same articles in the Act concerning the specifications and standards for foods and food additives shall also apply to the toys designated by the Minister of Health, Labour and Welfare as potentially injurious to infant health through contact therewith.

The Ordinance for Enforcement of the Food Sanitation Act (Article 78) re-defined toys designated by the Minister in March 2008 in order to cover wider areas of toys, as shown in the following.

The new toy definition in three categories

1. Toys which are used by infants principally by putting them in their mouth.*
2. Accessory toys**, transfer pictures, *okiagari* (*daruma* doll made so as to right itself when knocked over), masks, origami, rattles, educational toys, building blocks, toy phones, toy animals, dolls, clay, toy vehicles, balloons, blocks, balls, toys for playing house.
3. Toys which are played with in combination with those toys listed in 2. above.

* For example: pacifier, harmonica.

** Accessory toys include rings, necklaces, pendants, and brooches.

At the same time, in March 2008, specifications for materials used in toys were changed in the following way:

1. New specifications for the composition of applied coatings on the surface of toys rather than for the composition of paints used as raw material paints, so that the toy in question can be tested.
2. New specifications for the composition of actual components of toys made from polyvinyl chloride rather than for the composition of raw materials made with polyvinyl chloride as the major component, so that the toy in question can be tested.
3. Stricter restrictions for lead migration from coatings of toys
   Testing for lead has been incorporated in the specifications for polyvinyl chloride raw materials and metal accessories.

The summary of specifications and standards for toys are shown below.

Specifications and Standards for Toys

(MHLW Notice No. 370, 1959: Revision No.416, 2008)

Kind of toy	Elution test			
	Test items	Leaching conditions	Leaching solution	Standards
Transfer pictures	Heavy metals Arsenic	40 °C, for 30 min.	water	≤ 1μg/ml (as Pb) ≤ 0.1μg/ml (As_2O_2)
Origami	Heavy metals Arsenic	40 °C, for 30 min.	Distilled water	≤ 1μg/ml (as Pb) ≤ 0.1μg/ml (As_2O_2)
Rubber pacifiers	The same as for rubber nursing utensils in Section Ⅲ-D-3-(2)			
Coatings of toys	Cadmium Lead Arsenic	37 °C, for 2 hrs.	0.07 mol/l HCL	≤ 75μg/g ≤ 90μg/g ≤ 25μg/g
Coatings containing polyvinyl chloride	$KMnO_4$ consumption Evaporation residue	40 °C, for 30 min.		≤ 50μg/ml ≤ 50μg/ml
Parts made from polyvinyl chloride material (except coatings)	$KMnO_4$ consumption Heavy metals Cadmium Evaporation residue Arsenic	40 °C, for 30 min.		≤ 50μg/ml ≤ 1μg/ml (as Pb) ≤ 0.5μg/ml ≤ 50μg/ml ≤ 0.1μg/ml (As_2O_2)
Parts made from polyethylene material (except coatings)	$KMnO_4$ consumption Heavy metals Evaporation residue Arsenic	40 °C, for 30 min.		≤ 10μg/ml ≤ 1μg/ml (as Pb) ≤ 30μg/ml ≤ 0.1μg/ml (As_2O_2)
Synthetic resins containing polyvinyl chloride made by use of bis(2-ethyl hexyl-phthalate, and diisononyl phthalate as the principal ingredient				Shall not be used. *1
Metal accessory toy likely to be swallowed by infants	Lead	37 °C, for 2 hrs	0.07 mol/l HCL	≤ 90μg/g
Production Standards for				
1. Coloring agent: synthetic chemicals, if used, shall be the ones listed in Table 1 of the Enforcement Regulations (except when no eluted agent appears after immersing 1 cm^2 of sample in 2ml water for 10 min. at 40 °C.)				

Note) *1 The diisononyl phthalate specification only applies to a portion of the designated toys in category 1 and those made from paper, wood, bamboo, rubber, leather, celluloid, synthetic resin, metal and ceramics.

VI DETERGENTS

Specifications and Standards for Food and Food Additives etc.

(MHLW Notice No. 370, 1959: Revised; No.416, 2008)

Section 5. Detergents

The Food Sanitation Act (Article 62 Paragraph 2) stipulates that the same articles in the Act concerning the specifications and standards for foods and food additives shall also apply to detergents intended for use in washing vegetables, fruits or tableware.

A summary of the specifications and standards for detergents are shown in the table below.

Specifications and Standards for Detergents

(MHLW Notice No. 370, 1959: Revised; No.416, 2008)

<table>
<tr><td colspan="3">Specifications of components *1</td></tr>
<tr><td>Test item</td><td>Sample solution</td><td>Specifications</td></tr>
<tr><td>Arsenic *2</td><td rowspan="4">Detergent is diluted with distilled water
▪ 30 times for fatty-acid based detergents
▪ 150 times for other detergent</td><td>0.05ppm or less (as As_2O_2)</td></tr>
<tr><td>Heavy metals *2</td><td>1ppm or less (as Pb)</td></tr>
<tr><td>Methanol *2</td><td>1μg/g or less (for liquid detergent only)</td></tr>
<tr><td>Liquidity *2</td><td>fatty-acid based 6.0- 10.5
other detergent 6.0- 8.0</td></tr>
<tr><td>Enzymes or others with bleaching action</td><td></td><td>Not permitted.</td></tr>
<tr><td>Artificial aromatic agents</td><td></td><td>No synthetic chemicals other than those listed in Table 1 in the Ordinance for Enforcement.</td></tr>
<tr><td>Coloring agents</td><td></td><td>No synthetic chemicals other than those listed in Table 1 (Ordinance for Enforcement), and those listed here: Indanthrene Blue RS, Wool green BS, Quinoline Yellow, and Patent blue V.</td></tr>
<tr><td>Biodegradability</td><td></td><td>Not less than 85% (for those containing anionic surfactant only.)</td></tr>
<tr><td colspan="3">Standards of Use</td></tr>
<tr><td>Surfactant concentration</td><td colspan="2">0.5% or less for fatty-acid-based detergent
0.1% or less for others *1 *2</td></tr>
<tr><td></td><td colspan="2">Fruits and vegetables are not to be immersed in a detergent solution for more than 5 minutes.</td></tr>
<tr><td></td><td colspan="2">Fruits, vegetables and tableware, after washed, must be rinsed with potable water:
Longer than 30 seconds in running water for fruits and vegetables and 5 seconds for tableware. When using collected water, change the water more than twice.</td></tr>
</table>

*1 Except detergents solely intended for washing tableware (detergents exclusively intended for automatic tableware washing machines)

*2 Except solid soap

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I. Food

General Standards of Food

Table F01

(MHLW Notice No. 370, 1959: Revised; No.416, 2008)

A. Compositional Standards

1. Food shall not contain any antibiotics or chemically synthesized antibacterial substances, except for the following cases:
   (1) When the substance concerned is identical to the food additive designated by the Minister of Health, Labour and Welfare as having no potential to cause damage to human health under Article 10 of the Food Sanitation Act.
   (2) When compositional standards are set forth in 5, 6, 7, 8 or 9 below for the substance concerned.
   (3) When the food product concerned has been manufactured or processed using a food ingredient that meets the compositional standards given in 5, 6, 7, 8 or 9 below (except for foods containing antibiotics or chemically synthesized antibacterial substances for which compositional standards are not set forth in5, 6, 7, 8 or 9 below.
2. Foodstuffs that are composed in whole or in part of an organism derived by DNA recombination or that contain all or part of such an organism must be marked to show that the organism has undergone the safety inspection procedures proscribed by the Minister of Health, Labour and Welfare.
3. Foodstuffs manufactured using microorganisms derived by DNA recombination or containing such substances must be marked to show that the substances have undergone the safety inspection procedures prescribed by the Minister of Health, Labour and Welfare.
4. Foods for specified health use as prescribed in the Ordinance for Enforcement of the Food Sanitation Act must undergo the safety and effectiveness inspection procedures prescribed by the Minister of Health, Labour and Welfare.
5. The following substances (including substances produced by chemical transformation) shall not be contained in food.
   2,4,5-T, Azocyclotin and Cyhexatin, Amitrol, Captafol, Carbadox, Coumaphos, Chloramphenicol, Chlorpromazine, Diethylstilbestrol, Dimetridazole,Daminozide, Nitrofurans, Propham, Malachite Green, Metronidazole, Ronidazole

B. Food Production, Processing and Preparation Standards

1. When food is to be produced or processed, it must not be exposed to radiation(as stipulated in Article 3, No. 5 of the Atomic Energy Basic Law). However, this does not apply if food is exposed to radiation during any processes in the production or processing of food in order to control those processes, if the dosage to which the food is exposed is no more than 0.10 Gy, or if there are special provisions in the items under Section D: Specific Food Items.
2. When food is to be produced using fresh cow's milk or fresh goat's milk, during the production of that food the fresh cow's milk or fresh goat's milk must either be pasteurized for 30 minutes at 63°C by means of a holding system or pasteurized using a method that achieves an equivalent or better pasteurization effect. The milk added to food or used in preparing food must be cow's milk, special cow's milk, pasteurized goat's milk, homogenized cow's milk, low-fat cow's milk, non-fat cow's milk or processed milk.
3. When food is to be produced, processed, or prepared using blood, blood corpuscles, or blood plasma, (limited to livestock), during the production, processing or preparation of that food, the blood, blood corpuscles, or blood plasma must be sterilized for 30 minutes at 63°C or heated and sterilized using a method that achieves an equivalent or better sterilization effect.
4. Chicken eggs in their shells used for the production, processing, or preparation of food may not be eggs unfit for eating. When producing, processing, or preparing food using chicken eggs, during the production, processing or preparation of that food the chicken eggs must be sterilized for at least 1 minute at 70°C or they must be heated and sterilized using a method that achieves an equivalent or better sterilization effect..

However, this does not apply when food is to be prepared promptly after breaking normal eggs whose best-before-date has not passed, and which are fresh enough to be eaten raw.

5. When seafood is to be prepared to be eaten raw, it must be washed thoroughly in potable water (defined under Production Standards for Specific Items in D).
6. When food is to be produced using microorganisms obtained using recombinant DNA technology, it must be produced using a method recognized as complying with the standards set forth by the Minister of Health, Labour and Welfare.
7. When food is to be produced and processed, additives must not be used if they do not comply with the stipulations in Part II (Food Additives D or E).
8. When the meat of cattle bred in a country or where bovine spongiform encephalopathy has occurred, is to be sold directly to consumers, the vertebral columns of the cattle (with the exception of the transverse processes of thoracic vertebrae, transverse processes of lumbar vertebrae, ala sacralis and caudal vertebrae) must be removed. The removal must be undertaken using a method capable of preventing contamination, by the dorsal root ganglia, of meat of cattle and their internal organs, as well as meat situated in the vicinity of the removal and that is to be supplied for food.

When food is to be produced, processed or prepared, the vertebral columns of specific cattle must not be used as the ingredients of that food. However, this does not apply when the fats and oils from the vertebral columns of the specific cattle are to be used as ingredients after they have undergone hydrolysis, saponification or intersterification under the high-temperature and high-pressure conditions.

C. General Food Storage Standards

1. When food is to be stored in direct contact with crushed ice other than crushed ice for eating and drinking, crushed ice that tests negative for coliform bacilli must be used. (* The test method and the procedures are described here.)
2. When food is to be stored, no antibiotics may be used.
3. Food must not be exposed to radiation to increase storage life.

Note) The following are commonly specified points and are omitted in the tables below.
(A) Good quality materials (fresh fruits, vegetables, meat, fish, etc) shall be used for processing.
(B) Potable water or equivalent clean water shall be used.
(C) Implements, containers, and packaging used shall be hygienic.
(D) Test methodology

(MHLW Notice No. 370, 1959: Revised; No.416, 2008)

1. Soft Drinks

Standards for Soft Drink Beverage Components

1. Must not be turbid, with the exception of turbidity arising from correct flavoring, coloring or other ingredients generally recognized as being harmless to human health.
2. Must not contain any sediment, with the exception of sediment arising from correct flavoring, coloring or other ingredients generally recognized as being harmless to human health. Must not contain any solid foreign matter, with the exception of solid plant matter used as raw materials whose volume percentage is less than 30%.
3. Arsenic, lead or cadmium: must not be present in detectable amounts. Tin : must not exceed 150.0 ppm. (Test methodology)
4. Tests for coliform bacilli must be negative. (Test methodology)
5. Mineral water with a carbon dioxide pressure inside the container of not more than 98 kPa at 20°C and that has not been sterilized or disinfected must test negative for enterococci or green pus bacilli. (Test methodology)
6. For beverages made solely of apple juices and/or juiced fruit,
Patulin content: must not exceed 0.050 ppm. (Test methodology)

Production Standards for Soft Drink Beverages

(1) For soft drink beverages other than mineral water, frozen fruit juice drinks and fruit juices used as raw materials for such:
1. The water used as the raw material must be potable or otherwise conform to the specifications shown in the table below.
2. Soft drink beverages must be either filled in the containers or packaging and completely stoppered or sealed and then sterilized, or they must first be sterilized by a pasteurizer or other such unit equipped with a thermograph or first disinfected by a filter or other such unit and then filled automatically in the container or packaging, and after this must be completely stoppered or sealed.

The following method shall be used for sterilization or disinfection. However, sterilization or disinfection is not required for soft drink beverages that have a carbon dioxide pressure inside the container or packaging of more than 98 kPa at 20°C and that do not contain any plant or animal components.

a. Soft drink beverages with a pH of less than 4.0 must be sterilized by a method that heats the center for 10 minutes at a temperature of 65°C or by a method of equal or better efficacy.
b. Soft drink beverages with a pH of 4.0 or more (excluding those with pH4.6 or more and a water activity in excess of 0.94) must be sterilized by a method that heats the center for 30 minutes at a temperature of 85°C or by a method of equal or better efficacy.
c. Soft drink beverages with a pH of 4.6 or more and a water activity in excess of 0.94 must be sterilized by a method effective enough to destroy viable microorganisms that originate in the raw materials, etc. or by the method specified in "b" above.
d. Soft drink beverages must be disinfected by a method effective enough to remove viable microorganisms that originate in the raw materials, etc.

(2) Mineral waters (mineral waters are defined as soft drink beverages with water as the sole ingredient)
1. The water used as the raw material must be water supplied by a dedicated water-supply system or a small dedicated water-supply system under the Water Supply Law, or water that is found to be compliant with the standards shown in the table below.
2. Mineral waters must be either filled in the containers or packaging and completely stoppered or sealed and then sterilized, or they must first be sterilized by a pasteurizer or other such unit equipped with a thermograph or first disinfected by a filter or other such unit and then filled automatically in the container or packaging, and after this must be completely stoppered or sealed..

They must be sterilized or disinfected to this end by a method that heats the center for 30 minutes at a temperature of 85°C or by another method effective enough to destroy or remove the viable microorganisms that originate in the raw materials.

However, sterilization or disinfection is not required for mineral waters that have a carbon dioxide pressure inside the container or packaging of more than 98 kPa at 20°C or that are produced by a method complying with the following standards.

a. The water used as the raw material must be mineral water only, and after automatically filling the container with water taken directly from the source spring, it must be completely stoppered or sealed.
b. from the water used as the raw material must not be contaminated with pathogenic microbes or contain organisms or substances that could cause the water to be suspected of being contaminated with pathogenic microbes.
c. The water used as the raw material must test negative for anaerobic sulfite-reducing spore forming bacilli, enterococci and green pus bacilli and the bacterial count per 1 ml must be 5 or less. (Test methodology)

	Maximum allowable level	
Items	Soft Drink Beverages	Mineral Waters
Standard plate count	100/ml	100/ml
Coliform group	N.D.	N.D.
Cadmium	0.01mg/liter	0.01mg/liter
Mercury	0.0005 mg/liter	0.0005 mg/liter
Selenium	-	0.01 mg/liter
Lead	0.1mg/liter	0.05 mg/liter
Barium	-	1 mg/liter
Arsenic	0.05 mg/liter	0.05 mg/liter
Hexavalent chromium	0.05 mg/liter	0.05 mg/liter
Cyanogen	0.01 mg/liter	0.01 mg/liter
Nitrite& Nitrate nitrogen	10 mg/liter	10 mg/liter
Fluorine	0.8 mg/liter	2 mg/liter
Boron (as H_3BO_3)	-	30 mg/liter
Organic phosphorus	0.1 mg/liter	-
Zinc	1.0 mg/liter	5.0 mg/liter
Iron	0.3 mg/liter	-
Copper	1.0 mg/liter	1.0 mg/liter
Manganese	0.3 mg/liter	2 mg/liter
Sulfide		0.05 mg/liter as H_2S
Chlorine ions	200 mg/liter	-
Calcium, Magnesium etc.	300 mg/liter (hardness)	-
Evaporation residues	500 mg/liter	-
Anion surfactants	0.5 mg/liter	-
Phenols	0.005 as phenol	-
Organic substance (in terms of consumption of $KMnO_4$)	10 mg/liter	12 mg/liter - -
pH	5.8 - 8.6	-
Taste	Not abnormal	-
Odor	Not abnormal	-
Color	Less than 5 degrees	-
Turbidity	Less than 2 degrees	

(3) Frozen fruit juice beverages

a. In sterilizing fruit juices with a pH below 4.0, the center must be heated for 10 minutes at 65°C or a method that achieves an equivalent or better sterilization effect must be used.

b. In sterilizing fruit juices with a pH of 4.0 or above, the center must be heated for 30 minutes at 85°C or a method that achieves an equivalent or better sterilization effect must be used.

c. The fruit juices must be sterilized using a method effective enough to destroy any viable microorganisms in the raw materials, etc.

(4) Fruit juices used as raw materials

Storage standards for soft drink beverages

1. Soft drink beverages contained in glass bottles with caps made of paper must be stored at temperatures below 10°C.
2. Those soft drink beverages other than mineral waters, frozen fruit beverages and fruit juices used as raw materials that have a pH of 4.6 or above and a water activity exceeding 0.94 and that not been sterilized by a method effective enough to destroy viable microorganisms which originate in the raw materials, etc. must be stored at temperatures below 10°C.
3. Frozen fruit beverages and frozen fruit juices used as raw materials must be stored at temperatures below -15°C.

2. Powdered Drink Beverages

Standards for Powdered Drink Beverage Components

1. Turbidity and sedimentation must conform to items 1 and 2 described in the standards for soft drink beverage components when a powder is dissolved with twice the volume of water.
2. Arsenic, lead or cadmium : must not be present in detectable amounts. Tin: must not exceed 150.0 ppm.
3. For powdered soft drinks to which no lactic acid bacteria have been added,
   Colifiorm group: must test negative. Bacterial count: no more than 3,000/g.
4. For powdered soft drinks to which lactic acid bacteria have been added. .Colifiorm group : must test negative. Bacterial count (excluding lactic acid bacteria) : no more than 3,000/g.

3. Crushed Ice

Standards for Crushed Ice Components

1. Coliform group: must test negative. Bacterial count in melted ice : no more than 100/ml.
2. (Coliform test methodology)

4. Frozen Confections

Standards for Frozen Confection Components

1. Bacterial count in melted confection: no more than 10,000/ml.
(excluding lactic acid bacteria count when lactic acid bacteria is used as an ingredient.).
2. Colifirm group: must test negative. (Test methodology)

Production and Storage Standards for Frozen Confections

1. Water used as a raw material must be potable water.
2. Raw materials (excluding fermented milk or lactic acid bacteria beverages) must be heated and sterilized at a temperature of 68°C for 30 minutes or sterilized using a method that achieves an equivalent or better sterilization effect.

5. Meats and Whale Meat (with the exception of frozen whale meat to be eaten raw)

* for veterinary drug residue standards, see the Part1- on page 17

Storage Standards for Meats and Whale Meat

1. Must be stored at temperatures below 10°C. However, thinly-sliced frozen meats or whale meat that has been placed inside containers must be stored at temperatures below -15°C.
2. Must be placed inside clean and hygienically covered containers or wrapped in clean and hygienic plastic wrap, plastic coated paper, wax paper, parchment paper or cloth for transportation.

6. Edible Birds' Eggs

* For veterinary drug residue standards, see the Part1- on page 17

Standards for Edible Birds' Egg Components

1. Sterilized liquid eggs (chicken eggs)
Salmonella: must test negative (25 g test specimen)
2. Non-sterilized liquid eggs (chicken eggs)
Bacteria count: no more than 1,000,000/g.

Production Standards for Edible Birds' Eggs

(Standards for the liquid eggs of chickens)
(1) General standards
1. Ingredient eggs (eggs used for production) in their shells must be fit for consumption.
2. Ingredient eggs shall be handled after having been sorted into the categories of regular eggs, eggs with soiled shells, eggs with soft shells and eggs with broken shells.
(2) Individual Standards
1. Production standards for sterilized liquid eggs (12 specifications)
2. Production Standards for non-sterilized liquid eggs (11specifications)

Storage Standards for Edible Birds' Eggs

1.Storage standards for the liquid eggs of chickens
Liquid eggs to be stored at temperatures below 8°C (-15°C for frozen liquid eggs)
2. Usage Standards for Edible Birds' Eggs (limited to chicken eggs in their shells)
When supplying chicken eggs in their shells for eating or drinking without first heating and sterilizing them, regular eggs for raw consumption for which the best-before-date has not passed must be used.

7, Blood, Blood Corpuscles and Blood Plasma

Processing Standards for Blood, Blood Corpuscles and Blood Plasma

1. Blood used as a raw material must be cooled to temperatures below 4°C immediately after collection and after cooling it must be kept at temperatures below 4°C.
5. Excluding the heating and sterilization processes, processing must be undertaken without the temperature of the blood corpuscles or blood plasma exceeding 10°C.
6. Freezing must be done in such a way that when frozen, the temperature of the blood corpuscles or blood plasma will promptly drop below -18°C.

Storage Standards for Blood, Blood Corpuscles and Blood Plasma

1. Blood, blood corpuscles and blood plasma must be stored at temperatures below 4°C.
2. Those which are frozen must be stored at temperatures below -18°C.

8. Meat Products

Standards for Meat Product Components

(1) General standards

1. NO_2^-: no more than 0.070g/kg.

(2) Individual standards

Product group	*E.coli* spp.	Water activity	*Staphylocc. aureus*	*Salmonella*	*Clostridium* spp
Dried meat products	must test negative:	0.87 >		must test negative	
Unheated meat products	100/g >		1,000/g >	must test negative	
Special heated meat	100/g >		1,000/g >	must test negative	1,000/g
Heated meat products (sterilized after being packed in package)	must test negative			must test negative	1,000/g
Heated meat products (packed in package after being heat-sterilized)	must test negative		1,000/g >	must test negative	

Production Standards for Meat Products

(1) General standards

2. Number of spores for spice, sugar or starch used as ingredients in the meat products: no more than 1,000/g

(2) Individual standards

1. Dried meat products
2. Unheated meat products
3. Special heated meat products
4. Heated meat products

Storage Standards for Meat Products

(1) General standards

1. Frozen meat products must be stored at temperatures below -15°C.

(2) Individual standards

1. Unheated meat products
   Must be stored at temperatures below 10°C.
2. Specified heated meat products
   Those with a water activity of more than 0.95 must be stored at temperatures below 4°C.

3. Heated meat products
   Must be stored at temperatures below10°C. However, this does not apply to products that, after having been packed in airtight containers, have been sterilized using a method that heats them for 4 minutes at a temperature of 120°C as measured at the center or a method that achieves an equivalent or better effect..

9. Whale Meat Products

Standards for Whale Meat Product Components

1. Coliform group: must test negative
2. For whale meat bacon. NO_2^-: not more than 0.075g/kg

Production Standards for Whale Meat Products

4. Number of spores for spice, sugar, or starch used as ingredients in the whale meat product: no more than 1,000/g

6. Sterilization: Heating for 30 minutes at a temperature of 63°C as measured at their center or by a method that achieves an equivalent or better effect.

Storage Standards for Whale Meat Products

1. Whale meat products must be stored at temperatures below 10°C (or below -15°C for frozen whale meat products).
However, this does not apply to products that, after having been filled into air-tight containers, have been sterilized using a method that heats them for 4 minutes at a temperature of 120°C as measured at their center or a method that achieves an equivalent or better effect.

10. Fish-Paste Products
Standards for Fish-Paste Product Components
1. Coliform group： must test negative (excluding ground fish). 2. NO_2^-： no more than 0.05g/kg. (For fish sausages and fish ham only)
Production Standards for Fish-Paste Products
6. Number of spores for spice, sugar, or flour used as ingredients in fish-paste products: no more than 1,000/g 8. Fish sausages and fish ham must be sterilized using a method that heats them for 45 minutes at a temperature of 80°C as measured at the center, or a method that achieves an equivalent or better effect.
Storage Standards for Fish-Paste Products
1. Must be stored at temperatures below 10°C. 2. Frozen fish-paste products must be stored at temperatures below -15°C.

11. Salmon Roe or Cod Roe
Standards for Salmon Roe and Cod Roe Components
1. NO_2^-： no more than 0.05g/kg

12. Boiled Octopus
Standards for Boiled Octopus Components
1. *Vibrio parahaemolyticus*： must test negative (Test methodology) 2. Frozen boiled octopus Coliform group: must test negative Bacteria count： no more than 100,000/g.
Storage Standards for Boiled Octopus
1. Must be stored at temperatures below 10°C（frozen boiled octopus must be stored under 15°C.）.

13. Boiled Crab
Standards for Boiled Crab Components
1. Boiled Crab *Vibrio parahaemolyticus*： must test negative (Test methodology) 2. Frozen boiled crab Bacterial count：must not exceed 100,000/g. Coliform group: must test negative
Processing Standards for Boiled Crab
3. Processing shall be performed by heating the crab for 1 minute to a temperature of 70 °C as measured at the center or by a method that achieves an equivalent or better effect.
Storage Standards for
1. Must be stored under 10°C（Frozen boiled crabs must be stored under -15 °C.）

14. Fresh Fish and Shellfish to be Eaten Raw
Standards for Components of Fresh Fish and Shellfish to be Eaten Raw
1. *Vibrio parahaemolyticus*：must not exceed 100/g (Test methodology)
Storage Standards for Fresh Fish and Shellfish to be Eaten Raw
1. Must be stored at temperatures below 10 °C.

15. Oysters to be Eaten Raw

Standards for Components of Oysters to be Eaten Raw

1. Bacterial count： no more than 50,000/g.
2. The most probable number of E.coli： no more than 230/100g
3. (microbiological test methodology including the most probable number method)
4. The most probable number of *Vibrio parahaemolyticus*： no more than 100/g

Processing Standards for Oysters to be Eaten Raw

1. Oysters used as the raw material must be collected either from waters where the most probable number of coliform group bacilli is no more than 70/100ml of seawater, or collected from other waters but cleaned using either seawater where the most probable number of coliform group bacilli is no more than 70/100ml, or artificial salt water with a 3% salinity, while constantly changing or sterilizing the said seawater or artificial salt water.
2. (Conditions for temporary storage of oysters as the raw material.)

Storage Standards for Oysters to be Eaten Raw

1. Must be stored at temperatures below 10 °C. Frozen Oysters to be Eaten Raw must be stored under-15°C.

16. Agar

Standards for Agar Components

1. Boron compounds: no more than 1g/kg (as H_3BO_3).

17.Grains, Beans and Vegetables

Standards for Gain and Bean Components

	crop	Substance	Maximum allowable level
	rice	Cadmium and its compounds	1.0 ppm (as Cd)
	soybeans	Cyanide	undetectable.
	adzuki beans	Cyanide	undetectable (but 500ppm for saltani beans, saltapia beans, butter beans, pequia beans, white beans and lima beans)
	peas	Cyanide	undetectable.
	kidney beans	Cyanide	undetectable
	peanuts	Cyanide	undetectable
	Other types of beans	Cyanide	undetectable

Production Standards for

1. (Beans) Beans showing the presence of cyanide compounds shall not be used, except for bean jam for further processing.
2. (Potato) Conditions for using irradiation on potatoes：
   Only γ-ray of Cobalt 60 may be used with a dose of less than 150 gray.
   Re-irradiation on already irradiated potatoes is prohibited.

18. Bean Jam for Further Processing

Standards for Bean Jam Components for Further Processing

1. Cyanide: must be present in detectable levels

Production Standards for Bean Jam for Further Processing

1. The beans must be soaked for at least 4 hours using warm water.

19. Soybean Curd (*tofu*)

Production Standards for Soybean Curd

3. Soy juice or soy milk must be sterilized using a method that boils the juice or milk for 2 minutes or a method that achieves an equivalent or better sterilization effect.
6. The packaged soybean curd must be sterilized using a method that heats it for 40 minutes at 90°C or a method that achieves an equivalent or better sterilization effect.

Storage Standards for Soybean Curd

1 Must be refrigerated or stored in a water bath containing chilled potable water that is constantly changed..
2. (Conditions for bean curd intended to itinerant sales.)

20. Instant Noodles

Standards for Instant Noodle Components

1. Fats and oils in noodles: acid value of no more than 3. peroxide value: no more than 30.

Storage Standards for Instant Noodles

1. Must be stored in a location that is not exposed to direct sunlight.

21. Frozen Foods

Standards for Frozen Food Components

	category	bacterial count	coliform group
1	Frozen food to be consumed without heating	max. 100,000/g >	must test negative
2	Frozen food to be consumed after heating (those heated immediately before freezing process)	max. 100,000/g >	must test negative
3	Frozen food to be consumed after heating (Other than 2 above)	max. 3,000,000/g >	must test negative

Processing Standards for Frozen Foods (specifications 1- 6)

Storage Standards for Frozen Foods

1. Frozen foods must be stored at temperatures below -15 °C.

22. Food Packed in Containers and Sterilized by Pressurization and Heating

Standards for Components of Food Packed in Containers and Sterilized by Pressurization and Heating

1. Food Packed in Containers and Sterilized by Pressurization and Heating is defined as food (excluding soft drink beverages, meat products, whale meat products, and fish-paste products) that has been packed in air-tight containers, sealed and then subjected to sterilization by pressurization and heating.
Viable bacterial cells: must test negative (Test methodology)

Production Standards for Food Packed in Containers and Sterilized by Pressurization and Heating

2. In the production of food, no additives that are chemical compounds (excluding sodium hypochlorite) used as preservatives or germicidal agents may be used.
4. Food packed in containers and sterilized by pressurization and heating, other than canned or bottled foods, must be sealed by hot-melting or rolling.
5. The sterilizing machine must be equipped with an self-recording thermometer.
6. The sterilizing method must be established to meet the following requirements.
a) That it is satisfactorily effective in destroying any viable microorganisms that exist in the raw materials.
b) For food packed in containers and sterilized by pressurization and heating whose pH exceeds 4.6 and whose water activity exceeds 0.94, either a method that heats the food at a temperature of 120°C as measured at the center for 4 minutes or a method that achieves an equivalent or better effect must be used.

Maximum Residue Limits for Agricultural Chemicals, Feed Additives and Veterinary Drugs in Food

Table F03

List of the substances designated as having no potential to cause damage to human health

(MHLW Notification No. 498, 2005)

1. Zinc	34. Thiamine
2. Azadirachtin	35. Tyrosine
3. Ascorbic acid	36. Iron
4. Astaxanthin	37. Copper
5. Asparagine	38. Paprika coloring
6. beta-apo-8'-carotene acid ethyl ester	39. Tocopherol
7. Alanine	40. Niacin
8. Allicin	41. Neem oil
9. Arginine	42. Lactic acid
10. Ammonium	43. Urea
11. Sulfur	44. Paraffin
12. Inositol	45. Barium
13. Chlorine	46. Valine
14. Oleic acid	47. Pantothenic acid
15. Potassium	48. Biotin
16. Calcium	49. Histidine
17. Calciferol	50. Hydroxypropyl starch
18. beta-Carotene	51. Pyridoxine
19. Citric acid	52. Propylene glycol
20. Glycine	53. Magnesium
21. Glutamine	54. Machine oil
22. Chlorella extracts	55. Marigold coloring
23. Silicon	56. Mineral oil
24. Diatomaceous earth	57. Methionine
25. Cinnamic aldehyde	58. Menadione
26. Cobalamin	59. Folic acid
27. Choline	60. Iodine
28. Shiitake mycelia extracts	61. Riboflavin
29. Sodium bicarbonate	62. Lecithin
30. Tartaric acid	63. Retinol
31. Serine	64. Leucine
32. Selenium	65. Wax
33. Sorbic acid	

Provisional Regulatory Limitations of Contaminants in Food

Table F04

(Compiled from various sources as at December 31, 2008)

substance	Max. level
1 PCB in foods	(ppm)
Fish and shellfish (edible parts) in oceans and the open sea	o.5
Fish and shellfish (edible parts) in inland seas and bays including inland waters	3.0
Cow's milk (in all of the milk)	0.1
Milk products (in the whole quantity)	1.0
Powdered milk for babies (in all of the milk)	o.2
Meat (in the whole quantity)	0.5
Egg (in the whole egg)	0.2
Containers and packaging	5.0
2 Mercury in Fish and Shellfish	
Total level of mercury	0.4
Methyl mercury (as mercury)	0.3
However, these provisional limits shall not apply to tuna fish, fish from rivers, and deep sea fish and shellfish.	
3 Radionuclides in Imported Foods	Bq/kg
(Temporary regulations for imported foods resulting from the accident of the nuclear power plant in the former USSR.) All food	370 (Total of Ce134+137)
4 Aflatoxin in Peanuts etc.	(ppb)
Peanut and peanut products (peanut butter, peanut flour etc.)	10.0 (as aflatoxin B1)
The same level also applies to pistachios, almonds, Brazilian nuts, cashews, hazelnuts, macadamia nuts, walnuts, and giant corn.	
5 Deoxynivalenol	(ppm)
Wheat	1.1
6 Patulin	(ppm)
Apple juice and foods made with apple juice as principal raw material	0.050
7 Shellfish Toxins	(MU/g) *
a. Paralytic shellfish poisoning toxin: All shellfish (edible portion)	4
b. Diarrheal shellfish poisoning toxin: All shellfish (edible portion)	0.05

* 1MU (Mouse Unit) represents the amount of toxin that causes death in a mouse of 20g body weight in 15 minutes in case of paralytic shellfish poisoning toxin, while in case of diarrrheal shellfish poisoning toxin 1MU represents the amount of poison that causes death in a mouse of 16-20g body weight in 24 hours.

Foods Obtained by Application of Recombinant DNA Techniques

Table F05

List of Products that have undergone safety assessment & been announced in the Official Gazette

Department of Food Safety, MHLW as of December, 2008

Foods (97 crops)			
Crop	Trait		Developer (country)
Potato (8)	Insect resistant	2	USA 8
	Insect resistant/virus resistant	6	
Soybean (5)	Herbicide tolerant	4	USA 2
	High oleic acid	1	Germany 2
Sugar Beet (3)	Herbicide tolerant	3	USA 1
			Switzerland 1
			Germany 1
Corn (45)	Insect resistant	6	USA 35
	Insect resistant/Herbicide tolerant	32	Switzerland 8
	Herbicide tolerant	5	Germany 2
	High lysine	1	
	High oleic acid	1	
Rapeseed (15)	Herbicide resistant	13	Germany 13
	Herbicide tolerant／Male sterility	1	USA 2
	Herb. tolerant／Recovering male sterility	1	
Cotton (18)	Herbicide resistant	6	USA 16
	Herbicide tolerant／insect resistant	9	Germany 2
	Insect resistant	3	
Alfalfa (3)	Herbicide resistant	3	USA 3
Food Additives (14 items)			
α-Amylase (6)	High productivity	5	Denmark 5
	Heat resistant	1	USA 1
Rennet (2)	High productivity	2	Denmark 1
			Netherlands 1
Pullulanase (2)	High productivity	2	Denmark 1
			USA 1
Lypase (2)	High productivity	2	Denmark 2
Riboflavin (1)	High productivity	1	Switzerland 1
Glucoamylase (1)	High productivity	1	Denmark 1

List of crops and the processed food thereof

(which might require labeling as GM Foods)

The Ordinance for Enforcement of the Food Sanitation Act Article 21 Table 7

Crop	Processed Food
Soybean (including immature soybeans and bean sprouts)	1 *Tofu* (soybean curd) and *aburaage* (fried soybean curd) 2 *Koori-dofu* (frozen soybean curd), *okara* (dried *tofu* lees) and *yuba* (dried soybean milk membrane) 3 *Natto* (fermented soybeans) 4 Soybean milk 5 *Miso* (fermented soybean paste) 6 Soybean *nimame* (cooked soybean) 7 Canned soybeans and bottled soybeans 8 *Kinako* (roasted soybean flour) 9 Roasted soybeans 10 Food made mainly from ingredients listed in item 1 to item 9 11 Food made mainly from soybean for cooking 12 Food made mainly from soybean flour 13 Food made mainly from soybean protein 14 Food made mainly from immature soybean 15 Food made mainly from soybean sprouts
Corn	1 Corn snack confectionary 2 Corn starch 3 Popcorn 4 Frozen corn 5 Canned corn and bottled corn 6 Food made mainly from corn flour 7 Food made mainly from corn grits 8 Food made mainly from corn for cooking 9 Food made mainly from ingredients listed in item 1 to item 5
Potato	1 Potato snack confectionary 2 Dried potato 3 Frozen potato 4 Potato starch 5 Food made mainly from potato for cooking 6 Food made mainly from ingredients listed in item 1 to item 4
Rapeseed	
Cotton	
Alfalfa	Food made mainly from alfalfa
Sugar beet	Food made mainly from sugar beet for cooking

II Milk and Milk Products

Raw Milk

Table M01

(1) Milk shall be free from antibiotics or antimicrobial chemical compounds.
(2) Following cow's milk or goat's milk shall be prohibited to be milked.
① Those milks within 5 days after delivery. ② Those milks either having been fed or injected with medicine that has an effect on milk and been within the period when medicine remains in milk. ③ Those milks showing a significant reaction after the injection of biological drugs.
(3) Compositional standards

	Raw milk	Raw goat's milk
Specific gravity (at 15°C)	1.028～1.034[a)] 1.028～1.036[b)]	1.030～1.034
Acidity (as lactic acid %)	Not more than 0.18 [a)] Not more than 0.20 [b)]	Not more than 0.20
Bacteria (count/ml)	Not more than 4 million (Direct micro-scopic individual count method)	Not more than 4 million (Direct micro-scopic individual count method)

Notes :
a) Milk taken from cows other than Jersey cows.
b) Milk taken from Jersey cows.

Drinking Liquid Milks and Milk Drinks

Table M02

	Drinking milk			
	Cow's milk	Special cow's milk	Pasteurized goat's milk	Composition-controlled cow's milk
Specific gravity (at 15°C)	1.028～1.034a) 1.028～1.036b)	1.028～1.034a) 1.028～1.036b)	1.030～1.034	—
Acidity (as lactic acid %)	Not more than 0.18 c) Not more than 0.20 c)	Not more than 0.17 a) Not more than 0.19 b)	Not more than 0.20	Not more than 0.18
Nonfat milk solids (%)	Not less than 8.0	Not less than 8.5	Not less than 8.0	Not less than 8.0
Milk fat (%)	Not less than 3.0	Not less than 3.3	Not less than 3.6	—
Bacteria (count/ml)	Not more than 50,000 d) (Standard plate culture method)	Not more than 30,000 (Standard plate culture method)	Not more than 50,000 (Standard plate culture method)	Not more than 50,000 (Standard plate culture method)
Coliform group	Negative	Negative	Negative	Negative
Standards for manufacturing method	Pasteurizing method: To be heated at 63°C for 30 minutes by holder pasteurization or by an equivalent or more effective method	Pasteurizing method: To be heated at 63 to 65°C for 30 minutes by holder pasteurization when necessary	Same as that of cow's milk	Same as that of cow's milk
Standards for storing method	To be cooled down to 10°C or below for storage immediately after pasteurizing (except milk storable at normal temperaturee, which shall be stored at temperature not exceeding normal temperature)	To be cooled down to 10°C or below for storage immediately after processing (after pasteurizing when pasteurized)	To be cooled down to 10°C or below for storage immediately after pasteurizing	
Remarks	Components shall not be removed. Mixing with other materials prohibited (except steam generated when sterilized by heating directly at ultrahigh.)	Components shall not be removed. Mixing with other materials prohibited.	Mixing with other materials prohibited	Same as that of cow's milk

Drinking milk		Milk drink	
Low fat cow's milk	Nonfat cow's milk	Processed milk	Milk drinks
1.030～1.036	1.032～1.038	—	—
Not more than 0.18 e)	Not more than 0.18 e)	Not more than 0.18 e)	—
Not less than 8.0	Not less than 8.0	Not less than 8.0	—
Not less than 0.5 but not more than 1.5	Less than 0.5	—	—
Not more than 50,000 e) (Standard plate culture method)	Not more than 50,000 e) (Standard plate culture method)	Not more than 50,000 e) (Standard plate culture method)	Not more than 30,000 f) (Standard plate culture method)
Negative	Negative	Negative	Negative
Same as that of cow's milk	Same as that of cow's milk	Same as that of cow's milk	Raw materials, except those decomposed in process of pasteurization, shall be pasteurized by heating at 62°C for 30 minutes or other method having equal or no less pasteurizing effect.
Same as that of cow's milk	Same as that of cow's milk	Same as that of cow's milk	Same as that of cow's milk (except those packed in a container fit for storage and pasteurized by heating at 120°C for 4 minutes or heating otherwise to have equal or no less pasteurizing effect.
Same as that of cow's milk	Same as that of cow's milk	No materials shall be used except for water, raw milk, cow's milk, special milk, low fat cow's milk, nonfat cow's milk, whole milk powder, skimmed milk powder, concentrated milk, concentrated skimmed milk, evaporated milk, evaporated skimmed milk, cream and butter, butter oil, butter milk and butter milk powder not using additives.	Preservatives shall not be used for pasty or frozen one.

Notes：
a) Those using milk of cows other than Jersey cows only as raw materials.
b) Those using milk of Jersey cows only as raw materials.
c) In the case of a product storable at normal temperature, increase shall be within 0.02%, after stored at 29 to 31°C for 14 days or at 54 to 56°C for 7 days.
d) In the case of a product storable at normal temperature, the count of bacteria shall be zero when stored at 29 to 31°C for 14 days or at 54 to 56°C for 7 days.
e) Same as cow's milk in the case of a product storable at normal temperature.
f) In the case of a product storable at normal temperature, the count of bacteria shall be zero when stored at 29 to 31°C for 14 days or at 54 to 56°C for 7 days.

Milk Products

Table M03

	Cream	Butter	Butter oil	Natural cheese	Processed cheese	Concentrated whey
Acidity (as lactic acid %)	Not more than 0.20	—	—	—	—	—
Nonfat milk solids (%)	—	—	—	—	Not less than 40.0	Not less than 25.0
Milk fat (%)	Not less than 18.0	Not less than 80.0	Not less than 99.3	—	—	—
Sugar (%)	—	—	—	—	—	—
Water content (%)	—	Not more than 17.0	Not more than 0.5	—	—	—
Bacteria count (Standard plate culture method)	Not more than 100,000/g	—	—	—	—	—
Coliform group	Negative	Negative	Negative	—	Negative	Negative
Listeria monocytogenes	—	—	—	Negative	—	—
Standard for manufacturing method	Same as that of milk	—	—	—	—	—
Standard for storing method	To be cooled down to 10°C or below for storage immediately after pasteurizing except those kept in a container fit for storage and pasteurized.					
Remarks	Mixing with other materials prohibited			k)		

Notes:
a) For the products using fermented milks or lactic acid bacteria drinks as raw materials, bacteria count excluding lactic acid bacteria and yeast shall be not more than 100,000.
b) For the products using fermented milks or lactic acid bacteria drinks as raw materials, bacteria count excluding lactic acid bacteria and yeast shall be not more than 50,000.
c) However, this does not apply to the case when manufacture is performed continuously so as to prevent the stagnation of raw materials.
d) Same as that of cow's milk. After pasteurization the raw material shall be kept at not higher than 10°C or above 48°C before drying. However, this shall not apply to the cases when all structures of the equipments used are designed so as to prevent contamination by microorganisms from outside, or when the hours of raw material exposed to the temperature exceeding 10°C and not higher than 48°C are shorter than 6 hours.
e) This does not apply to the additives that were approved for their types and mixing ratios by the Minister of Health, Labour and Welfare.
f) Calcium chloride, calcium citrate, trisodium citrate, sodium bicarbonate, sodium carbonate (crystal), sodium carbonate (anhydrous), tetrasodium pyrophosphate (crystal), tetrasodium pyrophosphate (anhydrous), potassium polyphosphate, sodium polyphosphate, potassium metaphosphate, sodium metaphosphate, disodium hydrogen phosphate (crystal). disodium hydrogen phosphate (anhydrous), sodium dihydrogen phosphate (crystal), sodium dihydrogen phosphate (anhydrous), trisodium phosphate (crystal), and trisodium phosphate (anhydrous): Not more than 2 g/kg for a single use and not more than 3 g/kg for a combined use (The crystal is calculated in terms of the anhydride).

	Ice cream	Ice milk	Lacto ice	Concentrated milk	Concentrated skimmed milk
	—	—	—	—	—
	Not less than 15.0	Not less than 10.0	Not less than 3.0	Not less than 25.5	Not less than 18.5 (no fat content)
	Not less than 8.0	Not less than 3.0	—	Not less than 7.0	—
	—	—	—	—	—
	—	—	—	—	—
	Not more than 100,000/g a)	Not more than 50,000/g b)	Not more than 50,000/g b)	Not more than 100,000/g	Not more than 100,000/g
	Negative	Negative	Negative	—	—
	—	—	—	—	—
	Water used for the manufacture of the products shall be potable water. Raw materials (except fermented milk and fermented milk drinks) shall be pasteurized by heating at 68°C for 30 minutes or by an equivalent or more effective method. When extracting from a freezing tube, the outside of the tube shall be warmed with potable flowing water. The melted liquid shall not be used as ingredients except when pasteurized by heating.			Small as that of milk	Small as that of milk
				To be cooled down to 10°C or below for storage immediately after concentrating.	
				Mixing with other materials prohibited	Mixing with other materials prohibited

g) Calcium citrate, trisodium citrate, sodium bicarbonate, sodium carbonate (crystal), sodium carbonate (anhydrous), tetrasodium pyrophosphate (crystal), tetrasodium pyrophosphate (anhydrous), potassium polyphosphate, sodium polyphosphate, potassium metaphosphate, sodium metaphosphate, dipotassium hydrogen phosphate, disodium hydrogen phosphate (crystal), disodium hydrogen phosphate (anhydrous), sodium dihydrogen phosphate (crystal), and sodium dihydrogen phosphate (anhydrous): Not more than 2 g/kg for a single use and not more than 3 g/kg for a combined use (The crystal is calculated in terms of the anhydride). Lactose: Not more than 2 g/kg.
h) Trisodium citrate, sodium bicarbonate, sodium carbonate (crystal), sodium carbonate (anhydrous), tetrasodium pyrophosphate (crystal), tetrasodium pyrophosphate (anhydrous), potassium polyphosphate, sodium polyphosphate, potassium metaphosphate, sodium metaphosphate, disodium hydrogen phosphate (crystal), disodium hydrogen phosphate (anhydrous), trisodium phosphate (crystal), and trisodium phosphate (anhydrous): Not more than 5 g/kg for a single or combined use (The crystal is calculated in terms of the anhydride).
i) Trisodium citrate, sodium bicarbonate, tetrasodium pyrophosphate (crystal), tetrasodium pyrophosphate (anhydrous), potassium polyphosphate, sodium polyphosphate, potassium metaphosphate, sodium metaphosphate, disodium hydrogen phosphate (crystal), disodium hydrogen phosphate (anhydrous), trisodium phosphate (crystal),and trisodium phosphate (anhydrous): Not more than 5 g/kg for a single or combined use (The crystal is calculated in terms of the anhydride).
j) Milk (goat's milk excluded), milk products or those which may be used by an approval of the Minister of Health, Labour and Welfare for their types and mixing ratios.
k) Soft and semisoft natural cheese, excluding shred cheese (shredded and mixed) labeled "for heating", "for pizza", "for toast", or "for gratin".

	Evaporated milk	Evaporated skimmed milk	Sweetened condensed milk	Sweetened condensed skimmed milk	Whole milk powder	Skimmd milk powder
Milk solid (%)	Not less than 25.0	Not less than 18.5 (No fat content)	Not less than 28.0	Not less than 25.0	Not less than 95.0	Not less than 95.0
Milk protein (%) (in dried condition)	—	—	—	—	—	—
Milk fat (%)	Not less than 7.5	—	Not less than 8.0	—	Not less than 25.0	—
Sugar (%)	—	—	Not more than 58.0 (lactose included)	Not more than 58.0 (lactose included)	—	—
Water content (%)	—	—	Not more than 27.0	Not more than 29.0	Not more than 5.0	Not more than 5.0
Bacteria count (Standard plate culture method)	0/g	0/g	Not more than 50,000/g	Not more than 50,000/g	Not more than 50,000/g	Not more than 50,000/g
Coliform group	—	—	Negative	Negative	Negative	Negative
Standard for manufacturing method	To be heated at 115°C or above for 15 minutes in a container	Same as that of evaporated condensed milk	—	—	—	In the process of heat pasteurization raw material shall be kept at not higher than 10°C or above 48°C. c) Pasteurizing method: d)
Remarks	The following additives can be used: f)		Mixing of substances other than sucrose shall be as follows: g)			Lactose and filtrate of raw milk, cow's milk, special cow's milk, low fat milk or nonfat milk can be used for the adjustment of protein content.
					The following additives can be used: h)	

Cream powder	Whey powder	Whey powder protein concentrated	Buttermilk powder	Sweetened milk powder	Formulated milk powder
Not less than 95.0	Not less than 95.0	Not less than 95.0	Not less than 95.0	Not less than 70.0	Not less than 50.0
—	—	Not less than 15.0 and not more than 80.0	—	—	—
Not less than 50.0	—	—	—	Not less than 18.0	—
—	—	—	—	Not more than 25.0 (Except lactose)	—
Not more than 5.0	Not more than 5.0	Not more than 5.0	Not more than 5.0	Not more than 5.0	Not more than 5.0
Not more than 50,000/g	Not more than 50,000/g	Not more than 50,000/g	Not more than 50,000/g	Not more than 50,000/g	Not more than 50,000/g
Negative	Negative	Negative	Negative	Negative	Negative
—	—	—	—	—	—
				Mixing of substances other than sucrose shall be as follows: i)	Nothing shall be used except follows: j)
				e)	

Fermented Milk and Fermented Milk Drinks [a)]

Table M04

	Fermented milk	Lactic acid bacteria drinksb) (containing nonfat milk so lid not less than 3.0%)	Lactic acid bacteria drinksc) (containing nonfat milk sol id less than 3.0%)
Nonfat milk solids % Lactic acid bacteria or yeasts count (per ml)	Not less than 8 Not less than 10 millions	Not less than 10 millions However, those heated at 75°C or above for 15 minutes after being fermented or pasteurized by an equivalent or more effective method is excepted.	Not less than a million
Coliform group	Negative	Negative	Negative
Standard for manufacturing method	Water used for the manufacture of the product shall be potable water. Raw materials (excluding lactic acid bacteria, yeast, fermented milk and fermented milk drinks) shall be pasteurized by heating at 62°C for 30 minutes, or by an equivalent or more effective method.	Water used for the manufacture of base liquids shall be potable water. Raw materials (except lactic acid bacteria and yeast) shall be thermally pasteurized at 62°C for 30 minutes or pasteurized by an equivalent or more effective method . Water, etc. to be used for diluting stock solution shall be boiled for 5 minutes immediately before use or pasteurized by an equivalent or more effective method.	
Remarks	Preservatives shall not be used for paste-like or frozen one.	Preservatives shall not be used for pasteurized one..	

Notes:
a) The standard of the method of preparing lactic acid bacteria drinks prepared with a fullautomatic cooker of refreshing drinks has been provided separately.
b) Milk products
c) Food using milk, etc. as principal ingredients.

Products Storable at Room Temperature

Table M05

	Cow's milk & Composition-controlled cow's milk	Low fat milk	Nonfat milk	Processed milk	Milk drink
Alcohol test (before and after storage at 30 ±1°C for 14 days or at 55 ±1°C for 7 days)	Negative	Negative	Negative	Negative	—
Acidity (as lactic acid %) (a difference between before and after storing at 30 ±l °C for 14 days or at 55 ±1°C for 7 days)	Within 0.02 %	Within 0.02 %	Within 0.02 %	Within 0.02 %	—
Bacteria count (after storing at 30 ±l °C for 14 days or at 55 ±l °C for 7 days) (per ml)	0 (Standard plate culture method)	0 (Standard plate culture method)	0 (Standard plate culture method)	0 (Standard plate culture method)	0 (Standard plate culture method)

III Food additives

Designated Food Additives

Table FA01

The act prohibits the sale, or manufacture, importation, use, etc. for sale of any additive (except natural flavoring agent, and substance which is generally provided as food and is used as food additive) and any preparation or food that contains such food additive, except cases where the Minister of Health, Labour and Welfare designates it as not injurious to human health.

The following is list of designated food additives, arranged in alphabetical order. (The original list is Table 1 of Enforcement Regulations of the Food Sanitation Act).

Acesulfame Potassium (14)*
Acetaldehyde (18)*
Acetic Acid, Glacial (280)
Acetone (21)*
Acetophenone (20)*
Acetylated Distarch Adipate (15)
Acetylated Distarch Phosphate (17)
Acetylated Oxidized Starch (16)
Adipic Acid (4)
DL-Alanine (25)
Aliphatic Higher Alcohols Ref. (161)*
Aliphatic Higher Aldehydes (except those generally recognized as highly toxic) Ref. (162)*
Aliphatic Higher Hydrocarbons (except those generally recognized as highly toxic) Ref. (163)*
Allyl Cyclohexylpropionate (149)*
Allyl Hexanoate (Allyl Caproate) (312)*
Allyl Isothiocyanate (Volatile Oil of Mustard) (44)*
Aluminum Ammonium Sulfate (Crystal: Ammonium Alum, Desiccated: Burnt Ammonium Alum) (364)*
Aluminum Potassium Sulfate (Crystal: Alum or Potassium Alum, Desiccated: Burnt Alum) (365)
Ammonia (36)
Ammonium Alginate (28)
Ammonium Bicarbonate (Ammonium Hydrogen Carbonate) (205)
Ammonium Carbonate (202)
Ammonium Chloride (65)
Ammonium Dihydrogen Phosphate (Ammonium Phosphate, Monobasic or Monoammonium Phosphate) (380)
Ammonium Persulfate (80)*
Ammonium Sulfate (366)*
Amylalcohol (23)*
α-Amylcinnamaldehyde (α-Amylcinnamic Aldehyde) (24)*
Anisaldehyde (p-Methoxybenzaldehyde) (22)*
L-Arginine L-Glutamate (27)
Aromatic Alcohols Ref. (318)*
Aromatic Aldehydes (except those generally recognized as highly toxic) Ref. (319)*
L-Ascorbic Acid (Vitamin C) (6)
L-Ascorbic Acid 2-glucoside (8)
L-Ascorbic Palmitate (Vitamim C Palmitate) (11)
L-Ascorbic Stearate (Vitamin C Stearate) (9)
Aspartame (α-L-Aspartyl-L-Phenylalanine Methyl Ester) (13)
Benzaldehyde (317)*
Benzoic Acid (33)*
Benzoyl Peroxide (78)*
Benzyl Acetate (137)*
Benzyl Alcohol (316)*
Benzyl Propionate (308)*
Biotin (267)*

Bisbentiamine (Benzoylthiamine Disulfide) (269)
d-Borneol (331)*
Butanol (296)*
Butyl Acetate (136)*
Butyl Butyrate (352)*
Butyl p-Hydroxybenzoate (261)*
Butylated Hydroxyanisole (298)*
Butylated Hydroxytoluene (157)*
Butyraldehyde (297)*
Butyric Acid (348)*
Calcium Alginate (30)
Calcium L-Ascorbate (7)
Calcium Carbonate (204)*
Calcium Carboxymethylcellulose (Calcium Cellulose Glycolate) (81)*
Calcium Chloride (67)*
Calcium Citrate (92)*
Calcium Dihydrogen Phosphate (Calcium Phosphate, Monobasic) (384)*
Calcium Dihydrogen Pyrophosphate (Acid Calcium Pyrophosphate) (285)*
Calcium Disodium Ethylenediaminetetraacetate (Calcium Disodium EDTA) (59)*
Calcium Gluconate (105)*
Calcium Glycerophosphate (100)*
Calcium Hydroxide (Slaked Lime) (191)*
Calcium Lactate (250)*
Calcium Monohydrogen Phosphate (Calcium Phosphate, Dibasic) (383)*
Calcium Pantothenate (265)*
Calcium Propionate (306)*
Calcium 5'-Ribonucleotide (358)
Calcium Silicate (113)*
Calcium Stearate (195)
Calcium Stearoyl Lactylate (Calcium Stearyl Lactylate) (197)*
Calcium Sulfate (367)*
Carbon Dioxide (Carbonic Acid, Gas) (247)
ß-Carotene (83)*
Chlorine Dioxide (245)*
Cholecalciferol (Vitamin D3) (123)
1,8-Cineole (Eucalyptol) (155)*
Cinnamaldehyde (Cinnamic Aldehyde) (189)*
Cinnamic Acid (114)*
Cinnamyl Acetate (130)*
Cinnamyl Alcohol (Cinnamic Alcohols) (188)*
Citral (152)*
Citric Acid (89)*
Citronellal (153)*
Citronellol (154)*
Citronellyl Acetate (129)*
Citronellyl Formate (86)*
Copper Chlorophyll (231)*
Copper Salts (limited to Copper Gluconate and Cupric Sulfate) (229)*
Cyclohexyl Acetate (128)*
Cyclohexyl Butyrate (351)*
L-Cystein Monohydrochloride (150)*
Decanal (Decyl Aldehyde) (219)*
Decanol (Decyl Alcohol) (220)*
Diammonium Hydrogen Phosphate (Diammnonium Phosphate or Ammnonium Phosphate, Dibasic) (379)
Dibenzoyl Thiamine (158)
Dibenzoyl Thiamine Hydrochloride (159)
Diphenyl (Biphenyl) (156)*
Dipotassium Hydrogen Phosphate (Dipotassium Phosphate or Potassium Phosphate, Dibasic) (381)
Disodium 5'-Cytidylate (Sodium 5'-Cytidylate) (151)
Disodium Dihydrogen Pyrophosphate (Acid Disodium Pyrophosphate) (286)
Disodium Ethylenediaminetetraacetate (Disodium EDTA) (60)*
Disodium Glycyrrhizinate (101)*
Disodium 5'-Guanylate (Sodium 5'-Guanylate) (88)
Disodium Hydrogen Phosphate (Disodium Phosphate) (385)
Disodium 5'-Inosinate (Sodium 5'-Inosinate) (49)
Disodium 5'-Ribonucleotide (Sodium 5'-Ribonucleotide) (359)
Disodium Succinate (122)

Disodium DL-Tartrate (Disodium dl-Tartrate) (170)
Disodium L-Tartrate (Disodium l-Tartrate) (171)
Disodium 5'-Uridylate (Sodium 5'-Uridylate) (52)
Distarch Phosphate (374)
Ergocalciferol (Calciferol or Vitamin D2) (64)
Erythorbic Acid (Isoascorbic Acid) (62)*
Ester Gum (54)*
Esters Ref. (55)*
Ethers Ref. (61)*
Ethyl Acetate (126)*
Ethyl Acetoacetate (19)*
Ethyl Butyrate (350)*
Ethyl Cinnamate (115)*
Ethyl Decanoate (Ethyl Caprate) (221)*
Mixture of 2-Ethyl-3,5-dimethylpyrazine and 2-Ethyl-3,6-dimethylpyrazine (56)*
Ethyl Heptanoate (Ethyl Enanthate) (314)*
Ethyl Hexanoate (Ethyl Caproate) (313)*
Ethyl p-Hydroxybenzoate (260)*
Ethyl Isovalerate (42)*
2-Ethyl-3-methylpyrazine (58)*
Ethyl Octanoate (Ethyl Caprylate) (73)*
Ethyl Phenylacetate (292)*
Ethyl Propionate (305)*
Ethylvanillin (57)*
Eugenol (71)*
Fatty Acids Ref. (160)*
Ferric Ammonium Citrate (95)
Ferric Chloride (68)
Ferric Citrate (94)
Ferric Pyrophosphate (287)
Ferrocyanides (Potassium Ferrocyanide (Potassium Hexacyanoferrate(II)), Calcium Ferrocyanide (Calcium Hexacyanoferrate(II)), Sodium Ferrocyanide (Sodium Hexacyanoferrate(II))) (295)
Ferrous Gluconate (Iron Gluconate) (106)*
Ferrous Sulfate (368)
Folic Acid (347)
Food Blue No.1 (Brilliant Blue FCF) and its Aluminum Lake (184)*
Food Blue No.2 (Indigo Carmine) and its Aluminum Lake (185)*
Food Green No.3 (Fast Green FCF) and its Aluminum Lake (183)*
Food Red No.2 (Amaranth) and its Aluminum Lake (174)*
Food Red No.3 (Erythrosine) and its Aluminum Lake (175)*
Food Red No.40 (Allura Red AC) and its Aluminum Lake (176)*
Food Red No.102 (New Coccine) (177)*
Food Red No.104 (Phloxine) (178)*
Food Red No.105 (Rose Bengale) (179)*
Food Red No.106 (Acid Red) (180)*
Food Yellow No.4 (Tartrazine) and its Aluminum Lake (181)*
Food Yellow No.5 (Sunset Yellow FCF) and its Aluminum Lake (182)*
Fumaric Acid (299)
Furfurals and its derivatives (except those generally recognized as highly toxic) Ref. (301)*
Geraniol (118)*
Geranyl Acetate (127)*
Geranyl Formate (85)*
Gluconic Acid (103)
Glucono-delta-Lactone (Gluconolactone) (102)
L-Glutamic Acid (108)
Glycerol (Glycerin) (98)
Glycerol Esters of Fatty Acids (99)
Glycine (97)
Hexanoic Acid (Caproic Acid) (311)*
High Test Hypochlorite (119)
L-Histidine Monohydrochloride (268)
Hydrochloric Acid (70)*
Hydrogen Peroxide (77)*
Hydroxycitronellal (272)*
Hydroxycitronellal Dimethylacetal (273)*
Hydroxypropyl Cellulose (275)*
Hydroxypropyl Distarch Phosphate (274)
Hydroxypropyl Methylcellulose (277)*

Hydroxypropyl Starch (276)
Hypochlorous Acid Water (146)*
Imazalil (50)*
Indoles and its derivatives Ref. (51)*
Ion Exchange Resin (38)*
Ionone (37)*
Iron Lactate (251)
Iron Sesquioxide (Diiron Trioxide or Iron Oxide Red) (145)*
Isoamyl Acetate (125)*
Isoamylalcohol (39)*
Isoamyl Butyrate (349)*
Isoamyl Formate (84)*
Isoamyl Isovalerate (41)*
Isoamyl Phenylacetate (290)*
Isoamyl Propionate (304)*
Isobutanol (45)*
Isobutyl p-Hydroxybenzoate (258)*
Isobutyl Phenylacetate (291)*
Isobutylaldehyde (Isobutanal) (46)*
Isoeugenol (40)*
L-Isoleucine (48)
Isopropanol (47)*
Isopropyl Citrate (90)*
Isopropyl p-Hydroxybenzoate (259)*
Isothiocyanates (except those generally recognized as highly toxic) Ref. (43)*
Ketones Ref. (117)*
Lactic Acid (249)
Lactones (except those generally recognized as highly toxic) Ref. (353)*
Linalool (357)*
Linalyl Acetate (139)*
L-Lysine L-Aspartate (354)
L-Lysine L-Glutamate (356)
L-Lysine Monohydrochloride (355)
Magnesium Carbonate (208)
Magnesium Chloride (69)
Magnesium Hydroxide (193)
Magnesium Oxide (144)
Magnesium Stearate (196)*
Magnesium Sulfate (370)
DL-Malic Acid (dl-Malic Acid) (371)
Maltol (332)*
D-Mannitol (D-Mannite) (333)*
dl-Menthol (dl-Peppermint Camphor) (344)*
l-Menthol (Peppermint Camphor) (345)*
l-Menthyl Acetate (138)*
DL-Methionine (336)
L-Methionine (337)
Methyl Anthranilate (35)*
2-Methylbutanol (342)*
Methyl Cellulose (340)*
Methyl Cinnamate (116)*
Methyl Hesperidin (Soluble Vitamin P) (343)
Methyl N-Methylanthranilate (338)*
Methyl Salicylate (142)*
Methyl ß-Naphthyl Ketone (341)*
p-Methylacetophenone (263)*
5-Methylquinoxaline (339)*
Monocalcium Di-L-Glutamate (110)*
Monomagnesium Di-L-Glutamate (112)
Monopotassium Citrate and Tripotassium Citrate (91)
Monopotassium L-Glutamate (109)
Monosodium L-Aspartate (12)
Monosodium Fumarate (Sodium Fumarate) (300)
Monosodium L-Glutamate (111)
Monosodium Succinate (121)
Monostarch Phosphate (375)
Morpholine Salts of Fatty Acids (346)*
Natamycin (240)*
Neotame (253)
Nicotinamide (Niacinamide) (243)*
Nicotinic Acid (Niacin) (242)*
Nitrous Oxide (3)*
γ-Nonalactone (Nonalactone) (254)*
Octanal (Capryl Aldehyde or Octyl Aldehyde) (72)*
Oxalic Acid (164)*
Oxidized Starch (143)
l-Perillaldehyde (315)*

Phenethyl Acetate (Phenylethyl Acetate) (135)*
Phenol Ethers (except those generally recognized as highly toxic) Ref. (293)*
Phenols (except those generally recognized as highly toxic) Ref. (294)*
L-Phenylalanine (289)
o-Phenylphenol and Sodium o-Phenylphenate (75)*
Phosphated Distarch Phosphate (388)
Phosphoric Acid (373)
Piperonal (Heliotropine) (278)*
Piperonyl Butoxide (279)*
Polybutene (Polybutylene) (328)*
Polyisobutylene (Butyl Rubber) (322)*
Polysorbate 20 (323)*
Polysorbate 60 (324)*
Polysorbate 65 (325)*
Polysorbate 80 (326)*
Polyvinyl Acetate (134)*
Polyvinylpolypyrrolidone (327)*
Potassium Alginate (29)
Potassium DL-Bitartrate (Potassium Hydrogen DL-Tartrate or Potassium Hydrogen dl-Tartrate) (168)
Potassium L-Bitartrate (Potassium Hydrogen L-Tartrate or Potassium Hydrogen d-Tartrate) (169)
Potassium Bromate (165)*
Potassium Carbonate (anhydrous) (203)
Potassium Chloride (66)
Potassium Dihydrogen Phosphate (Monopotassium Phosphate) (382)
Potassium Gluconate (104)
Potassium Hydroxide (Caustic Potash) (190)*
Potassium Metaphosphate (334)
Potassium Nitrate (172)*
Potassium Norbixin (255)*
Potassium Polyphosphate (329)
Potassium Pyrophosphate (Tetrapotassium Pyrophosphate) (284)
Potassium Pyrosulfite (Potassium Hydrogen Sulfite or Potassium Metabisulfite) (282)*
Potassium Sorbate (201)*
Propanol (302)*
Propionic Acid (303)*
Propyl Gallate (320)*
Propyl p-Hydroxybenzoate (262)*
Propylene Glycol (309)*
Propylene Glycol Alginate (32)*
Propylene Glycol Esters of Fatty Acids (310)
Pyridoxine Hydrochloride (Vitamin B6) (281)
Riboflavin (Vitamin B2) (360)
Riboflavin 5'-Phosphate Sodium (Riboflavin Phosphate Sodium, Vitamin B2 Phosphate Sodium) (362)
Riboflavin Tetrabutyrate (Vitamin B2 Tetrabutyrate) (361)
Saccharin (140)*
Silicon Dioxide (Silica Gel) (246)*
Silicone Resin (Polydimethylsiloxane) (187)*
Sodium Acetate (133)
Sodium Alginate (31)
Sodium L-Ascorbate (Vitamin C Sodium) (10)
Sodium Benzoate (34)*
Sodium Bicarbonate (Bicarbonate Soda or Sodium Hydrogen Carbonate) (206)
Sodium Carbonate (Crystal: Carbonate Soda, Anhydrous: Soda Ash) (207)
Sodium Carboxymethylcellulose (Sodium Cellulose Glycolate) (82)*
Sodium Carboxymethylstarch (227)*
Sodium Caseinate (79)
Sodium Chlorite (2)*
Sodium Chondroitin Sulfate (124)*
Sodium Copper Chlorophyllin (230)*
Sodium Dehydroacetate (224)*
Sodium Dihydrogen Phosphate (Monosodium Phosphate) (386)
Sodium Erythorbate (Sodium Isoascorbate) (63)*
Sodium Ferrous Citrate (Sodium Iron Citrate) (93)
Sodium Gluconate (107)
Sodium Hydrosulfite (Hydrosulfite) (148)*
Sodium Hydroxide (Caustic Soda) (192)*
Sodium Hypochlorite (Hypochlorite of Soda) (147)*

Sodium Iron Chlorophyllin (222)*
Sodium Lactate (252)
Sodium DL-Malate (Sodium dl-Malate) (372)
Sodium Metaphosphate (335)
Sodium Methoxide (Sodium Methylate) (241)*
Sodium Nitrate (173)*
Sodium Nitrite (5)*
Sodium Norbixin (256)*
Sodium Oleate (76)*
Sodium Pantothenate (266)
Sodium Polyacrylate (321)*
Sodium Polyphosphate (330)
Sodium Propionate (307)*
Sodium Pyrophosphate (Tetrasodium Pyrophosphate) (288)
Sodium Pyrosulfite (Sodium Metabisulfite, Acid Sulfite of Soda) (283)*
Sodium Saccharin (Soluble Saccharin) (141)*
Sodium Starch Phosphate (228)*
Sodium Sulfate (369)
Sodium Sulfite (26)*
Sorbic Acid (200)*
Sorbitan Esters of Fatty Acids (198)
D-Sorbitol (D-Sorbit) (199)
Starch Acetate (132)
Starch Sodium Octenyl Succinate (74)
Succinic Acid (120)
Sucralose (Trichlorogalactosucrose) (194)
Sucrose Esters of Fatty Acids (186)
Sulfur Dioxide (Sulfurous Acid, Anhydride) (244)*
Sulfuric Acid (363)*
DL-Tartaric Acid (dl-Tartaric Acid) (166)
L-Tartaric Acid (d-Tartaric Acid) (167)
Terpene Hydrocarbons Ref. (226)*
Terpineol (225)*
Terpinyl Acetate (131)*
2,3,5,6-Tetramethylpyrazine (223)*
L-Theanine (218)
Thiabendazole (209)*
Thiamine Dicetylsufate (Vitamin B1 Dicetylsufate) (212)
Thiamine Dilaurylsulfate (Vitamin B1 Dilaurylsulfate) (215)
Thiamine Hydrochloride (Vitamin B1 Hydrochloride) (210)
Thiamine Mononitrate (Vitamin B1 Mononitrate) (211)
Thiamine Naphthalene-1,5-Disulfonate (Vitamin B1 Naphthalene-1,5-Disulfonate) (214)
Thiamine Thiocyanate (Vitamin B1 Thiocyanate) (213)
Thioethers (except those generally recognized as highly toxic) Ref. (216)*
Thiols (Thioalcohols) (except those generally recognized as highly toxic) Ref. (217)*
DL-Threonine (238)
L-Threonine (239)
Titanium Dioxide (248)*
dl-α-Tocopherol (232)*
all-rac-α-Tocopheryl Acetate (233)*
R,R,R-α-Tocopheryl Acetate (234)*
Tricalcium Phosphate (Calcium Phosphate, Tribasic) (377)*
Trimagnesium Phosphate (378)
2,3,5-Trimethylpyrazine (237)*
Tripotassium Phosphate (Potassium Phosphate, Tribasic) (376)
Trisodium Citrate (Sodium Citrate) (96)
Trisodium Phosphate (Sodium Phosphate, Tribasic) (387)
DL-Tryptophan (235)
L-Tryptophan (236)
γ-Undecalactone (Undecalactone) (53)*
L-Valine (264)
Vanillin (257)*
Vitamin A (Retinol) (270)
Vitamin A Fatty Acids Esters (Retinol Esters of Fatty Acids Esters) (271)
Xylitol (87)
Zinc salts (limited to Zinc Gluconate and Zinc Sulfate) (1)*

Food Additives with Standards of Use

Table FA02

Anticaking agents

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Ferrocyanide Potassium Ferocyanide Sodium Ferrocyanide	Salt	Not more than 0.020 g/kg as anhydrous sodium ferrocyanide (in case used in combination, total level shall not exceed this level.)		
Silicon Dioxide (Fine)		Not more than 2.0 % in food as silicon dioxide	Not permitted in substitute for mother's milk and weaning food	

Antifoaming agent

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Silicone Resin		Not more than 0.050 g/kg	Restricted for the purpose of antifoaming	

Antimold agents (preservatives)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Diphenyl	Grapefruit Lemon Oranges	Less than 0.070 g/kg (residual level)	Restricted for use in pieces of papers to be inserted in packagings for storage or transportation.	
Imazalil	Citrus fruits (excluding citrus UNSHU, mandarin orange) Banana	Not more than 0.0050 g/kg (residual level) Not more than 0.0020 g/kg (residual level)		
o-Phenylphenol Sodium o-Phenylphenate	Citrus fruits	Not more than 0.010 g/kg (residual level as o-phenylphenol)		
Thiabendazole	Banana (whole)	Not more than 0.0030 g/kg		
	Banana (pulp)	Not more than 0.0004 g/kg		
	Citrus fruits	Not more than 0.010 g/kg		

Antioxidants

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Butylated Hydroxyanisole	Frozen fish and shellfish (other than frozen fish, shellfish, and oyster to be served raw) Frozen whale meat (other than frozen whale meat to be served raw)	Not more than 1.0 g/kg (for dipping solution; in case used in combination with Butylated Hydroxytoluene, total level of both shall not exceed this level)		
	Butter Dried fish and shellfish Fats and oils Mashed potato (dried) Salted fish and shellfish	Not more than 0.20 g/kg (in case used in combination with Butylated Hydroxytoluene, total level of both shall not exceed this level)		
Butylated Hydroxytoluene	Frozen fish and shellfish (other than frozen fish, shellfish, and oyster to be served raw) Frozen whale meat (other than frozen whale meat to be served raw)	Not more than 1.0 g/kg (for dipping solution; in case used in combination with Butylated Hydroxyanisole, total level of both shall not exceed this level)		
	Butter Dried fish and shellfish Fats and oils Mashed potato (dried) Salted fish and shellfish	Not more than 0.20 g/kg (in case used in combination with Butylated Hydroxyanisole, total level of both shall not exceed this level)		
	Chewing gum	Not more than 0.75 g/kg		
Calcium Disodium Ethylenediamine -tetraacetate	Canned or bottled nonalcoholic beverage	Not more than 0.035 g/kg (as calcium disodium ethylenediamine-tetraacetate)	Shall be converted to calcium disodium ethylenediamine-tetraacetate before preparation of final food.	
Disodium Ethylenediamine-tetraacetate	Canned or bottled food (other than nonalcoholic beverage)	Not more than 0.25 g/kg (as calcium disodium ethylenediamine-tetraacetate)		
Erythorbic Acid Sodium Erythorbate			Restricted for purpose of antioxidation in food other than fishpaste products (excluding SURIMI) and bread	(Quality improver)

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Guaiac Resin	Fats and oils Butter	Not more than 1.0 g/kg		
Isopropyl Citrate	Fats and oils Butter	Not more than 0.10 g/kg (as mono-isopropyl citrate)		
Propyl Gallate	Fats and oils	Not more than 0.20 g/kg		
	Butter	Not more than 0.10 g/kg		
dl-α-Tocopherol			Restricted for purpose of antioxidation (except as an ingredient in preparation of ß-Carotene, Vitamin A, Vitamin A Esters of Fatty Acids, or Liquid Paraffin)	

Bleaching agents

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Sodium Chlorite	Cherry Citrus peels (limited to those for confectionery) FUKI (butterbur) Grape Peach Eggs (limited to the part of egg shell) Seasoned and processed herring roe (excluding dried and frozen herring roe) Vegetables for direct consumption	0.50 g/kg dipping solution (as sodium chlorite)	Decompose or remove prior to preparation of final food.	
Potassium Pyrosulfite Sodium Hydrosulfite Sodium Pyrosulfite Sodium Sulfite Sulfur Dioxide	AMANATTO (sweetened ADZUKI beans)	(residual level as sulfur dioxide) Less than 0.10 g/kg	Not permitted in sesame seed, bean, and vegetable.	(antioxidant, preservative)
	Tapioca starch for saccharification	Less than 0.25 g/kg		Tapioca starch, for saccharificationmeans the starch not consumed as direct food and used to prepare syrup of sugars derived from starch by hydrolysis, hydrogenation, etc.
	Cooked beans, sweetened	Less than O.10 g/kg		

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	Candied cherries	Less than 0.30 g/kg		Candied cherries means candied and pitted cherries or such cherries with crystal of sugar applied on the surface or such immersed in the packing media of syrup.
	Dijon mustard	Less than 0.50 g/kg		
	Dried fruits (excluding raisins)	Less than 2.0 g/kg		
	Raisons	Less than 1.5 g/kg		
	Dried potatoes	Less than 0.50 g/kg		
	Frozen raw shelled crab	Less than 0.10 g/kg		
	Wine Miscellaneous alcoholic beverages	Less than 0.35 g/kg		Excluding fruit squeezings containing not less than 1% by volume of alcohol and concentrate of the same used for manufacture of wine.
	Gelatin	Less than 0.50 g/kg		
	Molasses	Less than 0.30 g/kg		
	KAMPYOU (dried gourd shavings)	Less than 5.0 g/kg		
	MIZUAME (starch syrup)	Less than 0.20 g/kg		
	Natural fruit juice	Less than 0.15 g/kg		Natural fruit juice means the juice to be diluted not less than 5 times before serving.
	KONJAK flour (Devil's tongue root flour)	Less than 0.90 g/kg		
	Shelled prawn	Less than 0.10 g/kg		
	Other foods	Less than 0.030 g/kg (provided, however, that in case level of sulfiting agent in food (except KONJAK) listed in the third column of the Table of General Standards of Use of Food Additives is not less than 0.030 g/kg (as sulfur dioxide), less than that residual level.)		Excluding from other foods, cherries used for the manufacture of candied cherries; hop used for the manufacture of beer; and fruit juice, fruit squeezings containing not less than l % by volume of alcohol and concentrate of the same used for manufacture of wine.

Chewing gum bases

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Carbonate	Chewing gum	Not more than 10% (as calcium)		(Dietary supplement, raising agent, yeast nutrient)
Talc		Not more than 5.0%		
Calcium Monohydrogen Phosphate Tricalcium Phosphate		Not more than 1.0% in food (as calcium)	Restricted in case where its use is indispensable for manufacture or processing of food or for purpose of dietary supplement.	(Dietary supplement, emulsifier, raising agent, yeast nutrient)
Ester Gum Polybutene Polyisobutylene				
Polyvinyl Acetate			Shall not use other purpose except as coating of gum base, the rind of fruit or vegetable.	(Glazing agent)

Coagulants for TOFU, soybean curd

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Chloride		Not more than 1.0% in food (as calcium)	Restricted in case where its use is indispensable for manufacture or processing of food.	(Dietary supplement)
Calcium Sulfate				(Dietary supple-ment, raising agent, yeast nutrient)

Coating materials

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Hydroxypropyl Methylcellurose	Food for special dietary use (Limited to capsules and tablets)			
Morpholine Salts of Fatty Acids Polyvinyl Acetate Sodium Oleate	Rind of fruit or fruit vegetable		Shall not use other purpose except as coating material.	(Chewing gum base)

Color

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Annatto, Water-soluble Potassium Norbixin Sodium Norbixin			Not permitted to use in KOMBU (kelp), meat, raw fish and shellfish (including fresh whale meat), tea, NORI (laver), bean, vegetable, and WAKAME (seaweed, *Undaria pinnatifida*)	
ß-Carotene			Not permitted to use in KOMBU (sea tangle), meat, fresh fish and shellfish (including raw whale meat), tea, NORI (laver), bean, vegetable, and WAKAME (seaweed, *Undaria pinnatifida*)	(Dietary supplement)
Copper Chlorophyll	KOMBU, tangle	Not more than 0.15 g/kg (as copper in dry matter)		
	Fruit and vegetable (stored goods)	Not more than 0.10 g/kg (as copper)		
	Chewing gum	Not more than 0.050 g/kg (as copper)		
	Fish-paste product (excluding SURIMI)	Not more than 0.030 g/kg (as copper)		
	Pastry (excluding Confectionery bread)	Not more than 0.0064 g/kg (as copper)		
	Chocolate	Not more than 0.0010 g/kg (as copper)		
	Agar-agar gel in MITSUMAME (sweetened boiled bean mixture) packaged in can or plastic packagings	Not more than 0.00040 g/kg (as copper)		
Sodium Copper Chlorophyllin	KOMBU, tangle	Not more than 0.15 g/kg (as copper in dry matter)		
	Fruit and vegetable (stored goods)	Not more than 0.10 g/kg (as copper)		
	Syrup	Not more than 0.064 g/kg (as copper)		
	Chewing gum	Not more than 0.050 g/kg (as copper)		

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	Fish-paste product (excluding SURIMI))	Not more than 0.040 g/kg (as copper)		
	Candies	Not more than 0.020 g/kg (as copper)		
	Chocolate, Pastry (excluding confectionery bread)	Not more than 0.0064 g/kg (as copper)		
	Agar-agar gel in MITSUMAME (sweetened boiled bean mixture) packaged in can or plastic packagings	Not more than 0.00040 g/kg (as copper)		
Food Blue No. 1 (Brilliant Blue FCF) Food Blue No. 1 Aluminium Lake Food Blue No. 2 (Indigocarmine) Food Blue No. 2 Aluminium. Lake Food Green No. 3 (Fast Green FCF) Food Green No. 3 Aluminium Lake Food Red No. 102 (Cochineal Red) Food Red No. 104 (Phloxine) Food Red No. 105 (Rose Bengale) Food Red No. 106 (Acid Red) Food Red No. 2 (Amaranth) Food Red No. 2 Aluminium Lake Food Red No. 3 (Erythrosine) Food Red No. 3 Aluminium Lake Food Red No. 40 (Allura Red AC) Food Red No. 40 Aluminium Lake Food Yellow No. 4 (Tartrazine) Food Yellow No. 4 Aluminium Lake Food Yellow No. 5 (Sunset Yellow) Food Yellow No. 5	Not permitted to use in the following foods: beans, raw fish (including raw whale meat) and raw shellfish, fish pickles, KINAKO (roasted soybean flour), KOMBU (kelp) and WAKAME (seaweed), meat, meat pickles, marmalade, MISO (fermented soybean paste), noodle (including WONTON (Chinese flour dumpling with pork in them, served with soup), NORI (laver), soy sauce, sponge cake (including CASTELLA and other types), tea, vegetable, and whale meat pickles.		Restricted for the other purpose of coloring.	

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Aluminium Lake Preparations of Tar Colors Titanium Dioxide				
Sodium Iron Chlorophyllin			Not permitted to use in KOMBU (sea tangle), meat, fresh fish and shellfish (including raw whale meat), tea, NORI (laver), bean, vegetable, and WAKAME (seaweed, *Undaria pinnatifida*).	
Iron Sesquioxide	Banana KONJAK		Restricted for use at section of carpophore of banana.	
Colors other than chemically synthesized food additives (Nonchemically synthesized food additives)			Not permitted to use in KOMBU (sea tangle), meat, fresh fish and shellfish (including raw whale meat), tea, NORI (laver), bean, vegetable, and WAKAME (seaweed, *Undaria pinnatifida*). However, use of gold on NORI (laver) is permitted.	

Color fixatives

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Sodium Nitrite	Meat product Whale meat bacon	(residual level as $NO2^-$) Not more than 0.070 g/kg (do.)		
	Fish sausage and fish ham	Not more than 0.050 g/kg (do.)		
	Salmon roe	Not more than 0.0050 g/kg (do.)		
	IKURA (salmon roe)	Not more than 0.0050 g/kg (do.)		
	TARAKO (cod roe)	Not more than 0.0050 g/kg (do.)		TARAKO means cured roe of walleye pollack.
Potassium Nitrate Sodium Nitrate	Meat products Whale meat bacon	Not more than 0.0070 g/kg (do.)		(Fermentation aid)

Color retention agents

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Ferrous Gluconate	Table olive	Not more than 0.15 g/kg (as iron)		(Dietary supplement)
Nicotinamide Nicotinic Acid			Shall not use in meat and raw fish and shellfish (including whale meat).	(Dietary supplement)

Dietary supplements

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Biotin	Food for special ditary use			
Calcium Carbonate		Not more than 1.0% in food as calcium (excluding food for special use under the Health Promotion Act)	Restricted in case where its use is indispensable for manufacture or processing of food or is for purpose of nutrition.	(Chewing gum base, raising agent, yeast nutrient)
Calcium Chloride				(Coagulant for TOFU)
Calcium Citrate				(Emulsifier, flavor (taste), raising agent)
Calcium Dihydrogen Phosphate			Restricted in case where its use is indispensable for manufacture or processing of food or is for purpose of nutrition.	(Yeast nutrient, emulsifier, raising agent)
Calcium Dihydrogen Pyrophosphate				(Emulsifier, raising agent)
Calcium Gluconate Calcium Glycerophosphate			Restricted in case where its use is for purpose of nutrition.	
Calcium Hydroxide			Restricted in case where its use is indispensable for manufacture or processing of food or is for purpose of nutrition.	
Calcium Lactate				(Flavor (taste), raising agent)
Calcium Monohydrogen Phosphate			Restricted in case where its use is indispensable for manufacture or processing of food or is for purpose of nutrition.	(Chewing gum base, emulsifier, raising agent, yeast nutrient)
Calcium Pantothenate				

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Sulfate			Restricted in case where its use is indispensable for manufacture or processing of food or is for purpose of nutrition.	(Coagulant for TOFU, raising agent, yeast nutrient)
Copper Salts Cupric Gluconate Cupric Sulfate	Substitute for mother's milk	Not more than 0.60 mg/L as copper in prepared milk at specified concentration		Excluding the case under special approval from Minister of Health, Labour and Welfare for use in specially prepared dry milk.
L-Cysteine Monohydrochloride	Bread Natural juice			(Quality improver)
Ferrous Gluconate	Substitute for mother's milk Weaning food Dry milk for pregnant and lactating women			(Color retention agent)
Nicotinamide Nicotinic Acid			Shall not use in raw meat and raw fish and shellfish (including whale meat).	(Color retention agent)
all-rac-α-Tocopheryl Acetate R,R,R-α-Tocopheryl Acetate	Food with Nutrient Function Claims	*	*Restricted to less than 150 mg of α-tocopherol of estimated daily intake of food.	
Tricalcium Phosphate		Not more than 1.0% in food as calcium (excluding food for special use under the Health Promotion Act)	Restricted in case where its use is indispensable for manufacture or processing of food or is for purpose of nutrition.	(Chewing gum base, emulsifier, raising agent, yeast nutriment)
Zinc Salts Zinc Gluconate Zinc Sulfate	Substitute for mother's milk	Not more than 6.0 mg/L as zinc in prepared milk at specified concentration		Excluding the case under special approval from Minister of Health, Labour and Welfare for use in specially prepared dry milk.

Emulsifiers

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Citrate	Process cheese Cheese food Processed food derived from process cheese	Not more than 1.0% in food as calcium (except special nutrition food under the Health Promotion Act)		(Dietary supplement, flavor (taste), raising agent)
Calcium Dihydrogen Phosphate				(Dietary supplement, raising agent, yeast nutrient)
Calcium Dihydrogen Pyrophosphate				(Dietary supplement, raising agent)
Calcium Monohydrogen Phosphate				(Chewing gum base, dietary supplement, raising agent, yeast nutrient)
Calcium Stearoyl Lactylate	Mix powder for manufacture of Pastry	Not more than 10 g/kg	In this provision, confectionery is restricted to baked products prepared from wheat flour	Pastry is restricted to those made from rice.
	Butter cake, Sponge cake and MUSHIPAN (steamed bread)	Not more than 8.0 g/kg		
	Bread and confectionery treated with fats and oils	Not more than 5.5 g/kg		MUSHIPAN and MUSHIMANJU are restricted to those prepared from wheat flour.
	Confectionery (excluding butter cake and sponge cake)	Not more than 5.0 g/kg		
	MUSHIMANJU (steamed bean-jam bun)	Not more than 2.5 g/kg		
	Pastry	Not more than 6.0 g/kg		
	Butter cake Sponge cake MUSHIPAN (steamed bread)	Not more than 5.5 g/kg		
	Noodles (excluding macaronis)	Not more than 4.5 g/kg (in boiled noodles)		
	Baked confectionery (excluding butter cake and sponge cake) and confectionery treated with fats and oils Bread	Not more than 4.0 g/kg		
	Macaronis	Not more than 4.0 g/kg (in dry macaronis)	Moisture of dry macaroni is set to be 12%.	Macaronis include spaghetti, vermicelli, noodle and lasagna.
	MUSHIMANJU, steamed bean-jam bun	Not more than 2.0 g/kg (in dry matter)		

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Polysorbate 20	Food in not normal form (capsules, tablet)	25 g/kg (as total of Polysorbate 80)	When more than two kinds of Polysorbate are used, the limit is the sum of them. Except when permitted to use for special dietary foods	
	Cocoa and chocolate products Additives to shortening and instant noodles Sauces Chewing guns Milk fat replace	5.0 g/kg		
Polysorbate 60	Ice cream group Decoration on confectionary Sugar-added yoghurt Dressing Mayonaise Mixed powder Baked confectionary Wet cakes	3.0 g/kg		
Polysorbate 65	Candies Soup Flour paste Flavored ice	1.0 g/kg		
Polysorbate 80	Pickles of seaweed Chocolate drinks Pickled vegetables	0.50 g/kg		
	Unripened cheese	0.080 g/kg		
	Canned or bottled seaweed Canned or bottled vegetables	0.030 g/kg		
	Other foods	0.020 g/kg		
Tricalcium Phosphate	Process cheese Cheese food Processed food derived from process cheese	Not more than 1.0 % in food as calci-um (except food for special use under the Health Promotion Act)		(Chewing gum base, dietary supplement, raising agent, yeast nutrient)

Fermentation aids

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Potassium Nitrate	Cheese	Not more than 0.20 g/L in raw milk (as potassium or sodium salt)		(Color fixative)
Sodium Nitrate	Japanese SAKE (rice wine)	Not more than 0.10 g/L in mash (as potassium or sodium salt)		(Color fixative)

Flavorings

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Acetaldehyde Acetophenone Aliphatic Higher Alcohols* Aliphatic Higher Aldehydes (except substances ener-ally recognized as highly toxic)* Aliphatic Higher Hydrocarbons (except substances generally recog-nized as highly toxic)* Allyl Cyclohexylpropionate Allyl Hexanoate Allyl Isothiocyanate Amylalcohol α-Amylcinnamaldehyde Anisaldehyde Aromatic Alcohols* Aromatic Aldehydes (except substances gener-ally recognized as highly toxic)* Benzaldehyde Benzyl Acetate Benzyl Alcohol Benzyl Propionate d-Borneol Butanol Butyl Acetate Butyl Butyrate Butyraldehyde Butyric acid 1,8-Cineole Cinnamaldehyde Cinnamic Acid Cinnamyl Acetate Cinnamyl Alcohol Citral Citronellal Citronellol Citronelly Acetate Citronelly Formate Cyclohexyl Acetate Cyclohexyl Butyrate Decanal Decanol Esters* Ethers*			Flavors listed in this table shall not use for purpose other than flavoring unless pre	
Ethyl Acetate				(Processing aids)

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Ethyl Acetoacetate Ethyl Butyrate Ethyl Cinnamate Ethyl Decanoate 2-Ethyl-3,(5or6)-dimethylpyrazine Ethyl Heptanoate Ethyl Hexanoate Ethyl Isovalerate 2-Ethyl-3-methyl-pyrazine Ethyl Octanoate Ethyl Phenylacetate Ethyl Propionate Ethylvanillin Eugenol Fatty Acids* Frufural and its derivatives (except substances generally recog-nized as highly toxic)* Geraniol Geranyl Acetate Geranyl Formate Hexanoic Acid Hydroxycitronellal Hydroxycitronellal Dimethylacetal Indole and its derivatives* Ionone Isoamyl Acetate Isoamylalcohol Isoamyl Butyrate Isoamyl Formate Isoamyl Isovalerate Isoamyl Phenylacetate Isoamyl Propionate Isobutyl Phenylacetate Isobutylaldehyde lsoeugenol Isopropanol Isothiocyanates (except substances generally recog-nized as highly toxic)* Ketones* Lactones (except substances gener-ally recognized as highly toxic)* Linalool Linalyl Acetate				

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Maltol d l-Menthol l-Menthol l-Menthyl Acetate p-Methylacetophenone 2-Methylbutanol Methyl Anthranilate Methyl Cinnamate Methyl N-Methylanthranilate Methyl ß-Naphthyl Ketone 5-Methylquinoxaline Methyl Salicylate γ-Nonalactone Octanal l-Perillaldehyde Phenethyl Acetate Phenols (except substances gener-ally recognized as highly toxic)* Phenol Ethers (except substances generally recog-nized as highly toxic)* Piperonal Propanol				
Propionic Acid				(Preservative)
Terpene Hydrocarbons* Terpineol Terpinyl Acetate Thioethers (except substances gener-ally recognized as highly toxic)* Thiols (except substances gener-ally recognized as highly toxic)* δ-Undecalactone Vanillin				

*: Among Flavorings, 18 kinds of substances, i.e. Aliphatic Higher Alcohols, Aliphatic Higher Aldehydes, Aliphatic Higher Hydrocarbons, Aromatic Alcohols, Aromatic Aldehydes, Esters, Ethers, Fatty Acids, Furfral and its derivatives, Indole and its derivatives, Isothiocyanates, Ketones, Lactones, Phenols, Phenol Ethers, Terpene hydrocarbons, Thioethers and Thiols are designated not by each compound name but by class name. Examples of compounds belonging to each class are indicated below.
Figures in parentheses [ ] indicate CAS numbers.

For more information, refer to Association for the Safety of Imported Food, Japan (ASIF), 9 -8 Nihombashi Hisamatsu-cho, Chuo-ku, Tokyo 103-0005, Tel: 03 (5695) 0819, Fax: 03 (5695) 0969.

1. Aliphatic Higher Alcohols

Ambrinol [41199-19-3]
alpha-Bisabolol [515-69-5]
Borneol [507-70-0]
Butylcellosolve [111-76-2]
alpha-Campholenol [1901-38-8]
l-Carveol [2102-59-2]
Carveol [99-48-9]
beta-Caryophyllene Alcohol [472-97-9]
Cedrenol [28231-03-0]
Cedrol [77-53-2]
l-Citronellol [106-22-9]
Citronellol [106-22-9]
Cyclohexanol [108-93-0]
2-Cyclohexylethanol [4442-79-9]
2,4-Decadienol [18409-21-7]
3-Decanol [1565-81-7]
Decanol [112-30-1]
2-Decenol [22104-80-9]
9-Decenol [13019-22-2]
4-Decenol
Dihydrocarveol [619-01-2]
beta-Dihydroionol [3293-47-8]
1,2-Dihydrolinalool [2270-57-7]
Dihydromyrcenol [30385-25-2]
Dihydroperillyl Alcohol
2,5-Dihydroxy-2,5-dimethyl-1,4-dithiane [55704-78-4]
Diisobutyl Carbinol [108-82-7]
3,7-Dimethyl-1,5,7-octatrien-3-ol [20053-88-7]
2,6-Dimethyl-2-heptanol [13254-34-7]
3,6-Dimethyl-3-octanol [151-19-9]
2,4-Dimethyl-3-pentanol
2,4-Dimethyl-4-nonanol [74356-31-3]
2-Dodecanol [10203-28-8]
Dodecanol [112-53-8]
2-Dodecenol [22104-81-0]
Elemol [639-99-6]
2-Ethylbutanol [97-95-0]
2-Ethylfenchol [18368-91-7]
2-Ethylhexyl Alcohol [104-76-7]
Farnesol [4602-84-0]
Fenchyl Alcohol [1632-73-1]
Geraniol [106-24-1]
Geranyl Linalool [1113-21-9]
Heptadecanol [1454-85-9]
2-Heptanol [543-49-7]
3-Heptanol [589-82-2]
4-Heptanol [589-55-9]
Heptanol [111-70-6]
1-Hepten-3-ol [4938-52-7]
2-Heptenol [33467-76-4]
3-Heptenol [10606-47-0]
Hexadecanol [36653-82-4]
2,4-Hexadien-1-ol [111-28-4]
Hexadodecanol
2-Hexanol [626-93-7]
3-Hexanol [623-37-0]
Hexanol [111-27-3]
4-Hexen-1-ol [6126-50-7]
1-Hexen-3-ol [4798-44-1]
2-Hexenol [2305-21-7]
3-Hexenol [544-12-7]
cis-2-Hexenol [928-94-9]
cis-3-Hexenol [928-96-1]
cis-4-Hexenol [928-91-6]
trans-2-Hexenol [928-95-0]
trans-3-Hexenol [928-97-2]
trans-4-Hexenol [928-92-7]
Hinokitiol [499-44-5]
Hydroxycitronellal Diethyl Acetal [7779-94-4]
Hydroxycitronellal Dimethyl Acetal [141-92-4]
Hydroxycitronellol [107-74-4]
alpha-Ionol [25312-34-9]
beta-Ionol [22029-76-1]
Isoborneol [124-76-5]
Isodihydrocarveol [18675-35-9]
Isogeraniol
Isophytol [505-32-8]
Isopulegol [89-79-2]
Lavandulol [498-16-8]
Limonenediol [1946-00-5]
Linalool [78-70-6]
p-Menth-2-en-1-ol
2,8-p-Menthadien-1-ol [22771-44-4]
1,8-p-Menthadien-4-ol [3419-02-1]
Menthadienol [3269-90-7]
p-Menthan-2-ol [499-69-4]
p-Menthan-7-ol
p-Menthan-8-ol [498-81-7]
8-p-Menthen-7-ol [18479-64-6]
dl-Menthol [89-78-1, 1490-04-6]
Menthol [1490-04-6, 89-78-1]
3-(1-Menthoxy)-1,2-propanediol [87061-04-9]
3-Mercaptohexanol
Methoxycitronellal [3613-30-7]
3-Methyl-2-pentanol [565-60-6]
4-Methyl-2-pentanol [108-11-2]
6-Methyl-3-heptanol
5-Methyl-3-heptanol
2-Methyl-3-hexanol [617-29-8]
3-Methyl-3-pentanol [77-74-7]
6-Methyl-5-hepten-2-ol [1569-60-4]
2-Methyl-5-hepten-2-ol
alpha-Methyl-betahydroxypropyl alpha-Methylbeta-mercaptopropyl Sulfide [54957-02-7]
5-Methylhexanol [627-98-5]
2-Methylpentanol [105-30-6]
3-Methylpentanol [589-35-5]
4-Methylpentanol [626-89-1]
3-Methylthiohexan-1-ol [51755-66-9]
Myrcenol [543-39-5]
Myrtenol [515-00-4]
Neodihydrocarveol [18675-34-8]
d-Neomenthol [491-01-0]
Neomenthol [2216-52-6]
Nerol [106-25-2]
cis-Nerolidol [142-50-7]
trans-Nerolidol [40716-66-3]
Nerolidol [7212-44-4]
2,4-Nonadienol [62488-56-6]
3,6-Nonadienol [76649-25-7]
trans-2, cis-6-Nonadienol [28069-72-9]
Nonadienol [7786-44-9]
1-Nonanol [143-08-8]
2-Nonanol [628-99-9]
3-Nonanol [624-51-1]
1-Nonen-3-ol [21964-44-3]
3-Nonenol [10340-23-5]
6-Nonenol [35854-86-5]
cis-2-Nonenol [41453-56-9]
trans-2-Nonenol [31502-14-4]
Ocimenol [5986-38-9]
Octa-1,5-dien-3-ol [83861-74-9]
Octadecanol [112-92-5]
3,5-Octadienol [70664-96-9]
1,3-Octanediol [23433-05-8]
2-Octanol [123-96-6]
3-Octanol [589-98-0]
Octanol [111-87-5]
1-Octen-3-ol [3391-86-4]
2-Octen-4-ol [4798-61-2]
2-Octenol [22104-78-5]
3-Octenol [20125-84-2]
cis-5-Octenol [64275-73-6]
Oleinol
Pentadecanol [629-76-5]
Perilla Alcohol [536-59-4]
Phytol [150-86-7]
Pinocarveol [5947-36-4]
Piperitol [491-04-3]
Rhodinol [6812-78-8]
alpha-Santalol [115-71-9]
Sclareol [515-03-7]
1-Terpinenol [586-82-3]
4-Terpinenol [562-74-3]
alpha-Terpineol [98-55-5]
beta-Terpineol [138-87-4]
Terpineol [8000-41-7]
p-tert-Butylcyclohexanol [98-52-2]
1-Tetradecanol [112-72-1]
Tetrahydrocuminol [5502-72-7]
Tetrahydrogeraniol [106-21-8]
Tetrahydrolinalool [78-69-3]
Tetrahydromyrcenol
Thujyl Alcohol [21653-20-3]
4-Thuyanol [546-79-2]
Tridecanol [112-70-9]
2-Tridecenol [68480-25-1]
3,3,5-Trimethylcyclohexanol [116-02-9]
3,5,5-Trimethylhexanol

[3452-97-9]
2,4-Undecadienol [59376-58-8]
2-Undecanol [1653-30-1]
Undecanol [112-42-5]
cis,cis,1,5,8-Undecatrien-3-ol [35389-48-1]
10-Undecenol [112-43-6]
2-Undecenol [37617-03-1]
Verbenol [473-67-6]
Vetiverol [68129-81-7]
Viridiflorol [552-02-3]

2. Aliphatic Higher Aldehydes

Campholenic Aldehyde [4501-58-0]
Citral [5392-40-5]
Citronellal [106-23-0]
Citronellyl Oxyacetaldehyde [7492-67-3]
Cyclocitral [52844-21-0]
2,4-Decadienal [2363-88-4]
trans-2,trans-4-Decadienal [25152-84-5]
Decanal [112-31-2]
2-Decenal [3913-71-1]
4-Decenal [30390-50-2]
9-Decenal [39770-05-3]
cis-4-Decenal [21662-09-9]
trans-2-Decenal [3913-81-3]
trans-4-Decenal [65405-70-1]
cis-7-Decenal [21661-97-2]
2,6-Dimethyloctanal [7779-07-9]
Dimethyltetrahydrobebzaldehyde [68737-61-1]
2,4-Dodecadienal [21662-16-8]
2,6-Dodecadienal [21662-13-5]
Dodecanal [112-54-9]
2-Dodecenal [4826-62-4]
trans-2-Dodecenal [20407-84-5]
2-Ethyl-2-hexenal [645-62-5]
2-Ethylbutanal [97-96-1]
Ethylcitral [41448-29-7]
2-Ethylcrontone Aldehyde
2-Ethylhexanal [123-05-7]
5-(2-Furyl)-2,4-pentadienal [5916-94-9]
Geranial [141-27-5]
Geranoxyacetaldehyde [65405-73-4]
trans, trans-2,4-Heptadienal [4313-03-5]
2,4-Heptadienal [5910-85-0]
Heptanal [111-71-7]
2-Heptenal [2463-63-0]
cis-4-Heptenal [6728-31-0]
trans-2-Heptenal [18829-55-5]
trans-4-Heptenal [929-22-6]
cis-4-Heptenol [6191-71-5]
Hexadecanal [629-80-1]
trans,trans-2,4-Hexadienal [142-83-6]
Hexanal [66-25-1]
2-Hexenal [505-57-7]
3-Hexenal [4440-65-7]
cis-3-Hexenal [6789-80-6]
trans-2-Hexenal [6728-26-3]
trans-3-Hexenal [69112-21-6]
2-Hexylidenehexanal [13019-16-4]
beta-Homocyclocitral [472-66-2]
4-Hydroxy-4-methylpentyl-3-cyclo hexenecarboxaldehyde [31906-04-4]
Hydroxycitronellal [107-75-5]
Isocyclocitral [1335-66-6]
Isohexenylcyclohexene Carboxaldehyde [37677-14-8]
2-Isopropyl-5-methyl-2-hexenal [35158-25-9]
Melonal [106-72-9]
p-Mentha-1,3-dien-7-al
alpha-Methyl ional [58102-02-6]
4-Methyl-2-methylthiomethyl-2-he xenal
5-Methyl-2-methylthiomethyl-2-he xenal
4-Methyl-2-methylthiomethyl-2-pe ntenal [40878-73-7]
2-Methyl-2-pentenal [623-36-9]
4-Methyl-2-pentenal [5362-56-1]
4-Methyl-2-phenyl-2-hexenal
2-Methyl-3-(4-tertbutylphenyl) propanal [80-54-6]
2-Methyldecanal [19009-56-4]
2-Methyloctanal [7786-29-0]
2-Methylpentanal [123-15-9]
2-(Methylthiomethyl)-2-butenal [40878-72-6]
12-Methyltridecanal [75853-49-5]
2-Methylundecanal [110-41-8]
Myrtenal [564-94-3]
Neral [106-26-3]
2,4-Nonadienal [6750-03-4]
2,6-Nonadienal [557-48-2]
trans-2, trans-4-Nonadienal [5910-87-2]
trans-2,trans-6-nonadienal [17587-33-6]
3,6-Nonadienal [30551-17-8]
Nonanal [124-19-6]
2-Nonenal [2463-53-8]
cis-6-Nonenal [2277-19-2]
trans-2-Nonenal [18829-56-6]
cis-3-Nonenal [31823-43-5]
2,4-Octadienal [5577-44-6]
2,6-Octadienal [56767-18-1
trans-2,trans-4-Octadienal [30361-28-5]
Octanal [124-13-0]
2-Octenal [2363-89-5]
trans-2-Octenal [2548-87-0]
cis-3-Octenal [78693-34-2]
Octyloxyacetaldehyde [53488-14-5]
Perillaldehyde [2111-75-3]
1-p-Menthen-9-al [29548-14-9]
Safranal [116-26-7]
alpha-Sinensal [17909-77-2]
beta-Sinensal [60066-88-8]
Tetradecanal [124-25-4]
Tridecanal [10486-19-8]
2-Tridecenal [7774-82-5]
trans-2-Tridecenal [7069-41-2]
2,6,10-Trimethyl-5,9-undecadienal
3,5,5-Trimethylhexanal [5435-64-3]
2,4-Undecadienal [13162-46-4]
trans-2, trans-4-Undecadienal [30361-29-6]
Undecanal [112-44-7]
10-Undecenal [112-45-8]
2-Undecenal [2463-77-6]
trans-2-Undecenal [53448-07-0]

3. Aliphatic Higher Hydrocarbons

Dodecane [112-40-3]
1-Dodecene [112-41-4]
Eicosane [112-95-8]
4-Methyl-cis-2-pentene [691-38-3]
1-Nonene
Pentadecane [629-62-9]
Tetradecane [629-59-4]
2,6,10,14-Tetramethylpentadecane
Undecane
1,3,5,7-Undecatetraene
[116963-97-4]
1,3,5-Undecatriene [16356-11-9]
2-Undecene

4. Aromatic Alcohols

alpha-Amylcinnamyl Alchol [101-85-9]
Benzyl Alcohol [100-51-6]
Cinnamyl Alcohol [104-54-1]
Cuminyl Alcohol [536-60-7]
p-Cymen-8-ol [1197-01-9]
Dehydrocumin Alcohol [4489-11-6]
Dihydrocinnamyl Alcohol
[122-97-4]
2,4-Dimethyl Benzyl Alcohol [16308-92-2]
Dimethyl Benzyl Carbinol

[100-86-7]
p,alpha-Dimethylbenzyl Alcohol [536-50-5]
2-Ethoxybenzyl Alcohol
4-Ethoxybenzyl Alcohol
Furfuryl Alcohol [98-00-0]
Hydratropyl Alcohol [1123-85-9]
4-Hydroxybenzyl Alcohol [623-05-2]
p-Hydroxyphenethyl Alcohol [501-94-0]
alpha-Isobutylphenethyl Alcohol [7779-78-4]
2-Methoxybenzyl Alcohol
3-(4-Methoxyphenyl)propan-1-ol [5406-18-8]
Methyl p-Hydroxy Phenyl Carbinol [2380-91-8]
4-Methyl-2-phenylpentanol
2-Methyl-3-(3,4-methylenedioxyphenyl)propanal [1205-17-0]
2-Methyl-4-phenyl-2-butanol [103-05-9]
2-Methyl-5-hydroxymethylpyrazine
4-Methylbenzyl Alcohol [589-18-4]
5-Methylfurfuryl Alcohol [3857-25-8]
Phenethyl Alcohol [60-12-8]
Phenethyl Methyl Ethyl Carbinol [10415-87-9]
2-Phenoxyethanol [122-99-6]
Phenyl Ethyl Carbinol [93-54-9]
2-Phenyl-2-propanol [617-94-7]
4-Phenylbutan-2-ol [2344-70-9]
Piperonyl Alcohol [495-76-1]
Styrallel Alcohol [98-85-1]
Sulfurol [137-00-8]
Thenyl Alcohol [636-72-6]
Vanillyl Alcohol [498-00-0]
Vanillyl Alcohol Methyl Ether

5. Aromatic Aldehydes

alpha-Amylcinnamaldehyde [122-40-7]
o-Anisaldehyde [135-02-4]
Anisaldehyde [123-11-5]
Anisyl Alcohol [105-13-5]
Benzaldehyde [100-52-7]
4-Butoxy Benzaldehyde [5736-88-9]
alpha-Butylcinnamaldehyde [7492-44-6]
Cinnamaldehyde [104-55-2]
Cuminaldehyde [122-03-2]
Cyclamen Aldehyde [103-95-7]
Dihydrocinnamaldehyde [104-53-0]
3,4-Dihydroxybenzaldehyde [139-85-5]
2,4-Dimethylbenzaldehyde [15764-16-6]
2-Ethoxy Benzaldehyde [71672-25-8]
p-Ethoxybenzaldehyde [10031-82-0]
Ethyl Vanillin [121-32-4]
1-Ethyl-2-formylpyrrole [1193-59-5]
4-Ethylbenzaldehyde [4748-78-1]
Furyl Acrolein [623-30-3]
alpha-Hexylcinnamaldehyde [101-86-0]
Hydratropaldehyde [93-53-8]
2-Hydroxy-4-methylbenzaldehyde [698-27-1]
4-Hydroxybenzaldehyde [123-08-0]
2-Isopropyl-3-(2-furyl)-2-propenal
p-Isopropylhydrotropaldehyde [34291-99-1]
p-Methoxy-alphamethylcinnamaldehyde [65405-67-6]
3-Methoxybenzaldehyde [591-31-1]
2-Methoxycinnamaldehyde [1504-74-1]
p-Methoxycinnamaldehyde [1963-36-6]
p-Methoxyphenylacetaldehyde [5703-26-4]
3-(5-Methyl-2-furyl) Butanal [31704-80-0]
5-Methyl-2-phenyl-2-hexenal [21834-92-4]
4-Methyl-2-phenyl-2-pentenal [26643-91-4]
5-Methyl-2-thiophenecarbaldehyde [13679-70-4]
2-Methyl-3-p-tolylpropanal
[41496-43-9]
alpha-Methylcinnamaldehyde [101-39-3]
p-Methylhydratropaldehyde [99-72-9]
4-Methylphenylacetaldehyde [104-09-6]
m-Tolualdehyde [620-23-5]
N-Methyl-2-pyrrolecarboxaldehyde [1192-58-1]
N-Phenethyl-2-formylpyrrole [49795-42-8]
2-Phenyl-2-butenal [4411-89-6]
2-Phenyl-4-pentenal [24401-36-3]
3-Phenyl-4-pentenal [939-21-9]
Phenylacetaldehyde [122-78-1]
Piperonal [120-57-0]
2-Pyrrolecarbaldehyde [1003-29-8]
Salicylaldehyde [90-02-8]
3-Thiophenaldehyde [498-62-4]
o-Tolualdehyde [529-20-4]
p-Tolualdehyde [104-87-0]
Tolualdehyde [1334-78-7]
Vanillin [121-33-5]
Vanillin Ethyl Ether [120-25-2]
Vanillin Methyl Ether [120-14-9]
Vanillyl Ethyl Ether [13184-86-6]

6. Esters

Acetoin Acetate [4906-24-5]
2-Acetoxy-1-methylpropyl butyrate
Acetyl Vanillin [881-68-5]
Allyl 10-Undecenoate [7493-76-7]
Allyl 2-Ethylbutyrate [7493-69-8]
Allyl 2-Furoate [4208-49-5]
Allyl 2-Methylbutoxyacetate
Allyl 2-Methylbutyrate
Allyl Acetate [591-87-7]
Allyl Acetoacetate
Allyl Anthranilate [7493-63-2]
Allyl Butyrate [2051-78-7]
Allyl Cinnamate [1866-31-5]
Allyl Crotonate [20474-93-5]
Allyl Cyclohexaneacetate [4728-82-9]
Allyl Cyclohexanepropionate [2705-87-5]
Allyl Cyclohexyloxypropionate
Allyl Decanoate [57856-81-2]
Allyl Formate [1838-59-1]
Allyl Heptanoate [142-19-8]
Allyl Hexanoate [123-68-2]
Allyl Isoamyloxyacetate [67634-00-8]
Allyl Isobutyrate
Allyl Isohexanoate
Allyl Isovalerate [2835-39-4]
Allyl Levulinate [1070-35-5]
Allyl Nonanoate [7493-72-3]
Allyl Octanoate [4230-97-1]
Allyl Phenoxyacetate [7493-74-5]
Allyl Phenylacetate [1797-74-6]
Allyl Pivalate
Allyl Propionate [2408-20-0]
Allyl Pyruvate
Allyl Sorbate [7493-75-6]
Allyl Thiopropionate [41820-22-8]
Allyl Tiglate [7493-71-2]
Allyl Valerate
Amyl 2-Furoate [1334-82-3]
Amyl 2-Methylbutyrate [68039-26-9]
Amyl Acetate [628-63-7]
Amyl Angelate [7785-63-9]
Amyl Anthranilate
Amyl Benzoate [2049-96-9]
Amyl Butyrate [540-18-1]
Amyl Cinnamate [3487-99-8]
Amyl Crotonate
Amyl Decanoate [5933-87-9]

Amyl Formate [638-49-3]
Amyl Heptanoate [7493-82-5]
Amyl Hexanoate [540-07-8]
Amyl Isobutyrate [2445-72-9]
Amyl Isohexanoate
Amyl Isovalerare [25415-62-7]
Amyl Lactate [6382-06-5]
Amyl Laurate [5350-03-8]
Amyl Levulinate
Amyl Nonanoate
Amyl Octanoate [638-25-5]
Amyl Phenylacetate [5137-52-0]
Amyl Propionate [624-54-4]
Amyl Salicylate [2050-08-0]
Amyl Tigrate
Amyl Valerate [2173-56-0]
alpha-Amylcinnamyl Acetate [7493-78-9]
alpha-Amylcinnamyl Isovalerate [7493-80-3]
Anisyl Acetate [104-21-2]
Anisyl Butyrate [6963-56-0]
Anisyl Formate [122-91-8]
Anisyl Hexanoate [6624-60-8]
Anisyl Isobutyrate
Anisyl Isovalerate
Anisyl Phenylacetate [102-17-0]
Anisyl Propionate [7549-33-9]
Anisyl Valerate
Benzyl 2-Methylbutyrate [56423-40-6]
Benzyl Acetate [140-11-4]
Benzyl Acetoacetate [5396-89-4]
Benzyl Benzoate [120-51-4]
Benzyl Butyrate [103-37-7]
Benzyl Cinnamate [103-41-3]
Benzyl Crotonate [65416-24-2]
Benzyl Decanoate [42175-41-7]
Benzyl Formate [104-57-4]
Benzyl Hexanoate [6938-45-0]
Benzyl Isobutyrate [103-28-6]
Benzyl Isovalerate [103-38-8]
Benzyl Lactate [2051-96-9]
Benzyl Laurate [140-25-0]
Benzyl Levulinate [6939-75-9]
Benzyl Nonanoate [6471-66-5]
Benzyl Octanoate [10276-85-4]
Benzyl Phenylacetate [102-16-9]
Benzyl Propionate [122-63-4]
Benzyl Salicylate [118-58-1]
Benzyl Tiglate [37526-88-8]
Benzyl Valerate [10361-39-4]
Bornyl Acetate [76-49-3]
Bornyl Butyrate [13109-70-1]
Bornyl Formate [7492-41-3]
Bornyl Isovalerate [76-50-6]
Bornyl Propionate
Bornyl Valerate [7549-41-9]
2,3-Butanediol Diacetate [1114-92-7]
Butyl 2-Butenoate [591-63-9]
Butyl 2-Decenoate [7492-45-7]
Butyl 2-Hexenoate [13416-74-5]
Butyl 2-Methylbutyrate [15706-73-7]
Butyl 3-Hexenoate
2-Butyl 3-Methylbutanthioate [2432-91-9]
Butyl 3-Methylthiopropionate
sec-Butyl Acetate [105-46-4]
Butyl Acetate [123-86-4]
Butyl Acetoacetate [591-60-6]
Butyl Angelate [7785-64-0]
Butyl Anthranilate [7756-96-9]
Butyl Benzoate [136-60-7]
Butyl Butyrate [109-21-7]
Butyl Butyrolactate [7492-70-8]
Butyl Butyrylacetate
Butyl Cinnamate [538-65-8]
Butyl Crotonate [7299-91-4]
Butyl Decanoate [30673-36-0]
Butyl Formate [592-84-7]
Butyl Heptanoate [5454-28-4]
Butyl Hexanoate [626-82-4]
Butyl Isobutyrate [97-87-0]
Butyl Isovalerate [109-19-3]
Butyl Lactate [138-22-7]
Butyl Laurate [106-18-3]
Butyl Levulinate [2052-15-5]
Butyl Methacrylate
Butyl Methylphenylglycidate
Butyl Myristate [110-36-1]
Butyl Nonanoate [50623-57-9]
Butyl Octanoate [589-75-3]
Butyl Oleate [142-77-8]
Butyl Palmitate [111-06-8]
Butyl Phenylacetate [122-43-0]
Butyl p-Hydroxybenzoate [94-26-8]
Butyl Pivalate
Butyl Propionate [590-01-2]
Butyl Salicylate [2052-14-4]
Butyl Sorbate [7367-78-4]
Butyl Stearate [123-95-5]
Butyl Tiglate [7785-66-2]
Butyl Undecanoate
Butyl Undecylenate [109-42-2]
Butyl Valerate [591-68-4]
Butylcellosolve Acetate [112-07-2]
Carvyl 2-Methylbutyrate
cis-Carvyl Acetate [1205-42-1]
Carvyl Acetate [97-42-7]
Carvyl Butyrate [93919-04-1]
Carvyl Formate [29239-07-4]
Carvyl Hexanoate
Carvyl Isobutyrate
Carvyl Isovalerate
Carvyl Propionate [97-45-0]
Carvyl Valerate
Caryophyllene Acetate [32214-91-8]
Cedryl Acetate [77-54-3]
Cetyl Acetate [629-70-9]
Cinnamyl Acetate [103-54-8]
Cinnamyl Anthranilate [87-29-6]
Cinnamyl Benzoate [5320-75-2]
Cinnamyl Butyrate [103-61-7]
Cinnamyl Cinnamate [122-69-0]
Cinnamyl Formate [104-65-4]
Cinnamyl Hexanoate
Cinnamyl Isobutyrate [103-59-3]
Cinnamyl Isovalerate [140-27-2]
Cinnamyl Phenylacetate [7492-65-1]
Cinnamyl Propionate [103-56-0]
Cinnamyl Tiglate [61792-12-9]
Cinnamyl Valerate [10482-65-2]
Citrionellyl Propionate [141-14-0]
Citronellyl Acetate [150-84-5]
Citronellyl Butyrate [141-16-2]
Citronellyl Decanoate
Citronellyl Formate [105-85-1]
Citronellyl Hexanoate [10580-25-3]
Citronellyl Isobutyrate [97-89-2]
Citronellyl Isovalerate [68922-10-1]
Citronellyl Octanoate [72934-05-5]
Citronellyl Phenylacetate [139-70-8]
Citronellyl Tiglate [24717-85-9]
Citronellyl Valerate [7540-53-6]
p-Cresyl Butyrate [14617-92-6]
p-Cresyl Hexanoate
p-Cresyl Isobutyrate [103-93-5]
p-Cresyl Phenylacetate [101-94-0]
p-Cresyl Valerate [10415-86-8]
Cuminyl Acetate [59230-57-8]
Cyclodecyl Acetate [32210-23-4]
Cyclodecyl Propionate
Cyclododecyl Formate
Cyclohexyl Acetate [622-45-7]
Cyclohexyl Acetoacetate
Cyclohexyl Anthranilate [7779-16-0]
Cyclohexyl Benzoate
Cyclohexyl Butyrate [1551-44-6]
Cyclohexyl Cinnamate [7779-17-1]
Cyclohexyl Formate [4351-54-6]
Cyclohexyl Hexanoate [6243-10-3]
Cyclohexyl Isobutyrate [1129-47-1]
Cyclohexyl Isovalerate [7774-44-9]
Cyclohexyl Phenylacetate [42288-75-5]
Cyclohexyl Propionate [6222-35-1]
Cyclohexyl Salicylate [25485-88-5]
Cyclohexyl Valerate [1551-43-5]
2-Cyclohexylethyl Acetate [21722-83-8]
Cyclohexylethyl Benzoate
Cyclohexylethyl Butyrate
Cyclohexylethyl Formate
Cyclohexylethyl Isobutyrate
Cyclohexylethyl Isovalerate
Cyclohexylethyl Propionate
Cyclohexylethyl Valerate
Cyclotene Butyrate [68227-51-0]
Cyclotene Isobutyrate [68084-07-]

Cyclotene Propionate [87-55-8]
9-Decenyl Acetate [50816-18-7]
2-Decenyl Acetate [19487-61-7]
Decyl Acetate [112-17-4]
Decyl Butyrate [5454-09-1]
Decyl Formate [5451-52-5]
Decyl Hexanoate
Decyl Isobutyrate
Decyl Isovalerate [72928-48-4]
Decyl Nonanoate
Decyl Octanoate [2306-89-0]
Decyl Propionate [5454-19-3]
Dibutyl Malate [1587-18-4]
Dibutyl Sebacate [109-43-3]
Dibutyl Succinate [141-03-7]
Diethyl Adipate [141-28-6]
Diethyl Carbonate [105-58-8]
Diethyl Dodecanedioate [10471-28-0]
Diethyl Fumarate [623-91-6]
Diethyl Malate [7554-12-3]
Diethyl Maleate [141-05-9]
Diethyl Malonate [105-53-3]
Diethyl Oxalate [95-92-1]
Diethyl Sebacate [110-40-7]
Diethyl Succinate [123-25-1]
Diethyl Tartrate [87-91-2]
Dihydrocarvyl Acetate [20777-49-5]
Dihydrocarvyl Butyrate
Dihydrocarvyl Formate [93892-04-7]
Dihydrocarvyl Hexanoate
Dihydrocarvyl Isobutyrate
Dihydrocarvyl Isovalerate [93892-05-8]
Dihydrocarvyl Propionate
Dihydrocarvyl Valerate
Dihydrolinalyl Acetate
Dihydrolinalyl Butyrate
Diisoamyl Succinate [818-04-2]
Diisobutyl Adipate [141-04-8]
Diisopentyl Thiomalate [68084-03-7]
Dimethyl Anthranilate [85-91-6]
Dimethyl Benzyl Carbinyl Butyrate [10094-34-5]
Dimethyl Benzyl Carbinyl Crotonate
Dimethyl Benzyl Carbinyl Formate [10058-43-2]
Dimethyl Benzyl Carbinyl Isobutyrate [59354-71-1]
Dimethyl Benzyl Carbinyl Propionate [67785-77-7]
Dimethyl Malonate [108-59-8]
Dimethyl Phenethyl Carbinyl Acetate [103-07-1]
Dimethyl Phenethyl Carbinyl Isobutyrate [10031-71-7]
Dimethyl Phenyl Carbinyl Isobutyrate [7774-60-9]
Dimethyl Sebacate [106-79-6]
Dimethyl Succinate [106-65-0]
2,6-Dimethyl-4-heptenyl Acetate
2,6-Dimethyl-4-heptyl Acetate [10250-45-0]
1,1-Dimethylallyl Acetate [24509-88-4]
1,1-Dimethylbenzyl Acetate
2,4-Dimethylbenzyl Acetate [62346-96-7]
Dimethylbenzyl Carbinyl Acetate [151-05-3]
1,1-Dimethylbenzyl Formate
3,7-Dimethyloctyl Butyrate [67874-80-0]
Dipropyl Adipate [106-19-4]
Dipropyl Malonate [1117-19-7]
Dipropyl Succinate
2-Dodecenyl Acetate [38363-23-4]
Dodecyl Butyrate [3724-61-6]
Dodecyl Isobutyrate [6624-71-1]
Dodecyl Isovalerate
Dodecyl Lactate [6283-92-7]
Dodecyl Propionate [6221-93-8]
Ethyl 10-Undecenoate [692-86-4]
Ethyl 2-(Methyldithio)propionate [23747-43-5]
Ethyl 2-(Methylthio)acetate [4455-13-4]
Ethyl 2,4-Decadienoate
Ethyl 2-Acetylcinnamate [620-80-4]
Ethyl 2-Acetyldecanoate [24317-95-1]
Ethyl 2-Acetyldodecanoate [40778-32-3]
Ethyl 2-Acetylhexanoate [152548-73-7]
Ethyl 2-Acetyloctanoate [29214-60-6]
Ethyl 2-Acetylpropionate [609-14-3]
Ethyl 2-Benzylacetoacetate [620-79-1]
Ethyl 2-Ethoxybenzoate
Ethyl 2-Ethyl-3-methyl-3-phenylglycidate [056630-76-3]
Ethyl 2-Ethyl-3-phenylglycidate
Ethyl 2-Ethyl-3-phenylpropionate [2983-36-0]
Ethyl 2-Ethylbutyrate [2983-38-2]
Ethyl 2-Ethylhexanoate [2983-37-1]
Ethyl 2-Furfurylpropionate
Ethyl 2-Furoate [614-99-3]
Ethyl 2-Hexanoylhexanoate
Ethyl 2-Hexenoate [1552-67-6]
Ethyl 2-Hydroxy-3-phenylpropionate
Ethyl 2-Hydroxyisocaproate
Ethyl 2-Mercaptoacetate [623-51-8]
Ethyl 2-Mercaptopropionate [19788-49-9]
Ethyl 2-Methyl-3(4)-pentenoate
Ethyl 2-Methyl-3,4-pentadienoate [60523-21-9]
Ethyl 2-Methyl-3-pentenoate [1617-23-8]
Ethyl 2-Methyl-4-pentenoate [53399-81-8]
Ethyl 2-Methylbutyrate [7452-79-1]
Ethyl 2-Methylpentanoate [39255-32-8]
Ethyl 2-Methylthiopropionate
Ethyl 2-Nonenoate [17462-01-3]
Ethyl 2-Octenoate [7367-82-0]
Ethyl 2-Oxo-3-phenylbutyrate
Ethyl 2-Phenylfuran-3-carboxylate [50626-02-3]
Ethyl 3-(Methylthio)propionate [13327-56-5]
Ethyl 3,5,5-Trimethylhexanoate [67707-75-9]
Ethyl 3-Acetoxy-2-methylbutyrate [139564-43-5]
Ethyl 3-Acetoxybutyrate
Ethyl 3-Acetoxyhexanoate [21188-61-4]
Ethyl 3-Acetoxyoctanoate [8554-66-1]
Ethyl 3-Furfurylthiopropionate [94278-27-0]
Ethyl 3-Hexenoate [2396-83-0]
Ethyl 3-Hydroxybutyrate [5405-41-4]
Ethyl 3-Hydroxyhexanoate [2305-25-1]
Ethyl 3-Hydroxyoctanoate [7367-90-0]
Ethyl 3-Mercaptopropionate [5466-06-8]
Ethyl 3-Methylpentanoate [5870-68-8]
Ethyl 3-Nonenoate
Ethyl 3-Octenoate [1117-65-3]
Ethyl 3-Oxohexanoate [3249-68-1]
Ethyl 3-Oxooctanoate
Ethyl 3-Phenylpropionate [2021-28-5]
Ethyl 4-Hydroxybenzoate [120-47-8]
Ethyl 4-Octenoate [34495-71-1]
Ethyl 4-Tolyloxybenzoate
Ethyl 5-Acetoxydecanoate
Ethyl 5-Acetoxyoctanoate [35234-10-1]
Ethyl 5-Hexenoate [54653-25-7]
Ethyl 5-Hydroxydecanoate [75587-06-3]
Ethyl 5-Hydroxynonanoate
Ethyl 5-Hydroxyoctanoate

Ethyl 5-Oxodecanoate
Ethyl 5-Oxooctanoate
Ethyl 9-Decenoate [67233-91-4]
Ethyl 9-Hexadecenoate [54546-22-4]
Ethyl Acetate [141-78-6]
Ethyl Acetoacetate [141-97-9]
Ethyl Acetoacetate Ethylene Glycol Acetal
Ethyl Acetoacetate Propylene Glycol Acetal [6290-17-1]
Ethyl Acetyllactate [2985-28-6]
Ethyl Acrylate [140-88-5]
Ethyl alpha-Ethyl-betahydroxyphenylpropionate
Ethyl alpha-Methylcyclohexylspiroglycidate
Ethyl Anisate [94-30-4]
Ethyl Anthranilate [87-25-2]
Ethyl Benzoate [93-89-0]
Ethyl Benzoylacetate [94-02-0]
Ethyl beta-Methylthioacrylate [136115-65-6]
Ethyl beta-Phenylglycidate [121-39-1]
Ethyl Butyrate [105-54-4]
Ethyl Butyryllactate [71662-27-6]
Ethyl Cinnamate [103-36-6]
Ethyl cis-4-Decenoate [7367-84-2]
Ethyl Crotonate [623-70-1]
Ethyl Cyclohexanepropionate [10094-36-7]
Ethyl Decanoate [110-38-3]
Ethyl Formate [109-94-4]
Ethyl Furylpropionate [10031-90-0]
Ethyl Geranate [13058-12-3]
Ethyl Heptadecanoate [14010-23-2]
Ethyl Heptanoate [106-30-9]
Ethyl Hexanoate [123-66-0]
Ethyl Isobutyrate [97-62-1]
Ethyl Isohexanoate [24515-67-2]
Ethyl Isovalerate [108-64-5]
Ethyl Lactate [97-64-3]
Ethyl Laurate [106-33-2]
Ethyl Levulinate [539-88-8]
Ethyl Levurinate Propyleneglycol Acetal [941-43-5]
Ethyl Linolate [544-35-4]
Ethyl Linolenate [1191-41-9]
Ethyl Methoxyacetate
Ethyl Methylphenylglycidate [77-83-8]
Ethyl Methyl-p-tolylglycidate [74367-97-8]
Ethyl Myristate [124-06-1]
Ethyl Nicotinate [614-18-6]
Ethyl Nonadecanoate [18281-04-0]
Ethyl Nonanoate [123-29-5]
Ethyl o-Anisate [7335-26-4]
Ethyl Octanoate [106-32-1]
Ethyl Oleate [111-62-6]
Ethyl Palmitate [628-97-7]
Ethyl Pentadecanoate [41114-00-5]
Ethyl Phenyl Carbinyl Butyrate [10031-86-4]
Ethyl Phenylacetate [101-97-3]
Ethyl Pivalate [3938-95-2]
Ethyl p-Methyl-betaphenylglycidate 52788-71-3]
Ethyl Propionate [105-37-3]
Ethyl Propionyllactete
Ethyl Pyruvate [617-35-6]
Ethyl Ricinoleate [55066-53-0]
Ethyl Safranate [35044-57-6]
Ethyl Salicylate [118-61-6]
Ethyl Sorbate [2396-84-1]
Ethyl Stearate [111-61-5]
Ethyl Thioacetate [625-60-5]
Ethyl Tiglate [5837-78-5]
Ethyl trans-2,cis-4-Decadienoate [025-30-7]
Ethyl trans-2-Decenoate [367-88-6]
Ethyl trans-2-Hexenoate [7829-72-7]
Ethyl trans-3-Decenoate [2561-67-]
Ethyl trans-3-Ethoxycrotonate [57592-45-7]
Ethyl trans-3-Octenoate [26553-47-9]
Ethyl trans-4-Decenoate [76649-16-6]
Ethyl trans-4-Octenoate [78989-37-4]
Ethyl Undecanoate [627-90-7]
Ethyl Valerate [539-82-2]
Ethyl Vanillate [617-05-0]
1-Ethyl-1-methyl-3-phenylpropyl Acetate [72007-81-9]
2-Ethylbutyl Acetate [10031-87-5]
Ethylene Brassylate [105-95-3]
Ethylene Glycol Diacetate [111-55-7]
Ethylene Glycol Monoethyl Ether Asetate [111-15-9]
2-Ethylhexyl 3-Mercaptopropionate
2-Ethylhexyl Acetate [103-09-3]
2-Ethylhexyl Benzoate
2-Ethylhexyl Formate [5444-75-7]
2-Ethylhexyl Hexanoate [6293-37-4]
2-Ethylhexyl Propionate [118-60-5]
Ethylmalotol Propionate
Ethylmaltol Butyrate [93805-72-2]
Ethylmaltol Isobutyrate
Ethylvanillin Isobutyrate [188417-26-7]
Eugenyl Acetate [93-28-7]
Eugenyl Benzoate [531-26-0]
Eugenyl Formate [10031-96-6]
Eugenyl Phenylacetate [10402-33-2]
Evernyl [4707-47-5]
Farnesyl Acetate [29548-30-9]
Fenchyl Acetate [13851-11-1]
Fenchyl Butyrate
Furaneol Acetate [4166-20-5]
Furfuryl 2-Methylpropionate [6270-55-9]
Furfuryl Acetate [623-17-6]
Furfuryl Butyrate [623-21-2]
Furfuryl Decanoate
Furfuryl Formate [13493-97-5]
Furfuryl Heptanoate [39481-28-2]
Furfuryl Hexanoate [39252-02-3]
Furfuryl Isovalerate [13678-60-9]
Furfuryl Octanoate [39252-03-4]
Furfuryl Propionate [623-19-8]
Furfuryl Thioacetate [13678-68-7]
Furfuryl Thiopropionate [59020-85-8]
Furfuryl Valerate [36701-01-6]
Furfurylthio Formate [59020-90-5]
Geranyl 2-Methylbutyrate [68705-63-5]
Geranyl Acetate [105-87-3]
Geranyl Acetoacetate [10032-00-5]
Geranyl Anthranilate [67874-69-5]
Geranyl Benzoate [94-48-4]
Geranyl Butyrate [106-29-6]
Geranyl Crotonate [56172-46-4]
Geranyl Formate [105-86-2]
Geranyl Hexanoate [10032-02-7]
Geranyl Isobutyrate [2345-26-8]
Geranyl Isovalerate [109-20-6]
Geranyl Phenylacetate [102-22-7]
Geranyl Propionate [105-90-8]
Geranyl Tiglate [7785-33-3]
Geranyl Valerate [10402-47-8]
2-Geranylcyclopentanone [68133-79-9]
Glyceryl 5-Hydroxydecanoate [26446-31-1]
Glyceryl 5-Hydroxydodecanoate [26446-32-2]
Guaiacyl Acetate [613-70-7]
Guaiacyl Phenylacetate [4112-89-4]
Guaiyl Acetate [134-28-1]
2-Heptenyl Acetate [16939-73-4]
Heptyl 2-Methylbutyrate [50862-12-9]
2-Heptyl Acetate [5921-82-4]
Heptyl Acetate [112-06-1]
Heptyl Butyrate [5870-93-9]
Heptyl Butyryllactate
Heptyl Cinnamate [10032-08-3]
Heptyl Decanoate
Heptyl Formate [112-23-2]
Heptyl Heptanoate [624-09-9]

Heptyl Hexanoate [6976-72-3]
Heptyl Isobutyrate [2349-13-5]
Heptyl Isocaproate
Heptyl Isovalerate [56423-43-9]
Heptyl Nonanoate
Heptyl Octanoate [4265-97-8]
Heptyl Propionate [2216-81-1]
2,4-Hexadienyl Acetate [1516-17-2]
3-Hexenyl 2-Ethylbutyrate [94071-12-2]
cis-3-Hexenyl 2-Furoate
3-Hexenyl 2-Hexenoate [53398-87-1]
cis-3-Hexenyl 2-Methylbutyrate [53398-85-9]
3-Hexenyl 2-Methylbutyrate [10094-41-4]
trans-2-Hexenyl 2-Methylbutyrate [94089-01-7]
cis-3-Hexenyl 2-Methylvalerate
3-Hexenyl 3-Hexenoate [61444-38-0]
3-Hexenyl 4-Methylpentanoate
2-Hexenyl Acetate [10094-40-3]
cis-2-Hexenyl Acetate [2497-18-9]
cis-3-Hexenyl Acetate [3681-71-8]
trans-2-Hexenyl Acetate [2497-18-9]
1-Hexenyl Acetate [32797-50-5]
trans-3-Hexenyl Acetate
5-Hexenyl Acetate [5048-26-0]
cis-3-Hexenyl Acetoacetate [84434-20-8]
cis-3-Hexenyl Anisate [121432-33-5]
cis-3-Hexenyl Anthranilate [65405-76-7]
cis-3-Hexenyl Benzoate [25152-85-6]
trans-2-Hexenyl Benzoate
cis-3-Hexenyl Butyrate [16491-36-4]
trans-2-Hexenyl Butyrate [53398-83-7]
cis-4-Hexenyl Butyrate
cis-3-Hexenyl Cinnamate [68133-75-5]
trans-2-Hexenyl Cinnnamate
cis-3-Hexenyl Crotonate [65405-80-3]
cis-3-Hexenyl Decanoate [85554-69-4]
trans-2-Hexenyl Decanoate
cis-3-Hexenyl Formate [33467-73-1]
trans-2-Hexenyl Formate [53398-78-0]
cis-3-Hexenyl Heptanoate [61444-39-1]
cis-3-Hexenyl Hexanoate [31501-11-8]
trans-3-Hexenyl Hexanoate [56922-82-8]
trans-2-Hexenyl Hexanoate [53398-86-0]
cis-2-Hexenyl Hexanoate [56922-79-3]
trans-2-Hexenyl Isobutyrate
cis-3-Hexenyl Isobutyrate [41519-23-7]
3-Hexenyl Isovalerate [10032-11-8]
cis-3-Hexenyl Isovalerate [35154-45-1]
trans-2-Hexenyl Isovalerate
cis-3-Hexenyl Lactate [61931-81-5]
trans-2-Hexenyl Lactate [629-56-1]
cis-3-Hexenyl Levulinate [85554-70-7]
cis-3-Hexenyl Methyl Carbonate [67633-96-9]
cis-3-Hexenyl Nonanoate [88191-46-2]
cis-3-Hexenyl Octanoate [61444-41-5]
trans-2-Hexenyl Octanoate [85554-72-9]
cis-3-Hexenyl Phenylacetate [42436-07-7]
trans-2-Hexenyl Phenylacetate [68133-78-8]
cis-3-Hexenyl Propionate [33467-74-2]
trans-2-Hexenyl Propionate [53398-80-4]
cis-3-Hexenyl Pyruvate [68133-76-6]
cis-3-Hexenyl Salicylate [65405-77-8]
trans-2-Hexenyl Salicylate
cis-3-Hexenyl Tiglate [67883-79-8]
cis-3-Hexenyl Valerate [35852-46-1]
trans-2-Hexenyl Valerate [56922-74-8]
Hexyl 2-Ethylbutyrate
Hexyl 2-Furoate [39251-86-0]
Hexyl 2-Methylbutyrate [10032-15-2]
Hexyl 2-Methylvalerate
2-Hexyl Acetate [5953-49-1]
Hexyl Acetate [142-92-7]
Hexyl Benzoate [6789-88-4]
Hexyl Butyrate [2639-63-6]
Hexyl Cinnamate [3488-00-4]
Hexyl Crotonate [19089-92-0]
Hexyl Decanoate [10448-26-7]
Hexyl Formate [629-33-4]
Hexyl Heptanoate [1119-06-8]
Hexyl Hexanoate [6378-65-0]
Hexyl Isobutyrate [2349-07-7]
Hexyl Isocaproate
Hexyl Isovalerate [10032-13-0]
Hexyl Lactate [20279-51-0]
Hexyl Levulinate
Hexyl Nonanoate [6561-39-3]
Hexyl Octanoate [1117-55-1]
Hexyl Phenylacetate [5421-17-0]
Hexyl Pivalate
Hexyl Propionate [2445-76-3]
Hexyl Salicylate [6259-76-3]
Hexyl Sorbate
Hexyl Tiglate [16930-96-4]
Hexyl trans-2-Hexenoate [33855-57-1]
Hexyl Valerate [1117-59-5]
Hydratropyl Butyrate [80866-83-7]
delta-Hydroxy Decanoate
2-Hydroxy-1-methylpropyl 2-Methylbutyrate
2-Hydroxy-1-methylpropyl Butyrate [59517-17-8]
4-Hydroxybenzyl Acetate
Hydroxycitronellyl Acetate
Isoamtyl Acetoacetate [2308-18-1]
Isoamyl 2-Butenoate [25415-77-4]
Isoamyl 2-Furoate [615-12-3]
Isoamyl 2-Methylbutyrate [27625-35-0]
Isoamyl 2-Methylvalerate
Isoamyl 3-Methylvalerate
Isoamyl Acetate [123-92-2]
Isoamyl Anthranilate
Isoamyl Benzoate [94-46-2]
Isoamyl Butyrate [106-27-4]
Isoamyl Cinnamate [7779-65-9]
Isoamyl Decanoate [2306-91-4]
Isoamyl Formate [110-45-2]
Isoamyl Heptanoate [109-25-1]
Isoamyl Hexanoate [2198-61-0]
Isoamyl Isobutyrate [2050-01-3]
Isoamyl Isovalerate [659-70-1]
Isoamyl Lactate [19329-89-6]
Isoamyl Laurate [6309-51-9]
Isoamyl Levulinate [71172-75-3]
Isoamyl Myristate [62488-24-8]
Isoamyl Nonanoate [7779-70-6]
Isoamyl Octanoate [2035-99-6]
Isoamyl Palmitate [81974-61-0]
Isoamyl Phenylacetate [102-19-2]
Isoamyl Propionate [105-68-0]
Isoamyl Pyruvate [7779-72-8]
Isoamyl Salicylate [87-20-7]
Isoamyl Sorbate
Isoamyl Tiglate [10482-55-0]
Isoamyl Undecanoate
Isoamyl Undecylenate [12262-03-2]
Isoamyl Valerate [2050-09-1]
Isobornyl Acetate [125-12-2]
Isobornyl Butyrate [58479-55-3]
Isobornyl Formate [1200-67-5]
Isobornyl Isovalerate [7779-73-9]
Isobornyl Propionate [2756-56-1]
Isobutyl 2-Methylbutyrate [2445-67-2]
Isobutyl 2-Methylpentanoate

Isobutyl 2-Methylvalerate
Isobutyl 3-(Methylthio)butyrate
Isobutyl 4-Decenoate [106450-11-7]
Isobutyl Acetate [110-19-0]
Isobutyl Acetoacetate [7779-75-1]
Isobutyl Angelate [7779-81-9]
Isobutyl Anthranilate [7779-77-3]
Isobutyl Benzoate [120-50-3]
Isobutyl Butyrate [539-90-2]
Isobutyl Cinnamate [122-67-8]
Isobutyl Crotonate [589-66-2]
Isobutyl Decanoate [30673-38-2]
Isobutyl Formate [542-55-2]
Isobutyl Furylpropionate [105-01-1]
Isobutyl Heptanoate [7779-80-8]
Isobutyl Hexanoate [105-79-3]
Isobutyl Isobutyrate [97-85-8]
Isobutyl Isovalerate [589-59-3]
Isobutyl Lactate [585-24-0]
Isobutyl Laurate [37811-72-6]
Isobutyl Levulinate [3757-32-2]
Isobutyl Myristate [25263-97-2]
Isobutyl N-Methylanthranilate [65505-24-0]
Isobutyl Nonanoate [30982-03-7]
Isobutyl Octanoate [5461-06-3]
Isobutyl Palmitate [110-34-9]
Isobutyl Phenoxyacetate [5432-66-6]
Isobutyl Phenylacetate [102-13-6]
Isobutyl Pivalate
Isobutyl Propionate [540-42-1]
Isobutyl Pyruvate
Isobutyl Salicylate [87-19-4]
Isobutyl Stearate [646-13-9]
Isobutyl Tiglate [61692-84-0]
Isobutyl trans-3-Hexenoate
Isobutyl Undecenoate
Isobutyl Valerate [10588-10-0]
Isodecyl Acetate [69103-94-8]
Isoeugenyl Acetate [93-29-8]
Isoeugenyl Formate [7774-96-1]
Isoeugenyl Phenylacetate [120-24-1]
Isoheptyl Butyrate
Isohexyl Benzoate
Isohexyl Isohexanoate
Isononyl Acetate [40379-24-6]
Isopentyl (3-Methylthio) propionate [93762-35-7]
Isopropyl 2-Methylbutyrate [66576-71-4]
Isopropyl Acetate [108-21-4]
Isopropyl Acetoacetat [542-08-5]
Isopropyl Benzoate [939-48-0]
Isopropyl Butyrate [638-11-9]
Isopropyl Cinnamate [7780-06-5]
Isopropyl Crotonate [6284-46-4]
Isopropyl Decanoate [2311-59-3]
Isopropyl Formate [625-55-8]
Isopropyl Heptanoate
Isopropyl Hexanoate [2311-46-8]
Isopropyl Isobutyrate [617-50-5]
Isopropyl Isovalerate [32665-23-9]
Isopropyl Lactate
Isopropyl Laurate [10233-13-3]
Isopropyl Levulinate [21884-26-4]
Isopropyl Methylanthranilate
Isopropyl Myristate [110-27-0]
Isopropyl Nonanoate [28267-32-5]
Isopropyl Octanoate [5458-59-3]
Isopropyl Palmitate [142-91-6]
Isopropyl Phenylacetate [4861-85-2]
Isopropyl Propionate [637-78-5]
Isopropyl Sorbate [44987-75-9]
Isopropyl Tiglate [1733-25-1]
Isopropyl Valerate [18362-97-5]
4-Isopropylcyclohexyl Acetate [15876-32-1]
Isopulegyl Acetate [57576-09-7]
2-Keto-3,3-dibutanoyloxybutane [71808-61-2]
Lauryl Acetate [112-66-3]
Lavandulyl Acetate [25905-14-0]
Limonen-9-yl Acetate [15111-97-4]
Linalool Oxide(5) Acetate [56469-39-7]
Linalyl Acetate [115-95-7]
Linalyl Acetate Epoxide
Linalyl Anthranilate [7149-26-0]
Linalyl Benzoate [126-64-7]
Linalyl Butyrate [78-36-4]
Linalyl Cinnamate [78-37-5]
Linalyl Formate [115-99-1]
Linalyl Hexanoate [7779-23-9]
Linalyl Isobutyrate [78-35-3]
Linalyl Isovalerate [1118-27-0]
Linalyl Octanoate [10024-64-3]
Linalyl Phenylacetate [7143-69-3]
Linalyl Propionate [144-39-8]
Maltol Butyrate [67860-01-9]
Maltyl Isobutyrate [65416-14-0]
Martol Propionate
p-Menthan-8-yl Acetate [58985-18-5]
l-Menthyl 2-Methylbutyrate [53004-93-6]
Menthyl 3-Hydroxybutyrate
dl-Menthyl Acetate [89-48-5, 29066-34-0]
l-Menthyl Acetate [2623-23-6]
Menthyl Acetate [16409-45-3]
l-Menthyl Butyrate [6070-14-0]
l-Menthyl Crotonate
l-Menthyl Ethoxyacetate
Menthyl Formate [2230-90-2]
Menthyl Hexanoate [6070-16-2]
l-Menthyl Isobutyrate [68366-65-4]
Menthyl Isovalerate [16409-46-4]
l-Menthyl Lactate [59259-38-0]
l-Menthyl Phenylacetate [26171-78-8]
l-Menthyl Propionate [4951-48-8]
Menthyl Salicylate [89-46-3]
l-Menthyl Tigrate
Menthyl Valerate [89-47-4]
3-Mercapto-3-methylbutyl Formate [50746-10-6]
3-Mercaptohexyl Acetate [136954-20-6]
Methanethiol Acetate [1534-08-3]
Methionyl Phenylacetate
Methionyl Thioglycolate
2-Methoxyethyl Acetoacetate [22502-03-0]
Methyl 2-Acetoxypropanethioate [74586-09-7]
Methyl (Methylthio)acetate [16630-66-3]
Methyl 10-Undecenate [111-81-9]
Methyl 2-(Methylthio)butyrate [51534-66-8]
Methyl 2-(Propionyloxy) propanethioate [999999-90-9]
Methyl 2,4-Decadienoate [4493-42-9]
Methyl 2-Decenoate [2482-39-5]
Methyl 2-Ethylbutyrate [816-11-5]
Methyl 2-Furoate [611-13-2]
Methyl 2-Hexenoate [2396-77-2]
Methyl 2-Hydroxy-4-methylpentanoate [40348-72-9]
Methyl 2-Methoxybenzoate [606-45-1]
Methyl 2-Methylbutyrate [868-57-5]
Methyl 2-Methylvalerate [2177-77-7]
Methyl 2-Octenoate [2396-85-2]
Methyl 2-Oxopropionate [600-22-6]
Methyl 2-Thiofuroate [13679-61-3]
Methyl 3-(Furfurylthio) propionate [94278-26-9]
Methyl 3-(Methylthio)propionate [13532-18-8]
Methyl 3-Acetoxy-2-methylbutyrate [139564-42-4]
Methyl 3-Acetoxybutyrate [89422-42-4]
Methyl 3-Acetoxyhexanoate [77118-93-5]
Methyl 3-Acetoxyoctanoate [35234-21-0]
Methyl 3-Hexenoate [2396-78-3]
Methyl 3-Hydroxybutyrate [1487-49-6]
Methyl 3-Hydroxyhexanoate [21188-58-9]
Methyl 3-Mercapto-2-methylpropionate
Methyl 3-Methyl-3-phenylglycidate

Methyl 3-Nonenoate [13481-87-3]
Methyl 3-Octenoate [74023-04-4]
Methyl 3-Oxohexanoate [30414-54-1]
Methyl 3-Phenylpropionate [103-25-3]
Methyl 4-(Methylthio)butyrate [53053-51-3]
Methyl 4-Decenoate [7367-83-1]
Methyl 4-Hydoroxybenzoate
Methyl 4-Methylvalerate [2412-80-8]
Methyl 5-Acetoxydecanoate
Methyl 5-Acetoxydodecanoate
Methyl 5-Acetoxyhexanoate [35234-22-1]
Methyl 5-Formyroxydodecanoate
Methyl 5-Hydroxydecanoate [101853-47-8]
Methyl 5-Oxododecanoate
Methyl Acetate [79-20-9]
Methyl Acetoacetate [105-45-3]
Methyl Acrylate [96-33-3]
Methyl Anisate [121-98-2]
Methyl Anthranilate [134-20-3]
Methyl Benzoate [93-58-3]
Methyl beta-4-Tolylglycidate
Methyl beta-Phenylglycidate [37161-74-3]
Methyl Butanethioate [2432-51-1]
Methyl Butyrate [623-42-7]
Methyl Cinnamate [103-26-4]
Methyl cis-4-Octenoate [21063-71-8]
Methyl Citronellate [2270-60-2]
Methyl Crotonate [623-43-8]
Methyl Cyclohexanecarboxylate [4630-82-4]
Methyl Decanoate [110-42-9]
Methyl delta-Acetoxyoctanoate
Methyl Dihydrojasmonate [24851-98-7]
Methyl Formate [107-31-3]
Methyl Geranate [2349-14-6]
Methyl Glycolate
Methyl Heptanoate [106-73-0]
Methyl Hexanoate [106-70-7]
Methyl Isobutyrate [547-63-7]
Methyl Isohexyl Carbinyl Acetate [67952-57-2]
Methyl Isovalerate [556-24-1]
Methyl Jasmonate [1211-29-6]
Methyl Lactate [547-64-8]
Methyl Laurate [111-82-0]
Methyl leVulinate [624-45-3]
Methyl Linoleate Oxide
Methyl Linoleate [112-63-0]
Methyl Linolenate [301-00-8]
Methyl Methacrylate [80-62-6]
Methyl Methanethiosulfonate [2949-92-0]
Methyl Methyl-p-tolylglycidete
Methyl Myristate [124-10-7]
Methyl N,N-Dimethylanthranilate [10072-05-6]
Methyl N-Acetylanthranilate [2719-08-6]
Methyl N-Ethylanthranilate [17318-49-9]
Methyl N-Formylanthranilate [41270-80-8]
Methyl Nicotinate [93-60-7]
Methyl Nonanoate [1731-84-6]
Methyl Nonylenate [111-79-5]
Methyl NPhenylacetylanthranilate
Methyl Octanoate [111-11-5]
Methyl Octine Carbonate [111-80-8]
Methyl Oleate [112-62-9]
Methyl Palmitate [112-39-0]
Methyl Pentadecanoate
Methyl Phenylacetate [101-41-7]
Methyl Pivalate [598-98-1]
Methyl p-Methylbenzoate [99-75-2]
Methyl Propionate [554-12-1]
Methyl Propionylanthranilate [15628-84-6]
Methyl p-tert-Butylphenylacetate [3549-23-3]
Methyl Salicylate [119-36-8]
Methyl Sorbate [689-89-4]
Methyl Stearate [112-61-8]
Methyl Thioglycolate
Methyl Thiohexanoate [2432-77-1]
Methyl Thioisobutyrate [42075-42-3]
Methyl Thioisovalerate [23747-45-7]
Methyl Tiglate [6622-76-0]
Methyl trans-2-Octenoate [7367-81-9]
Methyl Tridecanoate [1731-88-0]
Methyl Undecanoate [1731-86-8]
Methyl Undecylenate [5760-50-9]
Methyl Valerate [624-24-8]
Methyl Vanillate [3943-74-6]
2-Methyl-2-butenyl Acetate [19248-94-3]
3-Methyl-2-butyl Butyrate
3-Methyl-3-butenyl Acetate [5205-07-2]
3-Methyl-3-butenyl Butyrate
5-Methyl-3-butyltetrahydropyran-4-yl Acetate [38285-49-3]
2-Methylallyl 2-Methylvalerate
2-Methylallyl Butyrate [7149-29-3]
2-Methylallyl Hexanoate
2-Methylallyl Isobutyrate
2-Methylallyl Propionate
o-Methylbenzyl Acetate [17373-93-2]
4-Methylbenzyl Acetate
4-Methylbenzyl Butyrate
2-Methylbutyl 2-Methylbutyrate [2445-78-5]
2-Methylbutyl Acetate [624-41-9]
2-Methylbutyl Benzoate [52513-03-8]
2-Methylbutyl Butyrate [51115-64-1]
2-Methylbutyl Cinnamate [4654-29-9]
2-Methylbutyl Formate [35073-27-9]
2-Methylbutyl Heptanoate
2-Methylbutyl Hexanoate [2601-13-0]
2-Methylbutyl Isobutyrate [2445-69-4]
2-Methylbutyl Isovalerate [2445-77-4]
2-Methylbutyl Lactate [638-33-5]
2-Methylbutyl Phenylacetate [61889-11-0]
2-Methylbutyl Propionate [2438-20-2]
2-Methylbutyl Salicylate [51115-63-0]
2-Methylbutyl Valerate [55590-83-5]
3-Methylcyclohexyl Acetate
Methylheptine Carbonate [111-12-6]
5-Methylhexyl Acetate [180348-60-1]
2-Methylpentyl 2-Methylpentanoate [90397-38-9]
2-Methylpentyl Butyrate
4-Methylpentyl Isovalerate
2-(Methylthio)ethyl Acetate [5862-47-5]
3-Methylthiohexyl Acetate [51755-85-2]
3-Methylthiopropyl Acetate [16630-55-0]
3-Methylthiopropyl Butyrate [16630-60-7]
mono-Menth-3-yl Succinate [77341-67-4]
Myrcenyl Acetate [1118-39-4]
Myrcenyl Propionate
Myrtenyl Acetate [1079-01-2]
Myrtenyl Formate [72928-52-0]
Neodihydrocarvyl Acetate [56422-50-5]
Neomenthyl Acetate
Nerolidyl Acetate [56001-43-5]
Nerolidyl Isobutyrate [2639-68-1]
Neryl Acetate [141-12-8]
Neryl Butyrate [999-40-6]
Neryl Crotonate
Neryl Formate [2142-94-1]
Neryl Isobutyrate [2345-24-6]
Neryl Isovalerate [3915-83-1]
Neryl Phenylacetate
Neryl Propionate [105-91-9]

Neryl Tiglate
trans-2,cis-6-Nonadienyl Acetate [67674-47-9]
1,3-Nonanediol Acetate [1322-17-4]
cis-6-Nonenyl Acetate [76238-22-7]
6-Nonenyl Butyrate
6-Nonenyl Isovalerate
6-Nonenyl Propionate
Nonyl Acetate [143-13-5]
Nonyl Butyrate [2639-64-7]
Nonyl Formate
Nonyl Hexanoate
Nonyl Isobutyrate
Nonyl Isovalerate [7786-47-2]
Nonyl Octanoate [7786-48-3]
Nonyl Pivalate
Nonyl Propionate
Nopyl Acetate [128-51-8]
Octadecyl Acetate [822-23-1]
trans-3,trans-5-Octadienyl Acetate [85722-81-2]
1-Octen-3-yl Acetate [2442-10-6]
1-Octen-3-yl Butyrate [16491-54-6]
1-Octen-3-yl Isobutyrate
trans-2-Octenyl Butyrate [84642-60-4]
Octyl 2-Furoate [39251-88-2]
Octyl 2-Methylbutyrate [29811-50-5]
3-Octyl 2-Methylbutyrate
2-Octyl Acetate [2051-50-5]
3-Octyl Acetate [4864-61-3]
Octyl Acetate [112-14-1]
Octyl Acetoacetate
Octyl Butyrate [110-39-4]
3-Octyl Butyrate
Octyl Crotonate [22874-79-9]
Octyl Decanoate [2306-92-5]
Octyl Formate [112-32-3]
3-Octyl Formate
Octyl Heptanoate [5132-75-2]
Octyl Hexanoate [4887-30-3]
Octyl Isobutyrate [109-15-9]
Octyl Isovalerate [7786-58-5]
Octyl Nonanoate [5303-26-4]
Octyl Octanoate [2306-88-9]
Octyl Phenylacetate [122-45-2]
Octyl Pivalate
Octyl Propionate [142-60-9]
Oleyl Acetate [693-80-1]
3-Oxobutan-2-yl Butyrate [84642-61-5]
2-Oxopropyl Acetate [592-20-1]
2-Pentyl Acetate [626-38-0]
2-Pentyl Butyrate [60415-61-4]
Perillyl Acetate [15111-96-3]
Phenethyl 2-Ethylhexanoate
Phenethyl 2-Furoate [7149-32-8]
Phenethyl 2-Methylbutyrate [24817-51-4]
Phenethyl Acetate [103-45-7]
Phenethyl Anthranilate [133-18-6]
Phenethyl Benzoate [94-47-3]
Phenethyl Butyrate [103-52-6]
Phenethyl Cinnamate [103-53-7]
Phenethyl Crotonate [64181-20-0]
Phenethyl Decanoate [61810-55-7]
Phenethyl Formate [104-62-1]
Phenethyl Heptanoate
Phenethyl Hexanoate [6290-37-5]
Phenethyl Isobutyrate [103-48-0]
Phenethyl Isovalerate [140-26-1]
Phenethyl Lactate [10138-63-3]
Phenethyl Nonanoate [57943-67-6]
Phenethyl Octanoate [5457-70-5]
Phenethyl Phenylacetate [102-20-5]
Phenethyl Pivalate [67662-96-8]
Phenethyl Propionate [122-70-3]
Phenethyl Salicylate [87-22-9]
Phenethyl Senecioate [42078-65-9]
Phenethyl Tiglate [55719-85-2]
Phenethyl Valerate [7460-74-4]
2-Phenoxyethyl Acetate [6192-44-5]
2-Phenoxyethyl Butyrate [23511-70-8]
2-Phenoxyethyl Isobutyrate [103-60-6]
2-Phenoxyethyl Propionate [23495-12-7]
Phenyl Acetate [122-79-2]
Phenyl Butyrate
Phenyl Isobutyrate [20279-29-2]
Phenyl Propionate
Phenyl Salicylate [118-55-8]
2-Phenylphenyl Acetate
3-Phenylpropyl Acetate [122-72-5]
3-Phenylpropyl Benzoate [60045-26-3]
3-Phenylpropyl Butanoate [7402-29-1]
3-Phenylpropyl Cinnamate [122-68-9]
Phenylpropyl Decanoate
3-Phenylpropyl Formate [104-64-3]
3-Phenylpropyl Hexanoate [6281-40-9]
2-Phenylpropyl Isobutyrate [65813-53-8]
3-Phenylpropyl Isobutyrate [103-58-2]
3-Phenylpropyl Isovalerate [5452-07-3]
3-Phenylpropyl Propionate [122-74-7]
3-Phenylpropyl Salicylate [24781-13-3]
3-Phenylpropyl Valerate [5451-88-7]
Phytyl Acetate [10236-16-5]
2(10)-Pinen-3-yl Isobutyrate
Piperonyl Acetate [326-61-4]
Piperonyl Isobutyrate [5461-08-5]
Prenyl Acetate [1191-16-8]
Prenyl Benzoate [5205-11-8]
Propyl 2-(2-Cyclopentenyl)-4-pentenoate [172450-04-3]
Propyl 2,4-Decadienoate [28316-62-3]
Propyl 2-Cyclopentenylacetate
Propyl 2-Furoate [615-10-1]
Propyl 2-Methylbutyrate [37064-20-3]
Propyl Acetate [109-60-4]
Propyl Acetoacetate
Propyl Benzoate [2315-68-6]
Propyl Butyrate [105-66-8]
Propyl Cinnamate [7778-83-8]
Propyl Crotonate [10352-87-1]
Propyl Cyclohexanepropionate
Propyl Decanoate [30673-60-0]
Propyl Dodecanoate [3681-78-5]
Propyl Formate [110-74-7]
Propyl Heptanoate [7778-87-2]
Propyl Hexadecanoate [2239-78-3]
Propyl Hexanoate [626-77-7]
Propyl Isobutyrate [644-49-5]
Propyl Isohexanoate [25415-68-3]
Propyl Isovalerate [557-00-6]
Propyl Lactate [616-09-1]
Propyl Levulinate [645-67-0]
Propyl Nonanoate [6513-03-7]
Propyl Octanoate [624-13-5]
Propyl Phenylacetate [4606-15-9]
Propyl p-Hydroxybenzoate [94-13-3]
Propyl Pivalate
Propyl Propionate [106-36-5]
Propyl Pyruvate
Propyl Sorbate [10297-72-0]
Propyl Thioacetate [2307-10-0]
Propyl Tiglate [70475-38-6]
Propyl Valerate [141-06-0]
Propylene Glycol Diacetate [623-84-7]
Propylene Glycol Dibutyrate [50980-84-2]
Propylene Glycol Dihexanoate
Propylene Glycol Dioctanoate [7384-98-7]
Propylene Glycol Dipropionate [10108-80-2]
Propylene Glycol Lactate
Propylene Glycol Mono 2-Methylbutyrate
Propylene Glycol Monobutyrate [29592-95-8]
Propylene Glycol Monohexanoate [29592-92-5]
Propylene Glycol Monopropionate
Rhodinyl Acetate [141-11-7]
Rhodinyl Butyrate [141-15-1]
Rhodinyl Formate [141-09-3]
Rhodinyl Isobutyrate [138-23-8]

Rhodinyl Isovalerate [7778-96-3]
Rhodinyl Phenylacetate [10486-14-3]
Rhodinyl Propionate [105-89-5]
S-(o-Tolyl) Thioacetate
Sabinene Hydrate Acetate
Santalyl Acetate [1323-00-8]
Santalyl Phenylacetate [1323-75-7]
S-Methyl Benzothioate [5925-68-8]
Styrallyl Acetate [93-92-5]
Styrallyl Butyrate [3460-44-4]
Styrallyl Formate [7775-38-4]
Styrallyl Hexanoate
Styrallyl Isobutyrate [7775-39-5]
Styrallyl Isovalerate
Styralyl Propionate [120-45-6]
Sulfuryl Acetate [656-53-1]
Sulfuryl Butyrate [94159-31-6]
Sulfuryl Decanoate [101426-31-7]
Sulfuryl Formate [6469-32-5]
Sulfuryl Heptanoate
Sulfuryl Hexanoate [94159-32-7]
Sulfuryl Isobutyrate [94021-42-8]
Sulfuryl Isovalerate
Sulfuryl Octanoate [102175-98-4]
Sulfuryl Propionate [94159-30-5]
alpha-Terpinyl Acetate [80-26-2]
Terpinyl Acetate [8007-35-0]
Terpinyl Butyrate [2153-28-8]
Terpinyl Cinnamate [10024-56-3]
alpha-Terpinyl Formate [2153-26-6]
4-Terpinyl Formate
Terpinyl Isobutyrate [7774-65-4]
Terpinyl Isovalerate [1142-85-4]
Terpinyl Propionate [80-27-3]
tert-Amyl Acetate
tert-Butyl Propionate [20487-40-5]
4-tert-Butylcyclohexyl Acetate
Tetradecyl Butyrate
Tetrahydrocuminyl Acetate
Tetrahydrofurfuryl 2-Mercaptopropionate
Tetrahydrofurfuryl Acetate [637-64-9]
Tetrahydrofurfuryl Butyrate [2217-33-6]
Tetrahydrofurfuryl Cinnamate [65505-25-1]
Tetrahydrofurfuryl Propionate [637-65-0]
Tetrahydrofuryl Phenylacetate [5421-00-1]
Tetrahydrogeranyl Acetate [20780-49-8]
Tetrahydrogeranyl Formate
p-Tolyl Acetate [140-39-6]
p-Tolyl Isovalerate [55066-56-3]
p-Tolyl Octanoate [59558-23-5]
Tributyl Citrate [77-94-1]
Tricyclodecenyl Acetate [2500-83-6]
Tricyclodecenyl Propionate [17511-60-3]
Triethyl Citrate [77-93-0]
3,3,5-Trimethylcyclohexyl Acetate [67859-96-5]
3,3,5-Trimethylcyclohexyl Butyrate
3,3,5-Trimethylcyclohexyl Levulinate
3,3,5-Trimethylcyclohexyl Propionate
3,3,5-Trimethylcyclohexyl Salicylate
3,5,5-Trimethylhexyl Acetate [58430-94-7]
3,5,5-Trimethylhexyl Formate [67355-38-8]
3,5,5-Trimethylhexyl Isovalerate
3,5,5-Trimethylhexyl Propionate
10-Undecenyl Acetate [112-19-6]
10-Undecenyl Butyrate
Undecyl Acetate [1731-81-3]
Undecyl Butyrate [1300-67-0]
Vanillin Isobutyrate [20665-85-4]
Verbenyl Acetate [33522-69-9]
Vetiveryl Aetate [117-98-6]

7. Ethers

Acetaldehyde 2,3-Butanediol Acetal [3299-32-9]
Acetaldehyde Amyl Butyl Acetal
Acetaldehyde Amyl Hexyl Acetal
Acetaldehyde Amyl Methyl Acetal [73142-32-2]
Acetaldehyde Benzyl Ethyl Acetal [66222-24-0]
Acetaldehyde Benzyl Hexyl Acetal
Acetaldehyde Benzyl Methoxyethyl Acetal [7492-39-9]
Acetaldehyde Butyl Ethyl Acetal [57006-87-8]
Acetaldehyde Butyl Hexyl Acetal
Acetaldehyde Butyl Methyl Acetal [75677-94-0]
Acetaldehyde Butyl Phenethyl Acetal [64577-91-9]
Acetaldehyde Di(2-methylbutyl) Acetal [13535-43-8]
Acetaldehyde Diamyl Acetal [13002-08-9]
Acetaldehyde Dibenzyl Acetal [23556-90-3]
Acetaldehyde Dibutyl Acetal [871-22-7]
Acetaldehyde Di-cis-3-hexenyl Acetal [63449-64-9]
Acetaldehyde Diethyl Acetal [105-57-7]
Acetaldehyde Difurfuryl Thioacetal
Acetaldehyde Dihexyl Acetal [5405-58-3]
Acetaldehyde Diisoamyl Acetal [13002-09-0]
Acetaldehyde Diisobutyl Acetal [5669-09-0]
Acetaldehyde Diisopropyl Acetal [4285-59-0]
Acetaldehyde Dimethyl Acetal [534-15-6]
Acetaldehyde Dipropyl Acetal [105-82-8]
Acetaldehyde Ethyl 3-Hexenyl Acetal [28069-74-1]
Acetaldehyde Ethyl Amyl Acetal [59184-43-9]
Acetaldehyde Ethyl Hexyl Acetal [54484-73-0]
Acetaldehyde Ethyl Isoamyl Acetal [13442-90-5]
Acetaldehyde Ethyl Linalyl Acetal [40910-49-4]
Acetaldehyde Ethyl Phenethyl Acetal [2556-10-7]
Acetaldehyde Ethyl trans-2-Hexenyl Acetal
Acetaldehyde Ethyl Vanillin Acetal
Acetaldehyde Glyceryl Acetal [3674-21-3]
Acetaldehyde Hexyl IsoamylAcetal
Acetaldehyde Isoamyl Isobutyl Acetal [75048-15-6]
Acetaldehyde Phenethyl Propyl Acetal [7493-57-4]
Acetaldehyde Propylene Glycol Acetal [3390-12-3]
Acetoin Dimethyl Acetal
Acetoin Propylene Glycol Acetal [94089-23-3]
Acetone Glyceryl Acetal
Acetone Propyleneglycol Acetal [1193-11-9]
Acetophenone Diethyl Acetal
Acetophenone Propylene GlycolAcetal
4-Acetoxy-3-pentyltetrahydropyran [18871-14-2]
Acrolein Diethyl Acetal [3054-95-3]
Ambroxan [6790-58-5]
Amyl Benzyl Ether
2-Amylcinnamaldehyde Diethyl Acetal [60763-41-9]
alpha-Amylcinnamaldehyde Dimethyl Acetal [91-87-2]
Anisaldehyde Diethyl Acetal [2403-58-9]
Anisaldehyde Dimethyl Acetal [2186-92-7]

Anisaldehyde Hexylene Glycol Acetal
Anisaldehyde Propylene Glycol Acetal
Benzaldehyde Dibutyl Acetal
Benzaldehyde Diethyl Acetal [774-48-1]
Benzaldehyde Diisoamyl Acetal
Benzaldehyde Dimethyl Acetal [1125-88-8]
Benzaldehyde Glyceryl Acetal [1319-88-6]
Benzaldehyde Propylene Glycol Acetal [2568-25-4]
Benzyl Butyl Ether [588-67-0]
Benzyl Ethyl Ether [539-30-0]
Benzyl Methyl Ether [538-86-3]
Bis(2-furyl)methane [1197-40-6]
Butanal Diethyl Acetal [3658-95-5]
2-Butyl Ethyl Ether [2679-87-0]
Butyl Methyl Ketone Propylene Glycol Acetal
2-sec-Butyl-3-methoxypyrazine [24168-70-5]
2-Butylfuran [4466-24-4]
Butyraldehyde Dimethyl Acetal [114-3-1]
beta-Caryophyllene Oxide [1139-30-6]
1,4-Cineole [470-67-7]
1,8-Cineole [470-82-6]
Cinnamaldehyde Diethyl Acetal [1176-1-2]
Cinnamaldehyde Dimethyl Acetal [4364-06-1]
Cinnamaldehyde Propylene Glycol Acetal [865-1-2]
Citral Diethyl Acetal [7492-66-2]
Citral Dimethyl Acetal [7549-37-3]
Citral Hexylene Glycol Acetal
Citral Propylene Glycol Acetal [10444-50-5]
Citronellal Diethyl Acetal
Citronellal Dimethyl Acetal
Citronellal Ethylene Glycol Acetal
Citronellal Propylene Glycol Acetal
p-Cresyl Ethyl Ether [622-60-6]
Cyclohexanone Diethyl Acetal [1670-47-9]
Decanal Diethyl Acetal [34764-02-8]
Decanal Dimethyl Acetal [7779-41-1]
Decanal Propylene Glycol Acetal [5421-12-5]
Dibenzyl Ether [103-50-4]
2,5-Diethyltetrahydrofuran [41239-48-9]
Difurfuryl Ether [4437-22-3]
2,5-Dihydroxy-2,5-di(hydroxymethyl)-1,4-dioxane [96-26-4]
Diisoamyl Ether [544-01-4]
4,5-Dimethyl-2-ethyloxazole [53833-30-0]
4,5-Dimethyl-2-isopropyloxazole [19519-45-0]
4,5-Dimethyl-2-propyloxazole [53833-32-2]
2,2-Dimethyl-5-(1-methylprop-1-enyl)tetrahydrofuran [7416-35-5]
2,6-Dimethyl-5-heptenal Propylene Glycol Acetal
2,5-Dimethylfuran [625-86-5]
2,5-Dimethyltetrahydrofuran [1003-38-9]
Dodecanal Diethyl Acetal [53405-98-4]
Dodecanal Dihexyl Acetal
Dodecanal Dimethyl Acetal [14620-52-1]
7,15-Epoxy-3-caryophyllene [1139-30-6]
2-Ethoxy-3,5 or 6-methylpyrazine [32737-14-7]
2-Ethoxy-3-ethylpyrazine [35243-43-7]
2-Ethoxy-3-isopropylpyrazine [72797-16-1]
Ethyl 2-Methoxybenzyl Ether
Ethyl Furan [3208-16-0]
Ethyl Geranyl Ether [40267-72-9]
Ethyl Levulinate Diethyl Acetal
Ethyl Methyl Ketone Propylene Glycol Acetal
2-Ethyl-3-methoxypyrazine [25680-58-4]
2-Ethyl-4-methyl-1,3-dioxolane [4359-46-0]
2-Ethyl-5-methyl-1,3-dioxolanone-4 [88-41-5]
2-Ethylhexanal Diethyl Acetal
Ethylvanillin Propylene Glycol Acetal [68527-76-4]
Formadehyde Diethyl Acetal [462-95-3]
Furfural Diisoamyl Acetal [18091-14-0]
Furfural Glyceryl Acetal
Furfural Propylene Glycol Acetal [4359-54-0]
Furfuryl Methyl Ether [13679-46-4]
Heliotropin Propylene Glycol Acetal [61683-99-6]
Heptanal Propylene Glycol Acetal [4351-10-4]
Heptanal Dibutyl Acetal
Heptanal Diethyl Acetal [688-82-4]
Heptanal Dimethyl Acetal [10032-05-0]
Heptanal Glyceryl Acetal [72854-42-3]
2-Heptanone Propylene Glycol Acetal
4-Heptenal Diethyl Acetal [18492-65-4]
Heptyl Methyl Ketone Propylene Glycol Acetal
Hexanal Diamyl Acetal
Hexanal Dibutyl Acetal [93892-07-0]
Hexanal Diethyl Acetal [3658-93-3]
Hexanal Dihexyl Acetal [33673-65-3]
Hexanal Diisoamyl Acetal
Hexanal Dimethyl Acetal [1599-47-9]
Hexanal Ethyl Isoamyl Acetal
Hexanal Glyceryl Acetal [4379-20-8]
Hexanal Hexyl Isoamyl Acetal
Hexanal PropyleneGlycol Acetal [1599-49-1]
cis-3-Hexenal Diethyl Acetal [73545-18-3]
trans-2-Hexenal Diethyl Acetal [67746-30-9]
trans-2-Hexenal Dimethyl Acetal [18318-83-7]
trans-2-Hexenal Glyceryl Acetal
trans-2-Hexenal Propylene Glycol Acetal [94089-21-1]
Hexyl Methyl Ether [4747-07-3]
2-Hexyl-3-methoxypyrazine
Hydratropaldehyde Diethyl Acetal
Hydratropaldehyde Ethylene Glycol Acetal [4362-22-5]
Hydratropaldehyde Glyceryl Acetal
Hydratropic Aldehyde Dimethyl Acetal [90-87-9]
Hydratropyl Methyl Ether
5-(5-Hydroxy)-decanoyloxy-2,2-dimethyl-1,3-dioxane
Hydroxycitronellal Dibutyl Acetal
Hydroxycitronellal Ethylene Glycol Acetal
Hydroxycitronellal Propylene Glycol Acetal
Isoamyl Phenethyl Ether [93951-34-9]
Isobutanal Diethyl Acetal [1741-41-9]
Isobutanal Propyleneglycol Acetal [67879-60-1]
2-Isobutyl-3-methoxypyrazine [24683-00-9]
Isobutyraldehyde Dimethyl Acetal
2-Isopropoxy-3-methylpyrazine [94089-22-2]
Isopropyl Methyl Ketone Propylene Glycol Acetal
2-Isopropyl-(3,5 or 6)-methoxypyrazine [25773-40-4]
2-Isopropyl-4,5-dimethyl-1,3-dioxolane

Isovaleraldehyde Dibutyl Acetal
Isovaleraldehyde Diethyl Acetal [3842-03-3]
Isovaleraldehyde Dimethyl Acetal
Isovaleraldehyde Dipropyl Acetal
Isovaleraldehyde Glycerin Acetal
Isovaleraldehyde Propylene Glycol Acetal [18433-93-7]
Lime Oxide [7392-19-0]
d-Limonene Oxide [1195-92-2]
Linalool Ethyl Ether
Linalool Oxide [1365-19-1]
m-Cresyl Methyl Ether [128-1-10]
Menthofuran [494-90-6]
Methional Diethyl Acetal
Methional Glycerin Acetal
Methional Propylene Glycol Acetal
2-Methoxy-(3,5 or 6)-methylpyrazine [68378-13-2]
2-Methoxy-2-methylpropane [1634-04-4]
2-Methoxy-3,5-dimethylpyrazine
2-Methoxy-3-isopropylpyrazine [93905-03-4]
2-Methoxypyrazine [3149-28-8]
Methyl 5-Methyl-2-furyl Sulfide [13678-59-6]
Methyl Diphenyl Ether [1706-12-3]
Methyl Heptenone Propylene Glycol Acetal [68258-95-7]
Methyl Phenethyl Ether [3558-60-9]
4-Methyl-2-propyl-1,3-dioxolane [4352-99-2]
2-Methyl-3-methylthiofuran [63012-97-5]
2-Methyl-4-propyl-1,3-oxathiane [67715-80-4]
2-Methyl-6-propoxypyrazine [67845-28-7]
2-Methylbutanal Diethyl Acetal [3658-94-4]
2-Methylbutanal Propylene Glycol Acetal
2-Methylfuran [534-22-5]
4-Methylphenylacetaldehyde Propylene Glycol Acetal
2-Methyltetrahydrofuran [96-47-9]
2-Methylundecanal Diethyl Acetal
2-Methylundecanal Dimethyl Acetal [68141-17-3]
Nerol Oxide [1786-08-9]
N-Furfurylpyrrole [1438-94-4]
2,6-Nonadienal Diethyl Acetal [67674-36-6]
Nonanal Diethyl Acetal [54815-13-3]
Nonanal Dimethyl Acetal [18824-63-0]
Nonanal Propylene Glycol Acetal [68391-39-9]
Ocimene Oxide [69103-20-4]
Octanal Diethyl Acetal [54889-48-4]
Octanal Dimethyl Acetal [10022-28-3]
Octanal Ethylene Glycol Acetal
Octanal Propylene Glycol Acetal [74094-61-4]
Paraldehyde [123-63-7]
2-Pentylfuran [3777-69-3]
Perillaldehyde Propylene Glycol Acetal [121199-28-8]
Phenylacetaldehyde Diethyl Acetal [6314-97-2]
Phenylacetaldehyde Diisobutyl Acetal [68345-22-2]
Phenylacetaldehyde Dimethyl Acetal [101-48-4]
Phenylacetaldehyde Glyceryl Acetal [29895-73-6]
Phenylacetaldehyde Propylene Glycol Acetal [5468-05-3]
3-Phenylpropanal Dimethyl Acetal [30076-98-3]
2-Phenylpropanal Propylene Glycol Acetal [67634-23-5]
Piperonal Dimethyl Acetal [59259-10-4]
Prenyl Ethyl Ether [22094-00-4]
Propionaldehyde Diethyl Acetal [4744-08-5]
Propionaldehyde Diisobutyl Acetal
Propionaldehyde Propylene Glycol Acetal [4395-46-0]
2-Propylfuran [4229-91-8]
Rose Oxide [16409-43-1]
Spiro[2,4-dithia-1-methyl-8-oxabicyclo[3,3,0]octane-3,3'-(1'-oxa-2'-methyl) cyclopentane] and Spiro[2,4-dithia-6-methyl-7-oxabicyclo[3,3,0]octane-3,3'-(1'-oxa-2'-methyl) cyclopentane] [38325-25-6]
Terpineol Ethyl Ether
Tetrahydrofurfuryl Alcohol [97-99-4]
Theaspirane [36431-72-8]
Tolualdehyde Glyceryl Acetal [1333-09-1]
p-Tolualdehyde Propylene Glycol Acetal [58244-29-4]
Tridecanal Diethyl Acetal [72934-16-8]
Triethyl Orthoformate [122-51-0]
2,4,5-Trimethyl-3-oxazoline [22694-96-8]
2,2,5-Trimethyl-4-hexenal Dimethyl Acetal
3,5,5-Trimethylhexanal Diethyl Acetal
Trimethyloxazole [20662-84-4]
Undecanal Diethyl Acetal [53405-97-3]
Undecanal Dimethyl Acetal [52517-67-6]
Undecanal Propylene Glycol Acetal [74094-62-5]
10-Undecenal Diethyl Acetal
10-Undecenal Dimethyl Acetal
Valeraldehyde Dibutyl Acetal
Valeraldehyde Diethyl Acetal [3658-79-5]
Valeraldehyde Dihexyl Acetal
Valeraldehyde Dimethyl Acetal [26450-58-8]
Valeraldehyde Propylene Glycol Acetal [74094-60-3]
Vitispirane [65416-59-3]

8. Fatty Acids

Acetic Acid [64-19-7]
Aconitic Acid [499-12-7]
Adipic Acid [124-04-9]
5-and 6-Decenoic Acid [72881-27-7]
Angelic Acid
Anisic Acid [100-09-4]
Butyric Acid [107-92-6]
Cinnamic Acid [621-82-9]
Citronellic Acid [502-47-6]
p-Cresoxyacetic Acid
Crotonic Acid [3724-65-0]
Cyclohexaneacetic Acid [5292-21-7]
Cyclohexanecarboxylic Acid [98-89-5]
Cyclohexylpropionic Acid
2-Cyclopenten-1-acetic Acid [13668-61-6]
Decanoic Acid [334-48-5]
2-Decenoic Acid [3913-85-7]
4-Decenoic Acid [26303-90-2]
9-Decenoic Acid [14436-32-9]
2-Dodecenoic Acid [32466-54-9]
Ethoxyacetic Acid [627-03-2]
4-Ethyl-2-octenoic Acid
2-Ethylbutyric Acid [88-09-5]
2-Ethylhexanoic Acid [149-57-5]
4-Ethyloctanoic Acid [16493-80-4]
Formic Acid [64-18-6]
2-Furoic Acid [88-14-2]
Geranic Acid [459-80-3]
Heptadecanoic Acid [506-12-7]
Heptanoic Acid [111-14-8]
2-Heptenoic Acid [18999-28-5]
2-Hexadecenoic Acid [50448-95-8]
Hexanoic Acid [142-62-1]
2-Hexenoic Acid [1191-04-4]
3-Hexenoic Acid [4219-24-3]
trans-2-Hexenoic Acid [13419-69-7]
Hexyloxyacetic Acid [57931-25-6]
4-Hydroxy-3-methoxycinnamic Acid [1135-24-6]
2-Hydroxy-3-methylpentanoic Acid

[488-15-3]
2-Hydroxy-4-methylvaleric Acid [498-36-2?]
3-Hydroxybutyric Acid [300-85-6]
3-Hydroxyhexanoic Acid [10191-24-9]
Isobutyric Acid [79-31-2]
Isovaleric Acid [503-74-2]
Lactic Acid [50-21-5]
Lauric Acid [143-07-7]
Levulinic Acid [123-76-2]
Linoleic Acid [60-33-3]
Linolenic Acid [463-40-1]
Malonic Acid [141-82-2]
2-Mercaptopropionic Acid [79-42-5]
3-Mercaptopropionic Acid [107-96-0]
3-Methyl Valeric Acid [105-43-1]
3-Methyl-2-oxovaleric Acid [39748-49-7]
2-Methyl-2-pentenoic Acid [3142-72-1]
2-Methyl-4-pentenoic Acid [1575-74-2]
2-Methylbutyric Acid [116-53-0]
3-Methylcrotonic Acid [541-47-9]
2-Methylheptanoic Acid [1188-02-9]
2-Methylhexanoic Acid [4536-23-6]
5-Methylhexanoic Acid [628-46-6]
8-Methylnonanoic Acid [5963-14-4]
4-Methyloctanoic Acid [54947-74-9]
4-Methylthiobutyric Acid
3-Methylthiopropionic Acid [646-01-5]
2-Methylvaleric Acid [97-61-0]
4-Methylvaleric Acid [646-07-1]
Myristic Acid [544-63-8]
Nonanoic Acid [112-05-0]
2-Nonenoic Acid [3760-11-0]
3-Nonenoic Acid [4124-88-3]
Octanoic Acid [124-07-2]
2-Octenoic Acid [1470-50-4]
3-Octenoic Acid [1577-19-1]
trans-3-Octenoic Acid [5163-67-7]
Oleic Acid [112-80-1]
2-Oxobutyric Acid [600-18-0]
2-Oxoglutaric Acid [328-50-7]
Palmitic Acid [57-10-3]
Pentadecanoic Acid [1002-84-2]
2-Pentenoic Acid [13991-37-2]
4-Pentenoic Acid [591-80-0]
Perillic Acid [7694-45-3]
Phenoxyacetic Acid [122-59-8]
Phenylacetic Acid [103-82-2]
2-Phenylpropionic Acid [492-37-5]
3-Phenylpropionic Acid [501-52-0]
Pivalic Acid [75-98-9]
Propionic Acid [79-09-4]
Pyruvic Acid [127-17-3]
Sorbic Acid [110-44-1]
Stearic Acid [57-11-4]
Thioacetic Acid [507-09-5]
Thioglycolic Acid [68-11-1]
Thiomalic Acid [70-49-5]
Thiopropionic Acid [1892-31-5]
Tiglic Acid [80-59-1]
Tridecanoic Acid [638-53-9]
3,5,5-Trimethylhexanoic Acid [446-3-6]
Undecanoic Acid [112-37-8]
10-Undecenoic Acid [112-38-9]
Valeric Acid [109-52-4]
Vanillic Acid [121-34-6]

9. Furfural and its derivatives
Furfural [98-01-1]
Furfural Diethyl Acetal [13529-27-6]
5-Hydroxymethylfurfural [67-47-0]
5-Methylfurfural [620-02-0]

10. Indole and Its delivatives
Indole [120-72-9]
2-Methylindole [95-20-5]
Skatole [83-34-1]

11. Isothiocyanates
Allyl Isothiocyanate [57-06-7]
Amyl Isothiocyanate [629-12-9]
Benzyl Isothiocyanate [622-78-6]
3-Butenyl Isothiocyanate [3386-97-8]
Butyl Isothiocyanate [592-82-5]
sec-Butyl Isothiocyanate [4426-79-3]
5-Hexenyl Isothiocyanate [49776-81-0]
Hexyl Isothiocyanate [6803-40-3]
Isoamyl Isothiocyanate [628-03-5]
Isobutyl Isothiocyanate [591-82-2]
Isopropyl Isothiocyanate [2253-73-8]
6-Methylthiohexyl Isothiocyanate [4430-39-1]
3-Methylthiopropyl Isothiocyanate [505-79-3]
4-Pentenyl Isothiocyanate [18060-79-2]
Phenethyl Isothiocyanate [2257-09-2]

12. Ketones
Acetanisole [100-06-1]
Acetoin [513-86-0]
Acetol [116-09-6]
Acetone [67-64-1]
Acetophenone [98-86-2]
Acetovanillone [498-02-2]
4-(p-Acetoxyphenyl)-2-butanone [3572-06-3]
Acetyl Butyryl [3848-24-6]
Acetyl Isobutyryl [7493-58-5]
Acetyl Isovaleryl [13706-86-0]
Acetyl Propionyl [600-14-6]
2-Acetyl-1-methylpyrrole [932-16-1]
2-Acetyl-1-pyrroline [99583-29-6]
5-Acetyl-2,4-dimethylthiazole [38205-60-6]
3-Acetyl-2,5-dimethylfuran [10599-70-9]
2-Acetyl-2-thiazoline [29926-41-8]
2-Acetyl-3,4,5,6-tetrahydropyridine [27300-27-2]
2-Acetyl-3,5(3,6)-dimethylpyrazine
2-Acetyl-3,5-dimethylpyrazine [54300-08-2]
2-Acetyl-3-ethylpyrazine [32974-92-8]
2-Acetyl-3-methylpyrazine [23787-80-6]
2-Acetyl-4-methylthiazole [7533-07-05]
2-Acetyl-5-methylfuran [1193-79-9]
2-Acetyl-5-methylthiophene [13679-74-8]
4-Acetyl-6-t-butyl-1,1-dimethylindane [13171-00-1]
Acetylacetone [123-54-6]
Acetylcedrene [32388-55-9]
2-Acetylfuran [1192-62-7]
Acetylpyrazine [22047-25-2]
2-Acetylpyridine [1122-62-9]
3-Acetylpyridine [350-03-8]
4-Acetylpyridine [1122-54-9]
2-Acetylpyrrole [1072-83-9]
2-Acetylthiazole [24295-03-2]
8-Acetylthio-p-menthan-3-one [57074-34-7]

alpha-Allylionone [79-78-7]
2-Aminoacetophenone [551-93-9]
2-Amyl-2-cyclopentenone [25564-22-1]
Anisyl Acetone [104-20-1]
Anisyl Methyl Ketone [122-84-9]
Benzoin [119-53-9]
Benzophenone [119-61-9]
Benzoyl Acetone [93-91-4]
Benzyl Isobutyl Ketone [5349-62-2]
Benzylidene Acetone [122-57-6]
Butyl Methyl Ketone [591-78-6]
2-sec-Butylcyclohexanone [14765-30-1]
Butylidene Acetone [1119-44-4]
Butyrophenone [495-40-9]
d-Camphor [464-49-3]
dl-Camphor [76-22-2]
Camphor [464-49-3]
d-Carvone [2244-16-8]
l-Carvone [6485-40-1]
Carvone [99-49-0]
Carvone Oxide [18383-49-8]
Celery Ketone [3720-16-9]
Civetone [542-46-1]
Cycloheptanone [502-42-1]
Cyclohexanone [108-94-1]
Cyclopentanone [120-92-3]
2-Cyclopentylcyclopentanone [4884-24-6]
Cyclotene [80-71-7]
alpha-Damascenone
beta-Damascenone [23696-85-7]
alpha-Damascone [43052-87-5]
beta-Damascone [23726-92-3]
delta-Damascone [41436-42-4]
3-Decanone [928-80-3]
3-Decen-2-one [10519-33-2]
Decyl Methyl Ketone [6175-49-1]
Dehydronootkatone
Diacetone Alcohol [123-42-2]
Diacetyl [431-03-8]
Dibenzyl Ketone [102-04-5]
4,5-Dihydro-3(2H)-thiophenone [1003-04-9]
2,3-Dihydro-3,5-dihydroxy-6-methyl-4H-pyran-4-one [28564-83-2]
Dihydro-alpha-ionone [31499-72-6]
Dihydro-beta-ionone [17283-81-7]
Dihydrocarvone [5948-04-9]
Dihydrojasmone [1128-08-1]
1,10-Dihydronootkatone [20489-53-6]
Diisopropyl Ketone [565-80-0]
3,4-Dimethoxyacetophenone
Dimethyl Methoxy Furanone [4077-47-8]
3,4-Dimethyl-1,2-cyclopentandione [13494-06-9]
3,5-Dimethyl-1,2-cyclopentandione [13494-07-0]
2,5-Dimethyl-3(2H)-furanone [14400-67-0]
2,4-Dimethylacetophenone [89-74-7]
2,6-Dimethylheptan-4-one [108-83-8]
Diosphenol [490-03-9]
Dipropyl Ketone [123-19-3]
Ethyl 2-Furyl Ketone [3194-15-8]
Ethyl Amyl Ketone [106-68-3]
Ethyl Anisylidene Ketone
Ethyl Butyl Ketone [106-35-4]
Ethyl Cyclopentenolone [21835-01-8]
Ethyl Hexyl Ketone [925-78-0]
Ethyl Maltol [4940-11-8]
Ethyl Propyl Ketone [589-38-8]
Ethyl Vinyl Ketone [1629-58-9]
5-Ethyl-4-hydroxy-2-methyl-3(2H)-furanone [27538-09-6]
Farnesyl Acetone [762-29-8]
d-Fenchone [4695-62-9]
Fenchone [1195-79-5]
Furaneol [3658-77-3]
Furfuryl Methyl Ketone [6975-60-6]
Furfurylidine Acetone [623-15-4]
1-(2-Furfurylthio)propanone [58066-86-7]
4-Furfurylthio-4-methylpentanone-2
Geranyl Acetone [689-67-8]
2-Heptadecanone [2922-51-2]
2,3-Heptanedione [96-04-8]
3,4-Hexadione [4437-51-8]
Hexahydrofarnesyl Acetone [502-69-2]
5-Hexen-2-one [109-49-9]
4-Hexen-3-one [2497-21-4]
1-Hexen-3-one [1629-60-3]
2-Hexyl Cyclopentanone [13074-65-2]
1-Hydroxy-2-butanone [5077-67-8]
4-Hydroxy-2-butanone [590-90-9]
2-Hydroxy-2-cyclohexen-1-one [10316-66-2]
1-Hydroxy-2-heptanone [17046-01-4]
3-Hydroxy-2-octanone [37160-77-3]
2-Hydroxy-3,4-dimethyl-2-cyclopenten-1-one [21835-00-7]
2-Hydroxy-3-pentanone [5704-20-1]
1-Hydroxy-4-methyl-2-pentanone
5-Hydroxy-4-octanone [496-77-5]
1-Hydroxy-5-methyl-2-hexanone
o-Hydroxyacetophenone [118-93-4]
3-Hydroxypentan-2-one [3142-66-3]
alpha-Ionone [127-41-3]
beta-Ionone [79-77-6]
alpha-Irone [79-69-6]
Isoamyl Ethyl Ketone [624-42-0]
Isojasmone [11050-62-7]
Isomenthone [491-07-6]
alpha-Isomethyl Ionone [127-51-5]
Isophorone [78-59-1]
4-Isopropyl-2-cyclohexenone [500-02-7]
5-Isopropyl-3-nonene-2,8-dione
5-Isopropyl-8-methyl-6,8-nonadien-2-one [1937-54-8]
p-Isopropylacetophenone [645-13-6]
Isopulegone [29606-79-9]
cis-Jasmone [488-10-8]
trans-Jasmone [6261-18-3]
Maltol [118-71-8]
4,6,8-Megastigmatrien-3-one [13215-88-8]
p-Menthan-2-one [499-70-7]
Menthone [89-80-5]
3-Mercapto-2-butanone [40789-98-8]
3-Mercapto-2-pentanone [67633-97-0]
Mesityl Oxide [141-79-7]
4-(p-Methoxyphenyl)-3-buten-2-one
Methyl Amyl Ketone [110-43-0]
alpha-Methyl Anisal Acetone [104-27-8]
Methyl Ethyl Ketone [78-93-3]
Methyl gamma-Decalactone [7011-83-8]
Methyl Heptyl Ketone [821-55-6]
Methyl Hexyl Ketone [111-13-7]
Methyl Ionone [1335-46-2]
Methyl Isoamyl Ketone [110-12-3]
Methyl Isobutyl Ketone [108-10-1]
Methyl Isopropyl Ketone [563-80-4]
beta-Methyl Naphthyl Ketone [93-08-3]
alpha-Methyl Naphtyl Ketone [941-98-0]
Methyl Nonyl Ketone [112-12-9]
Methyl Octyl Ketone [693-54-9]
Methyl Propyl Ketone [107-87-9]
Methyl Undecyl Ketone [593-08-8]
Methyl Vinyl Ketone [78-94-4]
3-Methyl-2-cyclopetenone [2758-18-1]
1-(5-Methyl-2-furyl)-1,2-propanedione [1197-20-2]
1-(5-Methyl-2-furyl)-2-propanone [13678-74-5]
6-Methyl-2-heptanone [928-68-7]
5-Methyl-2-hepten-4-one [81925-81-7]
3-Methyl-2-hexanone [2550-21-2]
3-Methyl-2-pentanone [565-61-7]
Methyl-3(4)-methyl Thienyl Ketone
7-Methyl-3,4-dihydro-2H-1,5-benzo

dioxepin-3-one
3-Methyl-3-buten-2-one [814-78-8]
5-Methyl-3-heptanone [541-85-5]
5-Methyl-3-hexen-2-one [5166-53-0]
p-Methylacetophenone [122-00-9]
Methyl-alpha-ionone [127-42-4]
3-Methylcyclohexan-1,2-dione [3008-43-3]
3-Methylcyclohexanone [591-24-2]
Methylexaltone [541-91-3]
6-Methylhepta-3,5-dien-2-one [1604-28-0]
Methylheptenone [110-93-0]
3-Methylnonane-2,4-dione [113486-29-6]
2-Methyltetrahydro-3-thiophenone [13679-85-1]
2-Methyltetrahydrofuran-3-one [3188-00-9]
1-(3-(Methylthio)-butyryl)-2,6,6-trimethylcyclohexene
4-Methylthio-4-methyl-2-pentanone [23550-40-5]
4-Methylthiobutan-2-one [34047-39-7]
9-Methylthiomegastigma-3,5-dien-7-one
8-Methylthio-p-menthan-3-one [32637-94-8]
3-Acetylpyrrole [1072-82-8]
4-Nonanone [4485-09-0]
3-Nonen-2-one [14309-57-0]
Nootkatone [4674-50-4]
3,5-Octadien-2-one [30086-02-3]
1,5-Octadien-3-one [65213-86-7]
3-Octen-2-one [1669-44-9]
1-Octen-3-one [4312-99-6]
2-Octen-4-one [4643-27-0]
4-Oxoisophorone [1125-21-9]
2-Pentadecanone [2345-28-0]
3-Pentanone [96-22-0]
3-Penten-2-one [625-33-2]
Pentyl 2-Furyl Ketone [14360-50-0]
1-Phenyl-1,2-propanedione [579-07-7]
Piperitenone [491-09-8]
d-Piperitone [6091-50-5]
Piperitone [89-81-6]
Piperonyl Acetone [55418-52-5]
Propioin [4984-85-4]
6-Propionyl-1-p-menthene [31375-17-4]
2-Propionylpyrrole [1073-26-3]
2-Propionylthiophene [13679-75-9]
Propiophenone [93-55-0]
3-Propylthio-4-heptanone
Pulegone [89-82-7]
Pyruvaldehyde [78-98-8]
Raspberry Ketone [5471-51-2]
4-tert-Butyl Cyclohexanone [762-75-4]
p-tert-Butylacetophenone
4-tert-Pentylcyclohexanone
2-Tetradecanone [2345-27-9]
cis-7-Tetradecen-2-one
Tetrahydro-pseudo-ionone [4433-36-7]
Tetramethyl Ethylcyclohexenone [17369-60-7]
Theaspirone [19377-59-4]
Thiazolidine-2,4-dione
Thiomenthone [38462-22-5]
12-Tridecen-2-one [60437-21-0]
3,5,5-Trimethyl-1,2-cyclohexanedione [57696-89-6]
1-(2,4,4-Trimethyl-2-cyclohexenyl)-trans-2-butenone [61711-48-6]
2,6,6-Trimethyl-2-hydroxycyclohexanone [7500-42-7]
2,2,6-Trimethylcyclohexanone [2408-37-9]
3,3,5-Trimethylcyclohexanone [873-94-9]
Undeca-2,3-dione [7493-59-6]
Valeroin
Verbenone [80-57-9]
Zingerone [122-48-5]

13. Lactones

Ambrettolide [123-69-3]
alpha-Angelica Lactone [591-12-8]
3-Butylidenephthalide [551-08-6]
gamma-Butyrolactone [96-48-0]
Cyclopentadecanolide [106-02-5]
delta-Decalactone [705-86-2]
gamma-Decalactone [706-14-9]
7-Decen-1,4-lactone [67114-38-9]
9-Decen-5-olide [74585-00-5]
delta-2-Decenolactone [16400-72-9]
delta-7-Decenolactone [25524-95-2]
Dihydroactinidiolide [17092-92-1]
Dihydroambrettolide [109-29-5]
Dihydrocoumarin [119-84-6]
3,3-Dimethyl-2-hydroxy-4-butanolide [599-04-2]
3,4-Dimethyl-5-pentyl-2(5H)-furanone [10547-84-9]
delta-Dodecalactone [713-95-1]
gamma-Dodecalactone [2305-05-7]
gamma-6-Dodecenolactone [18679-18-0]
epsilon-Decalactone [5579-78-2]
epsilon-Dodecalactone [16429-21-3]
5-Ethyl-3-hydroxy-4-methyl-2(5H)-furanone [698-10-2]
delta-Heptalactone [3301-90-4]
gamma-Heptalactone [105-21-5]
alpha-Heptyl-gammavalerolactone [40923-64-6]
gamma-Hexadecalactone [730-46-1]
delta-Hexadecanolide [7370-44-7]
delta-Hexalactone [823-22-3]
gamma-Hexalactone [695-06-7]
5-(cis-3-Hexenyl)dihydro-5-methyl-2(3H)furanone [70851-61-5]
3-Hydroxy-4,5-dimethyl-2(5h)-furanone [28664-35-9]
5-Hydroxy-8-undecenoic Acid delta-Lactone [68959-28-4]
Jasmolactone [32764-98-0]
Massoia Lactone [51154-96-2]
Menthone Lactone [499-54-7]
alpha-Methyl-gamma butyrolactone
beta-Methyl-gamma-octalactone [39212-23-2]
Mintlactone [38049-04-6]
delta-Nonalactone [3301-94-8]
gamma-Nonalactone [104-61-0]
gamma-2-Nonenolactone [21963-26-8]
delta-Octadecalactone [1227-51-6]
Octahydrocoumarin [4430-31-3]
delta-Octalactone [698-76-0]
gamma-Octalactone [104-50-7]
6-Pentyl-alpha-pyrone [27593-23-3]
3-Propylidenephthalide [17369-59-4]
Sclareolide [564-20-5]
delta-Tetradecalactone [2721-22-4]
delta-Tridecalactone [7370-92-5]
delta-Undecalactone [710-04-3]
gamma-Undecalactone [104-67-6]
delta-Valerolactone [542-28-9]
gamma-Valerolactone [108-29-2]
4-Vinyl-gamma-valerolactone

14. Phenols

4-Allyl-2,6-dimethoxyphenol [6627-88-9]
4-Allylphenol [501-92-8]
Carvacrol [499-75-2]
Catechol [120-80-9]
Creosol [93-51-6]
m-Cresol [108-39-4]
o-Cresol [95-48-7]
p-Cresol [106-44-5]
Dihydroeugenol [2785-87-7]
2,6-Dimethoxyphenol [91-10-1]
2,3-Dimethylphenol [526-75-0]

2,6-Dimethylphenol [576-26-1]
3,5-Dimethylphenol [108-68-9]
p-Ethoxyphenol [622-62-8]
4-Ethylguaiacol [2785-89-9]
2-Ethylphenol [90-00-6]
3-Ethylphenol [620-17-7]
4-Ethylphenol [123-07-9]
2-(Ethylthio)phenol [4500-58-7]
Eugenol [97-53-0]
Guaiacol [90-05-1]
Hexenal Dihexyl Acetal
4-Hydroxybenzoic Acid [99-96-7]
4-Hydroxybenzyl Ethyl Ether [57726-26-8]
Isoeugenol [97-54-1]
2-Isopropylphenol [88-69-7]
4-Isopropylphenol [99-89-8]
3-Methoxy-5-methylphenol
3-Methoxyphenol [150-19-6]
4-Methoxyphenol [150-76-5]
4-Methyl-2,6-dimethoxyphenol [6638-05-7]
3,4-Methylenedioxyphenol [533-31-3]
5-Methylguaiacol [1195-09-1]
4-(Methylthio)phenol [241-2-2]
Phenol [108-95-2]
p-Propylphenol [645-56-7]
Protocatechuic Acid [99-50-3]
Resorcinol [108-46-3]
Salicylic Acid [69-72-7]
Syringic Acid [530-57-4]
Thymol [89-83-8]
Tioguaiacol [1073-29-6]
Vanillin Propylene Glycol Acetal [68527-74-2]
Vanitrope [94-86-0]
Vinyl Guaiacol [7786-61-0]
p-Vinylphenol [2628-17-3]
2,4-Xylenol [105-67-9]
2,5-Xylenol [95-87-4]
3,4-Xylenol [95-65-8]

15. Phenol Ethers

trans-Anethole [4180-23-8]
Anethole [104-46-1]
Anisole [100-66-3]
Anisyl Ethyl Ether [5076-72-2]
Benzyl Eugenol [57371-42-3]
Catechol Diethyl Ether [2050-46-6]
m-Dimethoxybenzene [151-10-0]
p-Dimethoxybenzene [150-78-7]
3,4-Dimethoxystyrene [6380-23-0]
3,4-Dimethoxytoluene [494-99-5?]
2,3-Dimethylbenzofuran [3782-00-1]
Diphenyl Oxide [101-84-8]
Estragole [140-67-0]
1-Ethoxy-2-methoxybenzene [17600-72-5]
Ethyl isoeugenyl Ether [7784-67-0]
Ethyleugenol
4-Hydroxybenzyl Methyl Ether [5355-17-9]
Isobutyl beta-Naphthyl Ether [2173-57-1]
Isoeugenol Amyl Ether [10484-36-3]
Isoeugenyl Benzyl Ether [120-11-6]
2-Mercaptoanisole [7217-59-6]
2-Methoxynaphthalene [90-49-3]
Methyl Isoeugenol [93-16-3]
o-Methylanisole [578-58-5]
p-Methylanisole [104-93-8]
Methyleugenol [93-15-2]
beta-Naphthyl Butyl Ether [10484-56-7]
beta-Naphthyl Ethyl Ether [93-18-5]
beta-Naphthyl Methyl Ether [93-04-9]
p-Propyl Anisole [104-45-0]
Thymol Methyl Ether [1076-56-8]
1,2,3-Trimethoxybenzene [634-36-6]
Vanillyl Butyl Ether [82654-98-6]
Veratrole [91-16-7]]

16. Terpene Hydrocarbons

Allo-ocimene [673-84-7]
alpha-Bisabolene [17627-44-0]
Bisabolene [495-62-5]
beta-Bourbonene [5208-59-3]
delta-Cadinene [29350-73-0]
Camphene [79-92-5]
delta-3-Carene [13466-78-9]
alpha-Caryophyllene [6753-98-6]
beta-Caryophyllene [87-44-5]
alpha-Cedrene [469-61-4]
p-Cymene [99-87-6]
Dehydrop-p-cymene [1195-32-0]
cis-3,7-Dimethyl-1,3,6-octatriene [3338-55-4]
delta-Elemene [20307-84-0]
beta-Elemene [515-13-9]
alpha-Farnesene [502-61-4]
beta-Farnesene [18794-84-8]
Farnesene
Germacrene D [23986-74-5]
beta-Guaiene [88-84-6]
d-Limonene [5989-27-5]
l-Limonene [5989-54-8]
Limonene [138-86-3]
Longifolene [475-20-7]
Myrcene [123-35-3]
beta-Ocimene [13877-91-3]
alpha-Phellandrene [99-83-2]
alpha-Pinene [80-56-8]
beta-Pinene [127-91-3]
Pinocamphone [547-60-4]
Sabinene [3387-41-5]
alpha-Terpinene [99-86-5]
gamma-Terpinene [99-85-4]
Terpinolene [586-62-9]
Thujopsene
Valencene [4630-07-3]

17. Thioethers

3-Acetyl-2,5-dimethylthiophene [2530-10-1]
2-Acetylthiophene [88-15-3]
Allyl Methyl Disulfide [2179-58-0]
Allyl Methyl Sulfide [10152-76-8]
Allyl Methyl Trisulfide [34135-85-8]
Allyl Propyl Disulfide [2179-59-1]
Allyl Propyl Sulfide [33922-70-2]
Allyl Propyl Trisulfide [33922-73-5]
Benzothiazole [95-16-9]
Benzyl Methyl Disulfide [699-10-5]
Benzyl Methyl Sulfide [766-92-7]
Bis-(2-methyl-3-furyl) Disulfide [28588-75-2]
3,5-Bis(2-methyltetrahydrofuryl-3) spiro-1,2,4-trithiolan
Butyl Propyl Disulfide [72437-64-0]
2-Butyl-4,5-dimethylthiazole [76572-48-0]
2-sec-Butylthiazole [18277-27-5]
2-Butylthiophene [1455-20-5]
Butyraldehyde Dibenzyl Mercaptal
Diallyl Disulfide [2179-57-9]
Diallyl Polysulfides [72869-75-1]
Diallyl Sulfide [592-88-1]
Dibenzyl Disulfide [150-60-7]
Dibutyl Sulfide [544-40-1]
Dicyclohexyl Disulfide [2550-40-5]
Diethyl Disulfide [110-81-6]
Diethyl Sulfide [352-93-2]
Difurfuryl Disulfide [4437-20-1]
Difurfuryl Sulfide [13678-67-6]
Diisoamyl Disulfide [2051-04-9]
Diisopropyl Disulfide [4253-89-8]
Diisopropyl Sulfide [625-80-9]
Dimethyl Sulfide [75-18-3]
Dimethyl Sulfoxide [67-68-5]
Dimethyl Tetrasulfide [5756-24-1]
Dimethyl Trisulfide [3658-80-8]

3,5-Dimethyl-1,2,4-trithiolane [23654-92-4]
2,5-Dimethyl-2,5-epoxy-1,4-dithiane
4,5-Dimethyl-2-ethylthiazole [873-64-3]
4,5-Dimethyl-2-isobutyl-3-thiazoline [65894-83-9]
4,5-Dimethyl-2-propylthiazole [41981-72-0]
2,4-Dimethylthiazole [541-58-2]
2,5-Dimethylthiazole [4175-66-0]
4,5-Dimethylthiazole [3581-91-7]
2,5-Dimethylthiophene [638-02-8]
3,4-Dimethylthiophene [632-15-5]
Dinonyl Sulfide [929-98-6]
Di-o-tolyl Disulfide [4032-80-8]
Dipropyl Polysulfide
Dipropyl Sulfide [111-47-7]
Dipropyl Trisulfide [6028-61-1]
Di-tert-amyl Disulfide
Dithienyl Disulfide [6911-51-9]
2-Ethoxythiazole [15679-19-3]
Ethyl 2-Hydroxyethyl Sulfide [110-77-0]
2-Ethyl 4-Methylthiazole [15679-12-6]
Ethyl Propenyl Sulfide [36784-55-1]
5-Ethyl-4-methylthiazole [31883-01-9]
4-Ethyl-5-methylthiazole [52414-91-2]
2-Ethylthiazole [15679-09-1]
2-Ethylthiophene [872-55-9]
Formaldehyde Dimethyl Mercaptal [1618-26-4]
Furfuryl Isopropyl Sulfide [1883-78-9]
Furfuryl Methyl Sulfide [1438-91-1]
2-Hexylthiophene [18794-77-9]
2-Isobutyl-4,5-dimethylthiazole [53498-32-1]
2-Isobutyl-4-methylthiazole [61323-24-8]
2-Isobutyl-5-methylthiazole [72611-71-3]
2-Isobutylthiazole [18640-74-9]
2-Isopropyl-4-methylthiazole [15679-13-7]
Lenthionine [292-46-6]
Methional [3268-49-3]
Methionol [505-10-2]
Methyl 1-Propenyl Sulfide [10152-77-9]
Methyl 2-Methyl-3-furyl Disulfide [65505-17-1]
Methyl 2-Oxopropyl Disulfide [122861-78-3]
Methyl 5-Methylfurfuryl Disulfide [78818-78-7]
Methyl Butyl Sulfide [628-29-5]
Methyl Disulfide [624-92-0]
Methyl Ethyl Disulfide [20333-39-5]
Methyl Ethyl Sulfide [624-89-5]
Methyl Furfuryl Disulfide [57500-00-2]
Methyl Octyl Sulfide [3698-95-1]
Methyl o-Tolyl Disulfide [35379-09-0]
Methyl Phenyl Disulfide [14173-25-2]
Methyl Propyl Disulfide [2179-60-4]
Methyl Propyl Sulfide [3877-15-4]
Methyl Propyl Trisulfide [17619-36-2]
2-Methyl-2-thiazoline [2346-00-1]
2-Methyl-3,5 or 6-(furfurylthio)pyrazine (mixture of isomers) [65530-53-2]
2-Methyl-3,5 or 6-methylthiopyrazine [67952-65-2]
2-Methyl-3-furyl 2-Methyl-3-tetrahydrofuryl Disulfide
2-Methyl-5,7-dihydrothieno[3,4-d]pyrimidine [36267-71-7]
4-Methyl-5-vinylthiazole [1759-28-0]
2-Methylthiazole [3581-87-1]
4-Methylthiazole [693-95-8]
5-Methylthiazole [3581-89-3]
2-Methylthiazolidine [24050-16-6]
2-Methylthio-3-ethylpyrazine [72987-62-3]
3-Methylthiobutanal [16630-52-7]
4-Methylthiobutanol [20582-85-8]
2-Methylthioethanol [5271-38-5]
2-Methylthiophene [554-14-3]
3-Methylthiophene [616-44-4]
3-Methylthiopropylamine [4104-45-4]
Methylthiopyrazine [21948-70-9]
2-Pentylthiophene [4861-58-9]
Phenyl Disulfide [882-33-7]
Propenyl Propyl Disulfide [5905-46-4]
Propenyl Propyl Sulfide [27817-67-0]
Propyl Disulfide [629-19-6]
2-Propylthiazole [17626-75-4]
2-Propylthiazolidine [24050-10-0]
Tetrahydrothiophene [110-01-0]
Thiazole [288-47-1]
2-Thienyl Mercaptan [7774-74-5]
Thioanisole [100-68-5]
Thiophene [110-02-1]
2-Thiophenecarbaldehyde [98-03-3]
2,4,6-Trihydro-2,4,6-trimethyl-1,3,5-dithiazine [94944-51-1]
4,7,7-Trimethyl-6-thiabicyclo[3.2.1]octane [68398-18-5]
Trimethylthiazole [13623-11-5]
Trithioacetone [828-26-2]
2,3,5-Trithiohexane [42474-44-2]
1,2,4-Trithiolane [289-16-7]

18. Thioles

Allyl Mercaptan [870-23-5]
Benzenethiol [108-98-5]
Benzyl Mercaptan [100-53-8]
2,3-Butanedithiol [4532-64-3]
1-Butanethiol [109-79-5]
2-Butanethiol [513-53-1]
Cyclohexyl Mercaptan [1569-69-3]
Cyclopentanethiol [1679-07-8]
1,2-Dimercaptoethane [540-63-6]
2,3-Dimercaptopropanol
2,5-Dimethyl-3-furanthiol [55764-23-3]
3,3-Dimethylbutanethiol
Dodecyl Mercaptan [112-55-0]
Ethanethiol [75-08-1]
Furfuryl Mercaptan [98-02-2]
Heptyl Mercaptan [1639-09-4]
Hexadecanethiol [2917-26-2]
1,6-Hexanedithiol [1191-43-1]
Isoamyl Mercaptan [541-31-1]
Isopropyl Mercaptan [75-33-2]
3-((Mercapto-1-methylpropyl)thio) 2-butanol [76801-35-8]
3-Mercapto-2-butanol [37887-04-0]
4-Mercapto-4-methyl-2-pentanone [19872-52-7]
2-Mercaptoethanol [60-24-2]
2-Mercaptomethylpyrazine [59021-02-2]
2-,3-and 10-Mercaptopinane [23832-18-0]
4-Methoxy-2-methylbutane-2-thiol [94087-83-9]
Methyl Mercaptan [74-93-1]
2-Methyl-3-furanthiol [28588-74-1]
2-Methyl-3-tetrahydrofuranthiol [57124-87-5]
2-Methyl-4,5-dihydro-3-furanthiol
p-Methylbenzyl Mercaptan [4498-99-1]
3-Methylbutane-2-thiol [2084-18-6]
2-Methylbutanethiol [1878-18-8]
2-Methylpropane-2-thiol [75-66-1]
2-Naphtalenethiol [91-60-1]
1,9-Nonanedithiol [3489-28-9]
1,8-Octanedithiol [1191-62-4]
Octyl Mercaptan
2,4,4,6,6-Pentamethyl-2-heptaneth

iol [25103-58-6]
Pentane-2-thiol [2084-19-7]
Pentane-1-thiol [110-66-7]
2-Phenylethanethiol [4410-99-5]
1-p-Menthen-8-thiol [71159-90-5]
1,2-Propandithiol [814-67-5]
Propyl Mercaptan [107-03-9]
Pyrazineethanethiol [35250-53-4]
Pyridine-2-methyl Mercaptan [2044-73-7]
Terpinyl Mercaptan
2-Thenyl Mercaptan [6258-63-5]
1-(2-Thienyl)ethylmercaptan [94089-02-8]
Thiogeraniol [39067-80-6]
Thiolinalool [39707-47-6]
o-Toluenethiol [137-06-4]

Flavorings (for taste-related purpose), CHOUMIRYOU

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
(Amino acid) Monocalcium Di-L-Glutamate		Not more than 1.0 % calcium (except food for special use under the Health Promotion Act)		
(Organic acids) Calcium Citrate		Not more than 1.0 % as calcium (except special nutrition food under the Health Promotion Act)		(Dietary supplement, emulsifier, raising agent)
Calcium Lactate				(Dietary supplement, raising agent)
D-Mannitol	CHOUMIRYOU, flavoring for taste-related purpose	In case Potassium Chloride and glutamate(s) are formulated to be used as CHOUMIRYOU, flavoring for taste-related purpose, level of D-Mannitol shall not be more than 80% of total level of Potassium Chloride, glutamates, and D-Mannitol.		(Quality improver)

Flour treatment agents

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Ammonium Persulfate	Flour	Not more than 0.30 g/kg		
Benzoyl Peroxide			Its use shall be limited as Diluted Benzoyl Peroxide after dilution with one or more of Aluminium Potassium Sulfate, Calcium Phosphates, Calcium Sulfate, Calcium Carbonate, Magnesium Carbonate, and starch.	
Chlorine Dioxide	Flour			
Diluted Benzoyl Peroxide	Flour	Not more than 0.30 g/kg		

Humectant, emulsifier, and/or stabilizer

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Sodium Chondroitin Sulfate	Dressing Fish sausage Mayonnaise	Not more than 20 g/kg Not more than 3.0 g/kg Not more than 20 g/kg		

Insecticide

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Piperonyl Butoxide	Cereal	Not more than 0.024 g/kg		

Mold release agent/antisticking agent

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Liquid Paraffin	Bread	Less than 0.10 % (residual level in bread)	Restricted for use to divide dough by automatic dividing implements and for the purpose of antisticking agent during the process of baking.	
Magnesium Stearate	Food for special dietary use (limited to capsules and tablets)			

Plasticizer for chewing gum

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Propylene Glycol	Chewing gum	Not more than 0.60 %		(Quality sustainer)

Preservatives

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Benzoic Acid	Caviar	Not more than 2.5 g/kg (as benzoic acid)		Caviar means canned or bottled roe of sturgeon and is generally served raw and has not been pasteurized.

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	Margarine	Not more than 1.0 g/kg (as benzoic acid)	When used in margarine with Sorbic Acid or Potassium Sorbate, total level of the additives as benzoic acid and as sorbic acid shall not be more than 1.0 g/kg.	
	Syrup Soy sauce Nonalcoholic beverage	Not more than 0.60 g/kg (as benzoic acid)		
Butyl p-Hydroxy-benzoate Isobutyl p-Hydroxy-benzoate Ethyl p-Hydroxy-benzoate Propyl p-Hydroxy-benzoate Isopropyl p-Hydroxy-benzoate	Rind of fruit or fruit vegetable	Not more than 0.012 g/kg (as p-hydroxybenzoic acid)		
	Fruit sauce	Not more than 0.20 g/kg (as p-hydroxybenzoic acid)		
	Non-alcoholic beverage Syrup	Not more than 0.1 g/kg (as p-hydroxybenzoic acid)		
	Soy sauce	Not more than 0.25 g/kg (as p-hydroxybenzoic acid)		
	Vinegar	Not more than 0.10 g/kg (as p-hydroxybenzoic acid)		
Calcium Propionate Propionic Acid Sodium Propionate	Bread Cake	Not more than 2.5 g/kg (as propionic acid)		(flavoring)
	Cheese	Not more than 3.0 g/kg (as propionic acid)	When used in combination with Sorbic Acid or Potassium Sorbate or preparation of either of the additives, total level of the additives as propionic acid and as sorbic acid shall not be more than 3.0 g/kg.	

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Potassium Sorbate	Cheese	Not more than 3.0 g/kg (as sorbic acid)	When used in combination with Propionic Acid, Calcium Propionate or Sodium Propionate, total level of the additives as sorbic acid and as propionic acid shall not be more than 3.0 g/kg.	
	Fish-paste product (excluding SURIMI) Meat product Sea urchin Whale meat product	Not more than 2.0 g/kg (as sorbic acid)		
	Smoked cuttlefish Smoked octopus	Not more than l.5 g/kg (as sorbic acid)		
	AN (sweetened ADZUKI bean or other bean paste) Candied cherry Dried fish and shellfish product (excluding smoked cuttlefish and smoked octopus) Flour paste Gnocchi KASU-ZUKE (pickled in SAKE lees) KOJI-ZUKE preserved in KOJI (malted rice) MISO (fermented soy paste) MISO-ZUKE (preserved in MISO) NIMAME (sweetened cooked beans) SHIOZUKE (salted pickle) SHOUYU-ZUKE (pickled in soy sauce)	Not more than 1.0 g/kg (as sorbic acid)		
	Syrup		In this provision, syrup is restricted to those prepared from sugar or glucose.	

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	Fruit juice (including concentrated fruit juice) and fruit paste for manufacture of confectionery TAKUAN-ZUKE (pickled radish in rice bran paste or similar material)			TAKUAN-ZUKE means pickled raw or dried radish prepared by immersing in rice bran or wheat bran paste containing taste-related flavor, spice, food color, etc., after pickling in salt, excluding ITCHOU-ZUKE radish and HAYAZUKE radish.
	TSUKUDANI (stor-able food boiled down in soy sauce)	Not more than 1.0 g/kg (as sorbic acid)		
	Margarine		When used in margarine with Benzoic Acid or Sodium Benzoate, total level of the additives as benzoic acid and as sorbic acid shall not be more than 1.0 g/kg.	
	Dried prune Ketchup Soup (excluding potage) SU-ZUKE (pickled in vinegar) TARE (grilled meat's sauces) TSUYU (Japanese soup preparation)	Not more than 0.50 g/kg (as sorbic acid)		
	AMAZAKE [sweet drink made from fermented rice (restricted to be served after dilution to not less than 3 times in volume)]	Not more than 0.30 g/kg (as sorbic acid)		
	Fermented milk (for raw material for preparation of lactic acid bacteria drinks)	Not more than 0.30 g/kg (as sorbic acid)		
	Wine Miscellaneous alcoholic beverage	Not more than 0.20 g/kg (as sorbic acid)		
	Lactic acid bacteria drinks (excluding pasteurized product)	Not more than 0.050 g/kg (as sorbic acid) and not more than 0.30 g/kg (as sorbic acid) in raw material for preparation of lactic acid bacteria drinks		

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Sodium Benzoate	Caviar	Not more than 2.5 g/kg (as benzoic acid)		Caviar means canned or bottled roe of sturgeon and is generally served raw and has not been pasteurized.
	Fruit paste and fruit juice (including concentrated juice) for manufacture of confectionery	Not more than 1.0 g/kg (as benzoic acid)		
	Margarine		When used in margarine with Sorbic Acid or Potassium Sorbate, total level of the additives as benzoic acid and as sorbic acid shall not be more than 1.0 g/kg.	
	Syrup Soy sauce Nonalcoholic beverage	Not more than 0.60 g/kg (as benzoic acid)		
Sodium Dehydroacetate	Butter Cheese Margarine	Not more than 0.50 g/kg (as dehydro-acetic acid)		
Sorbic Acid	Cheese	Not more than 3.0 g/kg (as sorbic acid)	When used in combination with Propionic Acid, Calcium Propionate, or Sodium Propionate, total level of the additives as sorbic acid and as propionic acid shall not be more than 3.0 g/kg.	
	Fish-paste product (excluding SURIMI) Meat product Sea urchin Whale meat product	Not more than 2.0 g/kg (as sorbic acid)		
	Smoked cuttlefish Smoked octopus	Not more than 1.5 g/kg (as sorbic acid)		
	AN: (sweetened ADZUKI bean or other bean paste) Candied cherry Dried fish and shellfish product (excludinig smoked cuttlefish and smoked octopus)	Not more than 1.0 g/kg (as sorbic acid)		

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	Flour paste Gnocchi Jam KASU-ZUKE (pickled in SAKE lees) KOJI-ZUKE [preserved in KOJI (malted rice)] MISO (fermented soy paste) MISO-ZUKE (preserved in MISO) NIMAME (sweet-ened cooked beans) SHIOZUKE (salted pickle) SHOUYU-ZUKE (pickled in soy sauce) Syrup TAKUAN-ZUKE (pickled radish in rice bran paste or similar material) TSUKUDANI (storable food boiled down in soy sauce)		In this provision, syrup is restricted to those prepared from sugar or glucose.	Flour paste means heat-treated and pasteurized food in paste form prepared from the principal ingredients of flour, starch, nuts or their processed products, cocoa, chocolate, coffee, fruits or their juice and other ingredients which include sugar, fats and oils, powdered milk, eggs, and flour and to be used as fillings of bread or confectioneries or applied on their surface . TAKUAN-ZUKE means pickled raw or dried radish prepared by immersing in rice bran or wheat bran paste containing taste-related flavor, spice, food color, etc., after pickling in salt, excluding ITCHOU-ZUKE radish and HAYAZUKE radish.
	Margarine		When used in margarine with Benzoic Acid or Sodium Benzoate, total level of the additives as benzoic acid and as sorbic acid shall not be more than 1.0 g/kg.	
	Dried prune Ketchup Soup (excluding potage) SU-ZUKE (pickled in vinegar) TARE (grilled meat's sauce) TSUYU (Japanese soup preparation)	Not more than 0.50 g/kg (as sorbic acid)		

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	AMAZAKE [sweet drink made from fermented rice (restricted to be served after dilution to not less than 3 times in volume)] Fermented milk (for raw material for preparation of lactic acid bacteria drinks)	Not more than 0.30 g/kg (as sorbic acid)		
	Wine Miscellaneous alcoholic beverage	Not more than 0.20 g/kg (as sorbic acid)		
	Lactic acid bacteria drinks (excluding pasteurized product)	Not more than 0.050 g/kg (as sorbic acid) and not more than 0.30 g/kg (as sorbic acid) in raw material for preparation of lactic acid bacteria drinks		

Processing aids

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Acetone			Restricted for extraction of ingredients in Guarana nuts in the process of preparation of Guarana beverage and for fractionation of components of fats and oils. Remove prior to preparation of final food.	
Acid Clay, Bentonite, Diatomaceous Earth, Kaolin, Perlite, Sand, Talc, Insoluble Mineral Substances similar to above mentioned 7 substances		Not more than 0.50 % in food (residual level) (including the case where 2 or more substances are used) Not more than 5.0 % in chewing gum in case where only Talc is used	Only in case where its use is indispensable for manufacture or processing of food.	

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Silicate		2.0 %*	Not permitted to use in food replacement for mother's milk or baby food. * When used with powdered SiO2, 2.0 % is the total.	
Ethyl Acetate			Ethyl Acetate may be used for purpose of denaturalization of ethanol to be used as solvent for vinyl acetate resin, in the process of removal of the astringency of persimmons or preparation of granules or pellets of spice, as solvent of Butylated Hydroxytoluene, or Butylated Hydroxyanisole and as an ingredient for manufacture of edible vinegar, in manufacturing process of KONJAK flour or crystalline fructose, or for stimulating purpose of yeast autolysis, in addition to its use as flavor. In case for the purpose of yeast autolysis, remove prior to preparation of final food.	(Flavorings)
Hexane			Restricted for extraction of fats and oils in manufacturing process of edible fats and oils. Remove prior to preparation of final food.	
Hydrochloric Acid Ion Exchange Resin			Neutralize or remove prior to preparation of final food.	
Oxalic Acid			Neutralize or remove prior to preparation of final food.	

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Polyvinyl-polypyrrolidone			Restricted for purpose of filtration aid. Remove prior to preparation of final food.	
Potassium Hydroxide			Neutralize or remove prior to preparation of final food.	
Silicon Dioxide (Other than Silicon Dioxide, Fine)			Restricted for purpose of filtration aid. Remove prior to preparation of final food.	
Sodium Hydroxide Sodium Hydroxide (Crystal)			Neutralize or remove prior to preparation of final food.	
Sodium Methoxide			Decompose prior to preparation of final food and remove resulting methanol.	
Sulfuric Acid			Neutralize or remove prior to preparation of final food.	

Propellant

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Nitrous oxide	Whipped creams			Whipped creams mean foamed products prepared by use of either food using milkfat or substitute food of milkfat as principal ingredient.

Quality improver

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
L-Cysteine Monohydrochloride	Bread Natural fruit juice		Shall not be used for purpose of nutrition.	(Dietary supplement)
Erythorbic Acid Sodium Erythorbate	Fish-paste products (excluding SURIMI) Bread			(Antioxidants)

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
D-Mannitol	FURIKAKE, sprinkle-overs restricted for those containing granules)	Not more than 50 % as an ingredient in granules		(Flavorings)
	Candies	Not more than 40 %		
	RAKUGAN Riceflour cake	Not more than 30 %		
	TSUKUDANI, storable food boiled down in soy sauce (restricted for those prepared from KOMBU, tangle)	Not more than 25% as residual level		
	Chewing gum	Not more than 20 %		
Potassium Bromate	Bread	Not more than 0.030 g/kg of flour (as bromic acid)	Decompose or remove prior to preparation of final food.	Only for bread prepared from wheat flour

Quality sustainer

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Propylene Glycol	Uncooked noodle Smoked cuttlefish	Not more than 2.0 % (as added level of propylene glycol)		(Plasticizer for chewing gum)
	Crust of Chinese pastry or dumpling; shao mai, spring roll, won ton, and ziaozi (GYOUZA in Japanese)	Not more than 1.2 % (as added level of propylene glycol)		
	Other food	Not more than 0.60 % (as added level of propylene glycol)		

Raising agents (Baking powder)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Aluminium Ammonium Sulfate Aluminium Potassium Sulfate			Shall not use in MISO.	
Calcium Carbonate		Not more than 1.0 % in food as calcium (except special nutrition food under the Health Promotion Act)		(Chewing gum base, dietary supplement, yeast nutrient)
Calcium Citrate				(Dietary supplement, emulsifier, flavor (taste))

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Dihydrogen Phosphate				(Dietary supplement, emulsifier, yeast nutrient)
Calcium Dihydrogen Pyrophosphate				(Dietary supplement, emulsifier)
Calcium Lactate				(Dietary supplement)
Calcium Monohydrogen Phosphate				(Chewing gum base, dietary supplement, emulsifier, yeast nutrient)
Calcium Sulfate				(Coagulant for TOFU, dietary supplement)
Tricalcium Phosphate				(Chewing gum base, dietary supplement, emulsifier, yeast nutrient)

Sterilizing agents

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Hydrogen Peroxide			Decompose or remove prior to preparation of final food.	
Hypochlorous Acid Water			Shall be removed prior to preparation of final food.	
Sodium Hypochlorite			Shall not use in sesame seeds.	

Surface treating agent of natural cheese

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Natanycin	Natural cheese (limited to be used on the surface area of hard and semihard cheeses	Less than 0.020 g/kg		Hard cheese is defined as cheese MFFB (% moisture on fat free basis) of which being 49 – 56 %, while semi-hard cheese is defined as cheese MFFB of which being 54 - 69 %.

Sweeteners

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Acesulfame Potassium	Substitute for sugar	Not more than 15 g/kg		Substitute for sugar means that it is directly added to coffee, black tea, etc. and is used as substitute food for sugar.
	Food with nutritional function (limited to tablets)	Not more than 6.0 g/kg		
	Chewing gum	Not more than 5.0 g/kg		
	AN Confectionery and Pastry	Not more than 2.5 g/kg		
	Ice cream products Jam "Tare" "Tsuke-Mono" Ice candy Flour paste	Not more than 1.O g/kg		
	Wine Miscellaneous alcoholic beverage Soft drinks Milk drink Lactic bacteria fermented beverage (when used for beverage to be served after dilution, the diluted beverage)	Not more than 0.50 g/kg		
	Other foods	Not more than 0.35 g/kg		
	Food for specified use under the Nutrition Improvement Act	Specified level under the law		
Disodium Glycyrrhizinate	Soy sauce, MISO (fermented soy-bean paste)			
Saccharin	Chewing gum	Not more than 0.050 g/kg (as saccharin)		
Sodium Saccharin	KOJI-ZUKE (preserved in KOJI, fermented rice) SU-ZUKE (pickled in vinegar) TAKUAN-ZUKE (preserved radish in rice bran paste)	Less than 2.0 g/kg (as residual level of sodium saccharin)		
	Powdered nonalcoholic beverage	Less than 1.5 g/kg (do.)		

(Continued)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	KASU-ZUKE (pick-led in SAKE lees) MISO-ZUKE (preserved in fermented soy-bean paste) SHOUYU-ZUKE (preserved in soy sauce) Processed fish and shellfish (excluding SURIMI products, TSUKUDA-NI, pickled food, and canned or bottled food)	Less than 1.2 g/kg (do.)		
	NIMAME (cooked beans or peas, sweetened) Processed seaweed Soy sauce TSUKUDANI (preserved food boiled down in soy sauce)	Less than 0.50 g/kg (do.)		
	Edible ices Milk drinks Sauce Nonalcoholic beverage Fish-paste product Syrup Vinegar Lactic acid bacteria drinks	Less than 0.30 g/kg (less than 1.5 g/kg in case of materials for nonalcoholic beverage or lactic acid bacteria drinks or fermented milk product to be diluted not less than 5-fold before use, less than 0.90 g/kg in case of vinegar to be diluted not less than 3-fold before use) (do.)		Edible ices include sherbet, flavored ices and other similar products.
	AN (ADZUKI bean paste) Fermented milk product (excluding fermented milk product to be used as ingredient for lactic acid bacteria beverage) Flour paste Ice cream products Jam MISO (fermented soybean paste)	Less than 0.20 g/kg (do.)		These levels shall also be applied to liquid mix and mix powder which are the ingredient of confectionery, ice cream, or ice cake.

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
	TSUKEMONO (other than KASU-ZUKE, KOJI-ZUKE, MISO-ZUKE, SHOUYU-ZUKE, SU-ZUKE, TAKUAN-ZUKE)			
	Confectionery	Less than 0.10 g/kg (do.)		
	Canned or bottled food (including all food not listed in this column and fish and shellfish product)	Less than 0.20 g/kg (do.)		
	Food for special use under the Nutrition Improvement Act	Specified level under the Act		
Sucralose	Substitute for sugar	Not more than 12 g/kg		Substitute for sugar means that it is directly added to coffee, black tea, etc. and is used as substitute food for sugar.
	Chewing gum	Not more than 2.6 g/kg		
	Confectionery and Pastry	Not more than 1.8 g/kg		
	Jam	Not more than 1.0 g/kg		
	Japanese SAKE (rice wine) Compound SAKE (formulated rice wine) Wine Miscellaneous alcoholic beverage Soft drinks Milk drink Lactic acid bacteria drinks (when used for beverage to be served after dilution, the diluted beverage)	Not more than 0.40 g/kg		
	Other foods	Not more than 0.58 g/kg0		
	Food for specified use under the Nutrition Improvement Act	Specified level under the law		

Thickeners (stabilizers or gelling agents)

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Carboxymethy-lcellulose Methylcellulose		Not more than 2.0 %	In case where 2 or more of Calcium Carboxymethyl-cellulose, Methylcellulose, Sodium Carboxymethyl-cellulose, Sodium Carboxymethyl-starch, or Sodium Starch Phosphate are used in combination, the total level shall not be more than 2.0 %.	
Propylene Glycol Alginate		Not more than 1.0 %		

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Sodium Carboxymethyl-cellulose Sodium Carboxymethyl-starch		Not more than 2.0 %	In case where 2 or more of Calcium Carboxymethyl-celluIose, Methylcellulose, Sodium Carboxymethyl-cellulose , Sodium Carboxymethyl-starch, or Sodium Starch Phosphate are used in combination, the total level shall not be more than 2.0 %.	
Sodium Polyacrylate		Not more than 0.20 %		
Sodium Starch Phosphate		Not more than 2.0 %	In case where 2 or more of Calcium Carboxymethyl-cellulose, Methylcellulose, Sodium Carboxymethyl-cellulose, Sodium Carboxymethyl-starch, or Sodium Starch Phosphate are used in combination, the total level shall not be more than 2.0 %.	

Yeast nutrients

Substance name	Permitted food	Maximum level	Limitation of use	Note (Principal other uses)
Calcium Carbonate		Not more than 1.0 % in food as calcium (except special nutrition food under the Health Promotion Act)	Restricted in case where its use is indispensable for manufacture or processing of food or for purpose of dietary supplement.	(Chewing gum base, dietary supplement, raising agent)
Calcium Sulfate				(Coagulant for TOFU, dietary supplement, raising agent)
Calcium Dihydrogen Phosphate				(Dietary Supplement, emulsifier, raising agent)
Calcium Monohydrogen Phosphate Tricalcium Phosphate				(Dietary Supplement, chewing gum base, emulsifier, raising agent)

Food Additives with No Standards of Use

Table FA03

Anticaking agent
Magnesium carbonate (DS, RA)

Antioxidants
L-Ascorbic Acid (DS, QI, RA)
L-Ascorbyl Palmitate (DS)
L-Ascorbyl Stearate (DS)
Calcium L-Ascorbate (DS)
Sodium L-Ascorbate (DS, QI)

Acidity regulators
Acetic Acid (FA)
Adipic Acid (FA, RA)
Carbon Dioxide (FA)
Citric Acid (FA, RA)
Dipotassium Hydrogen Phosphate (EM, FT, KA, RA)
Disodium Dihydrogen Pyrophosphate (KA, RA)
Disodium Hydrogen Phosphate (EM, KA, FT, RA)
Disodium Succinate (FA, FT)
Disodium DL-Tartrate (FA, FT)
Disodium L-Tartrate (FA, FT)
Fumaric Acid (FA, RA)
Glacial Acetic Acid (FA)
Gluconic Acid (FA)
Glucono-δ-Lactone (COA, FA, RA)
Lactic Acid (FA, RA)
DL-Malic Acid (FA, RA)
Monosodium Fumarate (FA, RA)
Monosodium Succinate (FA, FT)
Phosphoric Acid (FA)
Potassium DL-Bitartrate (FT, RA)
Potassium L-Bitartrate (FT, RA)
Potassium Carbonate (Anhydrous) (YN, KA, RA)
Potassium Dihydrogen Phosphate (EM, FT, KA, RA)
Potassium Gluconate (EM, FA, FT, HU, YN)
Sodium Acetate (FA, FT)
Sodium Bicarbonate (KA, RA)
Sodium Carbonate (KA, RA)
Sodium Dihydrogen Phosphate (EM, KA, FT, RA)
Sodium Gluconate (EM, FA, FT, HU, YN)
Sodium Lactate (FA, FT)
Sodium DL-Malate (FA, FT, RA)
Succinic Acid (FA, FT)
DL-Tartaric Acid (FA, RA)
L-Tartaric Acid (FA, RA)
Trisodium Citrate (FA, FT)

Binding agents
Disodium Hydrogen Phosphate
Potassium Metaphosphate (EM, KA, RA)
Potassium Polyphosphate (EM, KA, RA)
Potassium Pyrophosphate (EM, KA, RA)
Sodium Metaphosphate (EM, KA, RA)
Sodium Polyphosphate (EM, KA, RA)
Sodium Pyrophosphate (EM. KA, RA)

Chewing gum bases
Glycerol Esters of Fatty Acids (EM)
Propylene Glycol Esters of Fatty Acids (EM)
Sorbitan Esters of Fatty Acids (EM)
Sucrose Esters of Fatty Acids (EM)

Coagulants for TOFU, soybean curd
Glucono-δ-Lactone (FA, AR, RA)
Magnesium Chloride (PA, YN, DS)
Magnesium Sulfate (FE, DS)

Color
Riboflavin (DS)
Riboflavin 5'-Phosphate Sodium (DS)
Riboflavin Tetrabutyrate (DS)

Color retention agents
Ferrous Sulfate (DS)

Amino acids
DL-Alanine (FT)
L-Arginine L-Glutamate (FT)
L-Glutamic Acid (FT)
Glycine (FT)
L-Histidine Monohydrochloride (FT)
L-Isoleucine (FT)
L-Lysine L-Aspartate (FT)
L-Lysine L-Glutamate (FT)
L-Lysine Monohydrochloride (FT)
D-Methionine (FT)
L-Methionine (FT)
Monosodium L-Aspartate (FT)
Monosodium L-Glutamate (FT)
L-Phenylalanine (FT)
L-Theanine (FT)
DL-Threonine (FT)
L-Threonine (FT)
DL-Tryptophan (FT)

L-Tryptophan (FT)
L-Valine (FT)

Minerals

Calcium Stearate
Ferric Ammonium Citrate
Ferric Chloride
Ferric Citrate
Ferric Pyrophosphate
Ferrous Sulfate (Crystal) (CD)
Iron Lactate
Magnesium Carbonate (AC, RA)
Magnesium Chloride (YN, PA, COA)
Magnesium Hydroxide
Magnesium Oxide (PA)
Magnesium Sulfate (COA, FE)
Sodium Ferrous Citrate
Trimagnesium Phosphate

Vitamins

L-Ascorbic Acid (AO, QI, RA)
L-Ascorbic Acid 2-Glucoside
L-Ascorbyl Palmitate (AO)
L-Ascorbyl Stearate (AO)
Bisbentiamine
β-Carotene (COL)
Calcium L-Ascorbate (AO)
Cholecalciferol
Dibenzoyl Thiamine
Dibenzoyl Thiamine Hydrochloride
Ergocalciferol
Folic Acid
Methyl Hesperidin
Pyridoxine Hydrochloride
Riboflavin (COL)
Riboflavin 5'-Phosphate Sodium (COL)
Riboflavin Tetrabutyrate (COL)
Sodium L-Ascorbate (AO, QI)
Sodium Pantothenate
Thiamine Dicetylsulfate
Thiamine Dilaurylsulfate
Thiamine Hydrochloride
Thiamine Mononitrate
Thiamine Naphthalene-1,5-Disulfonate
Thiamine Thiocyanate
Vitamin A
Vitamin A Esters of Fatty Esters

Emulsifiers

Glycerol Esters of Fatty Acids (CB)
Propylene Glycol Esters of Fatty Acids (CB)
Sorbitan Esters of Fatty Acids (CB)
Starch Sodium Octenylsuccinate (TH)
Sucrose Esters of Fatty Acids (CB)

Emulsifiers (for use in processed cheese, cheese food, and food from processed cheese)

Ammonium Dihydrogen Phosphate (YN, FE)
Diammonium Hydrogen Phosphate (YN, FE)
Dipotassium Hydrogen Phosphate (KA, RA, AR, FT)
Disodium Dihydrogen Pyrophosphate (KA)
Disodium Hydrogen Phosphate (KA, RA, AR, FT)
Potassium Dihydrogen Phosphate (KA, FT, AR, RA)
Potassium Gluconate (AR, FA, FT, HU, YN)
Potassium Metaphosphate (KA, BA, RA)
Potassium Polyphosphate (KA, BA, RA)
Potassium Pyrophosphate (KA, BA, RA)
Sodium Dihydrogen Phosphate (KA, RA, AR, FT)
Sodium Gluconate (AR, FA, FT, HU, YN)
Sodium Metaphosphate (KA, BA, RA)
Sodium Polyphosphate (KA, BA, RA)
Sodium Pyrophosphate (KA, BA, RA)
Trisodium Citrate (FA, FT, AR)
Trisodium Phosphate (KA, FT)
Tripotassium Phosphate (KA, FT)

Food acids

Acetic Acid (AR)
Adipic Acid (AR)
Carbon Dioxide (AR)
Citric Acid (AR, RA)
Disodium Succinate (AR, FT)
Disodium DL-Tartrate (AR, FT)
Disodium L-Tartrate (AR, FT)
Fumaric Acid (AR, RA)
Glacial Acetic Acid (AR)
Gluconic Acid (AR)
Glucono-δ-Lactone (AR, COA, RA)
Lactic Acid (AR, RA)
DL-Malic Acid (AR, RA)
Monopotassium Citrate (AR)
Monosodium Fumarate (AR, FT, RA)
Monosodium Succinate (AR, FT)
Phosphoric Acid (AR)
Potassium Gluconate (AR, EM, FT, HU, YN)
Sodium Acetate (AR, FT)
Sodium Gluconate (AR, EM, FT, HU, YN)
Sodium Lactate (AR, FT)
Sodium DL-Malate (AR, FT, RA)
Succinic Acid (AR, FT)
DL-Tartaric Acid (AR, FT)
L-Tartaric Acid (AR, FT)
Tripotassium Citrate (AR)
Trisodium Citrate (AR, EM, FT)

Fermentation aids

Ammonium Dihydrogen Phosphate (YN)
Ammonium Sulfate (YN)
Diammonium Hydrogen Phosphate (YN, EM)
Magnesium Sulfate (COA, DS)

Trimagnesium Phosphate

Flavorings for taste-related purpose, CHOUMIRYOU, excluding sweeteners and food acids

Amino acids

DL-Alanine (DS)
L-Arginine L-Glutamate (DS)
L-Glutamic Acid (DS)
Glycine (DS)
L-Histidine Monohydrochloride (DS)
L-Isoleucine (DS)
L-Lysine L-Aspartate (DS)
L-Lysine L-Glutamate (DS)
L-Lysine Monohydrochloride (DS)
DL-Methionine (DS)
L-Methionine (DS)
Monomagnesium Di-L-Glutamate
Monopotassium L-Glutamate (DS)
Monosodium L-Aspartate (DS)
Monosodium L-Glutamate (DS)
L-Phenylalanine (DS)
L-Theanine (DS)
DL-Threonine (DS)
L-Threonine (DS)
DL-Tryptophan (DS)
L-Tryptophan (DS)
L-Valine (DS)

Inorganic salts

Dipotassium Hydrogen Phosphate (AR, RA)
Potassium Chloride
Potassium Dihydrogen Phosphate (KA, RA, AR, EM)
Sodium Dihydrogen Phosphate (AR, RA, KA, EM)
Disodium Hydrogen Phosphate (AR, RA, EM, KA)
Tripotassium Phosphate (EM, KA)
Trisodium Phosphate (EM, KA)

Nucleotides

Calcium 5'-Ribonucleotide
Disodium 5'-Cytidylate
Disodium 5'-Guanylate
Disodium 5'-Inosinate
Disodium 5'-Ribonucleotide
Disodium 5'-Uridylate

Organic acids

Disodium Succinate (FA, AR)
Disodium DL-Tartrate (FA, AR)
Disodium L-Tartrate (FA, AR)
Monopotassium Citrate (FA)
Monosodium Fumarate (FA, AR)
Monosodium Succinate (FA, AR)
Potassium DL-Bitartrate (AR, RA)
Potassium L-Bitartrate (AR, RA)
Potassium Gluconate (AR, EM, FA, HU, YN)
Sodium Acetate (FA, AR)
Sodium Gluconate (AR, EM, FA, HU, YN)
Sodium Lactate (FA, AR)
Sodium DL-Malate (FA, AR)
Succinic Acid (FA, AR)
Tripotassium Citrate (FA)
Trisodium Citrate (FA, EM, AR)

Humectant

Potassium Gluconate (AR, EM, FA, FT, YN)
Sodium Gluconate (AR, EM, FA, FT, YN)
D-Sorbitol (SW, PC)

KANSUI, alkaline agents for preparation of Chinese noodles

Dipotassium Hydrogen Phosphate (EM, RA, AR, FT)
Disodium Dihydrogen Pyrophosphate (BA. EM, RA, AR)
Disodium Hydrogen Phosphate (AR, EM, RA, FT)
Potassium Carbonate (Anhydrous) (AR, RA, YN)
Potassium Dihydrogen Phosphate (EM, RA AR, FT)
Potassium Metaphosphate (BA, EM, RA)
Potassium Polyphosphate (BA, EM, RA)
Potassium Pyrophosphate (BA, EM, RA)
Sodium Bicarbonate (AR, RA)
Sodium Carbonate (AR, RA)
Sodium Dihydrogen Phosphate (AR, EM, RA, FT)
Sodium Metaphosphate (BA, EM, RA)
Sodium Polyphosphate (BA, EM, RA)
Sodium Pyrophosphate (BA, EM, RA)
Tripotassium Phosphate (EM, FT)
Trisodium Phosphate (AR, EM, FT)

Pasteurizing Agent

High-Test Hypochlorite

Processing aids

Ammonia
Magnesium Chloride (DS, YN, COA)
Magnesium Oxide (DS)
Sodium Caseinate
Sodium Sulfate

Plasticizers for chewing gum

Glycerol
D-Sorbitol (SW, HU)

Quality Improver

L-Ascorbic Acid (DS, AO, RA)
Sodium L-Ascorbate (DS, AO)

Raising agents

Adipic Acid (FA, AR)
Ammonium Bicarbonate
Ammonium Carbonate (YN)
Ammonium Chloride (YN)
L-Ascorbic Acid (DS, AO, QI)
Citric Acid (FA, AR)
Dipotassium Hydrogen Phosphate (AR, FT, KA, EM)
Disodium Dihydrogen Pyrophosphate (BA, KA, EM, AR)
Disodium Hydrogen Phosphate (AR, FT, KA, EM)
Fumaric Acid (FA, AR)
Glucono-δ-Lactone (COA, FA, AR)
Lactic Acid (FA. AR)
DL-Malic Acid (FA. AR)
Magnesium Carbonate (AC, DS)
Monosodium Fumarate (FA, AR, FT)
Potassium Carbonate (Anhydrous) (AR, KA. YN)
Potassium Dihydrogen Phosphate (AR, FT, KA, EM)
Potassium DL-Bitartrate (AR, FT)
Potassium L-Bitartrate (AR, FT)
Potassium Metaphosphate (BA, KA, EM)
Potassium Polyphosphate (BA, KA. EM)
Potassium Pyrophosphate (BA, KA. EM)
Sodium Bicarbonate (AR, KA)
Sodium Carbonate (AR, KA)
Sodium Dihydrogen Phosphate (AR, FT, KA, EM)
Sodium DL-Malate (FA, FT, AR)
Sodium Metaphosphate (BA, KA, EM)
Sodium Polyphosphate (BA, KA, EM)
Sodium Pyrophosphate (BA, KA, EM)
DL-Tartaric Acid (FA, AR)
L-Tartaric Acid (FA, AR)

Sweeteners

Aspartame
D-Sorbitol (PC, HU)
Neotame
Xylitol

Thickener (Stabilizer or gelling agent)

Acetylated Distarch Adipate
Acetylated Distarch Phosphate
Acetylated Oxidized Starch
Ammonium Alginate
Calcium Alginate
Distarch Phosphate
  Hydroxy propyl Distarch Phosphate
Hydroxypropyl Starch
Monostarch Phosphate
Oxidized Starch
Phosphated Distarch Phosphate
Potassium Alginate
Sodium Alginate
Starch Acetate
Starch Sodium Octenyl Succinate (EM)

Meaning of parenthetical abbreviated names

AC : Anticaking agent
AO : Antioxidant
AR : Acidity regulator
BA : Binding agent
CB : Chewing gum bases
CD : Color developer (Color fixative)
COA : Coagulant for TOFU, soybean curd
COL : Color
CR : Color retention agent
DS : Dietary supplement
EM : Emulsifier
FA : Food acid
FE : Fermentation aid
FT : CHOUMIRYOU, flavoring for taste-related purpose, excluding sweeteners and food acids
HU : Humectant
KA : KANSUI, alkaline agent for the preparation of Chinese noodles
PA : Processing aid
PC : Plasticizer for chewing gum
QI : Quality improver
RA : Raising agent (baking powder)
SW : Sweetener
TH : Thickner
YN : Yeast nutrient

Existing Food Additives

Table FA04

The following is the list of Existing Food Additives published by the Ministry of Health and Welfare in 2008. Any food appearing in the list, and any food or preparation containing such food additives, are not subject to the provision of Article 10 of the Food Sanitation Act as interim measure in the amendment to the law. Therefore, sale or manufacture, importation, use, etc. for sale of such food additives, etc. continues to be permitted.

Notes:
1) The following list is arranged in alphabetical order for the convenience of readers. Numbers in parentheses indicate numbers of the original Japanese list.
2) Naural flavouring agents, and substances generally provided as food and used as food additives are not subject to the provisions of Article 10. Therefore, they do not appers in the list.

Absinth extract (270)
A substance obtained from the whole absinth grass.
α-Acetolactate decarboxylase (12)
N-Acetylglucosamine (11)
Acid clay (168)
Acid phosphatase (169)
Actinidine (4)
Activated acid clay (68)
Active carbon (67)
Acylase (6)
5'-Adenylic acid (13)
Agarase (3)
Agrobacterium succinoglycan (5)
A substance obtained from the culture of bacteria belonging to *Agrobacterium.*
L-Alanine (19)
Alginate lyase (26)
Alginic acid (25)
Alkanet colour (23)
A substance obtained from alkanet roots.
Aloe extract (94)
A substance obtained from the leaved of *Aloe arborescens* MILL.
Aloe vera extract (28)
A substance obtained from aloe leaves.
Aluminium (27)
Amino acid-sugar reaction product (224)
A substance obtained by heating the mixture of amino acids and monosaccharides.
Aminopeptidase (16)
α-Amylase (17)
ß-Amylase (18)
Annatto extract (14)
A substance obtained from the seed coats of annatto.
Anthocyanase (29)
Arabino galactan (21)
L-Arabinose (22)
L-Arginine (24)
Artemisia sphaerocephala seed gum Artemisia seed gum (167)
Ascorbate oxidase (7)
L-Asparagine (8)
L-Aspartic acid (9)
Aspergillus terreus glycoprotein (10)
A substance obtained from the culture of mold.
Aureobasidium cultured solution (1)
A substance obtained from the culture of bacteria belonging to of Azotobacter vinelandii.
Bacillus natto gum (263)
A substance obtained from the culture of bacteria belonging to *Bacillus natto*.
Bamboo grass colour (165)
A substance obtained from the leaves of bamboo grass.
Bees wax (366)
Beet red (292)
Bentonite (347)
Betaine (332)
Bone carbon black (154)
A substance obtained by carbonizing bones.
Bone charcoal (153)
A substance obtained from bovine bones.
Brazilina licorice extract (311)
A substance obtained from Brazilian licorice roots.
Bromelain (318)
Buckwheat ash extract (211)
Butane (307)
Cacao carbon black (61)
Cacao colour (60)
Caffeine (extract) (73)

A substance obtained from coffee beans or tea leaves.

Calcinated calcium (187)

A substance obtained by calcinating sea urchin shells, shells, coral, whey, bones or eggshells.

Candelilla wax (90)

A substance obtained from the candelilla stems.

Cane wax (166)

Capsicum water-soluble Extract (247)

Caramel I (plain) (78)

A substance obtained by heating food-grade carbohydrates including starch hydrolysates, molasses or saccharides excluding Caramel II (No.79), Caramel III (No.80). And Caramel IV (No.81).

Caramel II (caustic sulfite process) (79)

A substance obtained by adding sulfite compounds to, and heat-treating, food grade carbohydrates including starch-hydrolysates, molasses or saccharides, excluding Caramel IV (No.81).

Caramel III (ammonia process) (80)

A substance obtained by adding ammonium compounds to, and heat-treating, food grade carbohydrates including starch-hydrolysates, molasses or saccharides, excluding Caramel IV (No.81).

Caramel IV (sulfite ammonia process) (81)

A substance obtained by adding sulfite compound and ammonium compounds to, and heat-treating, food grade carbohydrates including starch-hydrolysates, molasses or saccharides.

Carboxypeptidase (84)

Carnauba wax [Brazil wax] (83)

A substance obtained from leaves of carnauba trees.

Carob bean gum [Locust bean gum] (86)

A substance obtained by grinding and dissolving and precipitating the seed albumins of locust bean beans.

Carob germ colour (85)

Carrageenan (74)

A substance obtained from the whole algae of IBARA-NORI (Hypneaceae Hypnea), KIRINNSAI (Solieriacea Eucheuma), GINNANSOU (Gingartenacea Iridaea), SUGI-NORI (Gingartinaceae Girartina) or TSHUNOMATA (Chondrus.).

Carrot carotene (274)

Carthamus red (336)

A substance obtained from safflower flowers.

Carthamus yellow (337)

Cassia gum (64)

A substance obtained by grinding the seed of EBISU-GUSA-MODOKI (*Cassia tora LINN*).

Catalase (66)

Catechin (70)

Cellulase (208)

Charcoal (380)

A substance obtained by carbonizing bamboo or wood.

Chicle Chiquibul Crown gum Nispero (228)

A substance obtained from the secretion of sapodilla trees.

Chilte (233)

A substance obtained from the secretion of chite trees (*Chidoscolus elasticus*

LUNDELL).

Chinese bayberry extract (387)

Chitin (96)

Chitinase (95)

Chitosan (98)

Chitosanase (97)

Chlorophyll (132)

Chlorophylline (131)

Cholesterol (248)

A substance obtained from fish oil or lanolin (Refer to NO. Lanolin).

Clove extract (130)

A substance obtained from the buds,leaves or flowers of clove.

Cobalt (156)

Cochineal extract[Carminic acid] (152)

A substance obtained from cochineal insects.

Coffee bean extract (265)

Copal resin (155)

A substance obtained from the secretion of copal trees.

Copper (245)

Crayfish colour (72)

A substance obtained from crayfish shells or eyes.

Cristobalite (115)

Crude magnesium chloride (sea water) (210)

A substance obtained by separating potassium chloride and sodium chloride from sea water.

Crude potassium chloride (sea water) (209)

A substance obtained by separating sodium chloride from sea water.

Curdlan (71)

A substance obtained from the culture of bacteria belonging to *Argobacterium* or *Alcaligenes.*

Cyanocobalamin Vitamin B_{12} (173)

Cyclodextrin (178)

Cyclodextrin glucanotransferase (179)

L-Cystine (181)

5'-Cytidylic acid (184)

Dammar resin (227)

A substance obtained from the secretion of dammar trees.

5'-Deaminase (237)

Depolymerized Natural rubber (238)

A substance obtained by decomposing the secretion of para rubber trees.

Dextran (241)

Dextranase (240)

Diatomaceous earth (135)

Dokudami extract (249)

A substance obtained from the leaves of DOKUDAMI (*Houttuynia cordata* THUNB).

Dunaliella carotene (243)

A substance obtained from the whole algae of dunaliella.

Elemi resin (47)

A substance obtained from the secretion of elemi trees.

Ellagic acid (46)

Enzymatically decomposed apple extract (148)

A substance composed mainly of catechins and chlorogenic acid obtained by enzymatically decomposingapple fruits.

Enzymatically decomposed lecithin (149)

A substance composed mainly of phosphatidic acid and lysolechitin obtained from vegetable lecitin or yolk lecithin.

Enzymatically decomposed rice bran (162)

A substance composed mainly of phytic acid and peptides obtained dewaxed rice bran.

Enzymatically decomposed rutin (406)

A substance composed mainly of isoquercitrin and obtained from rutin.

Enzymatically hydrolyzed coix extract (147)

A substance obtained by enzymatically ydrolyzing the seeds of Job's tears (*Coix lacryma-jobi var. ma-yuen* STAPF).

Enzymatically hydrolyzed guar gum (106)

A substance composed mainly of polysaccharides obtained by grinding and hydrolyzing guar seeds.

Enzymatically modified licorice extract (140)

A substance composed mainly grycyrrheitinic acid-3-glucuronide obtained by enzymatically hydrolyzing a licorice extract.

Enzymatically modified hesperidin (143)

A substance obtained by adding glucose to hesperidin (Refer No. Hesperidin).

Enzymatically modified isoquercitrin (139)

A substance composed mainly α-glucosylquercetin obtained from enzymatically decomposed rutin.

Enzymatically modified lecithin (145)

A substance mainly composed of phosphatidylglycerol obtained from vegetable lecithin) or yolk lecithin.

Enzymatically hydrolyzed licorice extract (146)

A substance obtained from the licorice

Enzymatically modified naringin (142)

A substance mainly composed of α-glucosylmaringin obtained from naringin.

Enzymatically modified rutin (extract) (144)

A substance mainly composed ofα-glucosylrutin obtained from rutin extract.

Enzymatically modified tea extract (141)

A substance obtained by adding glucose to a tea extract,using cyclodextrin glucosyltransferase.

Essential oil-removed fennel extract (199)

A substance obtained from fennel seeds.

Esterase (45)

Eucalyptus leaf extract (389)

Exomaltotetraohydrolase (43)

Ferritin (304)

Ferulic acid (305)

Ficin (300)

Fish scale foil (101)

A substance obtained by extraction from the epithelium of fish.

Fractionated lecithin Cephalin Lipoinositol (320)

A substance composed mainly of sphingomyelin, phosphatidiyl inositol, phosphatidyl choline obtained

from vegetable lecithin (Refer to No. Vegetable lecithin) or yolk lecithin (Refer to No. Yolk Lecithin).

Fructosyl transferase (312)

Fukuronori extract (306)

A substance composed mainly of polysaccharides obtained from FUKURO-NORI (G*loiopeltis furcata* POSTEL et RUPR).

Furcellaran (298)

A substance composed mainly of polysaccharides obtained from the whole algae of furcellaria.

α-Galactosidase (75)

ß-Galactosidase (Lactase) (76)

Gallic acid (352)

Garden balsam extract (348)

A substance obtained from the leaves of garden balsam.

Gardenia blue (110)

A substance obtained from gardenia fruits and protein-decomposed substances.

Gardenia red (11)

A substance obtained by adding ß-glucosidase to the mixture of ester-hydrolysates of iridoid glycosides obtained from gardenia fruits and protein-decomposed substances.

Gardenia yellow (112)

A substance composed mainly of allylsulfides obtained from gardenia fruit.

Garlic extract (275)

Gastric mucin (65)

A substance composed mainly of mucopolysaccharides obtained from mammals' gastric mucosae.

Gellan gum (176)

A substance composed mainly polysaccharides obtained from the culture of bacteria belonging to *Pseudomonas elodea*.

Gentian root extract (136)

A substance obtained from gentian roots orrhizomes.

Ginger extract (186)

Glucanase (117)

Glucoamylase (118)

Glucosamine (119)

Glucose isomerase (124)

Glucose oxidase (125)

α-Glucosidase (120)

ß-Glucosidase (121)

α-Glucosyltransferase[4-α-Glucanotransferase,6-α-Glucanotransferase] (122)

α-Glucosyltransferasetreated stevia (123)

A substance obtained from a stevia extract. (Refer to NO. Stevia extract.)

Glutaminase (126)

L-Glutamine (127)

Gold (103)

Granite porphyry (63)

Grape seed extract (310)

Grape skin-derived substance (309)

A substance composed mainly of polyphenols obtained from the pericarps of Ameerican grapes.

Grape skin colourGrape skin extract (308)

Grapefruit seed extract (128)

Green tuff (116)

Guaiac resin (107)

A substance obtained from the trunks/branches of

Guajac resin (extract) (108)

A substance obtained from the secretion of guaiacum trees.

Guar gum (105)

A substance obtained from guar seeds, excluding No.enzymatically hydrolyzed guar gum.

Gum Arabic [Arabic gum, Acacia gum] (20)

Gum ghatti (69)

A substance obtained from the secretion of ghatti trees.

Gutta hang kang (113)

A substance obtained from the secretion of gutta hang kang trees.

Gutta percha (114)

A substance obtained from the secretion of gutta pecha trees.

Haematococcus algae colour (343)

A substance obtained from the whole algae ofhaematococcus.

Hego-Ginkgo leaf extract (328)

A substance obtained by extraction from the leaves of HEGO and ginkgo.

Helium (346)

Heme iron (345)

Hemicellulase (344)

Heptane (341)

Hesperetin (331)

Hesperidin Vitamin P (330)

Hesperidinase (329)
Hexane (324)
Higher fatty acid (137)
A substance obtained by hydrolyzing animal or vegetable fats/oils or their hardened fats and oils.
Himematsutake extract (295)
L-Histidine (291)
Hokosshi extract (349)
A substance obtained from the seed of HOKOSSHI *(Psoralea corylifolia* O>KNZ*)*.
Horseradish extract (200)
Hyaluronic acid (287)
Hydrogen (192)
L-Hydroxyproline (293)
Inositol (36)
Inulinase (35)
Invertase (38)
Iron (242)
Iso-α-bitter acid (31)
A substance composed mainly isohumulones obtained from hop flowers.
Isoamylase (30)
Isodonis extract (288)
A substance composed mainly of anmein obtained from the stems or leaves of HIKIOKOSHI (*Isodon japonicus* HARA).
Isomaltodextranase (32)
Itaconic acid (33)
Jamaica quassia extract (185)
A substance obtained from the tranks/branches or bark of Jamaicanquassia trees.
Japan wax (381)
A substance obtained from the fruits of Japanes wax trees.
Japanese persimmon colour (62)
A substance obtained from Japanese persimmon fruits.
Japanese styrax benzoin extract (44)
A substance composed mainly of benzoic acid obtained from the secretion of ANSOKLU-KO-NO-KI (*Styrax benzoin* DRY).
Jelutong (177)
A substance obtained from the secretion of julutong trees.
Jojoba wax (353)
A substance composed mainly of icosanyl icosanata obtained from jjojoba fruits.
Kaorliang colour (151)
A substance composed maily of apigeninidin and luteolindin obtained from kaoliang seeds.
Kaolin (59)
Karaya gum (82)
A substance composed mainly of polysaccharides obtained from the secretion of KRAYA trees (*Sterculia urens* ROXB) or silk cotton trees.
Kooroo colourMatsudai colour (129)
A substance obtained by extraction from the roots of SOMEMONO-IMO (*Dioscorea matsudai* HAYATA.
Krill colour (49)
Lac colour (394)
A substance composed mainly of laccaic acids obtained from the secretion of lac scale insects.
Lactoferrin concentrates (393)
A substance composed mainly of lactoferrin obtained from mammals' milk.
Lactoperoxidase (392)
Lanolin (395)
A substance composed mainly of esters of higher alcohols and α–hydroxylic acids obtained from waxy substances bearing the surface of sheep wool
Leche de vaca (410)
A substance composed mainly of esters of amyrin obtained from the secretion of leche de vaca trees (Brosimum utile (H.B.K.)PITT).
Lemon peel extract (412)
A substance composed mainly of geraniol and citrail obtained from lemon peels.
L-Leucine (414)
Levan (411)
A substance composed mainly of polysaccharides obtained from the culture of bacteria belonging to *Bacillus subtilis.*
Licorice extract (88)
A substance composed mainly of glycyrrhizic acid obtained from the roots or rhizomes of Chinese licorice, Xinjiang licorice or licorice.
Licorice oil extract (89)
A substance composed mainly of flavonoids and obtained from the roots or rhizomes of Chinese licorice, Xinjiang licorice or licorice.
Linseed gum [Linseed extract] (15)

A substance composed mainly of polysaccharides obtained from linseed.

Linter cellulose (405)

A substance composed mainly of cellulose obtained from cotton single pilus.

Lipase (401)

Lipoxygenase (402)

Liquid paraffin (404)

Logwood colour (415)

A substance composed mainly of haematoxylin and obtained from the heart wood of logwood.

L-Lysine (399)

Lysozyme (400)

Macrophomopsis gum (357)

A substance composed mainly of polysaccharides obtained from the culture of microorganism belonging to *Macrophomopsis.*

Maltose phosphorylase (362)

Maltotriohydrolase (363)

Mannentake extract (409)

A substance obtained by the extraction from the mycelium or fruit body of MANNAEN-TAKE (*Ganoderma lucidum* KARST) or its culture.

Marigold colour (361)

A substance composed mainly of xanthophylis obtained from marigold flowers.

Massaranduba balata (360)

A substance composed mainly of amyrin acetate and poly isoprenes obtained from the secretion of massarandula balata trees.

Massaranduba chocolate (359)

A substance composed mainly of amyrin acetate and polyisoprenes obtained from the secretion of massarandula chocolate trees.

Mastic gum (358)

A substance composed mainly of masticadienoic acid and obtained from the secretion of mastic trees.

Melaleuca oil (375)

A substance composed mainly of essential oil obtained from mlaleuca leaves.

Menaquinone (extract) [itamin K_2 (extract) (373)

A substance composed mainly of mnaquinone-4 from the culture of bacteria belonging to *Arthrobacter*.

Methylthioadenosine (372)

A substance composed mainly of 5'-dehydory-5'-methylthioadenosine obtained from yeasts belonging to *Saccharomyces*.

Mevalonic acid (374)

Microcrystalline cellulose (289)

A substance composed mainly of crystalinee cellulose obtained from pulp.

Microcrystalline wax (356)

Microfibrillated cellulose (290)

A substance composed mainly of cellulose obtained by microfibrilillating pulp or cotton.

Milt protein (191)

A substance composed mainly of basic proteins obtained from fish testes.

Mixed tocopherols (365)

A substance composed mainly of d- α-, d- ß-, d-ß - and d-δ -tocopherols and obtained from vegetable oils.

Monascus colour (334)

A substance composed mainly of ankaflavin and monascolubrin obtained from the culture of mould belonging to *Monascus*.

Monascus yellow (333)

A substance composed mainly of xanthromonacins obtained from the culture of mould belonging to *Monascus*.

Montan wax (386)

A substance composed mainly of esters of fatty acid arid tetracosyl-triacontanyl alcohol or hexacosyltriacontanyl alcohol obtained from brown coal or lignite.

Morin (385)

Mousouchiku charcoal extract (377)

A substance obtained by extraction from the cabonized stems of Mousouchiku bamboo.

Mousouchiku dry distillate (376)

A substance obtained by dry distillation from the stems of Mousouchiku bamboo.

Mousouchiku extract (378)

A substance composed mainly of 2,6-dimethoxy-1,4-benzoquinone obtained from the stem skins of Mousouchiku bamboo.

Mulberry bark extract (133)

A substance composed mainly of stilbene derivatives ad flavonoids obtained from the rhizome skins of mulberry.

Muramidase (371)

Mustard extract (77)
A substance composed mainly of allylisothiocyanata obtained from Indian mustard seeds.
Myrrh (367)
A substance obtained by extraction from the secretion of myrrh trees.
Nagingin (267)
Nainginase (266)
Nickel (272)
Niger gutta (269)
A substance composed mainly of amyrin acetate and polyiosprenes obtained from the secretion of niger gutta trees,
Nitrogen (229)
Non-calcinated calcium (364)
A substance composed mainly of calcium salts obtained by drying shells, pearl llayers, coral, bones or eggshells.
Nystose (271)
Olibanum (273)
A substance composed mainly ofα- and ß-boswellic acids obtained from the sedretion of Olibanum.
Oligo-N-acetylglucosamine (52)
Oligogalacturonic acid (53)
Oligoglucosamine (54)
Onion colour (218)
A substance composed mainly of quercetin obtained from onion bulbs.
Orange colour (57)
A substance composed mainly of carotene and xanthophylls obtained from the fruits or peels of AMA-DAIDAI(Citrus sinensis OSBECK).
Oregano extract (56)
A substance composed mainly of carvacrol and thymol obtained from oregano leaves.
γ-Oryzanol (55)
A substance composed mainly of booth esters consisssting of each combination of sterols and ferulic acid and triterpene alcohols and feulic acid obtained from
rice bran or germ oil.
Oxygen (170)
Ozokerite (50)
Ozone (51)
Paffia extract (281)
A substance composed mainly of ecdysteroids and saponins obtained from the roots of paffia (*Pafiic iresinoides* SPRENGEL).
Palladium (284)
Palm oil carotene (282)
A substance composed mainly of CAROTENE obtained from oil palm fruits.
Pancreatin (286)
Papain (280)
Paprika colour [Paprika oleoresin] (246)
A substance composed mainly of capsanthins obtained from capsicum fruits.
Paraffin wax (285)
Peach gum (384)
A substance composed mainly of polysaccharides obtained from the secretion of peach trees.
Pecan nut colour (323)
A substance composed mainly of flavonoids obtained from the pericarps or astringent skins of pecan nuts.
Pectin (326)
Pectin digests (327)
A substance composed mainly of galacturonic acid obtained from pectin.
Pectinase (325)
Pepper extract (339)
A substance composed mainly of feruperines obtained from pepper fruits.
Pepsin (340)
Peptidase (342)
Perilla extract (182)
A substance composed mainly of terpenoids obtained from perilla seeds or leaves.
Perlite (283)
Peroxidase (278)
Petroleum naphtha (264)
Phaffia colour (299)
A substance composed mainly of astaxanthins obtained from the culture of yeast belonging to *Phaffia*.
Phellodendron bark extract (100)
A substance composed mainly of berberine obtained from the bark of phellodendron trees.
Phosphodiesterase (350)
Phospholipase (351)
Phytase (301)
Phytic acid (302)

A substance composed mainly of inositol hexaphosphate obtained from rice bran or corn seeds.

Phytin (extract) (303)

A substance composed mainly of magnesium inositol hexa phosphate obtained from rice bran or corn seeds.

Pimento extract (296)

A substance composed mainly of eugenol and thymol obtained from pimento fruits.

Platinum (279)

ε-Polylysine (355)

Polyphenol oxidase (354)

Powdered annatto (335)

A substance composed mainly of norbixin and bixin obtained from annatto seeds.

Powdered bile (223)

A substance composed mainly of cholic acid and desoxycolic acid obtained from bile.

Powdered cellulose (321)

A substance composed mainly of cellulose obtained by decomposing pulp, excluding No.289 Mycrocrystalline cellulose.

Powdered rice hulls (322)

A substance composed mainly of cellulose obtained from rice hulls.

Powdered stevia (210)

A substance composed mainly of steviol glycosides obtained by grinding stevia leaves.

L-Proline (319)

Propane (316)

Propolis extract (317)

A substance composed mainly of flavonoids obtained from honeycomb.

Protease (315)

Psyllium seed gum (164)

A substance composed mainly of polysaccharides obtained from the seed coats of blond psyllium.

Pullulan (314)

Pullulanase (313)

Purple corn colour (369)

A substance composed mainly of cyanidine-3-glucoside obtained from corn seeds.

Purple sweet potato colour (368)

A substance composed mainly of cyanidine acylglucosides and penidin acylglucosides obtained from the tuberous roots of sweet potatos.

Purple yam colour (370)

A substance composed mainly of cyanidine acylglucosides obtained from yam tuberous roots.

Quassia extract (268)

A substance composed mainly of quassin obtained from the trunks/branches or bark of NIGAKI trees.

Quercetin (109)

Quicklime (198)

Quillaja extract (102)

A substance composed mainly of saponins obtained from the bark of quillaja trees.

Rakanka extract (391)

A substance composed mainly of mogulosides obtained from rakanka fruits.

Redbark cinchona extract (99)

A substance composed mainly of quinidine, quininne and cinchorine obtained from the bark of redbark cinchona trees.

Rennet (413)

Resin of depolymerized natural rubber (160)

A substance composed mainly of diterpenes, triterpenes and tetraterpenes obtained from rybber.

L-Rhamnose (397)

Rhamsan gum (396)

A substance composed mainly of polysaccharidesobtained from the culture of bacteria belonging to *Alcaligenes*.

D-Ribose (403)

Rice bran oil extract (161)

A substance composed mainly of ferulic acid obtained from rice bran oil.

Rice bran wax (163)

Rice straw ash extract (34)

A substance obtained from the ashes of rice stems or leaves.

Roasted rice bran extract (276)

A substance composed mainly of maltol obtained from roasted rice bran.

Roasted soybean extract (277)

A substance composed mainly of maltol obtained from roasted soybean seeds.

Rosemary extract (418)

A substance composed mainly of carnosic acid, carnosol, and polyisoprenes obtained from rosemary leaves or flowers.

Rosidinha (416)

A substance composed mainly of amyrin acetate and polyisopenes obtained from the secretion of rosidinha trees.

Rosin (417)

A substance composed mainly ofabietic acid obtained from the secretion of pine trees.

Rubber (159)

A substance composed mainly of polyisoprenes obtained from the secretion of Pararubber trees, excluding No.238 Depolymerized natural rubber.

Rumput roman extract (87)

A substance composed mainly of capillin obtained from the whole grass of rumput roman.

Ruthenium (408)

Rutin (extract) (407)

A substance composed mainly of rutin obtained from the whole grass of AZUKI (*Azukia angularis* OHWI),the buds or flowers of Japanes pagoda trees orbuckwheat grass.

Sage extract (204)

A substance composed mainly of carnosic acid and phenolic diterpenes obtained from

Salvia leaves.

Sandalwood red (183)

A substance composed mainly of santalin obtained from the trunks/branches of red sandalwood trees.

Sandarac resin (171)

A substance composed mainly of sandaracopimaric acid obtained from the secretion of sandarac trees.

Sclero gum (193)

A substance composed mainly ofpolusaccharides obtained from the culture of microorganism belonging to *Sclerotium glucannicum*.

Seaweed ash extract (58)

A substance composed mainly of pottassium iodide obtained from the ashes of brown algae.

Sepiolite (206)

L-Serine (207)

Sesame seed oil unsaponified matter (157)

A substance composed mainly of seamolin obtained from sesame seeds.

Sesame straw ash extract (158)

A substance obtained by extraction from the ashes of sesame stems or leaves.

Sesbania gum (205)

A substance composed mainly of polysaccharides obtained from sesbania seeds.

Shea nut colour (172)

A substance obtained from the fruits or seed coats of shea.

Shellac (174)

A substance composed mainly of esters of aleuritic acid and shellolic acid or jalaric acid obtained from the secretion of scale insects.

Shellac wax (175)

A substance composed mainly was of obtained from the secretion of scale insekts.

Shikon colour [Lithospermum root colour] (180)

A substance composed mainly of shikonin obtained from the root of MURASAKI plant.

Silver (104)

Smoke flavourings (134)

A substance obtained by capturing the gas generated by burning sugar canes, bamboo, corn stalks or wood, or a substance obtained by dry distillation from such materials.

Sodium chloride-decreased brine (saline lake) (48)

A substance composed mainly of salts of alkaline metals or alkaline earth metals obtained by separating sodium chloride from saline lake water.

L-Sorbose (214)

Sorva (Leche capsi) (212)

A substance composed mainly of amyrin acetatre and polyisoprenes obtained from the secretion of sorvinha trees.

Sorvinha (213)

Soybean saponin (215)

A substance composed mainly of saponins obtained from soybeans.

Sphingolipid (197)

A substancee composed mainly of sphingosine derivatives obtained from bovine or rice bran.

Spice extract (138)

Substances obtained by extraction or steam-distillataion from

Hemp seeds,

asafetida,ajpwan,anise,angelica,fennel,turmeric,allspice,oregano, orange peel, Chinese pepper, cassia, chamomile, mustard,cardamom,curryleaves, licorice, caraway, gardenia,cumin, cress, clove, poppy seeds, caper, pepper, sesame

seeds,coriander,sassafras,saffron,savory,salvia, Japanese pepper, perilla, cinnamon, shallot,juniperberry, ginger,star anise, spearmint, horseradish, celery, sorrel, thyme, onion, tamarind,tarragon, chive, chevil,dill, capsicum,nutmeg,wormwood, nigella, carrot,garlic, basil,parsley, mint, vanilla, paprika, hyssop, fenugreek, peppermint,horsemint,marjoram, MYOUGA (*Zingiber Mioga* (ROSC), lavender,linden,lemongrass,lemonbalm,rose,rosemary,laurel or WASABI (Japanese horseradish), excluding Turmaric oleoresin (No.40),Oregano extract (56),Orange colour (57),Mustard extract (77),Licorice extract (88),Licorice oil extract (89),Gardenia yellow (112),

Clove extract (130), Sesame seed oil unsaponified matter (157), Perilla extract (182),

Ginger extract (196),Essential oil removed fennel extract (199),Horseradish extract (200), Sage extract (204), Onion colour (218), Tamarind colour (219), Tamarind seed gum (200), Tannin (extract) (226), Paprika colour (246), Capsicum water-soluble extract (247), Absinth extract (270), Carrot carotene (274), Garlic extract (275),Pepper extract (339), Rosemary extract (418), Wasabi extract (419)

Spirulina colour (196)

A substance composed mainly of phycocyanin obtained from the whole alga of spirulina.

Stevia extract (194)

A substance composed mainly of steviol glycosides obtained by extraction from stevia leaves.

Sunflower seed extract (294)

A substance composed mainly of isocholorogenic acid and chlorogenic acid obtained from sunflower seeds.

Sweet potato carotene (37)

A substance composed mainly of carotene obtained from the tuberous roots of sweet potatos.

Talc (222)

Tamarind colour (219)

A substance composed mainly of flavonoids obtained from tamarind seeds.

Tamarind seed gum (220)

A substance composed mainly of polysaccharides obtained from tamarind seeds.

Tannase (225)

Tannin (extact) (226)

A substance composed mainly of tannin and tannic acid obtained from Japanese persimmon fruits,chestnut astringent skins,Japanese gall,tamarind seed coats, angelica powder, nutgall or silver wattle bark.

Tara gum (221)

A substance composed mainly of polusaccharides obtained from theseeds of tara trees.

Taurine (extract) (217)

A substance composed mainly of taurine obtained from the viscera or meat of fish or mammals.

Tea dry distillate (230)

A substance obtained by dry distillation from tea leaves.

Tea extract (232)

A substance composed mainly of catechins obtained from tea leaves.

Tea seed saponin (231)

A substance composed mainly of saponins obtained from tea seed.

Thaumatin (216)

A substance composed mainly of thaumatin obtained from the seeds of *Thaumatococcus danielli* BENTH.

Theobromine (239)

Thujaplicin (extract) (236)

A substance composed mainly of thujaplicins obtained from the trunks/branches or roots of HIBA trees.

Timber ash (382)

A substance obtained by ashing bamboo or wood.

Timber ash extract (383)

d-α -tocopherol (251)

d-γ -tocophero (252)

d-δ -tocophero (253)

Tocotrienol (250)

Tomato colour [Tomato lycopene] (254)

A substance composed mainly of lycopeneobtained from tomato fruits.

Tororoaoi (262)

A substance composed mainly of polusaccharides obtained from the roots of TORORO-AOI plant.

Tourmaline (244)

Tragacanth gum (255)

A substance composed mainly of polysaccharides obtained from the secretion of tragacanth trees.

Transglucosidase (256)

Transglutaminase (257)
Trehalose (260)
Trehalose phosphorylase (261)
Triacylglycerol lipase Triacylglycerol lipase (258)
Tripsin (259)
Tunu (235)
A substance composed mainly of obtained from the secretion of tunu trees.
Turmeric oleoresin [Curcumin] (40)
A substance composed mainly of curcumin obtained from turmeric rhizomes.
L-Tyrosine (234)
Urease (42)
Urushi Wax (41)
A substance composed mainly of glycerol palmitate obtained from the fruits of Japanese lacquer trees.
Vegetable carbon black (189)
A substance composed mainly carbon of obtained by carbonizing plants.
Vegetable lecithin (190)
A substance composed mainly of lecithin obtained from rape seeds or soybeans.
Vegetable oil soot colour (388)
A substance composed mainly of carbonobtained by burning vegetable oils.
Vegetable sterol (188)
A substance composed mainly of phytosterols obtained from oil seeds.
Venezuelan chicle (338)
A substance composed mainly ofamyrin acetate and polyisoprenes obtained from the secretion of Venezuelan chicle trees.
Vermiculite (297)
Wasabi extract (419)
A substance composed mainly of isothiocyanate obtained from the rhizomes or leaves of WASABI (*Wasabia japonica* MATSUM.).
Welan gum (39)
A substance composed mainly of polysaccharides obtained from the culture of bacteria belonging to *Alcaligene*s.
Wood chip (379)
A substance obtained by grinding the trunk/branches of Siberian filbert or BUNA (*fagus crenata* BLUME)
Xanthan gum (91)
A substance composed mainly of polysaccharides obtained from *Xylanase* (92)
D-Xylose (93)
Yeast cell wall (150)

Natural Flavoring Agents ..... Table FA05

The “Natural Flavoring Agents” are defined as food additives intended for use for flavoring food, which are substances obtained from animals or plants, or mixtures thereof (The Food Sanitation Act, in Article 4, Paragraph 3).

The specifications are not set, and labeling on foods are made by naming the original animal or plant name, or synonims rather than by naming chemical substance.

Agrimony
Ajowan
Akayajio
Akebia
Alfalfa
Alkanet
Allspice
Almond
Aloe
Amacha
Amachazuru
Amber
Ambergris
Ambrette
Amigasayuri
Amyris
Angelica
Angola weed
Angostura
Anise
Annatto
Anzutake (Chanterelle)
Apple
Apple mint
Apricot
Areca nut (Betel nut)]
Aritaso
Arnica
Artemisia
Artichoke
Asafetida
Avens (Herb bennet)
Avocado
Bamboo shoot
Banana
Barberry
Basikurumon
Basil
Bay
Beans
Bearberry
Beech
Bees wax
Benzoin
Betony
Blessed thistle
[Bergamot mint Bergamot]
Betel
betony
Birch
Biwa (Loquat)
Black caraway (Nigella)]
Black tea
Blackberry
Blessed thistle
Blueberry
Boldo
Borage
Boronia
Bran
Breadfruit
Brown sugar
Bryonia
Buchu
Buckbeans
Buffaloberry
Bugle
Bunaharitake
Burdock
Burnet bran
Butter
Butter milk
Butter oil
Cacao
Cactus
Cade
Cajeput (Cajuput)
Calabash nutmeg
Calamint
Calamondin
Calamus
Camellia
Camomile
Camphor tree
Caper
Capsicum
Caraway
Cardamon
Carissa (Karanda)
Carnation
Carob (Locust bean)
Carrot
Cascara
Cascarilla
Cashew nut
Cassie
Castoreum
Catechu
Catnip
Cedar
Celery
Centaury
Century plant]
Chinese bayberry
Cereals
Champac
Cheese
Cherimoya
Cherry
Cherry laurel
Cherry tree
Chervil
Chestnut
Chichitake
Chicory
Chigaya
Chinese bayberry
Chinese olive
Chinese quince
Chirata
Chive
Chlorella
Chokeberry
Chosengomishi
Chrysanthemum
Cinchona
Cinnamon
Citronella
Citrus
Civet
Clary sage
Clove
Clover
Cnidium fruit
Coca
Coconut
Coffee
Cola

Colombo
Coltsfoot
Comfrey
Common nasturtium solution
Common pomegranate
Common popsissewa
Copaiba
Coriander
Corn-mint (Japanese mint)
Costmary
Costus
Crab
Cranberry
Cream
Cubeb
Cucumber
Cultured lactic acid bacteria
Cultured Moniliaceae solution
Cumin
Currant
Curry leaf
Curry powder
Cypress
Damiana
Dandelion
Date palm
Davana
Deertongue
Dill
Dittany
Dittany of Crete
Dog grass (Couch grass)
Dokudami
Doragon's blood
Dried bonito
Durian
Ebisugusa
Egg
Egoma
Elder
Elecampane
Elemi
Eleutherococcus
Elm
Elm-mushroom
Endive
Engosaku
Enju (Japanese-pagoda-tree)
Enokidake
Erigeron
Eucalyptus
Eupatorium
Eyebright
Feijoa (Pineapple guava)
Fennel
Fenugreek
Fermented alcoholic beverages
Fermented milk
Fermented seasoning solution
Fig
Fir
Fish
Flax
Forger me not (Mouse ears)
Fruit vegetables
Fujibakama
Fujimodoki
Fumitory
Fusel oil
Galanga
Galbanum
Gambir
Garden rhubarb (Edible rhubarb)
Gardenia
Garlic
Genet
Gennoshoko
Gentian
Geranium
Germander
Getto
Giboshi
Ginger
Ginkgo (Gingko)
Ginseng
Gishigishi (Dock)
Golden rod
Goldthread
Gooseberry
Goshuyu
Grains of paradise
Grape
Grapefruit
Green tea
Ground ivy
Guaiacum
Guarana
Guava
Gumi (Oleaster)
Gymnema sylvestre
Hakobe (Common chickweed)
Hamabofu
Hamago
Hamanasu (Rugosa rose)
Hamasuge,
Hanasuga
Hatsutake
Haw
Hawthorn
Hay
Hazelnut
Heather
Hemp
Henna
Hiba
Hibiscus (Roselle)
Hickory
Hikiokoshi
Himehagi
Hinoki
Hiratake
Hishi (Water chestnut)
Hoarhound
Honey
Honeysuckle
Honoki
Hop
Horseradish
Horsemint
Houkitake
Houshou
Hyacinth
Iceland moss
Ikariso
Immortelle (Everlasting flower)
Iwaohgi Imperatoria
Inokozuchi
Itadori
Ivy
Jaborandi
Janohige
Japanese pepper
Japanese persimmon
Jasmin
Jew's mallow
Job's tears
Jojoba
Jujube
Juniper berry
Kaininso
Kamala
Karasubishaku (Dragon root)
Karasuuri
Katakuri
Kawamidori
Kencur
Kenponashi (Japanese raisin tree)
Kibanaohgi
Kidachi aloe
Kihada
Kikaigaratake
Kikurage (Jew's-ear)
Kikyo (Baloon flower)

Kisasage
Kiwifruit
Knotgrass
Kobushi
Koganebana
Kohone
Koji
Kombu kelp
Kondurango
Koutake
Krill
Kuko
Kurara
Kuromoji
Kusaboke (Dwarf Japanese quince)
Kusasugikazura
Kuzu (Thunberg kudzu vine)
Labdanum (Ciste)
Laurel
Lavender
Leaf vegetables
Leek
Lemon
Lemongrass
Licorice
Life-everlasting flower
Lilac
Lily
Lime
Linaloe
Linden
Lindera root
Lion's foot
Liqueur
Litch
Litsea
Lobster (Prawn, Shrimp)
Long-leaved podocarp
Longan
Longose
Lotus
Lovage
Lungmoss
Lungwort
Maidenhair fern
Maitake
Maize
Mallow
Malt
Mango
Mangosteen
Manna ash
Maple
Marigold
Marjoram
Marshmallow
Massoi
Mastic
Matatabi (Silver vine)
Mate tea
Matico
Matusbusa
Matsuhodo
Matsuoji
Matsutake
Meadowsweet
Meat
Mehajiki
Melilot
Melissa (Balm)
Melon
Mesquite
Mikan
Milfoil
Milk
Milk thistle
Mimosa
Mishimasaiko
Miso (Soybean paste)
Mistletoe
Mitsumata
Molasses
Moutan bark
Mugwort
Mulberry
Mullein
Murasaki (Gromwell)
Mushroom
Musk
Mustard
Myoga
Myrobalan
Myrrh
Myrtle
Nadeshiko
Naginatakoju
Nameko
Nanten
Naratake
Narcissus
Natto
Nemunoki (Silk tree)
Nettle
Nezumimochi
Nori (Laver)
Nut
Nutmeg (Mace)
Oak
Oak moss
Octopus
Oil and fats
Okera
Olibanum
Olive
Ominaeshi
Onion
Oolong tea
Opoponax
Orange
Orange flower
Origanum
Orris
Osmanthus
Palmarosa
Pandanus
Papaw
Papaya
Parsnip
Pepino
Para cress
Parsley
Parsnip
Passion fruit
Patchouli
Peach .
Peanut
Pear
Pellitory
Pennyroyal
Pepper
Peppermint
Peptone
Perilla
Peru balsam
Petitgrain
Pickled products pine
Pineapple
Pistachio
Plantain
Plum
Poplar
Poppy
Pressed sake cake
Pressed soy sauce cake
Prickly ash
Primrose
Proteins Reseda
Prunella (Self-heal)
Purging cassia
Quassia
Quebracho
Quillaja (Quillaia)
Quince
Radish

Rakanka (Lo han kuo)
Ramboutan
Raspberry
Red beans
Red sandalwood
Renge
Rengyo
Rhatany
Rhubarb
Roasted barley
Rooibos
Rose
Rose apple
Rosemary
Rosewood
Rowan tree(European mountain ash)
Royal agaric,
Rue
Rush
Root and tuber vegetables
Ryofunso
Safflower
Saffron
Sage
Sagiomodaka
Salsify
Sandalwood
Sandarac
Sanshuyu
Santa herb
Sapodilla
Saposhinikovia root
Sarashinashoma
Sarsaparilla
Sarunokoshikake
Sasa, Bamboo grass]
Sasakusa
Sassafras
Sauces
Savory
Schinus molle
Sea buckthorn
Sea squirt
Sea urchi n
Seaweed
Sekisho
Sendan
Senega
Senkyu
Senna
Sesame
Shakuyaku (Chinese peony)
Shallot
Shellfish
Shiitake
Shimeji
Shoro
Shukusha
Silver weed
[Simarouba Shimeji
Skirret
Sloe berry
Snake
Snakeroot, Serpentary
Soy sauce
Soybeans
Spearmint
Spignel
Spikenard
Spirits
Spruce
Squid
St.John's wort
Star anise
Starfruit (Carambora)
Strawberry
Strawberry tree
Styrax
Suberihiyu (Pigweed)
Sugar apple, Sweet sop
Sugi (Peacock pine)
Sundew
Sunflower
Suppon (Snapping turtle)
Suppontake
Tade (Water pepper)
Tamarind
Tamogitake
Tangerine (Mandarin)
Tansy
Tara (Angelica tree)
Tarragon
Tenma
Tenryocha
Thistle
Thyme
Ti-tree
Tochu
Toki
Tolu balsam
Tomato
Tonka beans
Truffle
Tsukushi (Fern-ally)
Tsuriganeninjin
Tsurudokudami
Tsuyukusa
Tuberose
Turmeric
Ukogi
Ume (apanese apricot)
Usubasaishin
Valerian
Vanilla
Verbena (Vervain)
Veronica
Vetiver
Vinegar
Violet
Walnut
Warabi (Eagle fern)
Waremoko, (Garden burnet)
Wasabi
Watafujiutsugi
Water cressWatermelon
Wax jambu (Mankil)
WheyWild cherry
Wine lees
Winter bloomWintergreen
Woodruff
Wormseed
Wormwood
Yakuchi
Yamabushi take
Yeasts
Yl ang-ylang
Yoroigusa
Yucca
Yukinoshita
Yuzu
Zdravetz
Zedoary

Substances Generally Provided as Food and Used Also as Food Additives Table FA06

Amacha extract
American red raspberry colour
Beefsteak plant colour
Black berry colour
Black currant colour
Black huckleberry colour
Blueberry colour
Boysenberry colour
Casein
Cherry colour
Chicory colour
Chlorella extract
Cocoa
Collagen
Corn cellulose
Cowberry colour
Cranberry colour
Daidai extract
Dark sweet cherry colour
Egg white
Elderberry colour
Ethanol
European dewberry colour
Fermentation-derived cellulose
Fruit juice
Berry juice
Black currant juice
Blackberry juice
Blueberry juice
Boysenberry juice
Cherry juice
Cowberry juice
Cranberry juice
Dark sweet cherry juice
Dewberry juice
Elderberry juice
Gooseberry juice
Grape juice
Huckleberry juice
Lemon juice
Loganberry juice
Morello cherry juice
Mulberry juice
Orange juice
Pineapple juice
Plum juice
Raspberry juice
Red currant juice
Salmonberry juice
Strawberry juice
Thimbleberry juice
Uguisukagura juice
Whortleberry juice
Gelatin
Gluten
Gluten decomposites
Gooseberry colour
Grape juice colour
Hibiscus colour
Hop extract
Hydrangea leaves extract
Kelp extract
Konjak extract
Lactic acid bacteria concentrate
Laver colour
Loganberry colour
Malt extract
Mannan
Morello cherry colour
Mugwort extract
Mulberry colour
Okra extract
Paprika
Perilla colour
Plum colour
Powdered licorice
Raspberry colour
Red cabbage colour
Red currant colour
Red radish colour
Red rice colour
Rennet casein
Saffron
Saffron colour
Salmonberry colour
Seaweed cellulose
Sepia colour
Soybean polysaccharides
Strawberry colour
Sweet potato cellulose
Tea
Thimbleberry colour
Turmeric
Uguisukagura colour
Vegetable juice
Beefsteak plant juice
Beet red juice
Carrot juice
Onion juice
Red cabbage juice
Tomato juice
Wheat extract
Whey salt (Whey mineral)
Whortleberry colour

General standards for raw materials

Table AP01

Materials (used for areas that contact with food)	Type	Standards
Metal	1.Implements	shall be so designed that copper, lead, or their alloys will not be scraped off.
	2.Tin for plating	Lead content： less than 0.1%
	4.Metals used to make or to repair implements or containers/ packages	Lead content: less than 0.1% Antimonycontent： less than 5%
	4.Solder used to make or to repair implements or containers/ packages	Lead content: less than 0.2%
	Electrodes to electrify foods directly of implements	Limited to Iron, aluminum, platinum, and titanium. (In case weak current is used, stainless steel may be used.)
Implements and containers/ packages, in general	6.Colors	Synthetic coloring agents other than those listed in the “Table 1” of the Enforcement Regulations shall not be used, (Excepting the cases where the colors are used in such a way that they will have no possibility of mixing with foods.)
Polyvinyl chloride	7.Implements or containers/packages that contact with food fats and oils or fat-rich foods	Materials made from polyvinylchloride,which contain Bis(2-ethylhexyl) phthalate, as a main raw material shall not be used. (This does not apply to cases where the phthalate has been used so as not to dissolve or learch into foods.)

Specifications and standards according to kinds of materials Table AP02

Material: Glass, Ceramic and Enameled						
Type				Test item	* a	Standards
Glass	Samples less than 2.5cm deep after liquid is filled or those not capable to be filled in.			Cadmium Lead		not more than 0.7 μg/cm² not more than 8 μg/cm²
	Samples deeper than 2.5cm when filled	Implements other than for cooking by heating	Capacity less than 600ml	Cadmium Lead		not more than 0.5 μg/ml not more than1.5 μg/ml
			Cap. between 600ml and 3L	Cadmium Lead		not more than 0.25 μg/ml not more than 0.75 μg/ml
			Cap. not less than 3L	Cadmium Lead		not more than 0.25 μg/ml not more than 0.5 μg/ml
		Implements used for cooking by heating		Cadmium Lead		not more than 0.05 μg/ml not more than 0.5 μg/ml
Ceramic	Samples less than 2.5cm deep after liquid is filled or those not capable to be filled in.			Cadmium Lead		not more than 0.7 μg/cm² not more than 8 μg/cm²
	Samples deeper than 2.5cm when filled	Implements other than for cooking by heating	Capacity less than 1.1 L	Cadmium Lead		not more than 0.5 μg/ml not more than 2 μg/ml
			Cap. between 1L and 3L	Cadmium Lead		not more than 0.25 μg/ml not more than 1 μg/ml
			Cap. not less than 3L	Cadmium Lead		not more than 0.25 μg/ml not more than 0.5 μg/ml
		Implements used for cooking by heating		Cadmium Lead		not more than 0.05 μg/ml not more than 0.5 μg/ml
Enameled	Samples less than 2.5cm deep after Liquid is filled, or not capable to be filled in.		Implements other than for cooking by heating	Cadmium Lead		not more than 0.7 μg/cm² not more than 8 μg/cm²
			Implements used for cooking by heating	Cadmium Lead		not more than 0.5 μg/cm² not more than 1 μg/cm²
	Samples deeper than 2.5cm when filled	Capacity not less than 3L		Cadmium Lead		not more than 0.5 μg/cm² not more than 1 μg/cm²
		Cap. less than 3L	Implements other than for cooking by heating	Cadmium Lead		not more than 0.07 μg/ml not more than 0.8 μg/ml
			Implements used for cooking by heating	Cadmium Lead		not more than 0.07 μg/ml not more than 0.4 μg/ml

* a) Leaching condition/ solution: at room temperature (dark place), for24 hours by 4 % acetic cid.

Material: Synthetic Resin (Page 1)					
Type	Material test	Elution test			
		Test item	Leaching condition	Leaching solution	Standards
Synth. resin, in general (General Standard)	Cadmium, Lead: not more than 100µg/ml each	Heavy metal	at 60°C for 30min. *7	4% acetic acid	not more than 1 µg/ml (as PB)
		Quantity *1 of KMnO4 Consumed		Water	not more than 10 µg/ml
Phenolic, melamine, and urea resins (Specific Standard)		Phenol	at 60°C for 30min *7.	Water	not more than 5 µg/ml
		Formaldehyde			negative
		Evaporation residue	at 25°C, for 1 hr.	Heptane	not more than 30 µg/ml
			at 60°C, for 30min.	20% Ethanol*4	
			at 60°C for 30min. *7	Water	
				4% acetic acid	
Synth. resin made from formaldehyde (Sp.Stand.)		Phenol	at 60℃, for 30min. *7	water	negative
		Formaldehyde			negative
		Evaporation residue		4% acetic acid	not more than 30 µg/ml
Polyvinyl chloride*2 (PVC) (Sp.Stand.)	▪Dibutyl tin compound. : not more than 50µg/ g (as dibutyl tin chloride) ▪Cresyl phosphates: not more than 1µg/gs ▪Vinyl cholorides: not more than 1µg/g	Evaporation residue	st 25℃, for1 hr.	Heptane *3	not more than 150 µg/ml
			at 60℃, for 30min.	20% ethanol*4	not more than 30 µg/ml acid
			at 60℃, for 30min.	Water *5	
				4% acetic	
Polyethylen (PE) and polypropylene (PP) (Sp.Standard)		Evaporation residue	at 25℃, for1 hr.	Heptane *3	not more than 30 µg/ml *a
			at 60℃, for 30min.	20% ethanol*4	not more than 30 µg/ml
			at 60℃, for 30min. *7	Water *5	
				4% acetic Acid *6	

Material: Synthetic Resin (Page 2)					
Type	Material test	Elution test			
		Test item	Leaching condition	Leaching solution	Standards
Polystyrene (PS) (Sp.Stand.)	Volatile substance as a total of styrene + toluene + ethylbenzene + isopropyl-benzene + n-propyl benzene: not more than 5 mg/g. But in case of polystyrene foam (using hot water), it shall be not more than 2 mg/g , and styrene and ethyl benzene are not more than mg/g, respectively.	Evaporation residue	at 25°C, for 1 hr.	Heptane *3	not more than 240 µg/ml
			at 60°C, for 30min.	20% ethanol*4	not more than 30 µg/ml
			at 60°C, for 30min. *7	Water *5	
				4 % acetic acid*6	
Polyvinylidene chloride (PVDC) (Sp.Stand.)	・ Barium: not more than 100µg/g ・ Vinylidene chloride: not more than 6 µg/g	Evaporation residue	at 25°C, for 1 hr.	Heptane *3	not more than 30 µg/ml
			at 60°C, for 30min.	20 % ethanol*4	
			at 60°C, for 30min. *7	Water*5	
				4 %acetic acid*6	
Polyethylene terephthalate (PET) (Sp.Stand.)		Antimony	at 60°C, for 30min. *7	4 % acetic acid	not more than 0.05 µg/ml
		Germanium			not more than 0.1 µg/ml
		Evaporation residue	at 25°C, for 1 hr.	Heptane *3	not more than 30 µg/ml
			at 60°C, for 30min.	20 % ethanol*4	
			at 60°C, for 30min. *7	Water*5	
				4 % acetic acid*6	

Material: Synthetic Resin (Page 3)					
Type	Material test	Elution test			
		Test item	Leaching condition	Leaching solution	Standards
Polymethyl metha-crylate (PMMA) (Sp.Stand.)		Methyl methacrylate	at 60°C, for 30min.	20% ethanol	not more than 15 µg/ml
		Evaporation residue	at 25°C, for 1 hr.	Heptane *3	not more than 30 µg/ml
			at 60°C, for 30min.	20 % ethanol*4	
			*7 at 60°C, for 30min.	Water*5	
				4 % acetic acid*6	
Nylon (PA) (Sp.Stan.)		Capro-lactam	at 60°C, for 30min.	20 % ethanol	not more than 15 µg/ml
		Evaporation residue	at 25°C, for 1 hr.	Heptane *3	not more than 30 µg/ml
			at 60°C, for 30min.	20 % ethanol*4	
			*7 at 60°C, for 30min.	Water*5	acid*6
				4 % acetic	
Polymethyl pentene (PMP) (Sp.Stan.)		Evaporation residue	at 25°C, for 1 hr.	Heptane*3	not more than 120 µg/ml
			at 60°C for 30mi.	20 % ethanol *4	not more than 30 µg/ml
			*7 at 60°C, for 30min.	Water*s	
				4 %acetic acid*6	
Polycarbonate (PC) (Sp,Stand.) Poly-carbonate (PC) (Sp.Stand.)	・ Bis-phenol A *b: not more than 500µg/g ・ Diphenyl Carbonate: not more than 500µg/g ・ Amines (Triethylamine and tributylamine): not more than 1 µg/g ・ Amines (Triethylamine and tributylamine): not more than 1 µg/g	Bisphenol A (Phenol & p-t-butylphenol)	at 25°C, for 1 hr.	Heptane *3	not more than 2.5 µg/ml
			at 60°C, for 30min.	20 % ethanol*4	
			at 60°C, for 30min. *7	Water	
				4 %acetic acid*6	
		Evaporation residue	at 25°C, for 1 hr.		
		Evaporation residue	at 25°C, for 1 hr.	Heptane *3	not more than 30 µg/ml
			at 60°C, for 30min.	20 % ethanol*4	
			at 60°C, for 30min. *7	Water*s	
				4 %acetic acid*6	

Material: Synthetic Resin (Page 4)					
Type	Material test	Elution test			
		Test item	Leaching condition	Leaching solution	Standards
Polylactic acid		Total of lactic acid	at 60°C, for 30min.	Water	not more than 30 µg/ml
		Evaporation residue	at 60°C, for 30min.	20 % ethanol*4	
				Water*5	
				4 %acetic acid*6	
Polyvinyl alcohol (PVA) (Sp.Stan.)		Evaporation residue	at 25°C, for 1 hr.	Heptane *3	not more than 30 µg/ml
			at 60°C, for 30min.	20 % ethanol*4	
			at 60°C, for 30min. *7	Water*5	
				4 %acetic acid*6	

Material: Rubber					
Type	Material test	Elution test			
		Test item	Leaching condition	Leaching solution	Standards
Except nursing utensils	・ Cadmium: not more than 100 µg/g ・ Lead: not more than 100 µg/g ・ 2-Mercapto imidazoline (in rubber containing chlorine) : negative	Phenol	at 60°C, for 30min. *7	Water	not more than 5 µg/ml
		Formaldehyde			negative
		Zinc		4 % acetic acid	not more than 15 µg/m
		Heavy metals			not more than 1 µg/ml (as Pb)
		Evaporation residue		Water*5*8	not more than 60 µg/ml
				4 % acetic acid*6	
			at 60°C, for 30min.	20 % ethanol *3*4	
Nursing utensils	・ Cadmium: not more than 10 µg/g ・ Lead: not more than 10 µg/g	Phenol	at 40°C, for 24hrs.	Water	not more than 5 µg/ml
		Formaldehyde			negative
		Zinc			not more than 1µg/ml
		Heavy metals		4 % acetic acid	not more than 1 µg/ml (as Pb)
		Evaporation residue		Water	not more than 40 µg/ml

Material: Metal cans [except those containing dried foods (except fats and oils and fatty foods)]					
Type	Material test	Elution test			
		Test item	Leaching condition	Leaching solution	Standards
		Arsenic	*7 at 60°C, for 30min.	Water*5	not more than 0.2µg/ml (as As203)
			at 60°C, for 30min.	0.5 % solution of citricacid*6	
		Cadmium	*7 at 60°C, for 30min.	Water*5	not more than 0.1 µg/ml
			at 60°C, for 30min	0.5 %solution of citricacid*6	
		Lead	*7 at 60°C, for 30min.	Water*5	not more than 0.4µg/ml
			at 60°C, for 30min.	0.5 %solution of citricacid*6	
		Phenol	at 60°C, for 30min. *7	Water	not more than 5µg/ml *11
		Formaldehyde			negative *11
		Evaporation residue	at 25°C, for 1 hr.	Neptane *3 *9	not more than 30 µg/ml *11
			at 60°C, for 30min.	20 % ethanol*4	
			at 60°C, for 30min. *7	Water*5*10	
				4 % acetic acid*6	
		Epichlorohydrin	at 25°C, for 2 hrs.	Pentane	not more than 0.5µg/ml*11 *12
		Vinylchloride	at not more than 5°C, for 24 hrs.	Ethanol	not more than 0.05µg/ml*11

Notes:
*1 Except phenolic resin, melamine resin and urea resin.
*2 Materials tests do not apply to implements other than tableware and cooking utensil.
*3 Fats and oils and fatty foods.
*4 Alcoholic beverages.
*5 Food whose pH value exceeds 5.
*6 Food whose pH value is 5 or less.
*7 However, 95°C for 30 minutes when used at the temperature exceeding 100°C.
*8 Limited to implements.
*9 Not more than 90µg/ml when the sample is a can whose inside is coated with a paint composed mostly of natural fats and oils and whose coatings contain zinc oxide more than 3 %.
*10 Quantity of a chloroform-soluble substance (limited to 30µg/ml or less) is to be determined when a sample can similar to *9 is used and such quantity exceeds 30µg/ml.
*11 Limited to those coated with synthetic resins.
*12 The eluted solution is considered to have been concentrated by 5 times although the concentration in the eluted solution is not more than 25µg/ml.

*a (not more than 150 µg/m for a sample used at the temp. of 100°C or less)
*b (inclg. phenol,pt butyl-phenol):

Specifications and standards according to intended uses .....Table AP03

Kinds of food	Kinds of implements and containes/ packages	Standards
1.Pressure- and Heat-Sterilized Packaged Food (except canned and bottled foods)	Containes/ packages, in general	1. Containers/packages shall be light-blocking and impermeable to gas (except when products have no risk of quality degradation due to deterioration of fats and oils). 2. They shall not be broken, deformed, colored, or discolored when filled up with water, sealed, and heated under pressure in the same conditions as in actual manufacture. 3. Compression proof test: Contents or water shall not leak out. 4. Heat sealing strength test: Not less than 23 N (Except metal cans sealed by seaming). However, this does not apply to rectangular containers which show value of higher than 20kPa by inner pressure strength test. 5. Dropping test: Contents or water shall not leak out.
2.Soft drinks (except Fruit juice as material)	(1) Made of glass	1. Glass containers that are to be reused shall be transparent. 2. They shall pass the following tests a. Sustained pressure-resistance test: Gas shall not leak out (This only applies to those for filling a carbonic acid-containing soft drinks, and this does not apply to those capped with paper lids.) b. Reduced pressure-resistance test: Air shall not leak out (This applies only to those containers filled with soft drinks with carbonic acid excepting those capped with paper lids). c. Liquid leak test: Contents shall not leak out (This applies only to those containers filled with soft drinks without carbonic acid by a method other than hot filling excepting those capped with paper lids).
	(2) Made of metal	1. Metal containers shall pass the following tests a. Pressure resistance test: Air shall not leak out (This only applies to those whose inside pressure exceeds atmospheric pressure at normal temperature.) b. Reduced pressure-resistance test: Air shall not leak out (This only applies to those whose inside pressure is same as or lower than atmospheric pressure at rooml temperature.) 2. They shall pass the following tests a, Pinhole test: Any pinhole shall not be found (This only applies to those containers/packages using sealing materials (other than metal) at their opening. b. Bursting strength test: Not less than 490.3 kPa (same as above). c. Piercing strength test: Not less than 15 N (same as above)

Kinds of food	Kinds of implements and containes/ packages	Standards
	(3) Made of synthetic resins, synthetic resin-processed paper, and synthetic resin-processed aluminum foil	1. Synthetic resins to be used for the parts in direct contact with food contents are limited to those whose standards have been set forth in the Section of "Standards by Materials" (except synthetic resin-processed aluminum foil which is used for sealing). 2. They shall pass the following tests a. Dropping test: Contents or water shall not leak out. b. Pinhole test: Any pinhole shall not be found. c. Sealing test: Air shall not leak out (This applies only to heat-sealed container-packages made of synthetic resins and synthetic resin-processed paper). d. Compression proof test: Contents or water shall not leak out . (This only applies to heat-sealed containers/packages made of synthetic resins or synthetic resin-processed aluminum foil.) e. Sustained pressure-resistance test: Gas shall not leak out. (this only applies to those which are sealed by crown caps and filled withcarbonic acid-containing refreshing drinks). f. Sustained reduced pressure resistance test: Coloring with methylene blue shall not be observed. (This only applies to those which are sealed by crown caps and hot-filled with soft drinks). g. Liquid leak test: Contents shall not leak out. (This only applies to those which are sealed by crown caps and filled with soft drinks without carbonic acid by a method other than hot-filling.)
	Combination	1. Metals are limited to those conforming to the standard of metal cans set forth in Section 4 "Standards by Materials", and for synthetic resins, synthetic resin-processed paper, and synthetic resin-processed aluminum foil, synthetic resins used for parts in direct contact with contents are limited to those conforming to the standards set forth in (3) -1 above. (However, this does not apply to synthetic resin-processed aluminum foil which is used for hermetic sealing purpose.). 2. They shall pass the following tests a. Dropping test: Contents or water shall not leak out. b. Pinhole test: Any pinhole shall not be found. Sealing test: Air shall not leak out (This applies only to those containers/packages sealed by hermetic heat-sealing). c. Reduced pressure resistance test: Air shall not leak out. (T his applies only to those hot-filled with soft drinks.) d. Liquid leak test: Contents shall not leak out. (This only applies to those which are filled with soft drinks by a method other than hot-filling,and sealed by a method other than hot-sealing.)

Kinds of food	Kinds of implements and containes/ packages	Standards
3.Flavored ice	Implements Containers/ package	(1) Implements for manufacture shall have such a structure as easily cleanable and having smooth inside and contact surfaces which are made of rust-proof materials or treated to prevent rust. (2) Both distributing and capping shall be performed by the machines. Machines shall be cleaned and sterilized easily and capable of preventing any contamination. (3) Containers/packages for storage or transport purposes shall have such structures as to prevent dust and insects from entering, and also such a structure that prevents melt water from contacting with flavored ice directly.
4.Foods in general	(1)Automatic vending machine, main body (limited to those whose part is in direct contact with food)	1. Materials used for parts in direct contact with food shall be stainless steel or others which have not the risk of dissolving out toxic or hazardous substances, and shall be acid-resistant, heat-resistant, water -proof, and impermeable. (Those for filtering food need not be impermeable.) 2. (Description of mechanical structures: omitted.)
	(2)Cartridge-type feed tank of an automatic vending machine (same as above)	1. The same as above, except what is described in the parentheses 2. (Description of mechanical structures: omitted.)
	(3)Containers used forselling food from an automatic vending machine (same as above)	1. Containers for offering food (except soft drinks) shall be cleaned and sterilized. (Except those made of new unused paper, synthetic resins, synthetic resin-processed paper or aluminum foil, or in combination, which have been sterilized or manufactured by a method with sterilizing effect and handled with care so as not to be contaminated before use.). 2. Containers for offering soft drinks shall be made of unused paper, synthetic resins, synthetic resin-processed paper or aluminum foil, or in combination, which have been sterilized or manufactured by a method with sterilizing effect and handled with care so as not to be contaminated before use.
5.Stock solution of soft drinks	Transporting devices or containes/ packages of soft drink stock solution which is kept in a cup-filling type or in a full-automatic machine.	(1) Metal containers shall be constructed in such a way that they are easily cleaned with screw-in type lids or stoppers ,and have a smooth inside surface, and made of rustproof materials or treated to prevent rust. (2) For synthetic resin containers/packages, The standard of containers / packages for soft drinks (except material fruit juices) made of ynthetic resins,synthetic resin-processed paper and synthetic resin-processed aluminum foil set forth in E-2-(3) above "Standards by Applications" shall apply mutatis-mutandis.

Standards of manufacturing ..... Table AP04

Materials	Standards
1. Implements and containers/ packages made of copper or copper alloy	The areas in contact with food shall be totally tin- or silver-plated, or otherwise treated not to cause any sanitary hazards (except those with characteristic gloss and rust-free).
2. Implements and containers/ packages in general	Synthetic coloring agents other than those listed in the "Table 1" of the Enforcement Regulations shall not be used, (Excepting the cases where the colors are used by way of melting them into glaze, glass or enamel or by other methods which shall prevent possibility of their mixing with food).
3. Containers/packages made of paper, shaved wood or metal foil for flavored ice	They shall be sterilized after the manufacture.
4. Implements and containers/ packages in general	The spine of the Specified Cattle shall not be used as raw material. However, this shall not apply to the fat and oil intended to be used as raw material, which have derived from the Specified Cattle but have been hydrolyzed, saponified or ineteresterified under the condition of high temperature and high pressure.
5. Implements and containers/ packages in general	Polylactic acid with a content of higher than 6% of D-lactic acid shall not be used to manufacture implements or containers/packages which are used at the temperature of higher than 40 degree C. (However, this does not apply to those which are used for less than 30 minutes at lower than 100 degree C or for less than 2 hours at lower than 66 degree C.)

Specifications and standards for milk and milk products

Table AP05

Kinds of milk, etc.	Types of container-packages (for use in sales)	Classification by materials	Materials test	Elution test				Strength test
				Test items	Leaching conditions	Leaching solution	Standard	
Cow's milk, special cow's milk, pasteurized goat's milk, partly skimmed milk, skimmed milk, processed milk, and cream	Glass bottle		Transparent uncolored one with a mouth inside diameter of 26 mm or above					
	Synthetic resin container-packages a), synthetic resin processed paper container-packages b), *1, *2	Synthetic resin (PE, Ethylene 1-alkene copolymerized resin(LLDPE), or polyethelene terephthalate(PET) to be used for parts in direct contact with contents *3	・n-Hexane extract: Not more than 2.6 % ・Xylene-soluble sub-stance: Not more than 11.3 % ・Arsenic: Not more than 2 ppm (as As_2O_3) ・Heavy metal: Not more than 20 ppm (as Pb)	Heavy metal	at 60°C for 30 minutes	4 % acetic acid	Not more than 1 ppm (as Pb)	・Bursting strength *9: Not less than 196.1 kPa for contents of 300 ml or less (392.3 kPa for container-packages for contents which can be kept at normal temperature). Not less than 490.3 kPa for contents above 300 ml (784.5 kPa for container-packages for contents which can be kept at normal temperature) ・Sealing strength (except combined container-packages): Shall be free from breakage and air leakage when the inner pressure was elevated to 13.3 kPa. ・Pinhole: No dot of methylene blue shall be found on filter paper when container-package was filled with methylene blue solutionn and put for 30 minutes on filter paper.
				Evaporation residue			Not more than 15 ppm (F=5, for milk, etc. except cream)	
					at 25°C for 60 minutes	n-Heptane	Not more than 15 ppm (F=5, for cream only)	
				Quantity of $KMnO_4$ consumed	at 60°C for 30 minutes	Water	Nor more than 5 ppm	
			・Cadmium: Not more than 100 ppm ・Lead: Not more than 100 ppm	Antimony	at 60°C for 30 minutes	4 % acetic acid	Not more than 0.025 ppm	These tests only apply to PET.
				Germanium			Not more than 0.05 ppm	

Kinds of milk, etc.	Types of container-packages (for use in sales)	Classification by materials	Materials test	Elution test				Strength test
				Test items	Leaching conditions	Leaching solution	Standard	
	Metal cans (limited to containers for cream)	Metals	Same with standard of metal cans set forth for Fermented Milk etc.	Same as left	Same as left	Same as left	Same as left	
	Combined container-packages (those made of synthetic resins or synthetic resin-processed paper. Those made of two or more materials, among above materials and metals)*1	Synthetic resin (PE, LLDPE or PET) to be used for direct contact with contents *3	Same with standard of synthetic resin -container-packages and synthetic resin processed paper containers-packages set forth for Cow's milk etc.	Same as left	Same as left	Same as left	Same as left	Same as left (Bursting strength test and pin hole test shall be performed for both synthetic resin and synthetic resin processed paper.)
		Metals	Same with standard of metal cans set forth for Fermented Milk etc.	Same as left	Same as left	Same as left	Same as left	
Fermented milk, fermented milk drink, and milk drink	Glass bottle		Transparent one					
	Container-packages made of synthetic resins, synthetic resin-processed paper, and synthetic resin-processed aluminium foil *2,*4	PE, Ethylene 1-alkene copolymerized resin to be used for parts in direct contact with contents		Same as left (Evaporation residue for 4 % acetic acid only)	Same as left	Same as left	Same as left	・ Penetrating Strength: Not less than 10 N ・ Pinhole: Same as that of cow's milk, etc. ・ Sealing strength: Same as that of cow's milk, etc.
		Polystyrene (PS)	・ Volatile substances (a total of styrene, toluene, ethylbenzene, isopropyl-benzene and n-propyl-benzene): Not more than 1,500 ppm ・ Arsenic: Not more than 2 ppm (as As_2O_3) ・ Heavy metal : Not more than 20 ppm (as Pb)	Heavy metal	at 60°C for 30 minutes	4 % acetic acid	Not more than 1 ppm (as Pb)	
				Evaporation residue			Not more than 15 ppm	
				Quantity of $KMnO_4$ consumed		Water	Not more than 5 ppm	
				Evaporation residue			Not more than 15 ppm	

Kinds of milk, etc.	Types of container-packages (for use in sales)	Classification by materials	Materials test	Elution test				Strength test
				Test items	Leaching conditions	Leaching solution	Standard	
		Synthetic resin (PP) to be used for direct contact with contents)	・n-Hexane extract: Not more than 5.5 % ・Xylene-soluble sub-stance: Not more than 30 % ・Arsenic: Not more than 2 ppm (as As_2O_3) ・Heavy metal: Not more than 20 ppm (as Pb)	Heavy metal	at 60°C for 30 minutes	4 % acetic acid	Not more than 1 ppm (as Pb)	
				Evaporation residue			Not more than 15 ppm	
				Quantity of $KMnO_4$ consumed		Water	Not more than 5 ppm	
		Synthetic resin (PET) to be used for direct contact with contents	・Cadmium: Not more than 100 ppm ・Lead: Not more than 100 ppm	Heavy metal	at 60°C for 30 minutes	4 % acetic acid	Not more than 1 ppm (as Pb)	
				Evaporation residue			Not more than 15 ppm	
				Quantity of $KMnO_4$ consumed		Water	Not more than 5 ppm	
				Antimony		4 % acetic acid	Not more than 0.025 ppm	
				Germanium			Not more than 0.05 ppm	
	Metal cans			Arsenic	at 60°C for 30 minutes	4 % acetic acid	Not more than 0.1 ppm (as As_2O_3)	
				Heavy metal			Not more than 1 ppm (as Pb)	
				Evaporation residue *8			Not more than 15 ppm (for those using synthetic resins for parts in direct contact with the contents)	
				Quantity of $KMnO_4$ consumed *8		Water	Not more than 5 ppm (Same as above)	
				Phenol *8			Negative (Same	

							as above)	
				Formaldehyde *8			Negative (Same as above)	

Kinds of milk, etc.	Types of container-packages (for use in sales)	Classification by materials	Materials test	Elution test				Strength test
				Test items	Leaching conditions	Leaching solution	Standard	
		Synthetic resins to be used for parts in direct contact with contents	・ Cadmium: Not more than 100 ppm ・ Lead: Not more than 100 ppm ・ Dibutyl tin compound (Iimited to PVC): Not more than 50 ppm (as dibutyl tin chloride) ・ Cresol phosphoric ester (limited to PVC): Not more than 1,000 ppm ・ Vinyl chloride (limited to PVC): Not more than 1 ppm					
	Combined container-packages (those made of two or more materials, among synthetic resins, synthetic resin-processed paper, synthetic resin-processed aluminium foil, and metals) *5	Synthetic resins, synthetic resin-processed paper, and synthetic resin-processed aluminium foil	Same as standard set forth in synthetic resins, etc. for fermented milk, etc.	Same as left	Same as left	Same as left	Same as left	Same as left (except sealing strength and standards for products storable at normal temperature)
		Metal	Same as standards set forth in metal cans for fermented milk	Same as left	Same as left	Same as left	Same as left	

Kinds of milk, etc.	Types of container-packages (for use in sales)	Classification by materials	Materials test	Elution test				Strength test
				Test items	Leaching conditions	Leaching solution	Standard	
		Synthetic resin-processed aluminium foil for hermetic sealing		Heavy metal	at 60°C for 30 minutes	4 % acetic acid	Not more than 1 ppm (as Pb)	・ Bursting strength (except standards for products storable at normal temperature): Not less than 196.1 kPa
				Evaporation residue			Not more than 15 ppm	
				Quantity of $KMnO_4$ consumed		Water	Not more than 5 ppm	
				Phenol	at 60°C for 30 minutes	Water	Negative	
				Formaldehyde			Negative	
		Synthetic resins of synthetic resin-processed aluminium foil for hermetic sealing which is used for parts in direct contact with contents.	・ Arsenic: Not more than 2 ppm (as As_2O_3) ・ Cadmium: Not more than 100 ppm ・ Lead: Not more than 100 ppm ・ Dibutyl tin compound (limited to PVC): Not more than 50 ppm (as dibutyl tin dichloride) ・ Cresol phosphoric ester (limited to PVC): Not more than 1,000 ppm ・ Vinyl chloride (limited to PVC): Not more than 1 ppm					

Kinds of milk, etc.	Types of container-packages (for use in sales)	Classification by materials	Materials test	Elution test				Strength test
				Test items	Leaching conditions	Leaching solution	Standard	
Prepared milk powder	Metal cans (including those using synthetic resins for hermetic sealing of the opening part) *6	PE, ethylene 1-alkene copolymerized or polyethylene terephthalate (PET) used for parts in direct contact with contents	Same as standard set forth in container-packages laminated synthetic resin for prepared milk powder	Same as left	Same as left	Same as left	Same as left	・ Sealing strength: Same as that of milk
	Container-packages of laminated synthetic resins (container-packages with aluminium foil laminated on synthetic resins or those with cellophane or paper laminated further) *7	Container-packages using PE, ethylene 1-alkene copolymerized resin *3	Same as tandard set forth in snthetic resines, etc. for fermented milk, etc.	Same as left	Same as left	Same as left	Same as left	・Bursting strength: Not less than 196.1 kPa for contents 300 g or less Not less than 490.3 kPa for contents above 300 g (196.1 kPa in case that an outer packaging i.e. package made over a container-package for retailing, is done and maximum bursting strengths of the outer and container-packages added together is not less than 980.7 kPa) ・Sealing strength: Same as that of milk
		PET used for parts in direct contact with contents	・ Cadmium: Not more than 100 ppm ・ Lead: Not more than 100 ppm	Heavy metal	at 60°C for 30 minutes	4 % acetic acid	Not more than 1 ppm (as Pb)	
				Evaporation residue			Not more than 15 ppm	
				Quantity of KMn04 consumed		Water	Not more than 5 ppm	
				Antimony 8)		4 % acetic acid	Not more than 0.025 ppm (Limited to container-packages using PET)	
				Germanium 8)			Not more than 0.05 ppm (same as above)	
	Combined container-packages (those made of metal cans and laminated synthetic resins)*7	Metal cans	Same with standard of metal cans set forth for Prepared milk powder	Same as left	Same as left	Same as left	Same as left	Same as left
		Laminated synthetic resins	Same with standard of laminated synthetic resins set forth for Prepared milk powder	Same as left	Same as left	Same as left	Same as left	Same as left (Bursting strength : Not less than 490.3 kPa)

a) Container-packages made of “synthetic resins” [polyethylene (PE), ethylene 1-alkene copolymerized resin (LLDPE), Nylon, polypropylene (PP) or polyethylene terepthalate (PET)].
b) Container-packages using PE processed paper, LLDPE processed paper or PET processed paper.

Notes:
*1 In case of synthetic resin processed paper container-packages, parts in direct contact with contents shall be limited to synthetic resin.
*2 Container-packages for products storable at normal temperature shall shield the light and shall not be gas-permiable.
*3 Additives shall not be used. Provided that, for synthetic resin container-packages, followings can be used: Not more than 2.5 g of calcium stearate (spec. of Japanese Pharmacopoeia) per 1 kg of synthetic resin; Not more than 0.3 g of glycerine fatty acid ester (spc. of Specifications and Standards of Food, Additives, etc.) per 1 kg of synthetic resin; or Titanium dioxide (spec. of Specifications and Standards of Food, Additives, etc.)
*4 Limited to PE, LLDPE, PS, PP or PET for parts in direct contact with contents.
*5 Additives shall not be used for PE and ethylene 1-alkene copolymerized resin used for parts in direct contact with contents. Breakage or air leakage relative to sealing strength are not allowed.
*6 Standards of PE, ethylene 1-alkene copolymerized resin, or PET to be used for parts in direct contact with contents are same as those of container-packages of laminated synthetic resin except bursting strength.
*7 Limited to PE, ethylene 1-alkene copolymerized resin, or PS for parts in direct contact with contents.
*8 Limited to those using PET.
*9 As to the bursting strength test and the sealing strength test for PET containers or processed paper container-packages, either of the two tests will suffice.