

Table 4. Analytical methods and analysis laboratories

No.	Compound	determined as	Analytical method	Laboratory
1	Aspartame	Aspartame	AFAF / HPLC	JFFI
2	Xylitol	Xylitol	MAHS / Ion-exchange chromatography	JFRL
3	Glycyrrhizine	Glycyrrhizine	MAHS / Ion-exchange chromatography	JFHA
4	Sodium saccharin	Sodium saccharin	AFAF / HPLC	FDSC
5	D-Sorbitol	D-Sorbitol	MAHS / Ion-exchange chromatography	JFRL
6	D-Mannitol	D-Mannitol	MAHS / Ion-exchange chromatography	JFRL
7	Amaranth	Amaranth	JFHS, 36 , 68. Enzyme / HPLC	JFRL
8	Erythrosine	Erythrosine	JFHS, 36 , 68. Enzyme / HPLC	JFRL
9	Allura red AC	Allura red AC	JFHS, 36 , 68. Enzyme / HPLC	JFRL
10	New coccine	New coccine	JFHS, 36 , 68. Enzyme / HPLC	JFRL
11	Phloxine	Phloxine	JFHS, 36 , 68. Enzyme / HPLC	JFRL
12	Rose bengale	Rose bengale	JFHS, 36 , 68. Enzyme / HPLC	JFRL
13	Acid red	Acid red	JFHS, 36 , 68. Enzyme / HPLC	JFRL
14	Tartrazine	Tartrazine	JFHS, 36 , 68. Enzyme / HPLC	JFRL
15	Sunset yellow FCF	Sunset yellow FCF	JFHS, 36 , 68. Enzyme / HPLC	JFRL
16	Fast green FCF	Fast green FCF	JFHS, 36 , 68. Enzyme / HPLC	JFRL
17	Brilliant blue FCF	Brilliant blue FCF	JFHS, 36 , 68. Enzyme / HPLC	JFRL
18	Indigo carmine	Indigo carmine	JFHS, 36 , 68. Enzyme / HPLC	JFRL
19	Titanium dioxide	Titanium	TAC / ICP Emission Spectroscopy	JFRL
20	β -Carotene	β -Carotene	STFC / HPLC	JFFI
21	Norbixine	Norbixine	EM / HPLC	JFRL
22	Sulfurous acid	Sulfurous acid	SMFR / Modified Rankine Method	TKF
23	Benzoic acid	Benzoic acid	AFAF / GC-SIM	JFFI
24	Sorbic acid	Sorbic acid	AFAF / HPLC	FDSC
25	Dehydroacetic acid	Dehydroacetic acid	AFAF / HPLC	FDSC
26	Isobutyl p-hydroxybenzoate	Isobutyl p-hydroxybenzoate	SMFR (partial directive extraction) / HPLC	TKF
27	Isopropyl p-hydroxybenzoate	Isopropyl p-hydroxybenzoate	SMFR (partial directive extraction) / HPLC	TKF
28	Ethyl p-hydroxybenzoate	Ethyl p-hydroxybenzoate	SMFR (partial directive extraction) / HPLC	TKF
29	Butyl p-hydroxybenzoate	Butyl p-hydroxybenzoate	SMFR (partial directive extraction) / HPLC	TKF
30	Propyl p-hydroxybenzoate	Propyl p-hydroxybenzoate	SMFR (partial directive extraction) / HPLC	TKF
31	Propionic acid	Propionic acid	AFAF / GC	JFFI
32	EDTA	EDTACa ₂ Na	AFAF / HPLC	JFRL
33	Erythorbic acid	Erythorbic acid	JFHS, 31, 41 / HPLC	JFHA
34	Isopropyl citrate	Monoisopropyl citrate	SMFR / GCMS	JFRL
35	L-Cysteine hydrochloride	Cysteine	AFAF / Amino Acid Analyzer	TKF
36	Butylated hydroxytoluene	Butylated hydroxytoluene	MAHS / Modified GCMS	TKF
37	d- α -Tocopherol	α -Tocopherol	HPLC	TKF
38	d- β -Tocopherol	β -Tocopherol	HPLC	TKF
39	d- γ -Tocopherol	γ -Tocopherol	HPLC	TKF
40	d- δ -Tocopherol	δ -Tocopherol	HPLC	TKF
41	Butylated hydroxyanisole	Butylated hydroxyanisole	MAHS / GCMSModified	TKF
42	Propyl gallate	Propyl gallate	AFAF / HPLC	TKF
43	Nitrite	NO ₂	BUNSEKI KAGAKU, 40, 105, Fluorometry	TKF
44	Nitrate	NO ₃	MAHS / HPLC	TKF
45	Imazaryl	Imazaryl	AFAF / HPLC	TKF
46	o-Phenylphenol	o-Phenylphenol	EM / GCMS(VI group: HPLC)	JFRL
47	Diphenyl	Diphenyl	EM / GCMS	JFRL
48	Thiabendazole	Thiabendazole	AFAF / HPLC	TKF
49	L-Aspartic acid	Aspartic acid	AFAF / Amino Acid Analyzer	TKF
50	DL-Alanine	Alanine	AFAF / Amino Acid Analyzer	TKF
51	Disodium 5'-inosinate	Inosinic acid	SMFR / HPLC	JFRL
52	Disodium 5'-uridyate	Uridylic acid	SMFR / HPLC	JFRL
53	Disodium 5'-guanylate	Guanylic acid	SMFR / HPLC	JFRL
54	Glycine	Glycine	AFAF / Amino Acid Analyzer	TKF
55	L-Glutamic acid	Glutamic acid	AFAF / Amino Acid Analyzer	TKF
56	Disodium 5'-cytidylate	Cytidylic acid	SMFR / HPLC	JFRL
57	L-Theanine	Theanine	AFAF / Amino Acid Analyzer	TKF
58	L-Isoleucine	Isoleucine	AFAF / Amino Acid Analyzer	TKF
59	L-Tryptophan	Tryptophan	AMFA / Fluorescence HPLC	TKF
60	L-Threonine	Threonine	AFAF / Amino Acid Analyzer	TKF
61	L-Valine	Valine	AFAF / Amino Acid Analyzer	TKF
62	L-Histidine hydrochloride	Histidine	AFAF / Amino Acid Analyzer	TKF
63	L-Phenylalanine	Phenylalanine	AFAF / Amino Acid Analyzer	TKF

No.	Compound	determined as	Analytical method	Laboratory
64	DL-Methionine	Methionine	AFAF / Amino Acid Analyzer	TKF
65	L-Lysine hydrochloride	Lysine	AFAF / Amino Acid Analyzer	TKF
66	L-Ascorbic acid	Total of oxidized and reduced style	SMFR / HPLC	JFRL
67	L-Ascorbyl stearate	L-Ascorbyl stearate	AROI, 27, 50 / HPLC	JFHA
68	L-Ascorbyl palmitate	L-Ascorbyl palmitate	AROI, 27, 50 / HPLC	JFHA
69	Thiamine hydrochloride	Thiamine hydrochloride	SMFR / HPLC	JFRL
70	Riboflavin	Riboflavin	EISHIN No.13 / HPLC	JFHA
71	Glycerol	Glycerol	AFAF / GC	JFFI
72	Silicone resin	Dimethylpolysiloxane	SMFR / AA	JFRL
73	Propylene glycol	Propylene glycol	AFAF / GC-SIM	JFHA
74	Adipic acid	Adipic acid	AFAF / GC-SIM	JFFI
75	Citric acid	Citric acid	JFHS, 29, 267 / HPLC	JFFI
76	Gluconic acid	Gluconic acid	AFAF / Enzyme□	JFFI
77	Succinic acid	Succinic acid	JFHS, 29, 267 / HPLC	JFFI
78	L-Tartaric acid	L-Tartaric acid	JFHS, 29, 267 / HPLC	JFFI
79	Lactic acid	Lactic acid	JFHS, 29, 267 / HPLC	JFFI
80	Acetic acid	Acetic acid	AFAF / HPLC / Modified	JFFI
81	Fumaric acid	Fumaric acid	JFHS, 29, 267 / HPLC	JFFI
82	DL-Malic acid	DL-Malic acid	JFHS, 29, 267 / HPLC	JFFI
83	Calcium	Calcium	TAC / AA	FDSC
84	Orthophosphoric acid	Orthophosphoric acid	EM / Absorptiometric Method	JFRL
85	Aluminum	Aluminum	TAC / AA	JFFI
86	Iron	Iron	TAC / AA	JFFI
87	Magnesium	Magnesium	TAC / AA	FDSC
88	Nordihydroguaiaretic acid	Nordihydroguaiaretic acid	EM / HPLC	JFRL
89	Naringin	Naringin	AFAF / HPLC(ECD)	JFFI
90	Hesperidine	Hesperidine	AFAF / HPLC	JFFI
91	Kojic acid	Kojic acid	AFAF / HPLC	JFHA
92	L-Asparagine	Asparagine	AFAF / Amino Acid Analyzer	TKF
93	L-Glutamine	Glutamine	AFAF / Amino Acid Analyzer	TKF
94	L-Arginine	Arginine	AFAF / Amino Acid Analyzer	TKF
95	L-Cystine	Cystine	AFAF / Amino Acid Analyzer	TKF
96	L-Serine	Serine	AFAF / Amino Acid Analyzer	TKF
97	L-Hydroxyproline	Hydroxyproline	AFAF / Amino Acid Analyzer	TKF
98	L-Tyrosine	Tyrosine	AFAF / Amino Acid Analyzer	TKF
99	L-Proline	Proline	AFAF / Amino Acid Analyzer	TKF
100	L-Leucine	Leucine	AFAF / Amino Acid Analyzer	TKF

Method of Analysis

AFAF:	Analytical Methods for Food Additives in Foods
MAHS:	Method of Analysis in Health Science
JFHS:	Journal of the Food Hygienic Society of Japan
TAC:	Test of Ash Content
STFC:	Standard Table of Food Composition in Japan 5th-Ed.
EM:	Extraction Method
SMFR:	Standard Methods of Analysis in Food Safety Regulation
AMFA:	Annotation of Official Methods of Feed Analysis in Japan
AROI:	Annual Report of Okinawa Prefectural Institute of Public Health
EISHIN:	Analytical methods for nutrients on the Standard of Nutrition Labeling, MHW Notification, EISHIN No.13, (1999)

Institutes

JFFI:	Japan Frozen Foods Inspection Corporation
JFRL:	Japan Food Research Laboratories
JFHA:	Japan Food Hygiene Association
FDSC:	Food and Drug Safety Center
TKF:	Tokyo Kenbikyoin Foundation