

4.10 Malaysia

1. FOOD ADMINISTRATION

Main administrative bodies responsible for food safety and hygienic control in Malaysia are Ministry of Agriculture and Agro-Based Industry and Ministry of Health. Their main roles are shown in Table 1.

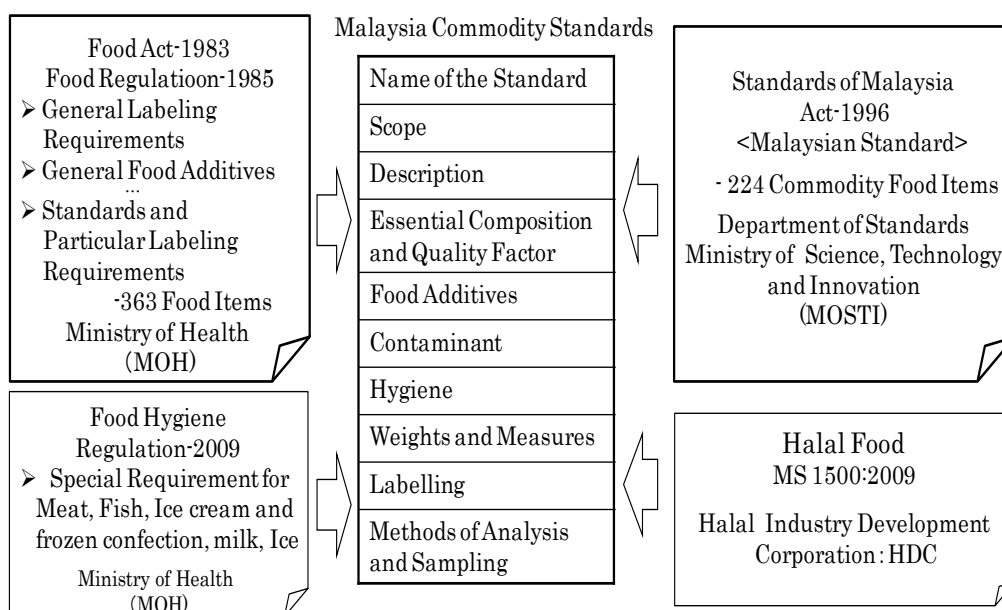
Table 1: Food Safety Control System in Malaysia

	Safety and Hygienic Control for Production and Primary Processing	Safety and Hygienic Control for Imported Foods and Processed Foods
	Ministry of Agriculture and Agro-Based Industry (MOA)	Ministry of Health (MOH)
Agricultural Products	Department of Agriculture (DOA), MOA	Food Safety and Quality Division (FSQD), MOH
Marine Products	Fisheries Department (DOF), MOA	
Livestock Products	Department of Veterinary Services (DVS), MOA	

2. SUMMARY OF ACTS AND REGULATIONS RELATED TO RESPECTIVE FOOD STANDARDS

Major acts and regulations related to Commodity Standards are presented in Figure 1.

Figure 1: Malaysian Commodity Standards and Relevant Laws



3. FOOD ACT (MINISTRY OF HEALTH)

(1) Food Act-1983⁶¹

The Food Act is a key law in food administration. It was enforced to protect the public against health hazards and fraud in the production, sale and use of foods. The Act stipulates permissible range in the preparation, sale and use of foods. It gives legal authority to relevant agencies to carry out their duties in implementing the Act. Such legal authority includes the power of the Minister of Health to stipulate the supplementary provisions compiled as Food Regulations-1985.

(2) Food Regulations-1985⁶²

Supplementary provisions are compiled in Food Regulations-1985. Food Regulations-1985 is continuously updated on amendment and newly setting of regulations. Food Regulations-1985 provides general requirements for labelling, food additives and supplements, packaging, contaminants, and bacterial toxin etc.; in addition, Commodity Standards and Particular Labelling Requirements for 363 food items in Chapter 8 (Table 2). It stipulates minimum definitions, component standards and special labelling requirements.

(3) Food Hygiene Regulations-2009⁶³

Food Hygiene Regulations-2009 regulates hygienic requirements against those who handle foods, as well as the conduct and maintenance of food premises. A food premise is defined in the Regulations as a place "used for or in connection with the preparation, preservation, packaging, storage, conveyance, distribution or sale of any food, or the relabelling, reprocessing or reconditioning of any food". The Regulations sets Special Requirements for Meat, Fish, Ice cream, and Frozen confection, Milk, and Ice in handling, preparation, packaging, supply, storage and sale. For vending machine, same special regulation is stipulated.

4. MALAYSIAN FOOD STANDARDS

As commodity standards, Malaysian Standards (MS) stipulated by the Ministry of Science, Technology and Innovation (MOSTI) occupies important place in food regulations. They are national standards for all industries pursuant to ISO, but are basically voluntary standards.

Malaysian Standards shown in Table 3 are in the same format for the Codex Commodity Standards.

Approximately 6,000 Malaysian Standards are issued. As of March, 2010, there are 454

⁶¹ <http://fsis2.moh.gov.my/fosimv2/HOM/frmHOMFARSec.aspx?id=22>

⁶² <http://fsis2.moh.gov.my/fosimv2/HOM/frmHOMFARSec.aspx?id=21>

⁶³ http://fsq.moh.gov.my/uploads/Food_Hygiene_Regulations_2009.pdf

Malaysian Standards issued in International Classification of Standards (ICS) code 67 (Food technology). Of them, 224 Malaysian Standards are related to Specifications (Table 4). These are basically voluntary standards and a certified mark can be labeled by obtaining official certification.

Recently, standardization of Malaysian Standards for agricultural products including fresh vegetables and fruits are proceeding as a national policy. As of end of February 2010, 30 items (Table 4) are registered as mandatory standards referred by administrative authority.

Table 2: Commodity Standards in Food Regulations-1985

Cereal, Cereal Product, Starch and Bread		Food Aerating Substance	
42	Flour	79	Cream of Tartar
43	Wheat Flour	80	Acid Phosphate
44	Chlorinated Wheat Flour	81	Baking Powder
45	Gluten Wheat Flour	Milk and Milk Product	
46	Protein-Increased Wheat Flour	82	Milk, Raw Milk or Fresh Milk
47	Self-Raising Wheat Flour	83	Milk Product
48	Whole meal Wheat Flour	84	Skimmed Milk, Skim Milk, Non-Fat Milk or Separated Milk
49	Rice	85	Pasteurized Milk
50	Milled Rice	86	Sterilized Milk
51	Rice Flour or Ground Rice	87	Ultra High Temperature Milk or U.H.T Milk
52	Glutinous Rice	88	Reference to Milk as Food
53	Glutinous Rice Flour	89	Flavoured Milk
54	Tapioca or Cassava	90	Full Cream Milk Powder or Dried Full Cream Milk
55	Tapioca Flour or Tapioca Starch	91	Skimmed Milk Powder, Skim Milk Powder, Dried Non-Fat Milk Solids or Separated Milk Powder
56	Sago	91A	Malted Milk Powder.
57	Sago Flour	92	Recombined Milk
58	Corn Flour or Corn Starch	93	Reconstituted Milk
59	Custard Powder	94	Evaporated Milk or Unsweetened Condensed Milk
60	Meal	95	Condensed Milk or Sweetened Condensed Milk
61	Wheat Germ Meal or Wheat Germ	96	Lactose Hydrolysed Milk
62	Oatmeal	97	Filled Milk
63	Pasta	97A	Filled Milk Powder.
64	Prepared Cereal Food	98	Evaporated Filled Milk or Unsweetened Condensed Filled Milk
65	Bread	99	Condensed Filled Milk or Sweetened Condensed Filled Milk
66	White Bread	100	Cream or Raw Cream
67	[Deleted by P.U.(A) 162/88]	101	Pasteurized Cream
68	Fruit Bread	102	Reduced Cream or Pouring Cream
69	Milk Bread	103	Butter
70	Meal Bread	104	Recombined Butter
71	[Deleted by P. U. (A) 162/88]	105	Ghee
72	Rye Bread	106	Cheese
73	Wheat-Germ Bread	107	Cottage Cheese
74	Wholemeal Bread		
75	Enriched Bread		
Malt and Malt Extract			
76	Malt		
77	Malt Extract		
78	Bakers' Malt Extract, Commercial Malt Extract, or Bakers' Maltose		

108	Cream Cheese
109	Processed Cheese
110	Cheese Paste, Cheese Spread or Cheese Mixture
111	Club Cheese or Luncheon Cheese
112	Dried Cheese or Powdered Cheese
113	Cultured Milk or Fermented Milk
114	[Deleted by P.U.(A) 162/88]
115	[Deleted by P.U.(A) 162/88]
116	Ice Cream
117	Particular Labelling Requirements of Milk and Milk Product
Sweetening Substance	
118	Sugar
118A	Stevia Extract
118B	Enzymatically Modified Stevia
119	Soft Brown Sugar
120	Coloured Sugar or Rainbow Sugar
121	Dextrose Anhydrous
122	Dextrose Monohydrates
123	Refiner's Syrup
124	Glucose
125	Glucose
126	Gula Melaka
127	Gula Kabong
128	Fructose
129	High Fructose Glucose Syrup
130	Honey
131	Icing Sugar
132	Molasses
132A	Artificial Sweetener
133	Non-nutritive Sweetening Substance
134	Aspartame, Glycerol and Sorbitol
134A	Beverage Whitener
134B	Sweetened Creamer
134C	Non Dairy Creamer
Confection	
135	Flour Confection
136	Sugar Confection
137	Frozen Confection
138	Ice Confection
139	Table Confection
140	Particular Labelling Requirement of Confection
Meat and Meat Product	
141	Meat or Fresh Meat
142	Chilled Meat
143	Frozen Meat
144	Minced Meat
145	Meat Product
146	Meat Paste
147	Manufactured Meat
148	Smoked Meat
149	Canned Meat
150	[Repealed by P.U. (A) 162/88]

151	Canned Meat With Other Food
152	Meat Extract or Meat Essence
153	Edible Gelatin
154	Meat or Meat Product Shall Not Contain Oestrogen Residue
155	Particular Labelling Requirement of Meat and Meat Product
Fish and Fish Product	
156	Fish
157	Fish Product
158	Cured, Pickled or Salted Fish
159	Smoked Fish
160	Prepared Fish
161	Canned Fish
162	Fish Paste
163	Belacan
164	Fish Sauce
165	[Repealed by P.U. (A) 162/88]
166	Cincaok
166A	Oyster Sauce
166B	Oyster Flavoured Sauce
167	Fish Ball or Fish Cake
168	Fish Keropok
169	Otak Udang, Petis or Heko
170	Pekasam
Egg and Egg Product	
171	Egg
172	Liquid Egg
173	Liquid Egg Yolk
174	Liquid Egg White
175	Dried Egg, Dried Egg Yolk or Dried Egg White
176	Reference to Egg as Food or as Ingredient in Food
177	Preserved Egg
178	Particular Labelling Requirement of Egg
Edible Fat and Edible Oil	
179	General Standard for Edible Fat and Edible Oil
180	Dripping
181	Suet
182	Lard
183	Refined, Bleached, Deodorized Palm Stearin
184	Neutralized, Bleached, Deodorized Palm Stearin
185	Margarine
186	Fat Spread
187	Vanaspati
188	General Standard for Edible Oil
189	Cooking Oil
190	Refined Coconut Oil
191	Unrefined Coconut Oil
192	Corn Oil
193	Cottonseed Oil
194	Groundnut Oil, Peanut Oil or Arachis Oil

195	Mustardseed Oil
196	Refined, Bleached, Deodorized, Palm Oil
197	Neutralized, Bleached, Deodorized Palm Oil
198	Refined, Bleached, Deodorized Palm Olein
199	Neutralised, Bleached, Deodorized Palm Olein
200	Refined, Bleached, Deodorized Palm Kernel Oil
201	Olive Oil
202	Rice Bran Oil
203	Rapeseed Oil of Toria Oil
204	Safflowerseed Oil
205	Sesameseed Oil or Gingelly Oil
206	Soya Bean Oil
207	Sunflower Seed Oil
208	Particular Labelling Requirement of Edible Fat and Edible Oil
Vegetable and Vegetable Product	
209	Vegetable
210	Fresh Vegetable
211	Dried or Dehydrated Vegetable
212	Frozen Vegetable
213	Vegetable Product
214	Salted Vegetable
215	Dried Salted Vegetable
216	Tomato Paste
217	Tomato Pulp
218	Tomato Puree
219	Vegetable Juice
220	Canned Vegetable
221	Fermented Soya Bean Product
222	Hydrolysed Vegetable Protein or Hydrolysed Plant Protein
Soup and Soup Stock	
223	Soup
224	Soup Stock
Fruit and Fruit Product	
225	Raw Fruit or Fresh Fruit
226	Dried Fruit
227	Mixed Dried Fruit
228	Fruit Product
229	Candied Fruit or Glaced Fruit or Crystallized Fruit
230	Salted Fruit
231	Dried Salted Fruit
232	Candied Peel
233	Canned Fruit
234	Canned Fruit Cocktail
235	Fruit Juice
236	Apple Juice
237	Grapefruit Juice
238	Lemon Juice
239	Lime Juice
240	Orange Juice
241	Passion Fruit Juice

242	Pineapple Juice
243	Particular Labelling Requirement of Fruit Juice
243A	Fruit Nectar
244	Fruit Pulp
245	Fruit Puree or Fruit Paste
Jam, Fruit Jelly, Marmalade and Seri Kaya	
246	Jam
247	Fruit Jelly
248	Marmalade
249	Seri Kaya
250	Pectin
251	Jam Setting Compound
Nut and Nut Product	
252	Nut
253	Coconut Milk
254	Coconut Cream
255	Coconut Cream Powder
256	Desiccated Coconut
257	[Repealed by P.U. (A) 162/88]
258	Coconut Paste
259	Peanut Butter
Tea, Coffee, Chicory and Related Product	
260	Tea
261	Tea Dust, Tea Fanning or Tea Sifting
262	Tea Extract, Instant Tea or Soluble Tea
263	Scented Tea
263A	Tea Mix
264	Particular Labelling Requirement of Tea
265	Coffee Bean
266	Coffee or Ground Coffee or Coffee Powder
267	Instant Coffee or Soluble Coffee
267A	Decaffeinated Coffee
268	Coffee Essence or Liquid Coffee Extract
269	Coffee Mixture
269A	Premix Coffee
270	Chicory
271	Coffee and Chicory
272	Instant Coffee and Chicory or Soluble Coffee and Chicory Extract
273	Coffee and Chicory Essence or Liquid Coffee and Chicory Extract
Cocoa and Cocoa Product	
274	Cocoa Bean
275	Cocoa Nib or Cracked Cocoa
276	Cocoa Paste, Cocoa Mass, Cocoa Slab or Cocoa Liquor
277	Cocoa Butter
278	Cocoa and Cocoa Powder or Soluble Cocoa
279	Chocolate
280	White Chocolate
281	Milk Chocolate
Milk Shake	

282	Milk Shake
Salt and Spice	
283	Salt
284	Table Salt
285	Iodised Table Salt or Iodised Salt
286	Spice
287	Aniseed
287A	Aniseed Powder
288	Caraway Seed
289	Caraway Powder
290	Cardomom
291	Cardamom Seed
292	Cardamom Powder
293	Cardamom Amomum
294	Cardamom Amomum Seed
295	Cardamom Amomum Powder
296	Celery Seed
297	Chilli
298	Chilli Powder
299	Chilli Slurry
300	Cinnamon
301	Cinnamon Powder
302	Cloves
303	Cloves Powder
304	Coriander
305	Coriander Powder
306	Cumin
307	Cumin Powder
308	Cumin Black
309	Cumin Black Powder
310	Dill Seed
311	Fennel
312	Fennel Powder
313	Fenugreek
314	Fenugreek Powder
315	Ginger
316	Ginger Powder
317	Mace
318	Mace Powder
319	Mustard
320	Mustard Powder
321	Nutmeg
322	Nutmeg Powder
323	Black Pepper
324	Black Pepper Powder
325	White Pepper
326	White Pepper Powder
327	Mixed Pepper Powder
328	Pimento
329	Saffron
330	Star Anise
331	Tumeric
332	Tumeric Powder
332A	Blended Tumeric Powder

333	Mixed Spice
333A	Curry Powder
Vinegar, Sauce, Chutney and Pickle	
334	Vinegar
335	Distilled Vinegar
336	Blended Vinegar
337	Artificial Vinegar or Synthetic Vinegar
338	Particular Labelling Requirement of Vinegar
339	Sauce
340	Soya Sauce or Soya Bean Sauce or Kicap
341	Hydrolysed Vegetable Protein Sauce or Hydrolysed Plant Protein Sauce
341A	Blended Hydrolysed Vegetable Protein Sauce or Blended Hydrolysed Plant Protein Sauce
342	Chilli Sauce
343	Tomato Sauce or Tomato Ketchup or Tomato Catsup
344	Salad Dressing
345	Mayonnaise
346	Chutney
347	Pickle
Soft Drink	
348	General Standard for Soft Drink
349	Syrup
350	Fruit Syrup, Fruit Cordial or Fruit Squash
351	Flavoured Syrup or Flavoured Cordial
352	Fruit Juice Drink
353	Fruit Drink
354	Flavoured Drink
355	Soft Drink Base or Soft Drink Premix
356	Botanical Beverage Mix
357	Soya Bean Milk
358	Soya Bean Drink
359	[Repealed by P.U. (A) 162/88]
360	Particular Labelling Requirement of Soft Drink
Natural Mineral water	
360A	Natural Mineral Water
Packaged Drinking water	
360B	Packaged Drinking Water
Alcoholic Beverage	
361	General Standard for Alcoholic Beverage
362	Wine
363	Wine Cocktail, Vermouth or Wine Aperitif
364	Aerated Wine
365	Dry Wine
366	Sweet Wine
367	Fruit Wine
368	Apple Wine
369	Cider

370	Pear Wine
371	Perry
372	Vegetable Wine
373	Honey Wine or Mead
374	Beer, Lager, Ale or Stout
375	Rice Wine
376	Toddy
377	Spirit
378	Brandy
379	Fruit Brandy
380	Rum
381	Whisky
382	Vodka
383	Gin
384	Samsu

385	Particular Labelling Requirement of Spirit
386	Liqueur
Shandy	
387	Shandy
Special Purpose Food	
388	Special Purpose Food
389	Infant Formula
389A	Follow-up Formula
390	Canned Food for Infants and Children
391	Cereal-Based Food for Infants and Children
392	Low Energy Food
393	Formula Dietary Food
393A	Special Dietary Foods With Low Sodium Content Including Salt Substitute

Note : Missing sequential regulation numbers are due to intentional deletion of the regulation from the Food Regulations

Table 3: Format of Malaysian Standards (MS)

MALAYSIAN STANDARDS MS 526:2009 ICS: 67.060, 180.20 Instant Wheat Noodles – Specification (Second Revision)	
Contents	
1 Scope	Table 1 Requirements for instant wheat noodles (fried and non-fried, excluding seasonings) .
2 Normative references	
3 Definitions	
4 Minimum requirements	Annex A Determination of moisture content
5 Packaging and labelling	Annex B Determination of cooking or soaking time
6 Hygiene	Annex C Determination of protein content
7 Sampling	Annex D Determination of acid value
8 Testing	
9 Compliance	
10 Legal requirements	

Table 4: Specifications in Malaysian Standards

MS No.	Title		
85:2010	Edible Wheat Flour - Specification (Third Revision)	1252:2009*	Fresh French Beans - Specification (First Revision)
513:2009	Caramel in The Manufacture of Soy Sauce - Specification (Second Revision)	2249:2009	Fresh Baby Corn - Specification
742:2009	Prawns/Shrimps Canned in Brine - Specification (First Revision)	997:2009	Canned Baked Beans in Tomato Sauce - Specification (First Revision)
2255:2009	Dried Wheat Noodles - Specification	ISO 6574:2008	Celery Seed (Apium Graveolens Linnaeus) - Specification (Iso 6574:1986, ldt)
2254:2009	Wet and Raw Wheat Noodles - Specification	ISO 10621:2008	Dehydrated Green Pepper (Piper Nigrum L.) - Specification (Iso 10621:1997, ldt)
526:2009	Instant Wheat Noodles - Specification (Second Revision)	1118:2008	Malaysian Cocoa Butter - Specification (First Revision)

ISO 11162:2008	Peppercorns (Piper Nigrum L.) in Brine - Specification and Test Methods (Iso 11162:2001, Idt)
ISO 11163:2008	Dried Sweet Basil (Ocimum Basilicum L.) - Specification (Iso 11163:1995, Idt)
1323:2008*	Fresh Mustards - Specification (First Revision)
1376:2008	Malaysian Cocoa Mass - Specification (First Revision)
1229:2008	Fresh Sweet Corn - Specification (First Revision)
2202:2008	Fresh Pummelo – Specification
2201:2008	Fresh Pitahaya – Specification
1798:2008	Milk and Milk Products - Specification of Mojonner-Type Fat Extraction Flasks (Iso 3889:2006, Mod)
1284:2008	Soft, Light and Dark Brown Sugar - Specification (First Revision)
1994:2007	Fresh 'Cavendish' Banana — Specification
1995:2007	Fresh Rambutan – Specification
ISO 882-1:2007	Cardamom [Elettaria Cardamomum (Linnaeus) Maton Var. Minuscula Burkill] - Specification - Part 1: Whole Capsules (Iso 882-1:1993, Idt)
ISO 882-2:2007	Cardamom [Elettaria Cardamomum (Linnaeus) Maton Var. Minuscula Burkill] - Specification - Part 2: Seeds (Iso 882-2:1993, Idt)
597:2007	Beer – Specification (First Revision)
2054:2007	Coriander (Coriandrum Sativum L.), Whole or Ground (Powdered) - Specification (Iso 2255:1996, Mod)
2055:2007	Fennel Seed, Whole or Ground (Powdered) – Part 1: Bitter Fennel Seed (Foeniculum Vulgare P. Miller Var. Vulgare) – Specification (Iso 7927-1:1987, Mod)

2056:2007	Fenugreek, Whole or Ground (Powdered) – Specification (Iso 6575:1982, Mod)
2062:2007	Aniseed (Pimpinella Anisum Linnaeus) - Specification (Iso 7386:1984, Mod)
815:2007 *	Palm Stearin - Specification (Second Revision)
2042:2007	Salty Soy Sauce – Specification
2043:2007	Virgin Coconut Oil – Specification
545:2007	Fresh, Chilled and Frozen Beef –Specification (First Revision)
ISO 11178:2007	Star Anise (Illicium Verum Hook. F.) - Specification (Iso 11178:1995, Idt)
814:2007 *	Palm Oil - Specification (Second Revision)
816:2007 *	Palm Olein - Specification (Second Revision)
1148:2007	Fine Granulated Sugar and Castorsugar – Specification(First Revision)
1980:2007	Flavoured Milk – Specification
236:2007	Palm Kernels - Specification (Second Revision)
894:2005 *	Fresh Chillies - Specification (First Revision)
1875:2006	Groundnuts (Peanuts) - Specification
1783:2005	Edible Ice in Food Processing and Food Services – Specification
1028:2005 *	Fresh Watermelon - Specification (First Revision)
234:2005	Black and White Pepper, Whole - Specification (Second Revision)
293:2005	Cocoa Beans – Specification for Grading (Fourth Revision)
1819:2005	Chocolate Flavoured Confections – Specification
1306:2005 *	Fresh Ginger – Specification
779:2005	Margarine - Specification(Second Revision)

883:2005	Vanaspati/Compound Vegetable Fat - Specification(First Revision)	1001:2002	Specification for Dried Chillies in Ground (Powdered) Form
4:2005	White Refined Sugar for General Use – Specification (Third Revision)	361:2002	Specification for Fresh, Chilled and Frozen Poultry (First Revision)
1283:2005	Oyster Flavoured Sauce -Specification (First Revision)	1127:2002 *	Specification for Fresh Carambola (Second Revision)(Codex Stan 187-1993, Neq)
1310:2005	Oyster Sauce – Specification	871 : 2001	Specification for Malaysian Cocoa Powder
807:2005	Light Soy Sauce – Specification	1041:2001	Specification for Fresh Pineapple (First Revision)
1264:2005	Dark (Thick) Soy Sauce - Specification (First Revision)	1507:2001	Specification for Refined Palm Glycerine
1234:2005	Vegetable Shortening – Specification	714:2001	Specification for Packaged Pineapple Juice (First Revision)
1820:2005	Fresh Sekaki Papaya – Specification	531:2001	Specification for Tomato Sauce (Ketchup) (Second Revision)
1859:2005	Fresh Chokanan Mango – Specification	889 : 2001	Specification for Turmeric, Whole and Ground(First Revision)
82:2005	White Refined Sugar for Industrial Use – Specification (Third Revision)	543 : 2001	Specification for The Production of Vegetable Seeds
892:2004 *	Spesifikasi Bagi Kobis Bulat	1516:2001	Specification for Vinegar
713:2004	Seri Kaya – Specification	295:1999	Specification for Tea
1762:2004	Palm Superolein – Specification	476:1998	Specification for Cream-Crackers (First Revision)
1102:2003	Specification for Black and White Pepper, Ground	1434:1998	Specification for Semi-Sweet Biscuits and Cookies
682:2004	Cooking Oils – Specification	6:1998	Specification for Dried Crackers (Keropok Kering) from Freshwater and Marine Fish, Crustacea and Molluscan Shellfish (First Revision)
1000:2003	Specification for Soya Bean Milk and Drink (First Revision)	898 : 1998	Specification for Dry-Salted Anchovies (Ikan Bilis) (Second Revision)
85 : 2003	Specification for Edible Wheat Flour(Second Revision)	1437:1998	Specification for Palm Kernel Stearin
1715 : 2003	Specification for Chocolate and Chocolate Products	241:1998	Specification for Bread
1126:2003	Meat Burgers - Specification (First Revision)	84 : 1998	Specification and Grades for Paddy (First Revision)
1145:2003 *	Specification for Fresh Eksotika Papaya	6:1998	Specification for Quick-Frozen, Raw and Cooked Shrimps or Prawns (Second Revision)
956 : 2003 *	Spesifikasi Bagi Timun	1436:1998	Specification for Palm Kernel Olein
893:2003 *	Spesifikasi Bagi Tomato	600:1998	Specification for Cordials, Squashes and Syrups
951:2003 *	Spesifikasi Bagi Kacang Panjang		
1125:2003	Meat Frankfurters – Specification		
302:2003	Specification for Canned Pineapple (First Revision)		

225 : 1997	Specification for Grading of Milled Rice	156 : 1994	Specification for Tapioca Pearl
83:1997	Specification and Methods of Test for Sugarcane Final Molasses(Second Revision)	155:1994	Specification for Industrial Tapioca Starch (First Revision)
1393:1996 *	Specification for Fresh Chinese Cabbage (Head Type)	1351:1994	Specification for Coconut Cream Powder
1124:1996 *	Specification for Fresh Sweet Pepper (Bell Pepper)	1282: PART 5:1994	Specification for Food Additives Part 5 : Stabilizers, Thickeners and Gelling Agents
532:1995	Specification for Red Chilli Sauce (Second Revision)	154:1994	Specification for Edible Tapioca Starch (First Revision)
890 : 1995	Specification for Curry Powder (First Revision)	468:1994	Specification for Industrial Sago Starch (First Revision)
1374:1995	Specification for Fresh, Chilled and Frozen Rabbit Meat	601:1994	Specification for Ready-to-Drink Beverages(Carbonated and Non Carbonated)(First Revision)
1381:1995	Specification for Desiccated Coconut	1325:1993 *	Specification for Fresh Muskmelon (Tembikai Wangi)
410:1995	Specification for Pasteurized and Pasteurized, Homogenized Full-Cream and Low-Fat Milk (Second Revision)	1282: PART 3:1993	Specification for Food Additives Part 3 : Antioxidants
1376:1995	Specification for Cocoa Mass	1309:1993	Specification for Nutmeg (Whole or Broken)
1373:1995	Specification for Serunding Daging (Spicy Shredded Meat)	1324:1993 *	Specification for Fresh Kale (Kailan)
1372:1995	Specification for Satay Sauce	469 : 1993	Specification for Rice (Oryza Sativa) Seed for Planting
1282: PART 8:1995	Specification for Food Additives Part 8 : Colouring Substance	467 : 1993	Specification for Cocoa (Theobroma Cacao) Seeds for Planting
680 : 1995	Specification for Fresh Chicken Eggs	598:1993	Specification for Ice-Cream
1057 : 1995	Specification for Adjustable Louvre Windows	1308:1993	Specification for Mace (Whole, in Pieces or Ground)
779:1994	Specification for Margarine (First Revision)	513:1993	Specification for Caramel in The Manufacture of Soya Sauce (First Revision)
1362:1994 *	Specification for Fresh Spinach	599:1993	Specification for Full Cream Milk Powder (First Revision)
1361:1994 *	Specification for Fresh Head Lettuce	1282: PART 4:1993	Specification for Food Additives Part 4 : Flavour Enhancers
1282: PART 7:1994	Specification for Food Additives Part 7 : Anticaking Agents	1250:1992	Specification for Duck Eggs
1282: PART 6:1994	Specification for Food Additives Part 6: Solvents	1282: PART 2:1992	Specification for Food Additives Part 2 : Preservatives
1356:1994	Specification for Rice Flour(Non-Glutinous) and Blended Rice Flour	1282: PART 1:1992	Specification for Food Additives : Part 1 : Acid Regulators
1357:1994	Specification for Sago Pearl		

1284:1992	Specification for Soft Brown Sugar and Brown Sugar	1121:1988	Specification for Canned Fish in Oil
1249:1992	Specification for Canned Mutton / Goat Meat in Curry	1122:1988	Specification for Canned Fish in Brine
1251:1992	Specification for Canned Cuttlefish or Squid	813:1988	Specification for Gelatin
1261:1992	Specification for Potato Chips	675:1988	Specification Forcanned Fish in Tomato Sauce (First Revision)
1253:1992	Specification for Cultured Milk(Fermented Milk)	1112:1988	Specification for Instant Beehoon (Instant Rice Vermicelli)
1262:1992	Specification for High Fructose Glucose Syrup 42	1111:1988	Specification for Raw Unprocessed in-Shell Groundnuts to Be Processed Into Menglembu Groundnuts
1259:1992, Including AMD. 1:1993	Specification for Icing Sugar (Powdered Sugar)	673:1988	Specification for Canned Sweet Corn (First Revision)
1260:1992	Specification for Canned Ikan Bilis (Anchovies)	243:1988	Specification for Monosodium Glutamate
470:1992	Specification for Edible Sago Starch (First Revision)	242:1988	Specification for Butter/Recombined Butter (First Revision)
1236 : 1991	Specification for Tamarind Pulp	80 : 1987	Specification for Palm Kernel Oil
1232:1991	Specification for Green Coffee	1083:1987	Specification for Ultra High Temperature (Uht) Flavoured Milk
1235:1991	Specification for Roasted Ground Coffee	239:1987	Specification for Coconut Oil (First Revision)
1230:1991 *	Specification for Fresh Okra (Lady'S Finger)	1040:1986 *	Specification for Fresh Papaya
1200:1991	Specification for Corn Starch	1024:1986	Specification for Wheel Nuts for Passenger Vehicles
1191:1991	Specification for Cereal-Based Snack Foods	1053:1986, Including AMD.1:1991 & AMD. 2	Specification for Evaporated Filled Milk
526:1988 (CONFIRME D:2003)	Specification for Instant Noodles (First Revision)	1055 : 1986 *	Specification for Fresh Jackfruit
1433:1998	Specification for Wafers	1054:1986, Including AMD. 1:1991 & AMD. 2:1993	Specification for Condensed Filled Milk
872 : 1990	Specification for Canned Beef Curry	997 : 1986	Specification for Canned Beans in Tomato Sauce
1126:1989	Specification for Chilled and Frozen Meatburgers	998 : 1986	Specification for Canned Long Beans
1149:1989 *	Specification for Fresh Guava	412:1986	Specification for Recombined Ultra High Temperature Milk and Recombined Ultra High Temperature Homogenized Milk (First Revision)
1128:1989 *	Specification for Quick Frozen Mangosteen		
1146:1989 *	Specification for Fresh Bitter Gourd		
999 : 1989	Specification for Canned Chicken Curry		
1075:1987, Including AMD.1:1989 *	Export Specification for Fresh 'Mas' Bananas		
1118:1988	Specification for Malaysian Cocoa Butter		
1115:1988	Specification for Table Salt		

411:1986	Specification for Ultra High Temperature Milk and Ultra High Temperature Homogenized Milk (First Revision)
235 : 1986	Specification for Copra
1027:1986	Specification for Canned Passion Fruit Nectar
952 : 1985	Specification for Canned Processed Peas
955 : 1985	Specification for Beehoon (Rice Vermicelli)
958 : 1985	Specification for Citric Acid (Food Grade)
915 : 1985	Specification for Sodium Benzoate, Food Grade
950 : 1985	Specification for Canned Guava
885 : 1984 *	Specification for The Grading of Mangoes for Fresh-Fruit Consumption
884 : 1984	Specification for Canned Jackfruit
895 : 1984	Specification for Hard Boiled Sweets
899 : 1984	Specification for Dried Prawns
891 : 1984	Specification for Peanut Butter
901 : 1984	Specification for Canned Mango Nectar
902 : 1984	Specification for Canned Guava Nectar
25:1983, Including AMD. 1:1993	Specification for Condensed Milk (First Revision)
818:1983	Specification for Ice Used in The Fish and Prawn Industry
819:1983	Specification for Sodium Metabisulphite, Food Grade
812:1983	Specification for Canned Tropical Fruit Cocktail
413:1983	Specification for Pasteurized Recombined Milk and Pasteurized, Homogenized Recombined Milk (First Revision)

851 : 1983	Specification for Phosphoric Acid (Food Grade)
808:1983	Specification for Resh Fish
777:1982	Specification for Instant Coffee
759:1982	Specification for Cloves, Whole and Ground (Powdered)
760:1982	Specification for Skimmed Milk Powder / Non - Fat Dried Milk
780:1982	Specification for Canned Papaya-Pineapple Salad
21:1982	Specification for Glucose Syrup (Liquid Glucose) (First Revision)
718 : 1981	Specification for Ginger, Whole and in Pieces
742:1981	Specification for Prawns / Shrimps Canned in Brine
664:1980	Specification for Canned Mushrooms (Agaricus)
596:1979	Specification for Jams (Fruit Preserves), Jellies and Marmalades
597:1979	Specification for Beer
548:1978	Specification for Fresh, Chilled and Frozen Lamb and Mutton
545:1978	Specification for Fresh, Chilled and Frozen Beef
547:1978	Specification for Fresh, Chilled and Frozen Pork
459:1976 *	Specification for Fresh Bananas
304:1975	Specification for Canned Rambutans
232:1974 *	Specification for Malaysian Mandarins for Fresh-Fruit Consumption
238:1974	Specification for Rice Bran Oil
79:1973	Specification for The Storage and Transport of Green Bananas

5. HALAL SYSTEM

Halal System is a system to examine raw materials of foods, production processes, quality of products permissible under Islamic Law, and to certify and label halal-compliant products. Currently, the Department of Islamic Development Malaysia (JAKIM) is responsible for evaluation for approval, and Halal Development Company (HDC) is for promotion of halal industry. As MS standards, MS 1500:2009 is established as main standards. It is said that any food without halal mark can not be distributed in Malaysian market. Therefore, we should give due consideration to Halal System.

The Malaysian government recently announced its intentions of enacting a Halal Act, and it will be positioned as the dominant conception of current Halal system. While it is still unclear as to what kind of provisions would be found within the Act, it should likely have a significant impact on the production, distribution, sales and so on.

6. LAWS AND REGULATIONS RELATED TO FOOD ADDITIVES

6.1 Overview

In Malaysia, food additives are regulated by the Food Safety and Quality Division (FSQD) within the Ministry of Health. The main legal basis for regulation of food additives in Malaysia is found in Part 5, Subregulation 19 of the Food Regulations 1985. The Subregulation provides that:

- 1) Substances that are not permitted as food additives are not allowed to be used as foods additives;
- 2) Permitted food additives that do not comply with standards prescribed under the Food Regulations, where such standard is so prescribed, are also not allowed in food;
- 3) Addition of food additives to foods is prohibited unless expressly allowed under the Food Regulations;
- 4) Food additives used in foods should not exceed the maximum permitted levels.

6.2 Food Additives Definitions & Functional Classes

Food additives are defined in the Food Regulations as follows:

“Food additive means any safe substance that is intentionally introduced into or on a food in small quantities in order to affect the food’s keeping quality, texture, consistency, appearance, odour, taste, alkalinity, or acidity, or to serve any other technological function in the manufacture, processing, preparation, treatment, packing, packaging, transport, or storage of the food, and that results or may be reasonably expected to result directly or indirectly in the substance or any of its by-products becoming a component of, or otherwise affecting the characteristics of, the food, and includes any preservative, colouring substance, flavouring substance, flavour enhancer, antioxidant and food conditioner, but shall not include added nutrient, incidental constituent or salt.”

As noted in the definition, food additives are divided into 7 functional classes in Malaysia, as follows:

- 1) Preservatives;
- 2) Antimicrobial agents;
- 3) Colouring substances;
- 4) Flavouring substances;
- 5) Flavour enhancers;
- 6) Antioxidants; and
- 7) Food conditioners;

Food conditioners are further divided into 11 subcategories, including

- 1) Emulsifiers;
- 2) Antifoaming agents;
- 3) Stabilizers;
- 4) Thickeners;
- 5) Modified starches;
- 6) Gelling agents;
- 7) Acidity regulators;
- 8) Enzymes;
- 9) Solvents;
- 10) Glazing agents; and
- 11) Anticaking agents

Some of the substances listed within the functional class for food conditioner may also be used in certain instances as food processing aids.

6.3 Permitted Food Additives and Maximum Limits

Use of an additive in food is on the condition that:

- 1) The additive is permitted by the Regulations to be in any ingredient used in the manufacture of the food;
- 2) The proportion of the additive in the final product does not exceed the maximum proportion, if any, permitted by the Regulations for that ingredient;
- 3) The total proportion of the additive in the final product does not exceed the maximum proportion, if any, permitted by the Regulations for that product;
- 4) The food into which the additive is carried over does not contain the additive in greater quantity that would be the case if the food were made under proper technological conditions and in accordance with sound manufacturing practices; and
- 5) The additive carried over is present in the food at a level that is significantly less than that normally required for the additive to achieve an efficient technological function in its own right;

Permitted food additives and maximum limits are found in the Sixth, Sixth (A), Seventh, Eighth, Ninth, Tenth and Eleventh Schedules of the Food Regulations. Limitations on the use of permitted food additives are that they must not be used to conceal any damage to or any inferiority in the quality of foods.

For flavourings, permitted flavouring substances that can be used in food include:

- 1) Those listed in one or more of the following publications:
 - a) FEMA GRAS (Generally Recognized As Safe (GRAS) flavouring substances published by the Flavor and Extract Manufacturers' Association of the United States (FEMA) contained in the Food Technology, a publication of the Institute of Food Technologists); or
 - b) Flavourings, List of Codex Specifications for Food Additives (CAC/MISC 6); or
- 2) Natural flavouring substance either in its raw state or after processing by traditional preparation process including drying, roasting, and fermentation.

6.4 Prohibited Substances to be used as Food Additives

Prohibited flavouring substances are found in the Eighth Schedule of the Food Regulations. There is no other negative list of prohibited food additives, since only permitted additives are allowed to be used in food.

6.5 Specifications & Standards for Food Additives

Specifications for food additives are found in Malaysian Standard (MS) 1281 Part 1 to Part 8 for acidity regulators, preservatives, antioxidants, flavour enhancers, stabilizers, thickeners and gelling agents, solvents, anticaking agents and colouring substances.

6.6 Application, Assessment and Approval of Food Additives

New food additives must first be evaluated by the Expert Committee on Food Additives and Contaminants and approved by the Food Safety and Quality Division (FSQD) within the Ministry of Health. Information and data requirements for the assessment include:

- 1) Chemical and/or common name of proposed additive (Trade names are not acceptable);
- 2) Specific type of food for which requested and classification of product under the Food Regulations 1985 (to state proposed regulation number and reason);
- 3) Proposed minimum and maximum levels of use in each food item;
- 4) The purpose of the additive in each food item and evidence that the additive will have the intended physical or other technical results when added to the particular food item;
- 5) Evidence as to whether or not the same objectives can be obtained by Good Manufacturing Practice or by additives currently approved in Malaysia;
- 6) The limits of the probably daily intake of the additive in the diet;
- 7) Evidence of approval and if approval has been rejected by any statutory body or authority;
- 8) Chemical structure and formula of the additive in precise chemical terms and all physical details;
- 9) Recognized standard of purity for the additive, e.g. Joint FAO/WHO Expert Committee on Food Additive (JECFA), Food Chemicals Code, British Standards Institute, etc.
- 10) Information regarding the stability and persistence of the additive in the food(s) in which it is to be used;
- 11) The advantages which will occur to the consumer from the use of this additive;
- 12) If intended use of the additive is in packaging materials, the maximum amount(s) (supported by evidence) that may be incidentally absorbed by the food(s) from the food packaging materials should be stated;

- 13) Evidence in the form of a request or requests from manufacturers of a specific type of food or food setting out the purpose to be served by the additive and establishing the need for it;
- 14) Analytical method to determine the amount of additive in the raw, processed and/or finished food;
- 15) Analytical method to determine any substance formed in or on such food because of the use of the food additive;
- 16) Outline of the method of manufacture of the additive;
- 17) Full details of the analytical controls used during the various stages of manufacturing, processing and packing;
- 18) Full details of pharmacological and toxicological investigations carried out according to the general terms of reference given in World Health Organization (WHO) Technical Report, Series 144, "Procedures for the testing of intentional food additives to establish their safety for use", specifically:
 - (a) acute, short term and long term (chronic) toxicity studies. Chronic toxicity data should be given for at least two species, one of which should be the dog and carried out over the major portion of the life span of the experimental animal. Chronic toxicity experiments should aim to give the data needed to establish a 'no-effect' level;
 - (b) reporting of any physiological effects or any abnormal reactions, including carcinogenesis, teratogenesis in pregnant species, sensitivity, tolerance or idiosyncrasy in response to the additive;
 - (c) biochemical information on the possible mode of action if available; metabolic studies to show rate, extent and mode of elimination;
 - (d) evidence of non-interference with essential dietary constituents;
 - (e) summary and bibliography of pertinent literature.

Additionally, it is also possible for applications to be made for existing permitted additives to be added into other standardized food items within the Food Regulations. Information required for such applications include:

- 1) The technological function and proposed minimum and maximum levels;
- 2) Exposure assessment for additives which have an ADI

6.7 Labelling of Food Additives in Foods

The presence of additives in foods in general should be listed on the label in the form – "*contains permitted (state the type of the relevant food additive)*". Additional labelling requirements for specific additives used in food include:

- 1) For sulphite or sulphur dioxide, the words "*contains sulphur dioxide*";
- 2) For flavour enhancers, the words "*contains (state the chemical name of the flavour enhancer) as permitted flavour enhancer*";
- 3) For polydextrose added as a food conditioner, the words "*Sensitive individuals may experience a laxative effect from the excessive consumption of food containing polydextrose*";
- 4) For food conditioners, the words "*contains (state the class name of the food conditioner) as permitted food conditioner*".

6.8 Summary of Food Additives

The definitions regarding food additives such as flavourings, processing aids, and carry-overs are summarized in Table 5. The descriptions of other items such as designated/existing food additives and prohibited substances are summarized in Table 6.

7. SPECIFICATIONS & STANDARDS AND METHODS OF ANALYSIS FOR GENERAL FOODS

Standards and methods of analysis for general foods are shown in Table 7. Standards and methods of analysis for the food categories taken up in the Case Study are described in the food categories, respectively.

8. CASE STUDIES

(1) Instant Noodles

Commodity Food Standards and Methods of Analysis:

Instant noodles are defined as "Pasta" including noodles, beehoon, laksa, macaroni and spaghetti in Food Regulations-1985. Instant Wheat Noodle (MS 526:2009) in MS is a standard which complied with Instant Noodles developed by Codex. Instant Noodles is also compared with Instant Beehoon (MS 1112:1988) (Table 8). These specifications and methods of analysis are described in Table 9.

Food Additives:

Standards for "Pasta" in Food Regulations-1985, and those for "Instant Wheat Noodle" (MS 526:2009) and "Instant Beehoon" (MS 1112:1988) in Malaysian Standards are described in Table 10. In each case, standards for use of food additives are regulated by the Food Regulations-1985, and MS Regulations do not exceed Food Regulations-1985 in the restrictions of the use of food additives.

(2) Carbonated Soft Drinks

Commodity Food Standards and Methods of Analysis:

There is no standard set either in Food Regulations-1985 or MS exclusively for Carbonated Soft Drinks. Both of them cover variety of food items like flavoured drinks. Specifications & standards are shown in Table 11, and methods of analysis in Table 12.

Food Additives:

Standards for "Flavoured Drink" in Food Regulations-1985, and those for "Ready-to-Drink Beverages" (MS 601:1994) in MS are described in Table 13. In each case, standards for use of food additives are regulated by the Food Regulations-1985, and MS do not exceed Food Regulations-1985 in the restrictions of the use of food additives.

(3) Prepared Frozen Foods

Commodity Food Standards and Methods of Analysis:

While there are some standards for frozen confection, frozen meats and frozen vegetables, no standards for prepared frozen foods more like Japanese ones. There are no any appropriate standards in MS, either; however, relatively similar standards are presented in Tables 14 and 15.

Food Additives:

There is no food category for “prepared frozen foods” in Malaysia. Standards for “Meat Frankfurters” (MS 1125:2003) and “Meat Burgers” (MS 1126:2003) in Food Regulations-1985 are described as examples. In each case, standards for use of food additives are regulated by the Food Regulations 1985, and MS do not exceed the Food Regulations in the restrictions of the use of food additives.

(4) Cow’s Milk

Commodity Food Standards and Methods of Analysis are summarized in Table 17. **Food Additives** are prohibited to use in Cow’s Milk according to Food Regulations-1985 (Table 18).

Table 5: Summary/Definition of Food Additives (General)

	Summary/Definitions	Reference
Related Legislation	Food Regulations 1985	http://fsis2.moh.gov.my/fosimv2/HOM/frmHOMFARSec.aspx?id=21
Summary/Definitions (General)		
Definition of Food Additives	Food additives are defined in the Food Regulations as follows: “Food additive means any safe substance that is intentionally introduced into or on a food in small quantities in order to affect the food’s keeping quality, texture, consistency, appearance, odour, taste, alkalinity, or acidity, or to serve any other technological function in the manufacture, processing, preparation, treatment, packing, packaging, transport, or storage of the food, and that results or may be reasonably expected to result directly or indirectly in the substance or any of its by-products becoming a component of, or otherwise affecting the characteristics of, the food, and includes any preservative, colouring substance, flavouring substance, flavour enhancer, antioxidant and food conditioner, but shall not include added nutrient, incidental constituent or salt.”	Food Regulations 1985, Part V Regulation No. 19 (1)
Flavours	“Flavouring substance” means any chemically-defined substance with flavouring properties either formed by chemical synthesis or obtained from materials of plant or animal origin. “Natural Flavouring Substance” means any flavouring substance obtained by physical processes may result in unavoidable but unintentional changes in the chemical structure of the component of the flavouring, or by enzymatic or microbiological processes from material of plant or animal origin, and is not synthetic flavouring substance or any flavouring substance formed by chemical synthesis.	Food Regulations 1985, Part V Regulation No. 22 (1) Food Regulations 1985, Part V Regulation No. 22 (2) Food Regulations 1985, Part V Regulation No. 22 (2) (b)
Processing Aids	Processing aids are considered as food additives under the functional class of “food conditioner”.	Food Regulations 1985, Part V Regulation No. 25 (1)
Carry-over	“Carry-over” principle is described in general in the Food Regulations, with restricted list of additives allowed to be carried over for infant formula.	Food Regulations 1985, Part V Regulation No. 19 (5); Food Regulation No.389 (5) (for infant formula)

Table 6: Summary/Definition of Food Additives (Specific)

	Summary/Definitions	Reference
Related Legislation	Food Regulations 1985	http://fsis2.moh.gov.my/fosimv2/HOM/frmHOMFARSec.aspx?id=21
Summary (Specific)/Additional Laws		
1 List of Designated Food Additives	Includes preservative, antimicrobial agent, colouring substance, flavouring substance, flavour enhancer, antioxidant, and food conditioner.	Food Regulations 1985, 6 th , 6 th (A), 7 th , 9 th , 10 th & 11 th Schedules; 21 st Schedule, Table II (for infant formula)
2 List of Existing Food Additives	There is no such list in Malaysia.	
3 List of Plant or Animal Sources for Flavouring Agents	There is no such list in Malaysia.	
4 List of Substances which Are Generally Provided for Eating or Drinking as Foods and Are Used as Food Additives as Well	There is no such list in Malaysia.	
Negative List	There is a list of flavouring substances the use of which is prohibited or limited in Malaysia.	Food Regulations 1985, 8 th Schedule, Table I
Specifications of Food Additives, Weights and Measures, Contaminants, Methods of Analysis and Sampling, Standards of Manufacturing of Food Additives	Found in Malaysian Standard 1282 Appendices 1-8 for acidity regulator; preservative; antioxidant; flavour enhancer; stabilizer, thickener and gelling agent; solvent; anticaking agent; and colouring substance.	MS 1282: Part 1: 1992 MS 1282: Part 2: 1992 MS 1282: Part 3: 1992 MS 1282: Part 4: 1992 MS 1282: Part 5: 1992 MS 1282: Part 6: 1992 MS 1282: Part 7: 1992 MS 1282: Part 8: 1995
Official Publication and/or Gazette for Food Additives	No official publication and/or gazette for food additives. However, updates on food additives are announced on the FSQD, MOH, Malaysia website.	http://fsq.moh.gov.my/v3/index.php?option=com_k2&view=item&layout=item&id=224&Itemid=104

Table 7: Specifications & Standards and Methods of Analysis for General Foods

Related Legislation	Item	Specifications	Methods of Analysis	Reference
Food Regulations 1985	Incidental constituent	No person shall import prepare or advertise for sale or sell any food containing incidental constituent, except as otherwise specified in regulations 38, 38A, 39, 40 and 41	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Metal contaminants	<ol style="list-style-type: none"> 1. No person shall import prepare or advertise for sale or sell any food, specified in column (1) of Table I to the Fourteenth Schedule which contains the substances set out in the headings to columns (2) to (9) of the said Table in a proportion greater than the maximum permitted proportion specified opposite that food in the columns thereof applicable to the substances. 2. No person shall import, prepare or advertise for sale or sell the food additives specified in column (1) of Table II to the Fourteenth Schedule which contains the substances set out in the headings to column (2) to (8) of the said Table in a proportion greater than the maximum permitted proportion specified opposite that food additive in the columns thereof applicable to the substance. 	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	3-MCPD	No person shall import prepare or advertise for sale or sell any food, specified in column (1) of Table I to the Fourteenth A Schedule which contains 3-monochloropropane-1,2-diol (3-MCPD) in a proportion greater than the maximum permitted proportion specified opposite that food in column (2) of the Schedule.		
	Microorganisms and their toxins	<ol style="list-style-type: none"> 1. No person shall import, prepare or advertise for sale or sell any food ready for consumption that is contaminated with pathogenic microorganisms; 2. No person shall import, prepare or advertise for sale or sell any food, excluding water, specified in column (1) of Table I to the Fifteenth Schedule which contains bacteria in numbers greater than the numbers specified opposite that food in columns (2), (3) and (4) of the said Table for total plate, coliform and Escherichia coli count respectively. 3. No person shall import, prepare or advertise for sale or sell any food which contains the mycological contaminant specified in column (1) of Table II to the Fifteenth Schedule in proportion greater than the proportion specified opposite thereto in column (2) of the said Table. 		

	Drug residue	<ol style="list-style-type: none"> 1. No person shall import, sell, expose or offer for sale or delivery, any food intended for human consumption which contains drug residues greater than the amount set out in Table I, to the Fifteenth A Schedule. 2. Notwithstanding subregulation (1), either chlorotetracycline or oxytetracycline may be incorporated in ice used for preserving fresh fish, and unpeeled shrimps, provided that the concentration of one of these drugs shall not exceed 5 parts per million in the product. 3. Notwithstanding subregulation (1) and (2), no person shall import, sell, expose for sale or delivery, any food intended for human consumption which contains the drugs as set out in Table II to the Fifteenth A Schedule. 		
	Pesticide residue	<p>No person shall import, prepare for sale or sell any food:</p> <ol style="list-style-type: none"> a) containing pesticide residue in a proportion greater than the proportion specified for that food in relation to that pesticide residue as set out in the Sixteenth Schedule; b) containing pesticide residue in a proportion greater than the proportion specified for that food in relation to that pesticide residue as recommended in the Codex Alimentarius, where the pesticide is not specified in the Sixteenth Schedule; or c) containing more than 0.01 milligram per kilogram of any pesticide residue, where the pesticide residue is not specified for that food in the Sixteenth Schedule or Codex Alimentarius 		

Table 8: Case Study (1) Instant Noodles: Specifications & Standards

Standard Item	Food Regulations 1985 (as at 1st September 2009)	MS 526:2009	MS 1112:1988
Name of the Standard	Pasta	Instant Wheat Noodles	Instant Beehoon
Scope	<ul style="list-style-type: none"> ▪ Noodles, beehoon, laksa, macaroni and spaghetti 	<ul style="list-style-type: none"> ▪ Fried noodles, non-fried noodles 	<ul style="list-style-type: none"> ▪ Instant beehoon (Instant rice vermicelli)
Description	<ul style="list-style-type: none"> ▪ Any product that is obtained by extruding or moulding units of dough. 	<ul style="list-style-type: none"> ▪ A product prepared from wheat as the main ingredient and other flour/starches, with or without the addition of other ingredients and packed with suitable packaging material. It may be treated by alkaline agents. It is characterised by the use of pregelatinisation process and dehydration either by frying or by other 	<ul style="list-style-type: none"> ▪ Made up principally of rice flour and other wholesome food with or without the incorporation of seasoning.

<p>Essential Composition and Quality Factor</p>	<ul style="list-style-type: none"> ▪ Principally of a cereal meal ▪ May contain carbohydrate foods, egg solids, salt and any other food 	<p>methods.</p> <ul style="list-style-type: none"> ▪ Free from dirt, foreign matter and insects. ▪ Acceptable in term of appearance, texture, aroma, taste and colour and be free from any undesirable off-flavours and odours. ▪ To qualify for the concept of 'instant', the noodle shall be cooked or soaked in not more than four minutes in boiling water. ▪ Essential ingredients are: <ul style="list-style-type: none"> a) wheat flour and other flour or starches; b) water; and c) common salts or alkaline salts. The permitted alkaline salts are sodium, potassium, or calcium salt of carbonates, phosphates and/or hydroxides. ▪ Moisture: 10% (fried) , 14% (non-fried) ▪ Cooking or soaking time: 4 minutes (fried and non-fried) ▪ Protein content: 8.5% (fried and non-fried) ▪ Acid value: 2.0 mg KOH/g (fried), Not applicable (non-fried) 	<ul style="list-style-type: none"> ▪ In the form of solid strands and shall be free from mould, off-flavour, insect infestation or other spoilage. ▪ To qualify for the concept of 'instant', the product must be cooked in not more than four minutes in boiling water. ▪ Moisture: 12% ▪ Cooking time: 4 minutes ▪ Total protein: 5.7% ▪ Total ash: 1.0%
<p>Food Additives</p>	<ul style="list-style-type: none"> ▪ Permitted colouring substance ▪ Transglutaminase, sulphur dioxide or sulphites (as permitted food conditioner): <200 mg/kg ▪ Subject to general requirements concerning food additives. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ May contain food additives but not contain any added preservatives.
<p>Contaminants</p>	<ul style="list-style-type: none"> ▪ Arsenic (As): <1 mg/kg ▪ Lead (Pb) : <2 mg/kg ▪ Tin (Sn): <40 mg/kg ▪ Mercury (Hg): <0.05 mg/kg ▪ Cadmium (Cd): <1 mg/kg ▪ Antimony (Sb): < 1 mg/kg ▪ 3-monochloropropane-1,2-diol (3-MCPD) for all foods containing acid hydrolysed protein (solid foods): 0.05 mg/kg 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.

Hygiene	<ul style="list-style-type: none"> ▪ Harmful, damaged packages prohibited ▪ No pathogenic microorganisms ▪ Aflatoxin or any other mycotoxins: <5 µg/kg ▪ Food Hygiene Regulations 2009 	<ul style="list-style-type: none"> ▪ Packed in suitable packaging materials which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the product. ▪ Packaging materials shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substances or undesirable odour or flavour. ▪ Processed and packed under hygienic conditions in premises licensed in accordance with MS1514 – Good Manufacturing Practices. 	<ul style="list-style-type: none"> ▪ Processed and packed under hygienic conditions.
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified
Labelling	<ul style="list-style-type: none"> ▪ If labelled with the word “egg” or any word of similar meaning: >4% egg solids calculated on water-free basis ▪ Subject to general requirements for labelling ▪ Nutrition labelling is mandatory (regulation 18B of the Food Regulations 1985) 	<ul style="list-style-type: none"> ▪ The following information shall appear clearly on each package: <ul style="list-style-type: none"> a) name of product; b) name and address of the manufacturer and/or distributor or trade mark owner; c) net weight (in grams); d) list of ingredients and additives; e) date of manufacture or manufacturer’s code; f) date of expiry; and g) method of preparation. ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ The following information shall appear clearly on each package: <ul style="list-style-type: none"> a) name of product; b) list of ingredients and added additives; c) name of manufacturer and/or supplier; d) guaranteed net weight in grams; e) date of manufacture or manufacturer’s code; ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Additives, contaminants, microorganisms, mycotoxins 	<ul style="list-style-type: none"> ▪ Moisture: oven-drying method ▪ Protein content: Kjeldahl method ▪ Acid value: Titrimetric method ▪ Cooking time 	<ul style="list-style-type: none"> ▪ Moisture: oven-drying method ▪ Protein content: Kjeldahl method ▪ Ash content: Direct method ▪ Cooking time

Table 9: Case Study (1) Instant Noodles: Specifications & Standards and Methods of Analysis

Related Legislation	Items	Specifications	Methods of Analysis	References
Food Regulations 1985	Food additives	Permitted colouring substance; transglutaminase: <200 mg/kg; sulphur dioxide: <200 mg/kg; sulphites: <200 mg/kg	International standards (AOAC, ISO, APHA, etc.)	
MS 526:2009 - Instant Noodles - Specification (Second Edition)	Moisture content	10% (Fried); 14% (Non-fried)	MS 526:2009, Appendix A	
	Cooking/soaking time	4 minutes	MS 526:2009, Appendix B	
	Protein content	8.50%	MS 526:2009, Appendix C	
	Acid value	2.0 mg KOH/g (Fried only)	MS 526:2009, Appendix D	
MS 1112:1988 - Instant Beehoon (Instant Rice Vermicelli) - Specification	Moisture content	12%	MS 1112:1988, Appendix A	
	Cooking/soaking time	4 minutes	MS 1112:1988, Appendix B	
	Protein content	5.70%	MS 1112:1988, Appendix C	
	Ash content	1.00%	MS 1112:1988, Appendix D	

Table 10: Case Study (1) Instant Noodles: Food Additives

	Description/Definitions	Reference
Scope and/or Description	Pasta	Food Regulations 1985
Positive and/or Negative List	Should not contain any prohibited flavouring substances under the Food Regulations 1985.	
Use Limitation and/or Maximum Level	May contain Transglutaminase and sulphur dioxide or sulphites, as permitted food conditioner at < 200mg/kg.	
Scope and/or Description	Instant Wheat Noodles	MS 526:2009 Instant wheat noodles
Positive and/or Negative List	Food additives are permitted in accordance with Food Regulations 1985.	
Use Limitation and/or Maximum Level		
Scope and/or Description	Instant Rice Noodles	MS 1112:1988 Instant rice noodles (beehoon)
Positive and/or Negative List	Preservatives are prohibited.	
Use Limitation and/or Maximum Level	Other additives are permitted in accordance with Food Regulations 1985.	

Table 11: Case Study (2) Carbonated Soft Drinks: Specifications & Standards

Standards Items	Food Regulations 1985 (as at 1 st September 2009)	MS 601:1994
Name of the Standard	Flavoured Drinks	Ready-To-Drink Beverages (carbonated and non-carbonated)
Scope	<ul style="list-style-type: none"> ▪ Flavoured drink 	<ul style="list-style-type: none"> ▪ Ready-to-drink beverages including fruit drinks and flavoured drinks
Descriptions	<ul style="list-style-type: none"> ▪ Flavoured drink shall be the soft drink composed of potable water and permitted flavouring substances, with or without sugar, glucose, high fructose glucose syrup or edible portions of extract of fruit or other plant substance. It may contain carbon dioxide. 	<ul style="list-style-type: none"> ▪ A non-alcoholic beverage and is saturated with carbon dioxide. It is prepared from comminuted fruit or fruit juices or concentrates and/or fruit or plant extracts, permitted sweeteners, potable water with or without the addition of the following ingredients: <ul style="list-style-type: none"> a) acidity regulators; b) permitted food conditioners; c) permitted flavouring substance; d) permitted preservatives; e) permitted colouring substance; f) permitted nutrient supplement like vitamin C; g) salts.
Essential Composition and Quality Factors	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Free from insect, rodent contamination and foreign particles as well as visibly free from seeds and skins. ▪ Have the flavour and aroma characteristic of the fruits, vegetables or flavours for which it is claimed or implied. Foreign flavours and odours shall not be present. ▪ Carbon dioxide – industrial grade free from hydrogen sulphide, sulphur dioxide and other noxious gases, mineral oils and also free from foreign odour. ▪ Flavouring agents: <ul style="list-style-type: none"> Comminuted fruit and fruit juices or concentrates – Extracted from natural and properly washed fruits and fit for consumption. They may either be freshly prepared or concentrated and preserved either by pasteurization or addition of permitted chemical preservatives. Essential oils and fruit/plant extracts – Essential oils and fruit/vegetable extracts are compounds obtained from fruit or plants and shall be safe for human consumption. ▪ Flavouring substances – Substance either naturally present in fruit/plant or added capable of imparting flavour to the product and shall be safe for consumption.
Food Additives	<ul style="list-style-type: none"> ▪ May contain permitted preservative, permitted colouring substances and permitted food conditioner including: 	<ul style="list-style-type: none"> ▪ Acid regulators - The following acids and the sodium, potassium, calcium salt of the acids may be used:

	<ul style="list-style-type: none"> ester gum <150 mg/litre; and β-cyclodextrin <500 mg/litre ▪ May contain caffeine-containing plant extract as permitted flavouring substance: < 200 mg/litre ▪ Preservative: <ul style="list-style-type: none"> Sulphur dioxide: <140 mg/kg Benzoic acid: <350 mg/kg Sorbic acid: <350 mg/kg ▪ Flavouring substance: <ul style="list-style-type: none"> Agaric acid: <20 mg/kg Total hydrocyanic acid: <1 mg/kg Pulegone: <1 mg/kg Quassin: <5 mg/kg Quinine: <85 mg/kg Thujones: <0.5 mg/kg ▪ Subject to general requirements concerning food additives. 	<ul style="list-style-type: none"> a) citric acid; b) phosphoric acid; c) lactic acid; d) malic acid; e) acetic acid; f) fumaric acid; g) tartaric acid. ▪ Food colours, nutritive and non-nutritive sweeteners as per Food Regulations. ▪ Mineral salts – sodium carbonate and sodium bicarbonate ▪ Preservatives: <ul style="list-style-type: none"> Sulphur dioxide: <140 ppm Benzoic acid: <350 ppm Sorbic acid: <350 ppm ▪ Flavouring agents (if used): <ul style="list-style-type: none"> Caffeine: <150 ppm Quinine: 40-85 ppm Vitamin C (ascorbic acid): 10 mg/100 ml
Contaminants	<ul style="list-style-type: none"> ▪ Arsenic (As): <0.1mg/kg ▪ Lead (Pb) : <0.2 mg/kg ▪ Tin (Sn): <40 mg/kg (<250 mg/kg if packed in can) ▪ Mercury (Hg): <0.05 mg/kg ▪ Cadmium (Cd): <1 mg/kg ▪ Antimony (Sb): < 0.15 mg/kg 	<ul style="list-style-type: none"> ▪ Metal contaminants: <ul style="list-style-type: none"> Copper: <1.0 ppm Arsenic: <0.02 ppm Lead: <0.2 ppm
Hygiene	<ul style="list-style-type: none"> ▪ Harmful, damaged packages prohibited ▪ Any glass bottle that has previously been used for another food ▪ No pathogenic microorganisms ▪ Aflatoxin or any other mycotoxins: <5 μg/kg ▪ Food Hygiene Regulations 2009 	<ul style="list-style-type: none"> ▪ Total colony count: <50 per ml ▪ Viable yeast and moulds: <10 per ml ▪ Presumptive coliform organism: negative ▪ Shall be prepared under strict hygienic conditions in accordance with Good Manufacturing Practices and relevant public health requirements currently enforced.
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified
Labelling	<ul style="list-style-type: none"> ▪ For the purpose of these Regulations, the word “beer”, “lager”, “champagne” or “wine” or other words suggesting that the product is an alcoholic beverage shall not appear on the label of any soft drink other than ginger beer, ginger ale and root beer. ▪ In the case of soft drink in bottles with applied ceramic labelling, the requirements of regulations 11 and 14 [general requirements for labelling relating to ‘Particulars in labelling’ 	<ul style="list-style-type: none"> ▪ Each container shall be suitably labelled with the following information: <ul style="list-style-type: none"> a) name and trade-mark of the product; b) name and address of the manufacturer and/or packer; c) guaranteed net volume in ml; d) list of ingredients in descending order of proportions; e) code number indicating batch and/or date of manufacture; ▪ Shall comply with requirements specified in the Malaysian Food Act

	<p>and 'Date marking'] may be printed in a reduced size of not smaller than 2 point lettering on the cap or crown of such bottle.</p> <ul style="list-style-type: none"> ▪ There shall be written in the label on a package containing flavoured syrup or flavoured cordial or flavoured drink the words "flavoured syrup" or "flavoured cordial" or "flavoured drink", or the name of such flavour in uniform lettering not less than 10 point conjoined with the words "flavoured syrup" or "flavoured cordial" or "flavoured drink", as the case may be. ▪ The label on the package of a flavoured syrup or flavoured drink shall not include – <ul style="list-style-type: none"> (a) any expression, pictorial representation or design that suggests or implies that the syrup or drink consists wholly or partly of fruit juice; or (b) a pictorial representation or design of a plant or part of a plant or a floral design that suggests or implies the presence of a plant in the syrup or drink ▪ There shall be written in the label on a package containing flavoured syrup or flavoured drink to which caffeine has been added a statement as to the presence of caffeine in that beverage. ▪ Flavoured syrup and flavoured drink to which a permitted fruit flavouring substance has been added shall be labelled in uniform lettering of not less than 10 point with the name of such fruit or fruits, immediately followed by the word "flavour" or "flavoured". ▪ Where fruit juice drink, fruit drink or flavoured drink is carbonated, there shall be written in the label on a package containing such drink – <ul style="list-style-type: none"> (a) the word "carbonated fruit juice drink" or "carbonated fruit drink" or "carbonated flavoured drink" as the case may be; or (b) the words "carbonated (state the name of the fruit) juice drink" or "carbonated (state the name of the fruit) fruit drink" or "carbonated (state the name of the flavour) flavoured drink", as the case may be. ▪ Where flavoured drink or botanical beverage contains quinine in a proportion exceeding 40 mg/litre – <ul style="list-style-type: none"> (a) the proportion of quinine added in mg/litre shall be stated on the label; and (b) such product may be labelled as "tonic water". 	<p>1983 and Food Regulations 1985.</p>
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	<ul style="list-style-type: none"> ▪ Subject to general requirements for labelling ▪ Nutrition labelling is mandatory (regulation 18B of the Food Regulations 1985) 	
Methods of Analysis and Sampling	<ul style="list-style-type: none"> ▪ Additives, contaminants, microorganisms, mycotoxins 	<ul style="list-style-type: none"> ▪ Caffeine: HPLC method ▪ Quinine: spectrophotometric method ▪ Ascorbic acid (vitamin c): titrimetric method ▪ Copper, arsenic, lead: Atomic absorption spectrophotometric method ▪ Total colony count: pour plate method ▪ Yeast & moulds: pour plate method ▪ Coliforms: MPN method ▪ Sulphur dioxide: Rankin method ▪ Benzoic acid and sorbic acid: HPLC method

Table 12: Case Study (2) Carbonated Soft Drinks: Methods of Analysis

Related Legislation	Item	Specifications	Methods of Analysis	Reference
Food Regulations 1985	Food additives	Ester gum: <150 mg/l; Beta-cyclodextrin: <500 mg/l; Caffeine-containing plant extract as permitted flavouring substance: <200 mg/l; Sulphur dioxide: <140 mg/l; Benzoic acid: <350 mg/kg; Sorbic acid: <350 mg/kg; Agaric acid: <20 mg/kg; Total hydrocyanic acid: <1 mg/kg; Pulegone: <1 mg/kg; Quassin: <5 mg/kg; Quinine: <85 mg/kg; Thujones: <0.5 mg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Metal contaminant	Arsenic: <0.1 mg/kg; Lead: <0.2 mg/kg; Tin: <40 mg/kg; Mercury: <0.05 mg/kg; Cadmium: <1 mg/kg; Antimony: <0.15 mg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Pathogens	No pathogenic microorganisms	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Mycotoxins	Aflatoxin or other mycotoxins: < 5 µg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
MS 601:1994 - Specification for ready-to-drink beverages (carbonated and non-carbonated) (first revision)	Caffeine	max: 150 ppm (if used)	MS 601:1994, Appendix A	
	Quinine	40-85 ppm (if used)	MS 601:1994, Appendix B	
	Ascorbic acid	10 mg/100 ml (if used)	MS 601:1994, Appendix C	
	Copper	< 1.0 ppm	MS 601:1994, Appendix D	
	Arsenic	< 0.02 ppm	MS 601:1994, Appendix E	
	Lead	< 0.2 ppm	MS 601:1994, Appendix F	
	Total colony count	<50 cfu per ml	MS 601:1994, Appendix G	
	Viable yeast & moulds	<10 cfu per ml	MS 601:1994, Appendix H	
	Presumptive coliform organisms	Negative	MS 601:1994, Appendix J	
	Sulphur dioxide	< 140 ppm	MS 601:1994, Appendix K	
Benzoic & sorbic acid	< 350 ppm	MS 601:1994, Appendix M		

Table 13: Case Study (2) Carbonated Soft Drinks: Food Additives

	Summary/Definitions	References
Scope and/or Description	Flavoured Drinks	Food Regulations 1985, 354 and PartV
Positive and/or Negative List	Flavouring substances which were permitted in Food Regulations 1985 can be used. However, the use is limited when plant extract including caffeine is used as flavouring. May contain permitted preservative and food conditioner in accordance with Food Regulations 1985 following each prescribed use limitation.	
Use Limitations and/or Maximum Levels	<ol style="list-style-type: none"> 1. Ester gum: <150mg/l 2. β-cyclodextrin: <150mg/l 3. Caffeine-containing plant extract as flavouring substance: <200mg/l 4. Sulphur dioxide: <140mg/l 5. Benzoic acid: <350mg/kg 6. Agaric acid: <20mg/kg 7. Total hydrocyanic acid (free and combined): <1mg/kg 8. Pulegone: <100mg/kg (except peppermint or mint flavoured beverages) or 250mg/kg (for peppermint or mint flavoured beverages) 9. Quassin: <5mg/kg 10. Quinine: <85mg/kg 11. Thujones: <0.5mg/kg 	
Scope and/or Description	Ready-To-Drink Beverages	MS 601:1994 Ready-to-drink beverages (carbonated and non-carbonated)
Positive and/or Negative List	Permitted acidity regulators: citric acid, phosphoric acid, lactic acid, malic acid, acetic acid, fumaric acid, tartaric acid (including the sodium, potassium and calcium salts) Permitted colours, nutritive and non-nutritive sweeteners in accordance with Food Regulations 1985. Permitted mineral salts: sodium carbonate and sodium bicarbonate Permitted preservatives and flavouring agents	
Use Limitation and/or Maximum Level	<ol style="list-style-type: none"> 1. Sulphuric acid: <140ppm 2. Benzoic acid: <350ppm 3. Sorbic acid: <350ppm 4. Caffeine: <150ppm 5. Quinine: 40-85ppm 6. Ascorbic acid: 10mg/100ml 	

Table 14: Case Study (3) Prepared Frozen Foods: Specifications & Standards

Standard Item	Food Regulations 1985 (as at 1 st September 2009)	MS 1125:2003	MS 1126:2003
Name of the Standard	Food not elsewhere standardized	Meat Frankfurters	Meat Burgers
Scope	<ul style="list-style-type: none"> ▪ Food not elsewhere standardized 	<ul style="list-style-type: none"> ▪ Chilled and frozen meat frankfurters made from comminuted meat (beef, lamb and mutton, poultry, pork) with or without meat by-products in the form of a sausage 	<ul style="list-style-type: none"> ▪ Chilled and frozen meat burgers made from comminuted meat (beef, lamb and mutton, poultry, pork).
Descriptions	<ul style="list-style-type: none"> ▪ Food for which a standard has not been otherwise expressly prescribed by these Regulations. 	<ul style="list-style-type: none"> ▪ Frankfurters shall be sausages that are either raw or cooked with or without smoking. The product is prepared from comminuted meat, seasoned with salt, herbs and spices, mixed with food additives, filler and binders and packed into casings made from cellulose, collage or intestines of animals. The frankfurters unless otherwise specified shall be skinless or skin on and uniform in size and shape. 	<ul style="list-style-type: none"> ▪ Meat burgers shall be the meat product prepared from comminuted meat with or without the addition of fillers, binders, herbs and spices, salt, sweeteners and other food additives, and is sold in various shapes and sizes.
Essential Composition and Quality Factors	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ All meat including mechanically deboned meat used shall be obtained from healthy animals slaughtered in a hygienically-managed slaughter-house and poultry processing plant. ▪ Trimmings which are bruised or from damaged parts of bellies shall not be used. Feet and other by-products including brain, gastrointestinal tract, paunches, udders, sweetbreads (thymus, pancreas), tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, cartilage and bony tissue shall not be used. ▪ Fillers – textured vegetable proteins, cereal rusks, flours or other wholesome edible materials of farinaceous origin may be used. 	<ul style="list-style-type: none"> ▪ All meat including mechanically deboned meat used shall be obtained from healthy animals slaughtered in a hygienically-managed slaughter-house and poultry processing plant. ▪ Trimmings which are bruised or from damaged parts of bellies shall not be used. Feet and other by-products including brain, gastrointestinal tract, paunches, udders, sweetbreads (thymus, pancreas), tripe, spleen, lungs, salivary glands, lymphatic glands, testicles, uterus, ovaries, cartilage and bony tissue shall not be used. ▪ Fillers – textured vegetable proteins, cereal rusks, flours or other wholesome edible materials of farinaceous origin may be used. ▪ Binders – Other non-meat proteins from

		<ul style="list-style-type: none"> ▪ Binders – Other non-meat proteins from soya bean or dairy products may be used. ▪ Fat – only wholesome, edible vegetable or animal fat derived from the same species of animal used in the product, may be used. ▪ Herbs and spices – all herbs, spices and extracts used shall be clean, sound, wholesome, and shall comply with the requirements of Malaysian Food Act 1983 and Food Regulations 1985. ▪ Salt – edible white refined salt shall be used. ▪ Sweeteners – only sugar (sucrose) conforming to the requirements in “MS 82:1989 – Specifications for white refined sugar for industrial use” or dextrose or other permissible sweeteners shall be used. ▪ Finished product – either raw or thoroughly cooked or smoked, or flavoured and cooked and shall be delivered in good condition. They shall show no signs of deterioration at the time of delivery. ▪ Flavour and appearance – shall be palatable, have a pleasant flavour, an attractive appearance with no visible damage, objectionable colour and odour. ▪ Texture – shall be a good uniform texture, characteristic of the product. ▪ Freedom from defects – pieces of hair, bristle, skin and particles of bone shall not be present in the product. The product shall be free from dirt and from insect and rodent contamination or any other foreign matter. Poisonous or deleterious substance shall not be present. ▪ Contain $\geq 65\%$ by weight of meat. 	<p>soya bean or dairy products may be used.</p> <ul style="list-style-type: none"> ▪ Fat – only wholesome, edible vegetable or animal fat derived from the same species of animal used in the product, may be used. ▪ Herbs and spices – all herbs, spices and extracts used shall be clean, sound, wholesome, and shall comply with the requirements of Malaysian Food Act 1983 and Food Regulations 1985. ▪ Salt – edible white refined salt shall be used. ▪ Sweeteners – only sugar (sucrose) conforming to the requirements in “MS 82:1989 – Specifications for white refined sugar for industrial use” or dextrose or other permissible sweeteners shall be used. ▪ Finished product – uniform in size and shall be delivered in good condition. They shall show no signs of deterioration at the time of delivery. ▪ Flavour and appearance – shall be palatable, have a pleasant flavour, an attractive appearance with no visible damage, objectionable colour and odour. ▪ Texture – shall be a good uniform texture, characteristic of the product. ▪ Freedom from defects – pieces of hair, bristle, skin and particles of bone shall not be present in the product. The product shall be free from dirt and from insect and rodent contamination or any other foreign matter. Poisonous or deleterious substance shall not be present. ▪ Contain $\geq 65\%$ by weight of meat. ▪ Salt, sugar and seasoning all together shall not exceed 4% by weight. ▪ Moisture content: max. 60% by wet weight ▪ Total fat content: max. 30% by wet weight
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		<ul style="list-style-type: none"> ▪ May contain meat by-products which include hearts, tongues, diaphragm meat and weasands up to a limit of 15% calculated on the weight of all ingredients with the exception of the added water. ▪ Salt, sugar and seasoning all together shall not exceed 4% by weight. ▪ Moisture content: max. 60% by wet weight ▪ Total fat content: max. 30% by wet weight ▪ Protein content: min. 11% by wet weight 	<ul style="list-style-type: none"> ▪ Protein content: min. 15% by wet weight
Food Additives	<ul style="list-style-type: none"> ▪ May contain permitted nutrient supplement, permitted food conditioner, permitted flavouring substance, permitted colouring substance and permitted flavour enhancer. ▪ Shall not contain permitted non-nutritive sweetening substance. ▪ No person shall use permitted preservative in food not elsewhere standardized without the prior approval of the Director 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.
Contaminants	<ul style="list-style-type: none"> ▪ Arsenic (As): <1 mg/kg ▪ Lead (Pb) : <2 mg/kg ▪ Tin (Sn): <40 mg/kg ▪ Mercury (Hg): <0.05 mg/kg ▪ Cadmium (Cd): <1 mg/kg ▪ Antimony (Sb): < 1 mg/kg ▪ 3-monochloropropane-1,2-diol (3-MCPD) for all foods containing acid hydrolysed protein (solid foods): 0.05 mg/kg 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985. 	<ul style="list-style-type: none"> ▪ In accordance with Malaysian Food Act 1983 and Food Regulations 1985.
Hygiene	<ul style="list-style-type: none"> ▪ Harmful, damaged packages prohibited ▪ No pathogenic microorganisms. ▪ Aflatoxin or any other mycotoxins: <5 µg/kg ▪ Food Hygiene Regulations 2009 	<ul style="list-style-type: none"> ▪ After processing, frankfurters may be chilled before freezing and the freezing completed at -12°C or lower within 24 hours. The product shall be stored at a temperature at or below -18°C throughout the storage period. ▪ Prepared and handled under strict 	<ul style="list-style-type: none"> ▪ After processing, the meat burgers may be chilled before freezing and the freezing completed at -12°C or lower within 8 hours. The product shall be stored at a temperature at or below -18°C throughout the storage period. ▪ Prepared and handled under strict hygienic

		<p>hygienic conditions in accordance to Good Manufacturing Practices as specified in MS 1514 and MS 1480.</p> <ul style="list-style-type: none"> ▪ Unless agreed otherwise between the purchaser and the manufacturer or the packer, frankfurters shall be packed in properly sealed bags/packaging material made of suitable food grade flexible transparent packaging material or in hermetically sealed containers. ▪ Mesophilic aerobic plate count (at 37°C for 48h): <math>10^4</math> (cooked), <math>10^5</math> (raw) per gram ▪ Coliform count (at 37°C for 48h): <math>50</math> per gram ▪ <i>E. coli</i>: negative ▪ Salmonellae: negative ▪ <i>S. aureus</i>: negative ▪ Clostridia: negative 	<p>conditions in accordance to Good Manufacturing Practices as specified in MS 1514 and MS 1480.</p> <ul style="list-style-type: none"> ▪ Unless agreed otherwise between the purchaser and the manufacturer or the packer, meat burgers shall be packed in properly sealed bags/packaging material made of suitable food grade flexible transparent packaging material or in hermetically sealed containers. ▪ Mesophilic aerobic plate count (at 37°C for 48h): <math>2.5 \times 10^5</math> per gram ▪ Coliform count (at 37°C for 48h): <math>100</math> per gram ▪ <i>E. coli</i>: negative ▪ Salmonellae: negative ▪ <i>S. aureus</i>: <math>100</math> per gram
Weight and Measures	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified 	<ul style="list-style-type: none"> ▪ Not specified
Labelling	<ul style="list-style-type: none"> ▪ There shall not be written in the label on a package containing food not elsewhere standardized or in an advertisement relating to that food any word or expression that compares a nutritional property or the ingredients of a food not elsewhere standardized with those of another food. ▪ Food not elsewhere standardized shall not be described or presented in such a manner or by such name or pictorial or other representation or devices as is suggestive of another article of food of which it is intended to be an imitation or substitute or which it resembles. ▪ The word "food not elsewhere standardized" shall not appear on the label of any package containing food 	<ul style="list-style-type: none"> ▪ Each package shall be suitably labelled with the following: <ul style="list-style-type: none"> a) the name of the product; b) a declaration of the presence of additives and a declaration indicating the common name of animal from which the meat is derived; c) name and address of the manufacturer and/or packer or the owner of the rights to manufacture or packing or the agent of any of them; d) minimum net weight in grams; e) list of ingredients in descending order of proportions used by weight in the product; f) storage instructions; g) for products which are not fully shelf-stable, i.e. which may be expected not to keep for at least one year in normal conditions of storage and sale, adequate 	<ul style="list-style-type: none"> ▪ Each package shall be suitably labelled with the following: <ul style="list-style-type: none"> a) the name of the product; b) a declaration of the presence of additives and a declaration indicating the common name of animal from which the meat is derived; c) name and address of the manufacturer and/or packer or the owner of the rights to manufacture or packing or the agent of any of them; d) minimum net weight in grams; e) list of ingredients in descending order of proportions used by weight in the product; f) storage instructions; g) for products which are not fully shelf-stable, i.e. which may be expected not to keep for at least one year in normal conditions of storage and sale, adequate

	<p>not elsewhere standardized.</p> <ul style="list-style-type: none"> ▪ Subject to general requirements for labelling ▪ Nutrient labelling is mandatory (regulation 18B of the Food Regulations 1985) 	<p>storage instructions shall be given on the label. These instructions shall state the recommended maximum temperature or conditions of storage and, in the case of products sold to the consumer, an indication of the recommended maximum period of storage in specified conditions shall be given;</p> <p>h) country of origin.</p> <ul style="list-style-type: none"> ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985. 	<p>storage instructions shall be given on the label. These instructions shall state the recommended maximum temperature or conditions of storage and, in the case of products sold to the consumer, an indication of the recommended maximum period of storage in specified conditions shall be given;</p> <p>h) country of origin.</p> <ul style="list-style-type: none"> ▪ Shall comply with requirements specified in the Malaysian Food Act 1983 and Food Regulations 1985.
<p>Methods of Analysis and Sampling</p>	<ul style="list-style-type: none"> ▪ Additives, contaminants, microorganisms, mycotoxins 	<ul style="list-style-type: none"> ▪ Moisture content: oven-drying method (MS 954:Part 1:2000) ▪ Total fat content: acid hydrolysis method (MS 954: Part 4:1985) ▪ Protein content: Kjeldahl method (MS 954: Part 11:1986) ▪ Salmonellae: detection (MS 1110:Part 1:1988) ▪ Coliforms and <i>E. coli</i>: detection and enumeration (MS 1110:Part 2:1989) ▪ Mesophilic aerobic plate count: enumeration (MS 1110:Part 3:1989) ▪ <i>S. aureus</i>: detection and enumeration (MS 1110:Part 4:1989) ▪ Clostridia: detection (MS 1110:Part 5:1992) 	<ul style="list-style-type: none"> ▪ Moisture content: oven-drying method (MS 954:Part 1:2000) ▪ Total fat content: acid hydrolysis method (MS 954: Part 4:1985) ▪ Protein content: Kjeldahl method (MS 954: Part 11:1986) ▪ Salmonellae: detection (MS 1110:Part 1:1988) ▪ Coliforms and <i>E. coli</i>: detection and enumeration (MS 1110:Part 2:1989) ▪ Mesophilic aerobic plate count: enumeration (MS 1110:Part 3:1989) ▪ <i>S. aureus</i>: detection and enumeration (MS 1110:Part 4:1989) ▪ Clostridia: detection (MS 1110:Part 5:1992)

Table 15: Case Study (3) Prepared Frozen Foods: Methods of Analysis

Related Legislation	Items	Specifications	Methods of Analysis
MS 1125:2003 - Meat Frankfurters - Specifications	Moisture content	Max: 60% by wet weight	MS 954:Part 1:2000
	Total fat content	Max: 30% by wet weight	MS 954:Part 4:1985
	Protein content	Min: 11% by wet weight	MS 953:Part 11:1986
	Sampling	As described in Annex A	MS 1125:2003 Annex A
	Mesophilic aerobic plate count	<10 ⁴ cfu/g (cooked); <10 ⁵ cfu/g (raw), 37°C for 48h	MS 1110:Part 3:1989
	Coliform count	< 50 cfu/g, 37°C for 48h	MS 1110:Part 2:1989
	Salmonellae	absent per 25g	MS 1110:Part 1:1988
	<i>E. coli</i>	absent, MPN	MS 1110:Part 2:1989
	<i>S. aureus</i>	absent, MPN	MS 1110:Part 4:1989
MS 1126:2003 - Meat Burgers - Specifications	Moisture content	Max: 60% by wet weight	MS 954:Part 1:2000
	Total fat content	Max: 30% by wet weight	MS 954:Part 4:1985
	Protein content	Min: 15% by wet weight	MS 953:Part 11:1986
	Sampling	As described in Annex A	MS 1126:2003 Annex A
	Mesophilic aerobic plate count	< 2.5 x 10 ⁵ cfu/g, 37°C for 48h	MS 1110:Part 3:1989
	Coliform count	< 100 cfu/g, 37°C for 48h	MS 1110:Part 2:1989
	Salmonellae	absent per 25g	MS 1110:Part 1:1988
	<i>E. coli</i>	MPN, absent, MPN	MS 1110:Part 2:1989
	<i>S. aureus</i>	< 100 cfu/g, MPN	MS 1110:Part 4:1989

Table 16: Case Study (3) Prepared Frozen Foods: Food Additives

	Summary/Definitions	References
Scope and/or Description	Meat Frankfurters	MS 1125:2003
Positive and/or Negative List	Food additives are permitted in accordance with Food Regulations 1985.	
Use Limitation and/or Maximum Level		
Scope and/or Description	Meat Burgers	MS 1126:2003
Positive and/or Negative List	Food additives are permitted in accordance with Food Regulations 1985.	
Use Limitation and/or Maximum Level		

Table 17: Case Study (4) Cow's Milk: Specifications & Standards and Methods of Analysis

Related Legislation	Items	Specifications	Methods of Analysis	References
Food Regulations 1985	Milk fat	> 3.25%	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Non-fat milk solids	> 8.5%	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Added water, permitted food additive, other added substances or trace of antibiotic substance	Prohibited	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Reductase Test	Shall not completely decolorize any methylene blue solution in less than 4 hours	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Metal contaminants	Arsenic: < 0.5 mg/kg; Lead: < 1 mg/kg; Tin: < 40 mg/kg; Mercury: < 0.05 mg/kg; Cadmium: < 1 mg/kg; Antimony: < 1 mg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Total plate count	< 10 ⁵ cfu/g or /ml, 37°C for 48h (pasteurized milk only)	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Coliform count	< 50 cfu/g, 37°C for 48h (pasteurized milk only)	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
	Aflatoxin	< 0.5 µg/kg	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD

	Drug residues	<p>Albendazole: < 100µg/kg; Amoxicillin: < 4 µg/kg; Ampicillin: < 4 µg/kg; Avoparcin: < 10 µg/kg; Benzylpenicillin: 4 <µg/kg; Cefquinome: < 20 µg/kg; Ceftiofur sodium: < 100 µg/kg; Cloxacillin: < 30µ/kg; Colistin: < 50 µg/kg; Dexamethazone: < 0.3 µg/kg; Dicloxacillin: < 30 µg/kg; Dihydrostreptomycin: 200 µg/kg; Diminazene: < 150 µg/kg; Erythromycin: < 40 µg/kg; Febantel: < 100 µg/kg; Fenbendazole: < 100 µg/kg; Gentamicin: < 100 µg/kg; Isometamidium: < 100 µg/kg; Moxidectin: <500 µg/kg; Neomycin: < 500 µg/kg; Oxacillin: < 30 µg/kg; Oxfendazole: < 100 µg/kg; Oxibendazole: < 50 µg/kg; Oxytetracycline: < 100 µg/kg; Spectinomycin: < 200 µg/kg; Spiramycin: < 200 µg/kg; Streptomycin: < 200 µg/kg; Sulphadiazine: < 100 µg/kg; Sulphadimethoxine: < 10 µg/kg; Sulphadimidine: < 25 µg/kg; Sulphonamide: < 100 µg/kg; Tetracycline: < 100 µg/kg; Thiabendazole: < 100 µg/kg; Tilmicosin: < 50 µg/kg; Tylosin: < 50 µg/kg</p>	International standards (AOAC, ISO, APHA, etc)	Email communication with Malaysia FSQD
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Table 18: Case Study (4) Cow's Milk: Food Additives

	Summary/Definitions	References
Scope and/or Description	Milk, raw milk or fresh milk	
Positive and/or Negative List	Food additives for this category are prohibited according to Food Regulations 1985.	Food Regulations 1985
Use Limitation and/or Maximum Level		