Issue date: 13 August 2024

Valid until: 19 September 2029

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LABORATORY LOCATION: (PERMANENT LABORATORY)



MY CO2 (KL) SDN. BHD. NO. 40, JALAN SEPADU B25/B 40400 SHAH ALAM, SELANGOR **MALAYSIA**

FIELDS OF TESTING: CHEMICAL, MICROBIOLOGY

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communiqué dated April 2017).

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water Potable & Domestic Water,	рН	APHA 4500 – H+ B
Ground Water, Mineral Water, Reverse Osmosis	Biological Oxygen Demand	APHA 5210 B
Water, Industrial / Cooling	(BOD)	APHA 4500 – O.G
Purposes, Steam Raising / Boiler Water, Swimming Pool Water & SPA, Surface Water and Drinking Water	Chemical Oxygen Demand (COD)	APHA 5220 B
	Chemical Oxygen Demand (COD)	APHA 5220 D
	Suspended Solid	APHA 2540 D
	Oil and Grease	APHA 5520 B
	Temperature	APHA 2550 B
	Chromium Hexavalent	APHA 3500 – Cr B



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water Potable & Domestic Water,	Cadmium (as Cd)	
Ground Water, Mineral Water, Reverse Osmosis	Calcium (as Ca)	
Water, Industrial / Cooling Purposes, Steam Raising /	Copper (as Cu)	
Boiler Water, Swimming Pool Water & SPA, Surface	Total Chromium (as Cr)	
Water and Drinking Water	Iron (as Fe)	
(cont.)	Lead (as Pb)	
	Magnesium (as Mg)	APHA 3111 B
	Manganese (as Mn)	ALTIASTITE
	Nickel (as Ni)	
	Potassium (as K)	
	Silver (as Ag)	
	Sodium (as Na)	
	Tin (as Sn)	
	Zinc (as Zn)	
	Fluoride	APHA 4500 F – D
	Phenol	In House Method MY/STP/069 based on APHA 5530 B & APHA 5530 D
	Sulphide	APHA 4500 – S ²⁻ D
	Chlorine (Residual)	APHA 4500 CI-G
	Sulfide	APHA 4500 S ²⁻ C & F
	Cyanide	APHA 4500 CN ⁻ C&E
	Colour (ADMI)	APHA 2120 F



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water Portable & Domestic Water, Ground Water,	Colour (Spectrophotometric Method)	APHA 2120 C
Mineral Water, Reverse	Turbidity	APHA 2130 B
Osmosis Water, Industrial / Cooling Purposes, Steam	Chloride	APHA 4500 – CI ⁻ D
Raising / Boiler Water, Swimming Pool Water &	Hardness	APHA 2340 C
SPA, Surface Water and Drinking Water	Nitrate	APHA 4500 – NO₃ B
(cont.)	Nitrite	APHA 4500 – NO ₂ B
	Sulphate	APHA 4500 – SO ₄ ²⁻ D
	Total Dissolved Solid	APHA 2540 C
	Anionic Surfactant – Detergent MBAS	APHA 5540 C
	Organochlorine Pesticide – Aldrin Gamma-BHC Heptachlor Heptachlor epoxide Dieldrin 4,4'-DDT 4,4'-DDD 4,4' DDE Endrin Endosulfan Hexachlorobenzene (Alpha, Beta and Delta) Methoxychlor	APHA 6630 D
Drinking water Portable water River water Raw and Treated water Sewage water Industrial effluent Surface water Waste water	Chromium Trivalent (as Cr3+)	In House Method MY/STP/015 based on APHA 3120 B and APHA 3500-Cr B (2005) by calculation



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water Portable water	Aluminium (as Al)	
Raw water Sewage water Industrial effluent and	Antimony (as Sb)	
leachate Mineral water	Arsenic (as As)	
	Barium (as Ba)	
	Boron (as B)	
	Cadmium (as Cd)	
	Calcium (as Ca)	
	Copper (as Cu)	
	Cobalt (as Co)	
	Iron (as Fe)	
	Lead (as Pb)	APHA 3030 F(b) & APHA 3120 B (2005) analyzed by ICP-OES
	Lithium (as Li)	
	Magnesium (Mg)	
	Mercury (as Hg)	
	Manganese (as Mn)	
	Nickel (as Ni)	
	Potassium (as K)	
	Selenium (as Se)	
	Silver (as Ag)	
	Sodium (as Na)	
	Strontium (as Sr)	



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water (cont.) Portable water Raw water	Thallium (as TI)	
Sewage water Industrial effluent and	Tin (as Sn)	APHA 3030 F(b) & APHA 3120 B
leachate Mineral water	Total Chromium (as Cr)	(2005) analyzed by ICP-OES
	Zinc (as Zn)	
	Formaldehyde	USEPA 8315A (Procedure 1) (1996)
Environmental Monitoring Industrial Effluent and	Nitrogen (Ammonia)	APHA 4500 NH ₃ B & C (2005)
Waste Water	COD (Chemical Oxygen Demand)	APHA 5220 C (2005)
	Colour (ADMI)	APHA 2120 F (2005)
	рН	APHA 4500 – H+ B (2005)
	Biological Oxygen Demand (BOD)	APHA 5210 B (2005)
	Chemical Oxygen Demand (COD)	APHA 5220 B (2005)
	Chemical Oxygen Demand (COD)	APHA 5220 D (2005)
Industrial Effluent, Sewage	Suspended Solid	APHA 2540 D (2005)
Water, Waste Water and Leachate	Oil and Grease	APHA 5520 B (2005)
	Temperature	APHA 2550 B (2005)
	Chromium Hexavalent	APHA 3500 – Cr B (2005)
	Fluoride	APHA 4500 F – D (2005)
	Phenol	In House Method My/STP/069 based on APHA 5530B & APHA 5530D (2005)
	Sulphide	APHA 4500 – S ²⁻ D (2005)



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring	Lead (as Pb)	
Industrial Effluent, Sewage Water, Waste Water and	Copper (as Cu)	
Leachate (cont.)	Manganese (as Mn)	
	Nickel (as Ni)	
	Tin (as Sn)	
	Zinc (as Zn)	
	Iron (as Fe)	APHA 3111 B (2005)
	Silver (as Ag)	(2000)
	Total Chromium (as Cr)	
	Cadmium (as Cd)	
	Magnesium (as Mg)	
	Sodium (as Na)	
	Calcium (as Ca)	
	Potassium (as K)	
	Colour (Spectrophotometric Method)	APHA 2120 C (2005)
	Turbidity	APHA 2130 B (2005)
	Chloride	APHA 4500 – Cl ⁻ D (2005)
	Hardness	APHA 2340 C (2005)
	Nitrate	APHA 4500 – NO ₃ B (2005)
	Nitrite	APHA 4500 – NO ₂ B (2005)
	Sulphate	APHA 4500 – SO ₄ ²⁻ D (2005)
	Sample Pre-treatment for metal analysis-Nitric acid digestion	APHA 3030 E (2005)
	Total Dissolved Solids	APHA 2540 C (2005)



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
<u>Foods</u>	Protein/ Nitrogen	AOAC 988.05
Animal FeedPet Food	Moisture	AOAC 930.15
ret i ood	Ash	AOAC 942.05
	Crude Fiber	AOAC 978.10
	Crude Fat	AOAC 920.39
Dairy ProductsMayonnaise	Fat	AOAC 932.06
Coffee Powder & Premix	Caffeine & Coffee Content	MS 1360
Beverage and JuicesNuts, Fruits, Vegetables and Vegetable Products	Protein/ Nitrogen	In House Method MY/STP/270 based on AOAC 988.05
 Nutritional Food Edible Oil, Fats and their Products 	Moisture	In House Method MY/STP/271 based on AOAC 931.04
	Ash	In House Method MY/STP/272 based on AOAC 942.05
	Fat (Soxhlet Extraction)	In House Method MY/STP/265 based on AOAC 963.15
	Total Carbohydrate (by calculation)	In House Method MY/STP/378 based on US FDA 21 CFR101.9
	Energy/calories (by calculation)	Part 101 (2017)
Foods (cont.)Dairy Products & Cocoa	Energy / Calories	Guide to Nutrition Labelling and Claims page 15 (2010)
 Beverage & Juices Nuts, Fruits, Vegetables and Vegetable Products Nutritional Food Edible Oil, Fats and Their Products 	Carbohydrate	Guide to Nutrition Labelling and Claims page 18 (2010)



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
Foods (cont.) Beverage and Juices	Iron (as Fe)	In House Method MY/STP/009 based on AOAC 968.08, 20 th Edition (2016)
Nuts, Fruits, Vegetables and Vegetable Products	Copper (as Cu)	
Nutritional Food, Edible Oil, Fats and	Calcium (as Ca)	
their Products	Magnesium (as Mg)	In House Method MY/STP/009
	Manganese (as Mn)	based on AOAC 968.08, 20 th Edition (2016) MY/STP/043 based on Metrohm
	Zinc (as Zn)	
	Cobalt (as Co)	Manual Method 21 D 3
	Sodium (as Na)	
	Sodium Chloride / Salt	
	Cholesterol	In House Method MY/STP/131 based on J AOAC Vol. 78, No. 6, 1995
	Total Dietary Fiber	In House Method MY/STP/030 based on SCC Technical Bulletin No. TDFAB



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
Foods (cont.) • Dairy Products & Cocoa • Beverage & Juices • Nuts, Fruits,	Fatty Acid Composition	
Vegetables and Vegetable Products Nutritional Food Edible Oil, Fats and		In House method MY/STP/090 based on AOAC 969.32
Their Products	Monounsaturated Fat	_
	Polyunsaturated Fat	
	Saturated Fat	
	Trans Fat	
	Total Sugar	AOAC 968.28
	Formaldehyde	AOAC 931.08
Spices, Salted Egg YolkConfectionary	Sudan Red I, II, III and IV	In House Method MY/STP/132 based on Government Chemist Publication List: LGC/GC/2007/005
 Nuts and nuts derived Products, Cereal Cereal, Animal Feed 	Aflatoxin	In House Method MY/STP/112 based on Direct Competitive Elisa Method
and Feed Derived Products	Gluten	In House Method MY/STP/235 based on Direct Competitive Elisa Method
Food and Beverage Products	Benzoic Acid	In House Method MY/STP/110 based on JAOAC Vol. 70, No. 5, 1987
	Sorbic Acid	In House Method MY/STP/110 based on JAOAC Vol. 70, No. 5, 1987
	Sulphur Dioxide (or sulphites calculated as sulphur dioxide)	In House Method MY/STP/040 based on Velp Scientific manual UDK 126 D
 Sugar and Sugar Confectionery Tea and Beverage 	Artificial Colouring	In House Method MY/STP/250 based on David A.Katz (2009), The extraction and identification of artificial food colours
Fat & oil Cosmetic Pharmaceuticals	Water content	In House Method MY/STP/385 by Karl Fischer



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
Solid & Semisolid Liquid Food	Water Activity	In House Method MY/STP/240 based on AOAC 978.18, 20 th Edition (2016)
	Acidity	AOAC 940.15
Flour & Bread	Propionic Acid	In House Method MY/STP/242 based on International Food Research Journal 17:1107-1112
Bird Nest & Bird Nest Products	Sialic Acid	In House Method MY/STP/246 based on Food Science Vol. 31, Iss 8, 233-236 (2010)
Palm Oil & Palm Oil Products	Moisture and Volatile Matter	MPOB P2.1 Part 1
Edible Oils	Impurities	MPOB P2.2
	Peroxide Value	MPOB P2.3
	Acidity / Free Fatty Acid	MPOB P2.5
	Saponification Value	MPOB P3.1
	Unsaponificable Matter	MPOB P2.7
	lodine Value	MPOB P3.2
	DOBI of CPO	MPOB P2.9
	Anisidine Value	MPOB P2.4
	Mineral Oil (Qualitative)	AOAC 945.102



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Agricultural Products and Materials Fertilizer	Total Nitrogen Ammoniacal Nitrogen Nitrate Nitrogen	MS 417:Part 3
	Total Phosphorus (as P ₂ O ₅) Water soluble P ₂ O ₅ Citric acid soluble P ₂ O ₅	MS 417:Part 4
	Potassium (as K ₂ O)	MS 417:Part 5
	Magnesium (as MgO) Water soluble MgO	MS 417:Part 6
Agricultural Products and Materials Animal Feeds	Arsenic (as As)	
Foods Cereal, cereal product, starch & bread Milk & milk product Sweetening substance Flour confection Meat & Meat Product Fish & fish product Egg & egg product Edible fat & edible oil Vegetable & vegetable product Fruit & fruit product Jam, fruit jelly, marmalade & seri kaya Nut & nut product	Cadmium as (as Cd)	
	Lead (as Pb)	In House Method MY/STP/375 based
	Mercury (as Hg)	on AOAC 999.10, 20th Ed (2016) (Microwave digestion), analyzed by ICP-OES
Tea, coffee, chicory & related product Cocoa & cocoa product Salt & spice Vinegar, sauce, chutney & pickle Soft drink	Tin (as Sn)	
Soft utilik	Antimony (as Sb)	



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Drugs and Pharmaceuticals	Arsenic (as As)	
Powder Tablet Hard gel capsule Soft gel capsule	Cadmium as (as Cd)	
Pill Oil Liquid	Lead (as Pb)	In House Method MY/STP/375 based on AOAC 999.10, 20th Ed (2016)
Cream Ointment Traditional herbs	Mercury (as Hg)	(Microwave digestion), analyzed by ICP-OES
Cosmetics & Essential oils Cosmetics and toiletries	Tin (as Sn)	
	Antimony (as Sb)	
Foods Cereal, cereal product, starch & bread Milk & milk product Sweetening substance Flour confection Meat & Meat Product Fish & fish product Egg & egg product Edible fat & edible oil Vegetable & vegetable product Fruit & fruit product Jam, fruit jelly, marmalade & seri kaya Nut & nut product Tea, coffee, chicory & related product Cocoa & cocoa product Salt & spice Vinegar, sauce, chutney & pickle Soft drink	Vitamin D2 (as Ergocalciferol)	In House Method MY/STP/380 based on AOAC 2002.05, 20th Ed (2016)-
	Vitamin D3 (as Cholecalciferol)	(HPLC)
Drugs and Pharmaceuticals Edible oils, fats and their products	Vitamin E (as alpha tocopherol) Tocotrienols (α-tocotrienol, β- tocotrienol, γ-tocotrienol, δ- tocotrienol)	In House Method MY/STP/404 based on ISO 9936:2016 (HPLC)

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Foods Beverage and juices Cheese & milk product Coffee & coffee product	Potassium (as K)	In House Method MY/STP/009 based on AOAC 968.08, 20th Ed (2016)
Foods Milk and milk product Sweetening substances Fruit & fruit product Soft drink Tea, coffee, chicory & related product	Sugar Profile Sucrose Glucose Maltose Lactose Fructose	In House Method MY/STP/382 based on GB 5009.8 – 2016 (HPLC)
Pharmaceutical products & Traditional medicines Tablets and capsules	Uniformity of weight	USP-NF Chapter <2091>
	Disintegration Test	BP (Appendix XII A. Disintegration)



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
Nutritional and Dietary Supplement, Pharmaceutical, Traditional Medicine, Toiletries and Cosmetic	Total Aerobic Microbial Count – Plate Method	USP- NF- Chapter 2021
	Total Yeast & Mould Count	USP-NF-Chapter 2021
	E.coli	BP (Appendix XVI B)
	Salmonella spp.	BP (Appendix XVI B)
	Staphylococcus aureus	BP (Appendix XVI B)
	Bile-tolerant gram-negative bacteria / Enterobacteriaceae	BP (Appendix XVI B)
	Pseudomonas aeruginosa	BP (Appendix XVI B)
	Total Aerobic Microbial Count	BP (Appendix XVI B) (Plate Count Method)
	Total Yeast & Mould Count	BP 2019 (Appendix XVI B) (Plate Count Method)
Water, Waste Water, Portable Water & Drinking Water	Total Plate Count / Heterotrophic Plate Count	APHA 9215 B (Pour Plate Method)
	Total Plate Count	APHA 9215 D (Membrane Filtration)
	Total Coliform	APHA 9222 B (Membrane Filtration)
	Fecal Coliform / E.coli	APHA 9222 D (Membrane Filtration)
	Fecal Coliform / E.coli	APHA 9221 E/F (Multiple Tube Method)
	Total Coliform	APHA 9221 B (Multiple Tube Method)
	Legionella spp. including Legionella pneumophilla	AS 3896



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
Water Ground water River water Portable water Treated water Raw water Swimming pool water Deionised water Mineral water Drinking water Dialysis water Reverse osmosis water Cooling tower water	Pseudomonas aeruginosa	APHA 9213 E (Membrane Filtration)
	Fecal streptococci / Enterococci	APHA 9230 C (Membrane Filtration)
	Clostridium perfringens	BS ISO 14189 (Membrane Filtration)
	Sulfite-reducing anaerobes (Clostridia)	BS ISO 26461-2 (Membrane Filtration)
Foods Cereal, cereal product, starch & bread Milk & milk product Sweetening substance Confectionery Meat & Meat Product Fish & fish product Egg & egg product Edible fat & edible oil Vegetable & vegetable product Fruit & fruit product Jam, fruit jelly, marmalade & seri kaya Nut & nut product Tea, coffee, chicory & related product Cocoa & cocoa product Salt & spice Vinegar, sauce, chutney & pickle Soft drink	Coliform	AOAC 991.14 (Petrifilm Method)
	Escherichia coli	
	Rapid Yeast & Mould	AOAC 2014.05 (Petrifilm Method)
	Aerobic Plate Count	AOAC 990.12 (Petrifilm Method)



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
All types of food and food related samples	Aerobic Plate Count	FDA – BAM Chapter 3
	Total Yeast & Mould Count	FDA – BAM Chapter 18
	Coliform	FDA – BAM Chapter 4 (Solid Medium Method)
	Coliform	FDA – BAM Chapter 4 (MPN Method)
	E.coli	FDA – BAM Chapter 4 (Solid Medium Method)
	E.coli	FDA – BAM Chapter 4 (MPN Method)
	Salmonella spp.	FDA – BAM Chapter 5
	Enterobacteriaceae	AOAC 2003.01, 20th Edition (Petrifilm Method)
	Coagulase positive staphylococci / Staphylococcus aureus	FDA – BAM Chapter 12 (Spread Plate Method)
	Bacillus cereus	FDA – BAM Chapter 14
	Clostridium perfringens	FDA – BAM Chapter 16
Pet Foods	Vibrio cholerae	FDA – BAM Chapter 9
 Sauces, Herbs, Spices and Condiments Sugars & Sugar Products 	Vibrio parahaemolyticus	FDA – BAM Chapter 9
	Listeria spp. Listeria monocytogenes	FDA – BAM Chapter 10
	Vibrio vulnificus	FDA – BAM Chapter 9
	Clostridium botulinum	FDA – BAM Chapter 17
Canned Food	Thermophilic Bacteria	FDA – BAM Chapter 21
	Anaerobic Organisms	FDA – BAM Chapter 21
	Leakage Organisms	FDA – BAM Chapter 21



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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
Microbiological Monitoring (Environmental Monitoring, Air & Work Surfaces)	Air monitoring by cascade impactor • Total bacteria count/Total plate count • Total yeast count • Total mold count • Total yeast and mold count	NIOSH method 0800 (Issue 1: 15 Jan 1998) MY/STP/185 based on NIOSH method 0800 (Issue 1:15 Jan 1998)
	Swab contact method	In House Method MY/STP/175 based on Compendium of Methods for The Microbiological Examination of Foods, 4 th Edition 2001 (Chapter 3)
	Sedimentation Method	In House Method MY/STP/175 based on Compendium of Methods for The Microbiological Examination of Foods, 4 th Edition 2001 (Chapter 3)
	Surface contact method Swab contact method Sponge contact method Rinse solution method Packaging containers Air sampling method Sedimentation method Impaction method Identification of surface contact method, rinse solution method, air sampling method: Total Plate Count Yeast & Mold Count E.coli Coliform Staphylcoccus aureus Enterobacteriaceae Bacillus cereus Clostridium perfringens Salmonella spp. Listeria monocytogenes	In House Method MY/STP/175 based on Compendium of Methods for the Microbiological Examination of Foods, 4th Edition 2001 (Chapter 3)



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Notes:

- 1. APHA: American Public Health Association, Standard Method for Examination of Water and Wastewater,
- BP: British Pharmacopeia 2.
- MS: Malaysia Standard 3.
- MPOB: Malaysia Palm Oil Board 4.
- USP: United States Pharmacopeia 5.
- NIOSH: National Institute of Occupational Safety & Health 6.
- GB: National Food Safety of People's Republic of China 7.
- 8. USEPA: United States Environmental Protection Agency
- FDA-BAM: US Food and Drug Administration / Bacteriological Analytical Manual AOAC: Official Methods of Analysis of AOAC International JAOAC: Journal of AOAC International 9.
- 10.
- 11.
- 12. AS: Australia Standard
- BS ISO: British Standard ISO 13.