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MS ISO/IEC 17025

NO: SAMM 336
(Issue 7, 12 January 2018 replacement of SAMM 336 dated 03 October 2017)

LABORATORY LOCATION: (PERMANENT LABORATORY)

BIO SYNERGY LABORATORIES SDN. BHD.
LOT 1109, MUKIM MALAU
DAERAH KUBANG PASU
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MALAYSIA

FIELDS OF TESTING: **CHEMICAL, GENETIC MODIFIED ORGANISM, NUCLEIC ACID & MICROBIOLOGY**

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2005 (ISO/IEC 17025:2005).

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).

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food Products • Alcohol & Non-alcoholic • Dairy Products • Edible Oils, Fats & Their Products • Egg & Egg Products • Essential Nutrients • Fish & Fish Products • Frozen Food • Flour & Confectionery • Food Additives & Supplements • Honey & Honey Products • Meat, Poultry & Derived Products • Nuts, Fruits & Vegetables & Derived Products • Feed, Sauces, Herbs, Spices & Condiments • Sugar & Sugar Products • Traditional Medicine	Energy Content as Calories	Method of Analysis for Nutrition Labeling, Chapter 1, 1993
	Calories from Fat	Method of Analysis for Nutrition Labeling, Chapter 1, 1993
	Total Carbohydrate	Method of Analysis for Nutrition Labeling, Chapter 1, 1993
	Crude Protein	AOAC 976.05
	Crude Fat	AOAC 991.36
	Crude Ash	MS ISO 5984: 2003
	Moisture Content	MS ISO 6496: 2003
	Crude Fiber	AOAC 962.09
	pH	AOAC 981.12 & 970.21
	Total Fat	In-house method CL/FD/001, based on Pearson's Chemical Analysis of Food, 8th Edition, 1990. Page 22
	Total Sugar	AOAC 923.09 & 968.28
	Moisture Content	In-house method CL/FD/002, using Moisture Analyzer HB43, Mettler Toledo

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food Products • Alcohol & Non-alcoholic • Dairy Products • Edible Oils, Fats & Their Products • Egg & Egg Products • Essential Nutrients • Fish & Fish Products • Frozen Food • Flour & Confectionery • Food Additives & Supplements • Honey & Honey Products • Meat, Poultry & Derived Products • Nuts, Fruits & Vegetables & Derived Products • Feed, Sauces, Herbs, Spices & Condiments • Sugar & Sugar Products • Traditional Medicine	Total Dietary Fiber	Method of Analysis for Nutrition Labeling, 1993. Method No.: 985.29
	Cholesterol	AOAC 994.10
	Fatty Acid Saturated Fat Monounsaturated Fat Trans Fat	AOAC 996.06
	Vitamin A	Method of Analysis for Nutrition Labeling, 1993. Method No. 992.06
	Vitamin C	BS EN 14130: 2003
	Vitamin E	Method of Analysis for Nutrition Labeling, 1993. Method No. 992.03
	Phosphorus	Method of Analysis for Nutrition Labeling, 1993. Method No. 965.17
	Metals/ Minerals • Lead • Cadmium • Tin • Antimony • Calcium • Magnesium • Manganese • Iron • Zinc • Copper • Sodium • Potassium • Chromium • Nickel	In-house method CL/FD/003, based on AOAC 999.11
	Arsenic	AOAC 986.15
	Mercury	AOAC 971.21
	3-MCPD	AOAC 2000.01
	Melamine Content, Cyanuric Acid, Ammeline, Ammelide	USFDA, LIB No. 4423, Vol 24, 2008
	Benzoic Acid Sorbic Acid Methylparaben Propylparaben	In-house method,CL/FD/004, based on Journal of Chromatography A, 1073, 2005. Page 393-397

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food Products • Alcohol & Non-alcoholic • Dairy Products • Edible Oils, Fats & Their Products • Egg & Egg Products • Essential Nutrients • Fish & Fish Products • Frozen Food • Flour & Confectionery • Food Additives & Supplements • Honey & Honey Products • Meat, Poultry & Derived Products • Nuts, Fruits & Vegetables & Derived Products • Feed, Sauces, Herbs, Spices & Condiments • Sugar & Sugar Products • Traditional Medicine	Sulphur Dioxide Boric Acid Vitamin B1, B2, B3, B6 &B12 Aspartame	In-house method, CL/FD/005, based on Pearson's Chemical Analysis of Food, 8th Edition, 1990. Page 64-65 AOAC 970.34 In-house method, CL/FD/011, based on Journal of Chromatography A, 870 (2000), Page 207-215 GB/T 22254-2008
Food Products • Meat • Fish	Nitroimidazoles Dimetrimedazole, Metronidazole, Ipronidazole, Ronidazole, Dimetridazole-2-hydroxy, Metronidazole-hydroxy, Ipronidazole-hydroxy	SN/T 1928-2007 (LC-MS/MS)
Food Products • Shrimp • Feed • Edible Oil & Oil Products • Traditional Medicine	• Lead • Cadmium • Arsenic • Mercury • Nickel • Iron • Copper	In-house Method, CL/FD/029, based on AOAC 2013.06 (ICP-MS)
Food • Sugar & Confectionery • Beverages	Synthetic Colouring Allura Red, Brilliant Blue, Carmoisine, Erythrosin, Ponceau 4R, Quinoline Yellow, Sunset Yellow, Tartrazine	In-house Method, CL/FD/017, based on Food Chemistry, Vol 61, No. 3, 1998. Page 367-372

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Milk & Milk Products	Aflatoxin M1	AOAC 2000.08: 2010
	Vitamin D3	In-house Method CL/FD/021, based on AOAC 995.05: 2010
Milk, Honey, Seafood & Egg	Chloramphenicol	In-house method, CL/FD/006, based on Competitive Enzyme Immunoassay Method
Milk, Meat, Seafood & Egg	Nitrofuran (AOZ, AMOZ, AHD, SEM)	In-house method, CL/FD/007, based on Competitive Enzyme Immunoassay Method
Meat, Cereal & Feed	Total Alfatoxin	In-house method, CL/FD/008, based on Competitive Enzyme Immunoassay Method
Feed & Meat	Beta-agonist	In-house method, CL/FD/013, based on Competitive Enzyme Immunoassay Method
Feed & Seafood	Ethoxyquine	In-house Method CL/FD/020, based on AOAC 996.13 using HPLC FLD & LC-MS/MS
Animal Derived Food & Seafood	Fluroquinolones	In-house method, CL/FD/015, based on Competitive Enzyme Immunoassay Method
	Flumequine	In-house method, CL/FD/016, based on Competitive Enzyme Immunoassay Method
	Amoxicillin	In-house method, CL/FD/024, based on USDA, CLG-BLAC.02.2007
	Fluroquinolones Residues • Danofloxacin • Enrofloxacin • Ciprofloxacin • Sarafloxacin	Department of Agriculture Bulletin No.: 1025-14-2008
	Sulfoamide Residues • Sulfadiazine • Sulfamonomethoxine • Sulfamerazine • Sulfathiazole • Sulfadimidine • Sulfaquinoxaline • Sulfamethoxine	Department of Agriculture Bulletin No.: 958-12-2007

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Seafood	Total Volatile Basic Nitrogen	In-house method, CL/FD/009, based on Pearson's Chemical Analysis of Food, 8th Edition, 1990. Page 415
	Polyphosphate	BS 4401-15: 1981/ ISO 5553:1981
	Histamine	In-house method, CL/FD/010, based on Journal of Instrumental Analysis, Vol. 25, No.4, 2006, Page 59-62
	Formaldehyde	SC/T 3025-2006
	Malachite Green Leucomalahite Green Crystal Violet Leucrystal Violet	In-house Method, CL/FD/014, based on GB/T 20361-2006
	Oxolinic Acid	SC/T 3028-2006
Spices & Sauces	Sudan I, II, III, IV, Para Red, Rhodamine B, Orange II	Government Chemist Publication Analytical Method: LGC/GC/2007/005
Sauces	Acidity pH Salt (as Sodium Chloride) Total Nitrogen Total Soluble Solid	MS 1120: 2004 MS 1120: 2004 MS 1120: 2004 MS 1120: 2004 MS 532: 1995, Appendix A
Coffee & Coffee Products	Caffeine Content	ISO 10095: 1992
Peanut	Aflatoxins B1, B2, G1 & G2	AOAC 994.08
Fish & Fish Products Meat & Meat Products	Tetracyline Oxytetracycline Chlortetracycline Doxycycline	In-house Method, CL/FD/012, based on AOAC 995.09
Sugar & Sugar based Food Products	Fructose, Glucose, Lactose, Maltose & Sucrose	Method of Analysis for Nutrition Labeling Method No. 980.13
Bread & Flour Confection	Propionic Acid	GB/T 23382-2009

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food & Cosmetic Products • Liquid Paste	Viscosity	BP 2013 Vol. IV, Appendix VH
Cosmetic Products • Soap • Liquid, Solid, Powder, Cream, Gel, Lotion, Oil based, Perfume, Soap & Paste	Total Fatty Matter Pb, Cd, As, Hg	IS 286-1978 BP 2010, Vol. IV, Appendix VII & IID
Cosmetic Products • Cream, Gel, Lotion etc	Retinoic Acid (Tretinoin) Hydroquinone Hydroquinone Monomethylether Hydroquinone Monoethylether Hydroquinone Monobenzylether	ASEAN Harmonized Method, ACM SIN 01, 2005 (HPLC) KS580: 2006
Pharmaceutical Products (Traditional Medicine) • *Monascus purpureus* (Red Yeast Rice • Table & Capsule • Powder • Tablet	Lovastatin Disintegration Bulk Density Friability	In-house Method, CL/PH/001, based on Fujian Analysis & Testing Research Bulletin, 12(3), 2003 USP 701 USP 616 BP 2013, Vol. IV, Appendix XVII G
Pharmaceutical Products (Traditional Medicine) • Powder • Capsule • Tablet • Oil & Cream; etc	Lead Cadmium Copper Arsenic Mercury Iron Nickel Zinc Calcium Magnesium Manganese Potassium Sodium	BP 2010, Vol. IV, Appendix VII & IID In-house method, CL/PH/002, based on BP 2010, Vol. IV, Appendix VII & IID

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Pharmaceutical Products (Traditional Medicine) • *Monascus purpureus* (Red Yeast Rice • Table & Capsule • Powder • Tablet	Lovastatin Disintegration Bulk Density Friability	In-house Method, CL/PH/001, based on Fujian Analysis & Testing Research Bulletin, 12(3), 2003 USP 701 USP 616 BP 2013, Vol. IV, Appendix XVII G
Pharmaceutical Products (Traditional Medicine) • Tablet • Powder • Soft Capsule • Hard Capsule	Mercury Lead Cadmium Copper Arsenic Iron Nickel Zinc Calcium Magnesium Manganese Potassium Sodium	BP 2013, Vol. V, Appendix VII & IID (FIMS) BP 2013, Vol. V, Appendix VII & IID (AAS) In-house method, CL/PH/002, based on BP 2013, Vol. V, Appendix VII & IID (AAS)

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water • Potable & Domestic • Industrial Water • Distilled Demineralized • Reverse Osmosis • Ultrapure Water • Swimming Pool Water • Cooling Tower Water • Boiler Water • Surface Water • Mineral Water • Industrial Effluent; etc	Temperature	APHA 2550 B
	pH	APHA 4500^{+}H
	COD	APHA 5220 B
	BOD	APHA 5210 B & 4500 OC
	Oil & Grease	APHA 5520 B
	Total Suspended Solid	APHA 2540 D
	Chromium Hexavalent	APHA 3500-Cr B
	Chromium Trivalent	In-house Method CL/WT/001, based on APHA 3500-Cr B & 3120 B
	Phenol	APHA 5530 C
	Ammoniacal Nitrogen	APHA 4500-NH_3 B & C
	Cyanide	APHA 4500-CN C & D
	Organochlorine Pesticide • Aldrin, Dieldrin, Chlordane, DDT, Heptachlor, Heptachlor Epoxide, Hexachlorobenzene, Lindane, Methoxychlor, Endosulfan	In-house Method, CL/WT/005, based on AOAC 990.06
	Lead Cadmium Chromium Calcium Magnesium Iron Zinc Sodium Potassium Copper Manganese Nickel	APHA 3111 B
	Arsenic	APHA 3114 C

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water • Potable & Domestic • Industrial Water • Distilled Demineralized • Reverse Osmosis • Ultrapure Water • Swimming Pool Water • Cooling Tower Water • Boiler Water • Surface Water • Mineral Water • Industrial Effluent; etc	Phosphorus	APHA 4500 P C
	Conductivity	BP 2010, Vol. IV, Appendix VO
	Free Chlorine	In-house Method CL/WT/002, based on HACH Spectrophotometer, Method 8021
	Total & Free Chlorine	APHA 4500-Cl G
	Sulphide (1)	APHA 4500-S^{2-} F
	Sulphide (2)	In-house Method CL/WT/003, based on HACH Spectrophotometer, Method 8131
	Formaldehyde (1)	APHA 6252 B
	Formaldehyde (2)	In-house Method CL/WT/004, based on HACH Spectrophotometer, Method 8110
	Anions by IC • Fluoride, Chloride, Nitrite, Bromide, Nitrate, Phosphate, Sulfate	APHA 4110 B
	Alkalinity	APHA 2320 B
	Hardness	APHA 2340 B
	Total Solid	APHA 2540 B
	Total Dissolved Solid	APHA 2540 C
Water • Ultrapure Water • Drinking Water • Treated Water	Bromodichloromethane, Bromoform, Chloroform, Dibromochloromethane, Styrene	In-house Method, CL/WT/008 based on USEPA 5030B & 8260B
	Total Organic Carbon	APHA 5310 B
	Colour PtCo	APHA 2120 C
	Turbidity	APHA 2130 B
	MBAS	APHA 5540 C
	Nitrate Nitrogen	APHA 4500-NO^{3-} B
	2,4-D	In-house Method, CL/WT/006 based on Agilent Application Note 5989-5320N (LC-MS/MS)

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water • Potable & Domestic • Industrial Water • Distilled Demineralized • Reverse Osmosis • Ultrapure Water • Swimming Pool Water • Cooling Tower Water • Boiler Water • Surface Water • Mineral Water • Industrial Effluent; etc	**Metals by ICP** • Aluminium as Al • Antimony as Sb • Arsenic as As • Barium as Ba • Beryllium as Be • Bismuth as Bi • Boron as B • Cadmium as Cd • Calcium as Ca • Chromium as Cr • Cobalt as Co • Copper as Cu • Gold as Au • Iron as Fe • Lead as Pb • Lithium as Li • Magnesium as Mg • Manganese as Mn • Mercury as Hg • Molybdenum as Mo • Nickel as Ni • Platinum as Pt • Potassium as K • Selenium as Se • Silicon as SiO_2 • Silver as Ag • Sodium as Na • Strontium as Sr • Sulfur as S • Thallium as Tl • Tin as Sn • Titanium as Ti • Vanadium as V • Zinc Zn Sample Pre-treatment for Metal Analysis	APHA 3120 B APHA 3030 E
Water • Cooling Tower Water • Boiler Water	Mercury	APHA 3112 B

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water • Potable & Domestic • Distilled/Demineralized • Reverse Osmosis • Ultrapure Water • Swimming Pool Water • Cooling Tower Water • Boiler Water • Surface Water • Mineral Water	• Aluminium • Antimony • Arsenic • Barium • Boron • Cadmium • Chromium • Copper • Iron • Lead • Manganese • Magnesium • Mercury • Nickel • Selenium • Silver • Sodium • Zinc • Calcium • Silicon • Potassium	APHA 3125 B (ICP-MS)
Municipal & Industrial Discharges	**Polycyclic Aromatic Hydrocarbons (PAH):** • Naphthalene • Acenaptylene • Acenaphthene • Fluorene • Phenanthrene • Anthracene • Fluoranthene • Pyrene • Benzo(a)anthracene • Chrysense • Benzo(b)fluoranthene • Benzo(k)fluoranthene • Benzo(a)pyrene • Dibenzo(a,h)anthracene • Benzo(ghi)perylene • Indeno(1, 2, 3-cd)pyrene	APHA 6440 B
Petroleum & Petroleum Products • Fuels • Lubricants • Solvent • Miscellaneous Products	Flash Point by Pensky-Martens Closed Cup Tester Kinematic Viscosity	ASTM D93 (Procedure A, Automated Apparatus) ASTM D445

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Beverages Flavour Enhancers	Phthalate Esters (BBP, DBP, DEHP, DIBP, DINP, DNOP)	GB/T 21911-2008 (GC-MS)
Meat & Meat Products Edible Bird's Nest	Nitrate/Nitrite	GB 5009.33-2010 (IC)
Meat & Meat Products Fish & Fish Products	Chloramphenicol, Florfenicol, Thiamphenicol	GB/T 20756-2006 (LC-MS/MS)
Fish & Fish Products Egg & Egg Products	Nitrofuran Metabolites (AOZ, AMOZ, SEM, AHD)	GB/T 21311-2007 (LC-MS/MS)
Food	Water Activity	In-house Method, CL/FD/017 based on Decagon Paw Kit Water Activity Meter Manual
Edible Oils, Fats & Their Products	Moisture & Volatile Matter	MPOB p2.1 Part 1: 2004
	Impurities	MPOB p2.2: 2004
	Peroxide Value	MPOB p2.3: 2004
	Acidity	MPOB p2.5: 2004
	DOBI	MPOB p2.9: 2004
	Saponification Value	MPOB p3.1: 2004
	Iodine Value	MPOB p3.2: 2004
	Colour Lovibond	MPOB p4.1: 2004
	Slip melting Point	MPOB p4.2: 2004
	Mineral Oil (Qualitative)	AOAC 945.102
	PG, TBHQ, BHA, BHT	AOCS Ce 6-86
	Benzo(α)pyrene	GB/T 22509-2008, AOCS Cd 21-91
	Anisidine Value	MPOB p2.4-2004
	Polycyclic Aromatic Hydrocarbons	In-house method, CL/FD/022 based on ISO 15753:2006 using Fluorescence Detector

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food Stimulants	Bisphenol – A	GB/T 23296.16-2009
Air Sampler Filter (Exclude Sampling)	Pb, Sn, Zn, Cd, As, Sb, Cu, Cr	NIOSH 7301 – Measurement
Food, Animal Feed & Edible Oil	Organochlorine Pesticides • Aldrin • cis-Chlordane (alpha) • trans-Chlordane (gamma) • 2,4'-DDD • 4,4'-DDD • 2,4'-DDE • 4,4'-DDE • 4,4'-DDT • Dieldrin • alpha-Endosulfan • beta-Endosulfan • Endrin • alpha-HCH • beta-HCH • gamma-HCH • Heptachlor • Heptachlor-exo-epoxide (cis-, isomer B) • Heptachlor-exo-epoxide (trans-, isomer A) • Methoxychlor • Endosulfan-sulfan • Hexachlorobenzene	In-house Method, CL/FD/019 based on AOAC 2007.01
Environmental Monitoring • Effluent	Colour ADMI	APHA 2120 F
Environmental Monitoring • Industrial Effluent	Mercury	In-house Method, CL/WT/007, based on APHA 3112B, using FIMS

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Edible Oil	Screening of Pesticides Residues • 2,4-D, • Acephate, • Aldicard, • Ametryn, • Bifenthrin, • Butacarboxim, • Captan, • Chlorpyrifos, • Cinosulfuron, • Clethodim, • Cyhalothrin, • Cypermethrin, • Cyproconazole, • Deltamethirn, • Dicamba, • Difenoconazole, • Diquat, • Dithiocarbamates, • Diuron, • DSMA, • Fenthion, • Fluazifop-butyl, • Fluroxypyr, • Flusilazole, • Glufosinate ammonium, • Glyphosate, • Haloxyfop methyl, • Haloxyfop-p-methyl, • Imazapyr, • Imazethapyr, • Methamidophos, • Methidathion, • Methomyl, • Methoxyfenozide, • Metsulfuron methyl, • Monocrotophos, • MSMA, • Paraquat, • Permethrin, • Prochloraz, • Procymidone, • Propargite, • Sethoxydim, • Triadimenol, • Triclopyr, • Trifluralin	In-House Method, CL/FD/023 based on AOAC 2007.01, using GC-MS/MS & LC-MS/MS

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food, Animal Feed & Edible Oil	Organophosphorus Pesticides • Ethion • Azinphos-ethyl • Phosalone • Chlorpyrifos • Carbophenothion • Malathion • Triphenyl Phosphate • Chlorpyrifos-methyl • Pirimiphos-methyl • Diazinon • Azinphos-methyl • Methidathion • Bromophos-ethyl • Formotion • Chlorfenvinphos • Dichloropenthion • Dichlorvos • Etrimfos • Fonofos • Primiphos-ethyl • Propetamphos • Sulfotep • Tertachlorvinphos • Dicrotops • Dimefox • Dimethoate • Disulfoton • Malaoxon • Methamidophos • Mevinphos • Omethoate • Paraoxon-ethyl • Parathion-ethyl • Pyrazophos • Triazophos	In-house Method, CL/FD/019 based on AOAC 2007.01
Workplace Environment & Hazards • Urine	Ag, Al, As, B, Ba, Cd, Co, Cr, Cu, Fe, Hg, Li, Mn, Mo, Ni, Pb, Pt, Sb, Si, Sr, Sn, Ti, Zn	In-house Method, CL/BS/001 based on NIOSH 8310

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food, Feed, Pharmaceutical Products, Edible Oils & Its Products	Dioxin & Dioxin Like PCBs, Furan	In-house Method, CL/FD/031, based on Agilent Application Note 5991-6590EN & LCTECH SOP, using GC-MS/MS
Feed, Grains, Coffee Products, Edible Oils & Its Products	Mycotoxins Aflatoxin B1, B2, G1, G2, Deoxinevalenol, Fumonisin B1, B2, Ochratoxin A, HT-2 Toxin & T-2 Toxin, Zearalenone	In-house Method, CL/FD/026, based on Journal of Environmental & Analytical Toxicology, 5:2, 2014, Pg. 1-6
Milk & Milk Products, Food Supplement, Feed	Iodine	In-house Method, CL/FD/032, based on AOAC 2012.14
Edible Oil & Its Products	2-MCPD Esters, 3-MCPD Esters & Glycidol Esters	AOCS Cd 29b-13 (GC-MS)

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Solid Waste, Liquid Waste	Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Ni, P, K, Se, Si, Ag, Na, Sr, Ti, Sn, Ti, Zn, Mo, V, Tl	USEPA 6010 D (ICP-OES)
	Au, Pd, Pt, Te, Th	In-house Method, CL/WT/009, Based on USEPA 6010 D (ICP-OES)
	Hg	USEPA 7471 B (FIMS)
	Reactivity	USEPA SW 864, Chapter 7 (Qualitative-Visual Inspection)
	Water	USEPA 9000 (Karl Fisher Titration)
	Total Organic Carbon	USEPA 9060 A (TOC Analyzer)
	Total Sulfur	ASTM D 3177-02, Method A (Eschka Method – Gravimetric)
	Gross Calorific Value	ASTM D 5468-02 (Bomb Calorimeter)
	Total Halogen as Chlorine	ASTM E776-04 (Gravitmetric)
	Specific Gravity	ASTM D 891-04, Method B (Pycnometer)
	Sediment	ASTM D 473-02 (Gravimetric)
	Boiling Point	ASTM D 1120-04 (Manual Determination by Thermometer)
Solid Waste	Sample Preparation For Metal Analysis	USEPA 3050 B (Acid Digestion)
Liquid Wate	Sample Preparation For Metal Analysis	APHA 3030 E (Acid Digestion)
Solid Waste	Corrosivity (pH)	USEPA 9045 D (pH Meter)
Liquid Waste	Corrosivity (pH)	APHA 4500 H^+ (pH Meter)
Solid Waste	Ignitability (Flash Point)	USEPA 1010 A (Pensky-Martens Closed-Cup Tester)
Liquid Waste	Ignitability (Flash Point)	USEPA 1020 B (Setaflash [Small Scale] Closed-Cup Tester

Note:

- AOAC : Association of Official Analytical Chemists, 18th Edition, 2005 (Revision3, 2010)
- APHA : American Public Health Association, Standard Method for Examination of Water and Wastewater, 21st Edition, 2005.
- ASTM : American Society for Testing and Materials.
- BP : British Pharmacopeia, 2010 Vol. IV.
- BS 4401-1 (1980)/ISO 5553 (1981) : British Standard/International Organization for Standardization: Methods of Test for Meat & Meat Products-Part 15: Detection of Polyphosphates.
- BS EN 14130 (2003) : British Standard European Standard: Foodstuffs – Determination of Vitamin C by HLPC.
- GB 5009.33-2010 : People's Republic of China Standard. National Food Safety Standard. Determination of Nitrite and Nitrate in Foods.
- GB/T 20361-2006 : People's Republic of China Standard. Determination of Malachite Green & Gentian Violet Residues in Fishery Products – HLPC with Fluorescence Detector.
- GB/T 20756-2006 : People's Republic of China Standard. Determination of Chloramphenicol, Florfenicol & Thiamphenicol Residue in Edible Animal Derived Food and Seafood by HPLC-MS/MS
- GB/T 21311-2007 : People's Republic of China Standard. Determination of Residues of Nitrofuran Metabolites in Food Stuffs of Animal Origin.
- GB/T 21911-2008 : People's Republic of China Standard. Determination of Phthalate Esters in Food.
- GB/T 22354-2008 : People's Republic of China Standard. Determination of Aspartame in Foods.
- GB/T 21311-2007 : People's Republic of China Standard. Food Contact Materials – Polymer – Determination of 2,2-bis (4-hyroxyphenyl) propane [Bisphenol A] in Food Simulans – High Performance Liquid Chromatography.
- GB/T 23382-2009 : People's Republic of China Standard. Determination of Sodium Propionate and Calcium Propionate in Foods – High Performance Liquid Chromatography Method.
- HACH : Handbook of Water Analysis.
- IS : Indian Standard, Method of Sampling and Test for Soaps (Second Revision) 1991.
- JIS : Japanese Industrial Standard.
- KS 580: 2006 : Kenya Standard. Cosmetic Creams, Lotions and Gels for Skin Care. Determination of Hydroquinone Content.
- MS 532: 1995 : Malaysian Standard, Specification for Red Chilli Sauce (Second Edition).
- MS 1120:2004 : Malaysian Standard, Sauces-Sampling and Test Methods (First Edition).
- MS ISO 5984: 1996 : Malaysian Standard Identical with ISO, Animal Feeding Stuffs – Determination of Crude Ash.
- MS ISO 6496: 2003 : Malaysian Standard Identical with ISO, Animal Feeding Stuffs – Determination of Moisture and Other Volatile Matter Content.
- NIOSH : National Institute of Occupational Safety and Health
- SC/T 3025-2006 : Aquaculture Industry Standards, Ministry of Agriculture of the People's Republic of China, Determination of Formaldehyde in Aquatic Products.
- SC/T 3028-2006 : Aquaculture Industry Standards, Ministry of Agriculture of the People's Republic of China, Determination of Oxolinic Acid in Aquatic Products, Liquid Chromatography Method.
- SN/T 1928-2007 (LC-MS/MS): People's Republic of China Standard for Entry-Exit Inspection & Quarantine, Determination of Nitroimidazoles Residues in Foodstuffs of Animal Origin for Import & Export-LC-MS/MS Method
- USDA, CLG-BLAC.02, 2007 : United States Department of Agriculture, Screening & Confirmation of β-lactam Antibiotic by HLPC-MS/MS.
- US EPA : United State Environment Protection Agency.
- USFDA, LIB : United State Food and Drug Administration, Laboratory Information Bulletin.
- USP : United State Pharmacopeia 32, NF27, 2009.

Signatories:

1.	**Khoo Hwa Chuan**	**IKM No.: M/2212/4433/03/05**
2.	**Nursyafawati Bakri**	**IKM No. : M/3574/6472/13 (Nutrition Analysis)**
3.	**Nurul Husna Zakaria**	**IKM No. : L/1946/6486/13 (LCMS/MS Analysis)**
4.	**Hanisah Zakaria**	**IKM No.: L/1947/6487/13 (Water & Wastewater Analysis)**
5.	**Boo Wei Ping**	**IKM No.: L/2075/7052/15 (GC & GCMS Analysis)**
6.	**Shahrul Fatin Izzati Adnan**	**IKM No.: L/2076/7053/15 (LCMS, GC & GCMS/MS Analysis)**
7.	**Siti Khadijah Ishak**	**IKM No.: L/2074/7051/15 (AAS, ICPMS, ICPOES Analysis)**
8.	**Muhammad Nasruddin Ghazali**	**IKM No.: L/2636/7824/17 (Nutrition, Waste, GC & GCMS Analysis**
9.	**Muhammad Dzafran Omar**	**871109-23-5473 (Nutrition, Waste, Water & Wasterwater Analysis – Signatory Under Supervision of Registered Chemist)**
10.	**Noor Shilla Ibrahim**	**861201-02-5322 (Chemical – ICPOES, ICPMS & AAS – Signatory under supervision of Registered Chemist)**

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Food Products • Coffee • Tea • Cereal Food • Frozen Food • Sauces • Fruit Drink & Juice • Flour & Confectionery • Dairy Products • Food Supplement (Herbal); etc	Standard Plate Count	AS 5013.1-2004
	Staphylococcus aureus	AS 1766.2.4;1995
	Yeast	AS 5013.29-2009
	Mould	AS 5013.29-2009
	Coliforms	AS 1766.2.3;1992
	Escherichia coli	AS 1766.2.3;1992
	Escherichia coli 0157: H7	FDA-BAM , Chapter 4A
	Basillus cereus	AS 1766.2.6;1991
	Clostridium perfringens	AS 1766.2.8; 1991
	Vibrio parahaemolyticus	AS/NZS 1766.2.9:1997
	Listeria monocytogenes	AS/NZS 1766.2.16:1998
	Vibrio cholerae	ISO/TS 21872-1: 2007 (E)
	Vibrio parahaemolyticus	ISO/TS 21872-1: 2007 (E)
	Vibrio vulnificus	ISO/TS 21872-2: 2007 (E)
	Clostridium botulinum	FDA-BAM, Chapter 17, 2001
	Total Plate Count	AOAC 2002.07
	Yeast & Mould Count	AOAC 2002.11
	Total Coliform & *E. coli* Count	AOAC 2005.03
	Aerobic Plate Count	AOAC 990.12
	Coliform & *E.coli*	AOAC 998.08 & 991.14
	Staphylococcus aureus	AOAC 2003.11
	Enterobacteriaceae	AOAC 2003.01 / AS 5013.8: 2004
	Salmonella	AS 1766.2.5;1991 / AOAC 2014.01
	Yeast & Mould	AOAC 997.02 / AOAC 2014.05
	Fecal Coliform	FDA-BAM , Chapter 4A

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Milk & Milk Products	*Enterobacter sakazakii*	ISO/TS 22964:2006
Canned Foods	**Spoilage in Canned Foods** • Flat Sour Organism • Anaerobic Organism • Leakage Organism	FDA-BAM, 2001, Chapter 21A
Pharmaceutical Products • Powder • Capsule • Tablet • Oil & Cream; etc	Total Microbial Aerobic Count Total Combined Yeast & Mould Count Enterobacteria and Certain Other Gram-Negative Bacteria Bile-tolerant Gram Negative Bacteria *Escherichia coli* *Salmonella* *Staphylococcus aureus* Pse*udomonas aeruginosa* *Clostridica spp* *Candida albicans*	BP 2013, Appendix XVI B BP 2013, Appendix XVI B BP 2005, Appendix XVI B BP 2013, Appendix XVI B BP 2013, Appendix XVI B BP 2013, Appendix XVI B BP 2013, Appendix XVI B BP 2013, Appendix XVI B BP 2013, Appendix XVI B BP 2013, Appendix XVI B
Water • Potable & Domestic • Distilled/Demineralized • Reverse Osmosis • Ultrapure Water • Swimming Pool Water • Cooling Tower Water • Boiler Water • Surface Water • Mineral Water	Coliform (MPN/100ml) Fecal Sterptococci (cfu/100ml) Yeast & Mould	APHA 9221 B APHA 9230 C APHA 9610 D

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water • Potable & Domestic • Industrial Water • Distilled Demineralized • Reverse Osmosis • Ultrapure Water • Swimming Pool Water • Cooling Tower Water • Boiler Water • Surface Water • Mineral Water • Industrial Effluent; etc	Heterotrophic Plate Count • Pour Plate • Membrane Filtration Standard Total Coliform *Pseudomonas aeruginosa* Fecal *Streptococci* Fecal Coliform *E. coli* (Membrane Filtration) Bacterial Endotoxin Examination for *Legionellae* including *Legionella pneumophila* • serogroup 1 • serogroup 2-14 • total *Legionella* • *Legionella spp.*	 APHA 9215 B-1998 APHA 9215 D-1998 APHA 9222 B-1998 APHA 9213 E-1998 APHA 9230 B APHA 9221 E APHA 9222 G Limulus Amebocyte Lysate (LAL) kit by Cape Cod AS/NZS 3896: 1998
Water • Potable & Domestic • Industrial Water • Distilled Demineralized • Reverse Osmosis • Ultrapure Water • Swimming Pool Water • Cooling Tower Water • Boiler Water • Surface Water • Mineral Water • Industrial Effluent; etc	Enumeration of Spores of Sulphite Reducing Anaerobes (Clostridia) including Clostridium Perfringens Escherichia coli (MPN/100ml)	AS/NZS 4276.17.1; 2000 APHA 9221 F
Pharmaceutical Products (Traditional Medicine) • Powder, Capsule, Tablet, Oil & Cream	Bile-tolerant Gram Negative Bacteria (Quantitative) *Escherichia coli* *Salmonella*	BP2013, Appendix XVIF BP2013, Appendix XVIF BP2013, Appendix XVIF

SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Cosmetic Products • Liquid, Solid, Powder, Cream, Oil based, Aerosol, Soap & etc	Aerobic Plate Count Yeast Mould *Staphylococcus aureus* *Pseudomonas aeruginosa* Anaerobic Plate Count	FDA-BAM, 2001, Chapter 23
Environmental Sampling & Monitoring • Air & Work Surfaces	Swab Contact Method Sedimentation Method	Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed, 1992
Sugar & Sugar Products	Total Mesophilic Bacterial Count Total Yeast & Mould Thermophilic Spore-forming Bacteria Flat Sours Spores Sulphides Spoilage Spores Thermophilic Gas-producing Anaerobes	MS 5: Part 2: 2006

Note:
- AOAC : Association of Official Analytical Chemists, 18th Edition, 2005 (Revision 3, 2010)
- APHA : American Public Health Association, Standard method for Examination of Water and Wastewater, 21st Edition, 2005
- AS : Australian Standard
- AS/NZS : Australian/New Zealand Standard
- BP : British Pharmacopeia. 2013
- FDA-BAM : Food & Drug Administration-Bacteriological Analytical Manual
- ISO/TS : International Organization of Standardization/Technical Specification
- MS: Malaysian Standard

Signatories:

1.	**Azyan Shahirah Baderol Sham**	**MJMM 0275/251/16**
2.	**Noor Shuhanija Shuib**	**MJMM 0276/252/16**
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4.	**Kulaab A/P Liam**	**871223-09-5064**

SCOPE OF TESTING: NUCLEIC ACID

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Porcine • Raw meat • Processed meat • Cooking oil	Porcine DNA	In-house Method NA/FD/001 using Real-Time PCR
Allergens • Raw meat • Processed meat • Cooking oil • Baking products • Dairy products • Nuts & Beans • Sesame • Corn • Coconut powder • Coffee & Tea	Allergens • Gluten • Soy • Milk • Peanut • Egg • Fish • Celery • Sesame	 In-house Method NA/FD/002 using Real-Time PCR In-house Method NA/FD/003 using Real-Time PCR In-house Method NA/FD/005 using Real-Time PCR In-house Method NA/FD/006 using Real-Time PCR In-house Method NA/FD/007 using Real-Time PCR In-house Method NA/FD/009 using Real-Time PCR In-house Method NA/FD/010 using Real-Time PCR In-house Method NA/FD/011 using Real-Time PCR
Shrimp	White Spot Syndrome Virus (WSSV) Yellow Head Virus (YHV)	In-house Method NA/FD/004 using Real-Time PCR In-house Method NA/FD/008 using Real-Time PCR

Signatory:

1. **Niwashini Saundararajan** **MJMM 0374**

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SCOPE OF TESTING: GENETIC MODIFIED ORGANISM

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Raw Material & Food • Cooking oil • Baking products • Biscuit & Chip • Nuts & Beans • Sesame • Corn • Coffee & Tea • Fruit	Identification of GMO (35S, NOS, FMV)	In-house Method GMO/FD/001 using Real-Time PCR

Signatory:

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