

Schedule

Issue date: 22 October 2019
Valid until: 19 September 2021



NO: SAMM 564

(Issue 2, 22 October 2019 replacement of SAMM 564 dated 02 August 2018)

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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).

SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water Potable & Domestic Water, Ground Water, Mineral Water, Reverse Osmosis Water, Industrial / Cooling Purposes, Steam Raising / Boiler Water, Swimming Pool Water & SPA, Surface Water and Drinking Water	pH	APHA 4500 – H ⁺ B (2005)
	Biological Oxygen Demand (BOD)	APHA 5210 B (2005) APHA 4500 – O.G
	Chemical Oxygen Demand (COD)	APHA 5220 B (2005)
	Chemical Oxygen Demand (COD)	APHA 5220 D (2005)
	Suspended Solid	APHA 2540 D (2005)
	Oil and Grease	APHA 5520 B (2005)
	Temperature	APHA 2550 B (2005)
	Mercury	APHA 3112 B (2005)
	Chromium Hexavalent	APHA 3500 – Cr B (2005)
	Arsenic	MY/STP/055 based on APHA 3114 C (2005)

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Water Potable & Domestic Water, Ground Water, Mineral Water, Reverse Osmosis Water, Industrial / Cooling Purposes, Steam Raising / Boiler Water, Swimming Pool Water & SPA, Surface Water and Drinking Water (cont.)	Cadmium	APHA 3111 B (2005)
	Calcium	
	Copper	
	Total Chromium	
	Iron	
	Lead	
	Magnesium	
	Manganese	
	Nickel	
	Potassium	
	Silver	
	Sodium	
	Tin	
	Zinc	
	Boron	APHA 4500 – B C (2005)
	Aluminium	APHA 3500 Al B (2005)
	Selenium	APHA 3500 – Se C (2005)
	Fluoride	APHA 4500 F – D (2005)
	Phenol	MY/STP/069 based on APHA 5530 B & APHA 5530 D (2005)
	Sulphide	APHA 4500 – S ²⁻ D (2005)
	Chlorine (Residual)	APHA 4500 Cl-G (2005)
	Sulfide	APHA 4500 S ²⁻ C & F (2005)
Cyanide	APHA 4500 CN ⁻ C&E (2005)	
Colour (ADMI)	APHA 2120 F (2005)	

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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, Mineral Water, Reverse Osmosis Water, Industrial / Cooling Purposes, Steam Raising / Boiler Water, Swimming Pool Water & SPA, Surface Water and Drinking Water (cont.)	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)
	Total Dissolved Solid	APHA 2540 C (2005)
	Anionic Surfactant – Detergent MBAS	APHA 5540 C (2005)
	Organochlorine Pesticide – <ul style="list-style-type: none"> • 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 (2005)

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring Industrial Effluent and Waste Water	Formaldehyde	USEPA 8315A (Procedure 1) (1996)
	Nitrogen (Ammonia)	APHA 4500 NH ₃ B & C (2005)
	COD (Chemical Oxygen Demand)	APHA 5220 C (2005)
	Colour (ADMI)	APHA 2120 F (2005)
Industrial Effluent, Sewage Water, Waste Water and Leachate	pH	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)
	Suspended Solid	APHA 2540 D (2005)
	Oil and Grease	APHA 5520 B (2005)
	Temperature	APHA 2550 B (2005)
	Mercury	APHA 3112 B (2005)
	Chromium Hexavalent	APHA 3500 – Cr B (2005)
	Arsenic	MY/STP/055 based on APHA 3114 C (2005)
	Boron	APHA 4500 – B C (2005)
	Aluminium	APHA 3500 Al B (2005)
	Selenium	APHA 3500 – Se C (2005)
	Fluoride	APHA 4500 F – D (2005)
Phenol	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 Industrial Effluent, Sewage Water, Waste Water and Leachate (cont.)	Lead	APHA 3111 B (2005)
	Copper	
	Manganese	
	Nickel	
	Tin	
	Zinc	
	Iron	
	Silver	
	Total Chromium	
	Cadmium	
	Magnesium	
	Sodium	
	Calcium	
	Potassium	
	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> <ul style="list-style-type: none"> Animal Feed Pet Food 	Protein/ Nitrogen	AOAC 988.05, 20 th edition (2016)
	Moisture	AOAC 930.15, 20 th edition (2016)
	Ash	AOAC 942.05, 20 th edition (2016)
	Crude Fibre	AOAC 978.10, 20 th edition (2016)
	Crude Fat	AOAC 920.39, 20 th edition (2016)
<ul style="list-style-type: none"> Dairy Products Mayonnaise 	Fat	AOAC 932.06, 20 th edition (2016)
<ul style="list-style-type: none"> Coffee Powder & Premix 	Caffeine & Coffee Content	MS 1360: 1994
<ul style="list-style-type: none"> Beverage and Juices Nuts, Fruits, Vegetables and Vegetable Products Nutritional Food Edible Oil, Fats and their Products 	Protein/ Nitrogen	MY/STP/270 based on AOAC 988.05, 20 th Edition (2016)
	Moisture	MY/STP/271 based on AOAC 931.04, 20 th Edition (2016)
	Ash	MY/STP/272 based on AOAC 942.05, 20 th Edition (2016)
	Fat (Soxhlet Extraction)	MY/STP/265 based on AOAC 963.15, 20 th Edition (2016)
	Total Carbohydrate (by calculation)	US FDA 21 CFR101.9 Part 101
	Energy/calories (by calculation)	
	Arsenic	MY/STP/025 based on AOAC 971.21, 20 th Edition (2016)
<u>Foods (cont.)</u> <ul style="list-style-type: none"> Dairy Products & Cocoa Beverage & Juices Nuts, Fruits, Vegetables and Vegetable Products Nutritional Food Edible Oil, Fats and Their Products 	Energy / Calories	Guide to Nutrition Labelling and Claims page 10 & 14
	Carbohydrate	Guide to Nutrition Labelling and Claims page 10 & 14

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
<u>Foods (cont.)</u> <ul style="list-style-type: none"> • Beverage and Juices • Nuts, Fruits, Vegetables and Vegetable Products • Nutritional Food • Edible Oil, Fats and their Products 	Cadmium	AOAC 973.34, 20 th Edition (2016)
	Lead	AOAC 972.23, 20 th Edition (2016)
	Mercury	AOAC 971.21, 20 th Edition (2016)
	Tin	AOAC 985.16, 20 th Edition (2016)
	Antimony	AOAC 964.16, 20 th Edition (2016)
	Iron	MY/STP/009 based on AOAC 968.08, 20 th Edition (2016)
	Copper	
	Calcium	
	Magnesium	
	Manganese	
	Zinc	
	Cobalt	
	Sodium	
	Sodium Chloride / Salt	MY/STP/043 based on Metrohm Manual Method 21 D 3
Cholesterol	MY/STP/131 based on J AOAC Vol. 78, No. 6, 1995	
Total Dietary Fibre	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
<u>Foods (cont.)</u> <ul style="list-style-type: none"> • Dairy Products & Cocoa • Beverage & Juices • Nuts, Fruits, Vegetables and Vegetable Products • Nutritional Food • Edible Oil, Fats and Their Products 	Fatty Acid Composition	AOAC 996.06, 20 th Edition (2016)
	Monounsaturated Fat	
	Polyunsaturated Fat	
	Saturated Fat	
	Trans Fat	
	Total Sugar	AOAC 968.28, 20th Edition (2016)
	Formaldehyde	AOAC 931.08, 20 th Edition (2016)
	Vitamin C	AOAC 967.21 & MY/STP/154 based on GB 5413.18-2010
Vitamin A	MY/STP/128 based on USP30-NF25 page 214	
<ul style="list-style-type: none"> • Spices, Salted Egg Yolk • Confectionary 	Sudan Red I, II, III and IV	Government Chemist Publication List: LGC/GC/2007/005
<ul style="list-style-type: none"> • Nuts and nuts derived Products, Cereal • Cereal, Animal Feed and Feed Derived Products 	Aflatoxin	MY/STP/112 based on Direct Competitive Elisa Method
	Gluten	MY/STP/235 based on Direct Competitive Elisa Method

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
<ul style="list-style-type: none"> Solid & Semisolid Liquid Food 	Water Activity	MY/STP/240 based on AOAC 978.18, 20 th Edition (2016)
	Acidity	AOAC 940.15, 20 th Edition (2016)
<ul style="list-style-type: none"> Flour & Bread 	Propionic Acid	MY/STP/242 based on International Food Research Journal 17:1107-1112
<ul style="list-style-type: none"> Sauces & Ketchup Coffee 	3 Monochloro-propane-1,2 diol (Free 3-MCPD & 3-MCPD ester)	MY/STP/243 based on Czech J. Food Sci Vol. 22, No.5:182-189
<ul style="list-style-type: none"> Bird Nest & Bird Nest Products 	Sialic Acid	MY/STP/246 based on Food Science Vol. 31, Iss 8, 233-236 (2010)
<ul style="list-style-type: none"> Palm Oil & Palm Oil Products Edible Oils 	Moisture and Volatile Matter	MPOB P2.1 Part 1: 2004
	Impurities	MPOB P2.2: 2004
	Peroxide Value	MPOB P2.3: 2004
	Acidity / Free Fatty Acid	MPOB P2.5: 2004
	Saponification Value	MPOB P3.1: 2004

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SCOPE OF TESTING: CHEMICAL

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
<u>Foods (cont.)</u> <ul style="list-style-type: none"> Palm Oil & Palm Oil Products Edible Oils 	Unsaponifiable Matter	MPOB P2.7: 2004
	Iodine Value	MPOB P3.2: 2004
	DOBI of CPO	MPOB P2.9: 2004
	Mineral Oil (Qualitative)	AOAC 945.102, 20 th Edition (2016)
	Anisidine Value	MPOB P2.4: 2004
<ul style="list-style-type: none"> Food and Beverage Products 	Benzoic Acid	MY/STP/110 based on JAOAC Vol. 70, No. 5, 1987
	Sorbic Acid	MY/STP/110 based on JAOAC Vol. 70, No. 5, 1987
	Sulphur Dioxide	MY/STP/040 based on Velp Scientific manual UDK 126 D
<ul style="list-style-type: none"> Sugar and Sugar Confectionery Tea and Beverage 	Artificial Colouring <ul style="list-style-type: none"> Tartrazine Sunset Yellow Carmoisine Alura Red Brilliant Blue 	MY/STP/250 based on David A.Katz (2009), The extraction and identification of artificial food colours

Signatories:

- | | |
|----------------------------------|----------------------------|
| 1. Chua Siong Wei | IKM No.: L1563/4942/2006 |
| 2. Poh Tze Kye | IKM No.: M/2458/6147/11/12 |
| 3. Nyeoh Yeong Sheng | IKM No.: L/1910/6319/12 |
| 4. Nur Aniqah Wardiah bt Suhaime | IKM No.: L/2086/7071/15 |
| 5. Siti Zaleha bt Ahmad | IKM No.: M/4250/7117/15 |
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*Non-resident Signatory

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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 30 – NF (2007) – 2021
	Total Yeast & Mould Count	USP 30 – NF (2007) – 2021
	<i>E.coli</i>	BP 2013 (Appendix XVI B)
	<i>Salmonella</i>	BP 2013 (Appendix XVI B)
	<i>Staphylococcus aureus</i>	BP 2013 (Appendix XVI B)
	Bile-tolerant gram-negative bacteria / Enterobacteriaceae	BP 2013 (Appendix XVI B)
	<i>Pseudomonas aeruginosa</i>	BP 2013 (Appendix XVI B)
	Total Aerobic Microbial Count – Plate Count Method	BP 2013 Appendix XVI B
	Total Yeast & Mould Count – Plate Count Method	BP 2013 Appendix XVI B
Canned Food	Thermophilic Bacteria	FDA – BAM Chapter 21
	Anaerobic Organisms	FDA – BAM Chapter 21
	Leakage Organisms	FDA – BAM Chapter 21
Water, Waste Water, Portable Water & Drinking Water	Total Plate Count / Heterotrophic Plate Count (Pour Plate Method)	APHA 9215 B (2005)
	Total Plate Count (Membrane Filtration)	APHA 9215 D (2005)
	Total Coliform (Membrane Filtration)	APHA 9222 B (2005)
	Fecal Coliform / <i>E.coli</i> (Membrane Filtration)	APHA 9222 D (2005)
	Fecal Coliform / <i>E.coli</i> (Multiple Tube Method)	APHA 9221 E/F (2005)
	Total Coliform (Multiple Tube Method)	APHA 9221 B (2005)
	<i>Legionella spp</i> including <i>Legionella pneumophila</i>	AS/ NZS 3896: 2008

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SCOPE OF TESTING: MICROBIOLOGY

Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard test Method/ Equipment/Techniques
All types of food and food related samples <ul style="list-style-type: none"> • Foods • Alcoholic Beverages • Dairy Products • Edible Oils, Fats & their Product • Egg & Egg Products • Essential Nutrients including Vitamins • Fish & Fish Products • Flour & Confectionery • Food Additives & Supplement • Honey & Honey Products • Infant Foods • Meat, Poultry & Derived Products • Non-alcoholic Beverages • Nut, Fruit & Vegetables and Derived Products • Pet Foods • Sauces, Herbs, Spices and Condiments • Sugars & Sugar Products 	Aerobic Plate Count	FDA – BAM Chapter 3 (2001)
	Total Yeast & Mold Cont	FDA – BAM Chapter 18 (2001)
	Coliform (Solid Medium Method)	FDA – BAM Chapter 4 (2017)
	Coliform (MPN Method)	FDA – BAM Chapter 4 (2017)
	<i>E.coli</i> (Solid Medium Method)	FDA – BAM Chapter 4 (2017)
	<i>E.coli</i> (MPN Method)	FDA – BAM Chapter 4 (2017)
	<i>Salmonella</i>	FDA – BAM Chapter 5 (2018)
	Enterobacteriaceae (Petri-film Method)	AOAC 2003.01, 20th Edition (2016)
	<i>Coagulase positive staphylococci / Staphylococcus aureus</i> (spread plate method)	FDA – BAM Chapter 12 (2016)
	<i>Bacillus cereus</i>	FDA – BAM Chapter 14 (2012)
	<i>Clostridium perfringens</i>	FDA – BAM Chapter 16 (2001)
	<i>Vibrio cholerae</i>	FDA – BAM Chapter 9 (2004)
	<i>Vibrio parahaemolyticus</i>	FDA – BAM Chapter 9 (2004)
	<i>Listeria spp. Listeria monocytogenes</i>	FDA – BAM Chapter 10 (2017)
	<i>Vibrio vulnificus</i>	FDA – BAM Chapter 9 (2004)
	<i>Clostridium botulinum</i>	FDA – BAM Chapter 17 (2001)

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SCOPE OF TESTING: MICROBIOLOGY

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 <ul style="list-style-type: none"> • 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)
	Swab contact method	MY/STP/175 based on Compendium of Methods for The Microbiological Examination of Foods, 4 th Edition 2001 (Chapter 3)
	Sedimentation Method	MY/STP/175 based on Compendium of Methods for The Microbiological Examination of Foods, 4 th Edition 2001 (Chapter 3)

Signatories:

- | | | |
|----|----------------------------|-----------------|
| 1. | Chua Siong Wei | MJMM0281 |
| 2. | Nyeoh Yeong Sheng | MJMM0491 |
| 3. | *Noor Adura Mat Isa | |

Non-resident Signatory*Notes:**

1. APHA: American Public Health Association, Standard Method for Examination of Water and Wastewater, 21st Edition, 2005
2. BP: British Pharmacopeia, 2013
3. MS: Malaysia Standard
4. MPOB: Malaysia Palm Oil Board
5. USP: United States Pharmacopeia
6. NIOSH: National Institute of Occupational Safety & Health
7. GB: National Food Safety of People's Republic of China
8. USEPA: United States Environmental Protection Agency
9. FDA-BAM: US Food and Drug Administration / Bacteriological Analytical Manual
10. AOAC: Official Methods of Analysis of AOAC International, 20th Edition, 2016
11. JAOAC: Journal of AOAC International.