**Issue date: 26 March 2025**
**Valid Until: -**

**NO: SAMM 203**



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| **LABORATORY LOCATION/ CENTRAL OFFICE:** | Makmal Keselamatan dan Kualiti Makanan, Perlis<br>Jabatan Kesihatan Negeri Perlis Jalan Abi Tok Hashim 01000 Kangar, Perlis , 1000,<br>PERLIS<br>MALAYSIA |
| **ACCREDITED SINCE :** | 26 MARCH 2025 |
| **FIELD(S) OF TESTING:** | MICROBIOLOGICAL<br>CHEMICAL |

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).

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| **CENTRAL LOCATION:** | Makmal Keselamatan dan Kualiti Makanan, Perlis<br>Jabatan Kesihatan Negeri Perlis Jalan Abi Tok Hashim 01000 Kangar, Perlis , 1000,<br>Perlis |
| **FIELD(S) OF TESTING :** | MICROBIOLOGICAL, CHEMICAL |



## SCOPE OF TESTING : MICROBIOLOGICAL

| Material / Product Tested | Type Of Test / Properties Measured / Range Of Measurement | Standard Test Methods / Equipment / Techniques |
|---|---|---|
| **Qualitative And Quantitative Tests For Different Groups Of Microorganisms** Perishable Samples/ready To Eat Food, Frozen Fish, Meat Product And Milk Product. (as List Under 15 Schedule Food Act. 1985 Regular 39) | Total plate count<br>Faecal streptococci | Manual for Microbiological Examination of Food, Food Quality Control, Ministry of Health Malaysia, 1996 |
| | Aerobic Count Plate | AOAC Official Method 990.12 – 2000 3M™ Petrifilm™ Aerobic Count Plate |

| **Material / Product Tested** | **Type Of Test / Properties Measured / Range Of Measurement** | **Standard Test Methods / Equipment / Techniques** |
|---|---|---|
| | Coagulase-positive Staphylococci | AOAC Official Method 2003.07-2006 3M™ Petrifilm™ Staph Express Count Plate in Selected types of Processed and Prepared Foods<br>AOAC Official Method 2003.08-2003: Enumeration of Staphylococcus aureus in Selected Dairy Foods<br>AOAC Official Method 2003.11-2007: Enumeration of Staphylococcus aureus in Selected Meat, Seafood and Poultry |
| **Qualitative And Quantitative Tests For Different Groups Of Microorganisms**<br>Drinking Water, Mineral Water, Raw Water Treated/ Portable Water | Faecal streptococci | Manual for Microbiological Examination of Food, Food Quality Control, Ministry of Health Malaysia (Revised Edition, 1996) |
| | Escherichia coli and Coliform | ISO 9308-1:2014(E) Water Quality: Enumeration of Escherichia coli and coliform bacteria - Part 1: Membrane Filtration method for waters |
| **Qualitative And Quantitative Tests For Different Groups Of Microorganisms**<br>All Types Of Food And Drinks | Sulfite reducing bacteria growing under anaerobic conditions | ISO 15213:2003 (E) Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of sulfite-reducing bacteria growing under anaerobic conditions |
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.**<br>Perishable Samples / Ready To Eat Food, Frozen Fish, Meat Products And Milk Products. Drinking Water, Mineral Water, Raw Water, Treated / Potable Water | Escherichia coli/ Coliform | AOAC Official Method 991.14 – 2000 3M™ Petrifilm™ Escherichia coli/ Coliform Count Plates |
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.**<br>Drinking Water, Mineral Water, Raw Water Treated/ Portable Water | Pseudomonas aeruginosa | ISO 16266:2006 (E) Water Quality: Detection and Enumeration of Pseudomonas aeruginosa - Method by membrane filtration |

| **Material / Product Tested** | **Type Of Test / Properties Measured / Range Of Measurement** | **Standard Test Methods / Equipment / Techniques** |
|---|---|---|
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.** Milk And Milk Product | Enterobacter sakazakii | ISO/TS 22964:2006(E) IDF/RM 210:2006(E) Detection of Enterobacter sakazakii |
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.** All Types Of Food And Drinks | Shigella | ISO 21567:2004 (E) Microbiology of food and animal feeding stuffs – Horizontal method for the detection of Shigella spp. |
| | Listeria monocytogenes (Detection) | ISO 11290-1:2017 Microbiology of the food chain - Horizontal method for the detectionand enumeration of Listeria monocytogenes and of Listeria spp. Part 1: Detection Method |
| | Listeria monocytogenes (Enumeration) | ISO 11290-2:2017 Microbiology of the food chain - Horizontal method for the detectionand enumeration of Listeria monocytogenes and of Listeria spp. Part 2: Enumeration Method |
| | Coagulase-positive staphylococci (Staphylococcus aureus and other species) | ISO 6888-1:1999/Amd.1:2003(E) Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species)- Part 1: Technique using Baird-Parker agar medium |
| | Bacillus cereus | ISO 7932:2004(E) Horizontal method for the enumeration of presumptive Bacillus cereus – Colony-count technique at 30°C |
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.** All Types Of Food And Drinks. Environmental Samples In The Area Of Food Production And Food Handling | Salmonella spp. | ISO 6579-1:2017/Amd 1:2020 Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella-Part 1: Detection of Salmonella spp. — Amendment 1: Broader range of incubation temperatures, amendment to the status of Annex D, and correction of the composition of MSRV and SC |
| | Clostridium perfringens | ISO 7937:2004(E) Horizontal method for the enumeration of Clostridium perfringens - Colony Count technique |

| **Material / Product Tested** | **Type Of Test / Properties Measured / Range Of Measurement** | **Standard Test Methods / Equipment / Techniques** |
|---|---|---|
| | Escherichia coli 0157 | ISO 16654:2001 (E) – Microbiology of food and animal feeding stuffs – horizontal method for the detection of Escherichia coli 0157 |
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.** All Types Of Food And Drinks, Including Deep-frozen, Dried And Salted Products. Environmental Samples In The Area Of Food Production And Food Handling | Vibrio parahaemolyticus<br>Vibrio cholerae | ISO/TS 21872-1:2017 Microbiology of the food chain - Horizontal method for the determination of Vibrio spp. – Part 1: Detection of Vibrio parahaemolyticus, Vibrio cholerae and Vibrio vulnificus |
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.** Food And Drinks, Swabs From Environmental Samples (food Production/handling) | Coliforms | ISO 4831:2006(E) Horizontal method for the detection and enumeration of coliforms – Most probable number technique |
| | Escherichia coli | ISO 7251:2005(E) Horizontal method for the detection and enumeration of presumptive Escherichia coli – Most probable number technique |
| **Qualitative And Quantitative Tests For Specific Genera/species Etc.** Food And Drinks | Enterobacteriaceae | AOAC Official Method 2003.01 3M™ Petrifilm™ Enumeration of Enterobacteriaceae |
| All Types Of Food And Drinks | Total plate count | ISO 4883-1: 2013 (E) Microbiology of the food chain - Horizontal method for enumeration of microorganismsPart 1: Colony count at 30°C by the pour plate technique<br>ISO 2883-2: 2013 (E) Microbiology of the food chain - Horizontal method for enumeration of microorganismsPart 2: Colony count at 30°C by the surface plating technique |
| Water (drinking Water, Mineral Water, Raw Water Treated / Potable Water) | Sulphite reducing anaerobes | ISO 6461-2: 1986 (E) Water quality-Detection and enumeration of the spores of sulphite reducing anaerobes (clostridia) Part 2: Method by Membrane Filtration |
| All Type Of Food And Drinks | Yeast and Mould | AOAC Official Method 997.02 Yeast and Mould Counts in Foods3MTM Petrifilm TM |

**SCOPE OF TESTING : CHEMICAL**

| **Material / Product Tested** | **Type Of Test / Properties Measured / Range Of Measurement** | **Standard Test Methods / Equipment / Techniques** |
|---|---|---|
| **Foods**<br>Food And Drinks (as List Under 16 Schedule Food Regulation, 1985) | 1) Benzoic acid<br>2) Sorbic acid | In-house Method, Ref. No. MOH E03-002, Based on JAOAC Vol. 70, No. 5. Page 892-896 |
| | Sulfur Dioxide | In-house Method, Ref. No. MOH E03-007, Based on AOAC 961.09, 2000 |
| **Foods**<br>Food And Drinks | Synthetic Food colour<br>1) Tartrazine<br>2) Quinoline Yellow<br>3) Sunset Yellow FCF<br>4) Orange G<br>5) Orange II<br>6) Ponceau 6R (Ponceau 6M)<br>7) Erythrosine (Erythrosine BS)<br>8) Amaranth (Brilliant Scarlet 4R, Cochineal Red A0<br>9) Rhodamine B<br>10) Allura Red AC<br>11) Patent Blue V<br>12) Indigo Carmine (Indigoline)<br>13) Green S (Lissamine Green, Aid Brilliant Green BS, Wool Green BS)<br>14) Violet BNP (Acid Violet)<br>15) Black PN (Food Black 1, Brilliant Plack PN) | In-house Method, Ref. No. MOH E03-003 The Determination of Water Soluble Synthetic Food Colour in Food by Paper Chromatography and UV/VIS Spectrophotometer |
| | 1) Saccharin<br>2) Cyclamate | In-house Method, Ref. No. MOH E03-006 Based on JAOAC Vol. 71, No. 5, Page 934-937. |
| | Boric Acid | AOAC 970.33, 2000 |
| | Caffeine | In-house Method, Ref. No. MOH J03-016 Based on Journal Food Chemistry Toxic. Vol 27, No.1, page 49-51 |
| **Foods**<br>Soft Drinks | 1) Aspartame<br>2) Phenylalanine | In-house Method, Ref. No. MOH E03-008 Determination of Aspartame and phenylalanine in Soft drink by High Performance Liquid Chromatography |

| Material / Product Tested | Type Of Test / Properties Measured / Range Of Measurement | Standard Test Methods / Equipment / Techniques |
|---|---|---|
| **Foods**<br>Beverages | Acesulfame-K | In-house Method, Ref. No. MOH E03-009 Determination of Acesulfame-K in Beverages by Liquid Chromatography |
| | Sucralose | In-house Method, Ref. No. MOH E03-034 Determination of Sucralose in Food using Liquid Chromatography with Refractive Index Detector |
| **Foods**<br>Bread And Flour Confection | Propionic Acid | In-house Method, Ref. No. MOH E03-011 Based on JAOAC, Vol 64, No.2, pages 280-281 |
| **Foods**<br>Fish And Pasta | Formaldehyde | In-house Method, Ref. No. MOH E03-014, Determination of Formaldehyde in Fish and Fish Products and Pasta Using Nash's Method |
| **Foods**<br>Spices, Sugar Confection, Flour Confection | 1) Coumarin<br>2) Diethylene Glycol Monoethyl Ether (DEGME)<br>3) Diethylene Glycol (DEG) | In-house Method, Ref. No. MOH E03-017 The Determination of Diethylene Glycol Monoethyl Ether (DEGME), Diethylene Glycol(DEG) and Coumarin in Food by Gas Chromatography using Internal Standard |
| **Foods**<br>Biscuit , Beverage | 1) Methyl paraben<br>2) Ethyl paraben<br>3) Propyl paraben<br>4) Butyl paraben | In-house Method, Ref. No. MOH E03-019, The Determination of Parabens in Food using Liquid Chromatography |
| **Foods**<br>Starch And Starch Products | Maleic Acid | In-house Method, Ref. No. MOH E03-023, Determination of Maleic Acid in Starch and Starch Products by High Performance Liquid Chromatography with DAD |
| **Foods**<br>Flours | Benzoyl Peroxide | In-house Method, Ref. No. MOH E03-024, The Determination of Benzoyl Peroxide in flours by Liquid Chromatography |
| **Foods**<br>Soft Drink | Neotame | In-house Method, Ref. No. MOH E03-031 Determination of Neotame in Soft Drink using HPLC with Diode Array Detector |
| **Foods**<br>Honey | Acidity | Method for Acidity in Honey, MAFF Validated Method V19, April 1992 |
| | Hydroxymethylfurfural | In-house Method, Ref. No. MOH N03-011 Determination of Hydroxymethylfurfural (HMF) by Liquid Chromatography |

| Material / Product Tested | Type Of Test / Properties Measured / Range Of Measurement | Standard Test Methods / Equipment / Techniques |
|---|---|---|
| **Foods**<br>Flour, Honey, Coffee | Moisture | In-House Method, MOH J03-001 Determination of Moisture in Food Using Drying Technique (Convection and Vacuum Oven) |
| **Foods**<br>Flour, Honey, Belacan | Ash | In-House Method, MOH J03-002 Determination of Ash using Muffle Furnace |
| **Foods**<br>Canned Product | Net Content | In-house Method, Ref. No. MOH J03-019, The Determination of Percentage of Fish in Canned Product by Drained weight Method |
| **Foods**<br>Lnstant Coffee, Premix Coffee, Coffee Mixtures | Coffee Content | In-house Method, Ref. No., MOH J03-034 Determination of Caffeine and Coffee Content in Coffee and Coffee Mixtures by Reflux Method and Liquid Chromatography |
| **Foods**<br>Fish And Fish Products | Lead<br>Cadmium | In-house Method, Ref. No. MOH H03-002, based on AOAC 999.10,1999, Microwave Digestion, ICP-OES |
| | Antimony | In-house Method, Ref. No MOH H03-002 Determination of Heavy Metal In Food by Using Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) |
| **Foods**<br>Milk Powder (infant Formula, Etc) | Stanum (Sn) | In-house Method, Ref. No. MOH H03-002 Determination of Heavy Metal In Food by Using Inductively Coupled Plasma- Optical Emission Spectrometer (ICP-OES). |
| **Foods**<br>Iodised Salt | Iodine Content | In-house Method, Ref. No. MOH J03-021 The Determination of Iodine Content in Iodised salt using Iodometric Titration by Pearson Method |
| **Foods**<br>Sweetening Substance | Sucrose<br>Fructose<br>Glucose | AOAC 977.20, 2006, using High Performance Liquid Chromatography |
| **Foods**<br>Fruit Juices | Malic Acid<br>Citric Acid | In-house Method, Ref. No MOH E03- 033 Determination of Organic Acids in Food using High Performance Liquid Chromatography |
| **Foods**<br>Spices | Total Arsenic | In-house Method, Ref. No MOH H03-002 Determination of Heavy Metal In Food by Using Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES) |

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