

Schedule

Issue date: 2 March 2020
Valid until: 5 October 2021



MS ISO/IEC 17025

NO: SMM 195

(Issue 2, 2 March 2020 replacement of SMM 195 dated 27 December 2018)

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LABORATORY LOCATION: (PERMANENT LABORATORY)



ENVIRONMENTAL TECHNOLOGY RESEARCH CENTRE (ETRC)
BUILDING 15,
SIRIM BERHAD
NO.1, PERSIARAN DATO' MENTERI,
P.O. BOX 7035,
40700 SHAH ALAM,
SELANGOR,
MALAYSIA.

FIELD OF TESTING: CHEMICAL, BIOLOGICAL (TOXICITY)

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
Environmental Monitoring <ul style="list-style-type: none"> • Ground Water • Processed Water • Recycled Water • Wastewater • Leachate • Aqueous Extract • Industrial Effluent 	Ammoniacal Nitrogen	APHA 4500-NH3 B & C (1998) Preliminary Distillation Step Nesslerization Method
	Anions: Fluoride, Bromide, Chloride, Nitrite, Nitrate, Sulphate, Phosphate	APHA 4110 B (2005) Anions by Ion Chromatography
	Biological Oxygen Demand (BOD5)	APHA 5210 B (2005) 5 Day BOD Test
	Chemical Oxygen Demand (COD)	APHA 5220 D (2005) Closed Reflux, Colorimetric Method
	Cyanide	APHA 4500-CN C & E (2005) Colorimetric Method
	Free Chlorine	APHA 4500-Cl G (2005) DPD Colorimetric Method
	Oil and Grease	APHA 5520 B (2005) Partition Gravimetric Method

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring <ul style="list-style-type: none"> • Ground Water • Processed Water • Recycled Water • Wastewater • Leachate • Aqueous Extract • Industrial Effluent 	pH	APHA 4500-H ⁺ B (2005) pH value
	Phenol	APHA 5530 D (2005) Direct Photometric Method
	Sulphide	APHA 4500 S ²⁻ D (2005) Methylene Blue Method
	Total Suspended Solids	APHA 2540 D (2005) Total Suspended Solids, Dried at 103°C- 105°C

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques	
Workplace Environment and Hazards <ul style="list-style-type: none"> Metal & Metal Compounds 	Hexavalent Chromium	APHA 3500 Cr-B (2005) Colorimetric Method	
	Arsenic	EPA SW 846 – Method 6010C (2007) Inductively Coupled Plasma- Atomic Emission Spectrometry	
	Aluminium		
	Barium		
	Boron		
	Cadmium		
	Calcium		
	Chromium		APHA 3120 B (2005) Inductively Coupled Plasma Method (2005)
	Cobalt		
	Copper		
	Iron		APHA 3030 E Nitric Acid Digestion (2005)
	Lead		
	Magnesium		
	Manganese		EPA SW 846 3051A Microwave Assisted Acid Digestion of Sediments, Sludges, Soils and Oils (2007)
	Molybdenum		
	Nickel		
	Potassium		
	Selenium		
	Silicon		
	Silver		
	Sodium		
	Tin		
	Vanadium		
	Zinc		
	Bismuth	EPA SW 846 7473 using NIC Mercury Analyzer (2007)	
	Beryllium		
	Antimony		
Titanium			
Thalium			
Mercury			

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Environmental Monitoring <ul style="list-style-type: none"> • Soil • Sludge • Sediment • Solid Wastes • Petroleum-based liquid 	Loss of Ignition	BS:EN 12879:2000 Determination of the Loss of Ignition of Dry Mass
	Hexavalent Chromium	EPA SW-846 Method 3060A (1996) Alkaline Digestion for Hexavalent Chromium APHA 3500 Cr-B (2005) Colorimetric Method
	Moisture	BS:EN 12880:2000 Determination of Dry Residue and Water Content
	Oil and Grease	APHA 5520 E (2005) Extraction Method for Sludge Samples
	Oxygen	In-house method using Fison Analyser Ref. No. : QW-257-PS-22
	Carbon,Hydrogen, Nitrogen, Sulphur	In-house method using Elemental Analyzer Vario EL III Ref. No. : QW-257-PS-22
	Toxicity Characteristics Leaching Procedure (TCLP)	EPA SW-846 -Method 1311 (1992) Toxicity Characteristic Leaching Procedure
	Ignitability	EPA SW-846-Method 1030 (1996)
Environmental Monitoring <ul style="list-style-type: none"> • Wastewater • Sludge • Chemical Substances • Product 	Aerobic Biodegradation	OECD Method 301 C (1992) Modified MITI Test (1)
	Qualitative Organic Analysis	In-house Method using GC-MSD QW-257-PS-43

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques	
Environmental Monitoring <ul style="list-style-type: none"> • Soil • Sludge • Sediment • Solid Wastes 	Hexavalent Chromium	APHA 3500 Cr-B (2005) Colorimetric Method	
	Aluminium	EPA SW 846 3051A Microwave-Assisted Acid Digestion of Sediments, Sludges, Soils and Oils (2007)	
	Arsenic		
	Barium		
	Boron		
	Cadmium		EPA SW 846 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry (2007)
	Calcium		
	Chromium		
	Cobalt		
	Copper		
	Iron		
	Lead		
	Magnesium		
	Manganese		
	Molybdenum		
	Nickel		
	Potassium		
	Selenium		
	Silicon		
	Silver		
	Sodium		
	Tin		
	Vanadium		
	Zinc		
	Bismuth	EPA SW 846 7473 (2007) using NIC Mercury Analyzer	
	Beryllium		
	Antimony		
Titanium			
Thalium	EPA SW 846 7473 (2007) using NIC Mercury Analyzer		
Mercury			

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Liquid Sample Solvent Liquid product	Determination of boiling point Range: 0°C – 280°C	QW-257-PS-50 In house Method Based on OECD 103 Guideline for Testing Chemicals (1995) and European Pharmacopoeia 5.0 (2.2.12. Boiling Point)

Signatories:

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|----|--------------------------------------|------------------------|
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Note:

APHA	American Public Health Association
ASTM	American Standard Testing Methods
OECD	Organisation for Economic Cooperation and Development Guidelines for Testing of Chemicals
EPA/SW	Test Methods for Evaluating Solid Waste SW-846, 3 rd . Edition
BS	British Standard
EN	European Standard
QW	In-house ETRC Coding System

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Materials/ Products Tested	Type of Test/ Properties Measured/ Range of Measurement	Standard Test Methods/ Equipment/Techniques
Toxicity Testing for: Chemical Substances, Cosmetics and Skin Care Products, Waste and Environmental Samples	Fish: Acute Toxicity Test	OECD Guideline for Testing of Chemicals Method No. 203:2019
	<i>Daphnia sp.</i> : Acute Immobilisation Test	OECD Guideline for Testing of Chemicals Method No. 202:2004
	Algae : Growth Inhibition Test	OECD Guideline for Testing of Chemicals Method No. 201:2006
	Terrestrial Plants : Growth Test	OECD Guideline for Testing of Chemicals Method No. 208:2006
	Bacterial Reverse Mutation Test	OECD Guideline for Testing of Chemicals Method No. 471:1997
	In-vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method	OECD Guidelines for Testing of Chemicals Method No. 431:2016
	In-vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method	OECD Guidelines for Testing of Chemicals Method No. 439:2015

Signatories:

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