

Name of Laboratory : ALS Laboratory Group (Thailand) Co., Ltd. (Rayong Branch)
Address : 616/10 Moo 5, Tambon Maenamkoo, Amphoe Pluak Daeng,
Changwat Rayong 21140
Accreditation Number : Testing - 0042
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Initial Issue Date : 30th September 2009
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Standard : ISO/IEC 17025:2017
Reference No. : 0303/15079

Scope of Testing Laboratory Accreditation

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Laboratory Status : Permanent Site Temporary Mobile

Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
1	Water	<p>- pH 4.0 to 10.0</p> <p>- Cyanide 0.005 mg/L to 0.2 mg/L</p> <p>- Total dissolved solids dried at 180 °C 5 mg/L to 2 000 mg/L</p>	<p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-H⁺ B</p> <p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 4500-CN⁻ C and E</p> <p>Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24th ed., 2023, part 2540 C</p>

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1 (cont.)	Water	- Total solids dried from 103 °C to 105 °C 5 mg/L to 2 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 2540 B
		- Fluoride 0.2 mg/L to 50 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 4500-F ⁻ C
2	Wastewater	- pH 4.0 to 10.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 4500-H ⁺ B

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2 (cont.)	Wastewater	- Cyanide 0.005 mg/L to 5 mg/L - Total dissolved solids dried from 103 °C to 105 °C 50 mg/L to 3 000 mg/L - Total dissolved solids dried at 180 °C 50 mg/L to 20 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 4500-CN C and E In - house method : STM 02-006 based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 2540 C Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 2540 C

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2 (cont.)	Wastewater	- Total suspended solids dried from 103 °C to 105 °C 5 mg/L to 2 000 mg/L - BOD 2 mg/L to 10 000 mg/L - COD 25 mg/L to 20 000 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 2540 D Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 5210 B, 4500-O G Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 5220 D

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2 (cont.)	Wastewater	- Oil and Grease 3 mg/L to 200 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 5520 B
		- Fluoride 0.2 mg/L to 50 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 4500-F ⁻ C
		- Formaldehyde 0.1 mg/L to 10 mg/L	Wastewater analysis manual, Environmental Engineering Association of Thailand, 4 th ed., 2004

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2 (cont.)	Wastewater	- Phenol 0.01 mg/L to 1.00 mg/L - Color 5 ADMI to 700 ADMI - Total Kjeldahl Nitrogen 1 mg/L to 500 mg/L	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 5530 B, D Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 2120 F Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 24 th ed., 2023, part 4500-N _{org} C, 4500-NH ₃ D

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3	Air - Workplace - Ambient air	- Total dust 0.5 mg/m ³ to 28 mg/m ³ - Respirable dust 0.5 mg/m ³ to 10 mg/m ³ - Total suspended particulate 0.002 mg/m ³ to 0.75 mg/m ³ - Particulate matter (PM-10) 0.002 mg/m ³ to 0.30 mg/m ³	In - house method : STM 02-022 based on NIOSH Manual of Analytical Method, 4 th ed., NMAM, method 0500 Issue 2, 1994 In - house method : STM 02-023 based on NIOSH Manual of Analytical Method, 4 th ed., NMAM, method 0600 Issue 3, 1998 United States Environmental Protection Agency 40 CFR, method 50, Appendix B, revised as of July 1, 2008 United States Environmental Protection Agency 40 CFR, method 50, Appendix J, revised as of July 1, 2008

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3 (cont.)	Air - Emission from stationary sources	- Total suspended particulate 0.5 mg/m ³ to 500 mg/m ³ (At actual O ₂) 0.5 mg/m ³ to 10 000 mg/m ³ (At 7% O ₂)	United States Environmental Protection Agency 40 CFR method 5

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4	Environmental noise	- Noise level Equivalent sound level $L_{eq,T}$ 30 dB (A) to 130 dB (A) Maximum sound level L_{max} 30 dB (A) to 130 dB (A) Background noise level L_{90} 30 dB (A) to 130 dB (A)	- ISO 1996-1: 2016 - Notification of the Department of Industrial Works, Method of measuring nuisance period noise level, 24-hour average sound level and maximum sound level from plant operation, 2010 - Notification of the Pollution Control Board, Method of measuring the background noise level, non nuisance period noise level, the measuring and calculation of noise level from nuisance period, the calculation of Nuisance level and record form of nuisance noise measurement, 2022

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Item Number	Test Material / Product	Test Item / Range of Testing	Test Method / Technique Used
4 (cont.)	Environmental noise	- Noise nuisance Background noise level L_{90} 30 dB (A) to 130 dB (A) Noise level without disturbance $L_{eq,T}$ 30 dB (A) to 130 dB (A) Noise level with disturbance $L_{eq,T}$ 30 dB (A) to 130 dB (A) Noise nuisance level 0 dB (A) to 30 dB (A)	- Notification of the Department of Industrial Works, Method of measuring nuisance period noise level, 24-hour average sound level and maximum sound level from plant operation, 2010 - Notification of the Pollution Control Board, Method of measuring the background noise level, non nuisance period noise level, the measuring and calculation of noise level from nuisance period, the calculation of Nuisance level and record form of nuisance noise measurement, 2022

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