



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

Page 5 of 32

Sample Number : 23110519-1
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : 16.88.11.111111 (GPS 47P 0735193, 1405894)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cs-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cs-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.90	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	02/10/23 - 03/10/23	ug/m3	0.60	1.72	<1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	02/10/23 - 03/10/23	ug/m3	0.80	2.47	3.07	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	02/10/23 - 03/10/23	ug/m3	0.06	0.17	0.76	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	02/10/23 - 03/10/23	ug/m3	0.30	0.94	9.50	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	02/10/23 - 03/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	02/10/23 - 03/10/23	ug/m3	0.60	1.76	1.90	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	02/10/23 - 03/10/23	ug/m3	0.40	1.15	4.59	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon
Senior Manager

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Sample Number : 23110519-1
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : 16.88.11.111111 (GPS 47P 0735193, 1405894)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	02/10/23 - 03/10/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	02/10/23 - 03/10/23	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	02/10/23 - 03/10/23	ug/m3	0.20	0.66	5.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	02/10/23 - 03/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	02/10/23 - 03/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Perfomal	02/10/23 - 03/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : 16.88.11.111111 (GPS 47P 0735193, 1405894)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	02/10/23 - 03/10/23	ug/m3	0.50	1.48	4.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	02/10/23 - 03/10/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	02/10/23 - 03/10/23	ug/m3	0.30	0.86	6.33	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	02/10/23 - 03/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	02/10/23 - 03/10/23	ug/m3	0.11	0.34	<0.34	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	02/10/23 - 03/10/23	ug/m3	0.60	1.88	5.65	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	02/10/23 - 03/10/23	ug/m3	0.09	0.27	<0.27	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	02/10/23 - 03/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Sample Number : 23110519-1
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : 16.88.11.111111 (GPS 47P 0735193, 1405894)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	02/10/23 - 03/10/23	ug/m3	0.04	0.33	0.31	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Nantawat Sarin

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Sample Number	23110519-2								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	Uthonsasakul (GPS 47P 0729820, 1403299)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	02/10/23 - 03/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	02/10/23 - 03/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	02/10/23 - 03/10/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	02/10/23 - 03/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	02/10/23 - 03/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	02/10/23 - 03/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromochloroethane	02/10/23 - 03/10/23	ug/m3	0.10	0.38	Not Detected	379	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Sample Number	23110519-2									Page 2 of 10 - 4
Sampled Date	Oct 02, 2023									
Sample Description	Air Quality									
Location	Uthonsasakul (GPS 47P 0729820, 1403299)									
Date Analysis Commenced	Oct 04, 2023									
Condition of Sample	Drawn into one 6-L Canister									
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location	
Air Testing										
1,2-Dichloroethane	02/10/23 - 03/10/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,2-Dichloropropane	02/10/23 - 03/10/23	ug/m3	0.08	0.23	Not Detected	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,2-Dichlorotetrafluoroethane	02/10/23 - 03/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1,3,5-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1,3-Butadiene	02/10/23 - 03/10/23	ug/m3	0.04	0.11	0.18	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,3-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1,4-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,4-Dioxane	02/10/23 - 03/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1-Butanol	02/10/23 - 03/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1-Propanol	02/10/23 - 03/10/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
2-Hexanone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	

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Sample Number	23110519-2								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	บ้านบึงจตุร (GPS 47P 0729820, 1403299)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	02/10/23 - 03/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	02/10/23 - 03/10/23	ug/m3	0.05	0.18	3.79	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	02/10/23 - 03/10/23	ug/m3	0.08	0.24	6.18	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	02/10/23 - 03/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	02/10/23 - 03/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	02/10/23 - 03/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	02/10/23 - 03/10/23	ug/m3	0.05	0.16	0.32	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	02/10/23 - 03/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	Uthonsasakul (GPS 47P 0729820, 1403299)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	02/10/23 - 03/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	02/10/23 - 03/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	02/10/23 - 03/10/23	ug/m3	0.06	0.19	0.47	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanol	02/10/23 - 03/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	02/10/23 - 03/10/23	ug/m3	0.05	0.16	2.49	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	02/10/23 - 03/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC 22)	02/10/23 - 03/10/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	02/10/23 - 03/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	02/10/23 - 03/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	02/10/23 - 03/10/23	ug/m3	0.30	1.03	3.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.96	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	02/10/23 - 03/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	02/10/23 - 03/10/23	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	02/10/23 - 03/10/23	ug/m3	0.80	2.47	3.16	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	02/10/23 - 03/10/23	ug/m3	0.06	0.17	0.28	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	02/10/23 - 03/10/23	ug/m3	0.30	0.94	6.71	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	02/10/23 - 03/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	02/10/23 - 03/10/23	ug/m3	0.60	1.76	4.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	02/10/23 - 03/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon
Dej Changchon
Senior Manager

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MS1570 (EN)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	02/10/23 - 03/10/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	02/10/23 - 03/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	02/10/23 - 03/10/23	ug/m3	0.20	0.66	5.06	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	02/10/23 - 03/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	02/10/23 - 03/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	02/10/23 - 03/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	02/10/23 - 03/10/23	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	02/10/23 - 03/10/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	02/10/23 - 03/10/23	ug/m3	0.30	0.86	1.31	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	02/10/23 - 03/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	02/10/23 - 03/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	02/10/23 - 03/10/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	02/10/23 - 03/10/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-113)	02/10/23 - 03/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Dej Changchon
Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	02/10/23 - 03/10/23	ug/m3	0.04	0.13	<0.13	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Guideline :									
NEB : Notification of National Environment Board, B.E. 2560 (2017)									
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).									
Sampled By : Nantawat Sanin									
Remark :									
- LOD : Limit of Detection									
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)									

Approved by

Dej Changchon
Dej Changchon
Senior Manager

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
S. Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number	23110519-3								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	Saenurak (GPS 47P 0730823, 1407374)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	02/10/23 - 03/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	02/10/23 - 03/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	02/10/23 - 03/10/23	ug/m3	1.00	3.83	<3.83	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	02/10/23 - 03/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	02/10/23 - 03/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	02/10/23 - 03/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	02/10/23 - 03/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Client: Thai Plastic & Chemicals Public Co., Ltd.
S. Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number	23110519-3								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	Saenurak (GPS 47P 0730823, 1407374)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	02/10/23 - 03/10/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	02/10/23 - 03/10/23	ug/m3	0.08	0.23	<0.23	62	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	02/10/23 - 03/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	02/10/23 - 03/10/23	ug/m3	0.04	0.11	0.22	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	02/10/23 - 03/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	02/10/23 - 03/10/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	02/10/23 - 03/10/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
S. Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number		23110519-3							
Sampled Date		Oct 02, 2023							
Sample Description		Air Quality							
Location		Suanurak (GPS: 47P 0730823, 1407374)							
Date Analysis Commenced		Oct 04, 2023							
Condition of Sample		Drawn into one 6-L Canister							
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	02/10/23 - 03/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	02/10/23 - 03/10/23	ug/m3	0.05	0.18	3.14	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	02/10/23 - 03/10/23	ug/m3	0.08	0.24	3.94	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	02/10/23 - 03/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	02/10/23 - 03/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	02/10/23 - 03/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	02/10/23 - 03/10/23	ug/m3	0.05	0.16	9.38	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	02/10/23 - 03/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
S. Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number	23110519-3									Page 25 of 32
Sampled Date	Oct 02, 2023									
Sample Description	Air Quality									
Location	Innovation (GPS 47P 0730823, 1407374)									
Date Analysis Commenced	Oct 04, 2023									
Condition of Sample	Drawn into one 6-L Canister									
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location	
Air Testing										
Bromodichloromethane	02/10/23 - 03/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Bromoform	02/10/23 - 03/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Bromomethane	02/10/23 - 03/10/23	ug/m3	0.06	0.19	0.39	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
Butanal	02/10/23 - 03/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Carbon Disulfide	02/10/23 - 03/10/23	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong	
Carbon Tetrachloride	02/10/23 - 03/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
Chlorobenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Chlorodifluoromethane (HCFC-22)	02/10/23 - 03/10/23	ug/m3	0.60	1.77	1.91	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Chloroethane	02/10/23 - 03/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Chloroform	02/10/23 - 03/10/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
Chloromethane	02/10/23 - 03/10/23	ug/m3	0.30	1.03	2.35	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110519
Date Received Oct 03, 2023
Date Reported Oct 11, 2023
Report Number 2784607-1

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Sample Number 23110519-3
Sampled Date Oct 02, 2023
Sample Description Air Quality
Location Suanrasaeng (GPS 47P 0730823, 1407374)
Date Analysis Commenced Oct 04, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	02/10/23 - 03/10/23	ug/m3	0.50	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	02/10/23 - 03/10/23	ug/m3	0.80	2.47	3.26	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	02/10/23 - 03/10/23	ug/m3	0.06	0.17	0.76	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	02/10/23 - 03/10/23	ug/m3	0.30	0.94	3.01	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	02/10/23 - 03/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	02/10/23 - 03/10/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutylene	02/10/23 - 03/10/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

D. Changchong
Dej Changchong
Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110519
Date Received Oct 03, 2023
Date Reported Oct 11, 2023
Report Number 2784607-1

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Sample Number 23110519-3
Sampled Date Oct 02, 2023
Sample Description Air Quality
Location Suanrasaeng (GPS 47P 0730823, 1407374)
Date Analysis Commenced Oct 04, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	02/10/23 - 03/10/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	02/10/23 - 03/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	02/10/23 - 03/10/23	ug/m3	0.20	0.66	5.29	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	02/10/23 - 03/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	02/10/23 - 03/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	02/10/23 - 03/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

D. Changchong
Dej Changchong
Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110519
Date Received Oct 03, 2023
Date Reported Oct 11, 2023
Report Number 2784607-1

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Sample Number 23110519-3
Sampled Date Oct 02, 2023
Sample Description Air Quality
Location Suanrasaeng (GPS 47P 0730823, 1407374)
Date Analysis Commenced Oct 04, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	02/10/23 - 03/10/23	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propane	02/10/23 - 03/10/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	02/10/23 - 03/10/23	ug/m3	0.30	0.86	1.38	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	02/10/23 - 03/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	02/10/23 - 03/10/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	02/10/23 - 03/10/23	ug/m3	0.60	1.88	2.04	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	02/10/23 - 03/10/23	ug/m3	0.09	0.27	<0.27	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	02/10/23 - 03/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

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Dej Changchong
Senior Manager

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Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110519
Date Received Oct 03, 2023
Date Reported Oct 11, 2023
Report Number 2784607-1

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Sample Number 23110519-3
Sampled Date Oct 02, 2023
Sample Description Air Quality
Location Suanrasaeng (GPS 47P 0730823, 1407374)
Date Analysis Commenced Oct 04, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	02/10/23 - 03/10/23	ug/m3	0.04	0.13	<0.13	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB Notification of National Environment Board, B.E. 2560 (2017)
PCD Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Nantawat Sarin

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

D. Changchong
Dej Changchong
Senior Manager

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21150
P/O : PHM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number	23110519-4								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	02/10/23 - 03/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	02/10/23 - 03/10/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	02/10/23 - 03/10/23	ug/m3	1.00	3.83	<3.83	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	02/10/23 - 03/10/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	02/10/23 - 03/10/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	02/10/23 - 03/10/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	02/10/23 - 03/10/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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21150
P/O : PHM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number	23110519-4								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	02/10/23 - 03/10/23	ug/m3	0.07	0.20	0.24	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.08	0.23	<0.23	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	02/10/23 - 03/10/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	02/10/23 - 03/10/23	ug/m3	0.04	0.11	1.50	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	02/10/23 - 03/10/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	02/10/23 - 03/10/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	02/10/23 - 03/10/23	ug/m3	0.50	1.52	2.79	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	02/10/23 - 03/10/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PHM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number	23110519-4								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	02/10/23 - 03/10/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	02/10/23 - 03/10/23	ug/m3	0.05	0.18	4.08	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	02/10/23 - 03/10/23	ug/m3	0.08	0.24	3.75	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	02/10/23 - 03/10/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	02/10/23 - 03/10/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	02/10/23 - 03/10/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	02/10/23 - 03/10/23	ug/m3	0.05	0.16	0.32	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	02/10/23 - 03/10/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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21150
P/O : PHM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23110519
Date Received: Oct 03, 2023
Date Reported: Oct 11, 2023
Report Number: 2784607-1

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Sample Number	23110519-4								
Sampled Date	Oct 02, 2023								
Sample Description	Air Quality								
Location	สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)								
Date Analysis Commenced	Oct 04, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	02/10/23 - 03/10/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	02/10/23 - 03/10/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	02/10/23 - 03/10/23	ug/m3	0.06	0.19	0.85	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	02/10/23 - 03/10/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	02/10/23 - 03/10/23	ug/m3	0.05	0.16	0.62	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	02/10/23 - 03/10/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	02/10/23 - 03/10/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	02/10/23 - 03/10/23	ug/m3	0.60	1.77	4.53	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	02/10/23 - 03/10/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	02/10/23 - 03/10/23	ug/m3	0.08	0.24	0.29	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	02/10/23 - 03/10/23	ug/m3	0.30	1.03	2.35	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :
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Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

Sample Number : 23110519-4
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : ตำบลนาเกลืออุตสาหกรรมภาค (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	02/10/23 - 03/10/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	02/10/23 - 03/10/23	ug/m3	0.80	2.47	4.06	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	02/10/23 - 03/10/23	ug/m3	0.06	0.17	0.63	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	02/10/23 - 03/10/23	ug/m3	0.30	0.94	3.62	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	02/10/23 - 03/10/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	02/10/23 - 03/10/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	02/10/23 - 03/10/23	ug/m3	0.40	1.15	3.58	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon
Senior Manager

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031171 (B/M)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :
Page 30 of 32

Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

Sample Number : 23110519-4
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : ตำบลนาเกลืออุตสาหกรรมภาค (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	02/10/23 - 03/10/23	ug/m3	0.50	1.39	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	02/10/23 - 03/10/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	02/10/23 - 03/10/23	ug/m3	0.20	0.66	13.45	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	02/10/23 - 03/10/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	02/10/23 - 03/10/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	02/10/23 - 03/10/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	02/10/23 - 03/10/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	02/10/23 - 03/10/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	02/10/23 - 03/10/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :
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Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

Sample Number : 23110519-4
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : ตำบลนาเกลืออุตสาหกรรมภาค (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	02/10/23 - 03/10/23	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	02/10/23 - 03/10/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	02/10/23 - 03/10/23	ug/m3	0.30	0.86	13.73	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	02/10/23 - 03/10/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	02/10/23 - 03/10/23	ug/m3	0.11	0.34	<0.34	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	02/10/23 - 03/10/23	ug/m3	0.60	1.88	<1.88	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	02/10/23 - 03/10/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	02/10/23 - 03/10/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	02/10/23 - 03/10/23	ug/m3	0.09	0.27	<0.27	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	02/10/23 - 03/10/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	02/10/23 - 03/10/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :
Page 32 of 32

Lot ID: 23110519
Date Received : Oct 03, 2023
Date Reported : Oct 11, 2023
Report Number : 2784607-1

Sample Number : 23110519-4
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : ตำบลนาเกลืออุตสาหกรรมภาค (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Oct 04, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	02/10/23 - 03/10/23	ug/m3	0.04	0.13	8.28	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Nantawat Sarin

Remark :

LOD : Limit of Detection
LOQ : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

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Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

Page 1 of 32

Sample Number 23121200-1
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location ต.บึงสามพัน (GPS 47P 0735193, 1405894)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	01/11/23 - 02/11/23	ug/m3	0.10	0.34	Not Detected	63	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	01/11/23 - 02/11/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1,2-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	01/11/23 - 02/11/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2-Dibromochloroethane	01/11/23 - 02/11/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

Page 2 of 32

Sample Number 23121200-1
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location ต.บึงสามพัน (GPS 47P 0735193, 1405894)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichloropropane	01/11/23 - 02/11/23	ug/m3	0.06	0.23	<0.23	82	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	01/11/23 - 02/11/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3-Butadiene	01/11/23 - 02/11/23	ug/m3	0.04	0.11	0.40	5.3	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,4-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,4-Dioxane	01/11/23 - 02/11/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1-Butanol	01/11/23 - 02/11/23	ug/m3	0.50	1.52	2.30	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
2-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

Page 3 of 32

Sample Number 23121200-1
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location ต.บึงสามพัน (GPS 47P 0735193, 1405894)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
2-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
3-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
3-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acetaldehyde	01/11/23 - 02/11/23	ug/m3	0.05	0.18	7.00	860	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Acetone	01/11/23 - 02/11/23	ug/m3	0.08	0.24	10.97	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acetonitrile	01/11/23 - 02/11/23	ug/m3	0.30	0.84	1.11	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acrolein	01/11/23 - 02/11/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Acrylonitrile	01/11/23 - 02/11/23	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Benzene	01/11/23 - 02/11/23	ug/m3	0.05	0.16	0.89	7.6	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Benzyl Chloride	01/11/23 - 02/11/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compensum Method, TO-15	PCD	Rayong

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

Page 4 of 32

Sample Number 23121200-1
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location ต.บึงสามพัน (GPS 47P 0735193, 1405894)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	01/11/23 - 02/11/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromoform	01/11/23 - 02/11/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromomethane	01/11/23 - 02/11/23	ug/m3	0.06	0.19	<0.19	150	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Butanal	01/11/23 - 02/11/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Carbon Disulfide	01/11/23 - 02/11/23	ug/m3	0.05	0.16	0.93	100	Based on US EPA Compensum Method, TO-15	NEB	Rayong
Carbon Tetrachloride	01/11/23 - 02/11/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chlorobenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	01/11/23 - 02/11/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroethane	01/11/23 - 02/11/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroform	01/11/23 - 02/11/23	ug/m3	0.08	0.24	0.29	57	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chloromethane	01/11/23 - 02/11/23	ug/m3	0.30	1.03	1.78	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

Page 5 of 32

Sample Number: 23121200-1
Sampled Date: Nov 01, 2023
Sample Description: Air Quality
Location: 16.86.31.106.126 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Nov 03, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	01/11/23 - 02/11/23	ug/m3	0.60	1.72	<1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	01/11/23 - 02/11/23	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	01/11/23 - 02/11/23	ug/m3	0.06	0.17	1.74	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	01/11/23 - 02/11/23	ug/m3	0.30	0.94	9.84	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	01/11/23 - 02/11/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	01/11/23 - 02/11/23	ug/m3	0.60	1.76	21.22	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	01/11/23 - 02/11/23	ug/m3	0.40	1.15	2.71	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Approved by

Dej Changchon
Senior Manager

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3613-171 (BML)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

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Sample Number: 23121200-1
Sampled Date: Nov 01, 2023
Sample Description: Air Quality
Location: 16.86.31.106.126 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Nov 03, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	01/11/23 - 02/11/23	ug/m3	0.50	1.39	1.45	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	01/11/23 - 02/11/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	01/11/23 - 02/11/23	ug/m3	0.20	0.66	9.99	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	01/11/23 - 02/11/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	01/11/23 - 02/11/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	01/11/23 - 02/11/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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3613-171 (BML)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

Page 7 of 32

Sample Number: 23121200-1
Sampled Date: Nov 01, 2023
Sample Description: Air Quality
Location: 16.86.31.106.126 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Nov 03, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	01/11/23 - 02/11/23	ug/m3	0.50	1.48	5.49	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	01/11/23 - 02/11/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	01/11/23 - 02/11/23	ug/m3	0.30	0.86	3.27	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	01/11/23 - 02/11/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	01/11/23 - 02/11/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	01/11/23 - 02/11/23	ug/m3	0.60	1.88	6.56	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	01/11/23 - 02/11/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-113)	01/11/23 - 02/11/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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3613-171 (BML)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

Page 8 of 32

Sample Number: 23121200-1
Sampled Date: Nov 01, 2023
Sample Description: Air Quality
Location: 16.86.31.106.126 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Nov 03, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	01/11/23 - 02/11/23	ug/m3	0.04	0.13	Not Detected	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline:
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).
Sampled By : Watsut Pabpa

Remark:
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOQ (Limit of Reporting)

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3613-171 (BML)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

Page 9 of 22

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.60	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	01/11/23 - 02/11/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	01/11/23 - 02/11/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	01/11/23 - 02/11/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	01/11/23 - 02/11/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.07	0.20	0.24	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	01/11/23 - 02/11/23	ug/m3	0.08	0.23	0.28	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	01/11/23 - 02/11/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	01/11/23 - 02/11/23	ug/m3	0.04	0.11	0.22	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	01/11/23 - 02/11/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	01/11/23 - 02/11/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchorn
Senior Manager

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	01/11/23 - 02/11/23	ug/m3	0.05	0.18	5.23	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	01/11/23 - 02/11/23	ug/m3	0.08	0.24	12.68	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	01/11/23 - 02/11/23	ug/m3	0.30	0.84	<0.84	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	01/11/23 - 02/11/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	01/11/23 - 02/11/23	ug/m3	0.07	0.22	0.74	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	01/11/23 - 02/11/23	ug/m3	0.05	0.16	1.53	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	01/11/23 - 02/11/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Senior Manager

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MS1571/04/01



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23121200
Date Received: Nov 02, 2023
Date Reported: Nov 09, 2023
Report Number: 2809527-1

Page 12 of 22

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromochloromethane	01/11/23 - 02/11/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	01/11/23 - 02/11/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	01/11/23 - 02/11/23	ug/m3	0.06	0.19	0.78	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	01/11/23 - 02/11/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	01/11/23 - 02/11/23	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	01/11/23 - 02/11/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	01/11/23 - 02/11/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	01/11/23 - 02/11/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	01/11/23 - 02/11/23	ug/m3	0.08	0.24	0.29	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	01/11/23 - 02/11/23	ug/m3	0.30	1.03	4.63	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

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Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand.
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Page 13 of 32

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

Sample Number : 23121200-2
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : Uthumphawan (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	01/11/23 - 02/11/23	ug/m3	0.60	1.72	<1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	01/11/23 - 02/11/23	ug/m3	0.80	2.47	2.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	01/11/23 - 02/11/23	ug/m3	0.06	0.17	1.53	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	01/11/23 - 02/11/23	ug/m3	0.30	0.94	6.22	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	01/11/23 - 02/11/23	ug/m3	0.60	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	01/11/23 - 02/11/23	ug/m3	0.40	1.15	1.70	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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303-171 (EN)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand.
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Page 14 of 32

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

Sample Number : 23121200-2
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : Uthumphawan (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	01/11/23 - 02/11/23	ug/m3	0.50	1.39	1.56	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	01/11/23 - 02/11/23	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	01/11/23 - 02/11/23	ug/m3	0.20	0.66	10.14	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	01/11/23 - 02/11/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	01/11/23 - 02/11/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	01/11/23 - 02/11/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Page 15 of 32

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

Sample Number : 23121200-2
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : Uthumphawan (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	01/11/23 - 02/11/23	ug/m3	0.50	1.48	2.01	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	01/11/23 - 02/11/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	01/11/23 - 02/11/23	ug/m3	0.30	0.86	5.54	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	01/11/23 - 02/11/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	01/11/23 - 02/11/23	ug/m3	0.11	0.34	<0.34	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	01/11/23 - 02/11/23	ug/m3	0.60	1.88	5.28	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	01/11/23 - 02/11/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	01/11/23 - 02/11/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand.
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Page 16 of 32

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

Sample Number : 23121200-2
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : Uthumphawan (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	01/11/23 - 02/11/23	ug/m3	0.04	0.13	<0.13	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).
Sampled By : Warawut Pupba

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	01/11/23 - 02/11/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	01/11/23 - 02/11/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1,2-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	01/11/23 - 02/11/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	<2.46	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2-Dibromochloroethane	01/11/23 - 02/11/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.07	0.20	0.24	48	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichloropropane	01/11/23 - 02/11/23	ug/m3	0.08	0.23	0.28	82	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	01/11/23 - 02/11/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3-Butadiene	01/11/23 - 02/11/23	ug/m3	0.04	0.11	0.44	5.3	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,4-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,4-Dioxane	01/11/23 - 02/11/23	ug/m3	0.10	0.36	Not Detected	960	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1-Butanol	01/11/23 - 02/11/23	ug/m3	0.50	1.52	3.15	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
2-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
2-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
3-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
3-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acetaldehyde	01/11/23 - 02/11/23	ug/m3	0.05	0.18	6.75	850	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Acetone	01/11/23 - 02/11/23	ug/m3	0.08	0.24	11.31	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acetonitrile	01/11/23 - 02/11/23	ug/m3	0.30	0.84	1.84	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acrolein	01/11/23 - 02/11/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Acrylonitrile	01/11/23 - 02/11/23	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Benzene	01/11/23 - 02/11/23	ug/m3	0.05	0.16	1.47	7.6	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Benzyl Chloride	01/11/23 - 02/11/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compensum Method, TO-15	PCD	Rayong

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

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Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	01/11/23 - 02/11/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromoform	01/11/23 - 02/11/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromomethane	01/11/23 - 02/11/23	ug/m3	0.06	0.19	<0.19	190	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Butanal	01/11/23 - 02/11/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Carbon Disulfide	01/11/23 - 02/11/23	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compensum Method, TO-15	NEB	Rayong
Carbon Tetrachloride	01/11/23 - 02/11/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chlorobenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	01/11/23 - 02/11/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroethane	01/11/23 - 02/11/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroform	01/11/23 - 02/11/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chloromethane	01/11/23 - 02/11/23	ug/m3	0.30	1.03	2.60	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PPM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

Page 23 of 32

Sample Number : 23121200-3
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : เหนือสระ (GPS 47P 0730823, 1407374)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.90	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	01/11/23 - 02/11/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	01/11/23 - 02/11/23	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	01/11/23 - 02/11/23	ug/m3	0.06	0.17	2.01	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	01/11/23 - 02/11/23	ug/m3	0.30	0.94	9.08	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	01/11/23 - 02/11/23	ug/m3	0.60	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	01/11/23 - 02/11/23	ug/m3	0.40	1.15	1.84	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PPM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

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Sample Number : 23121200-3
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : เหนือสระ (GPS 47P 0730823, 1407374)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	01/11/23 - 02/11/23	ug/m3	0.50	1.39	1.45	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	01/11/23 - 02/11/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	01/11/23 - 02/11/23	ug/m3	0.20	0.66	16.96	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.47	1.71	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	01/11/23 - 02/11/23	ug/m3	0.90	2.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	01/11/23 - 02/11/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	01/11/23 - 02/11/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PPM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

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Sample Number : 23121200-3
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : เหนือสระ (GPS 47P 0730823, 1407374)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	01/11/23 - 02/11/23	ug/m3	0.50	1.48	1.89	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	01/11/23 - 02/11/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	01/11/23 - 02/11/23	ug/m3	0.30	0.86	3.30	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	01/11/23 - 02/11/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	01/11/23 - 02/11/23	ug/m3	0.11	0.34	<0.34	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	01/11/23 - 02/11/23	ug/m3	0.60	1.88	7.24	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	01/11/23 - 02/11/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-113)	01/11/23 - 02/11/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PPM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

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Sample Number : 23121200-3
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : เหนือสระ (GPS 47P 0730823, 1407374)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	01/11/23 - 02/11/23	ug/m3	0.04	0.13	<0.13	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline:
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Warawut Pulpba

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

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Sample Number 23121200-4
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location อำเภอเมืองระยองอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.50	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	01/11/23 - 02/11/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	01/11/23 - 02/11/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1,2-Trichloroethane	01/11/23 - 02/11/23	ug/m3	0.50	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,1-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	01/11/23 - 02/11/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,2-Dibromomethane	01/11/23 - 02/11/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

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Sample Number 23121200-4
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location อำเภอเมืองระยองอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	01/11/23 - 02/11/23	ug/m3	0.07	0.20	0.32	48	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichloropropane	01/11/23 - 02/11/23	ug/m3	0.08	0.23	<0.23	62	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	01/11/23 - 02/11/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3-Butadiene	01/11/23 - 02/11/23	ug/m3	0.04	0.11	3.67	5.3	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,4-Dichlorobenzene	01/11/23 - 02/11/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,4-Dioxane	01/11/23 - 02/11/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1-Butanol	01/11/23 - 02/11/23	ug/m3	0.50	1.52	3.21	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
2-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
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Sample Number 23121200-4
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location อำเภอเมืองระยองอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
2-Propanol	01/11/23 - 02/11/23	ug/m3	0.40	1.23	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
3-Hexanone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
3-Pentanone	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acetaldehyde	01/11/23 - 02/11/23	ug/m3	0.05	0.18	3.64	860	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Acetone	01/11/23 - 02/11/23	ug/m3	0.08	0.24	7.65	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acetonitrile	01/11/23 - 02/11/23	ug/m3	0.30	0.84	<0.84	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Acrolein	01/11/23 - 02/11/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Azylonitrile	01/11/23 - 02/11/23	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Benzene	01/11/23 - 02/11/23	ug/m3	0.05	0.16	1.09	7.6	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Benzyl Chloride	01/11/23 - 02/11/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compensum Method, TO-15	PCD	Rayong

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23121200
Date Received Nov 02, 2023
Date Reported Nov 09, 2023
Report Number 2809527-1

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Sample Number 23121200-4
Sampled Date Nov 01, 2023
Sample Description Air Quality
Location อำเภอเมืองระยองอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced Nov 03, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	01/11/23 - 02/11/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromoform	01/11/23 - 02/11/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromomethane	01/11/23 - 02/11/23	ug/m3	0.06	0.19	0.23	190	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Butanol	01/11/23 - 02/11/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Carbon Disulfide	01/11/23 - 02/11/23	ug/m3	0.05	0.16	Not Detected	100	Based on US EPA Compensum Method, TO-15	NEB	Rayong
Carbon Tetrachloride	01/11/23 - 02/11/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chlorobenzene	01/11/23 - 02/11/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	01/11/23 - 02/11/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroethane	01/11/23 - 02/11/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroform	01/11/23 - 02/11/23	ug/m3	0.08	0.24	<0.24	57	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chloromethane	01/11/23 - 02/11/23	ug/m3	0.30	1.03	1.69	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

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Sample Number : 23121200-4
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	01/11/23 - 02/11/23	ug/m3	0.60	1.72	<1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	01/11/23 - 02/11/23	ug/m3	0.80	2.47	<2.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	01/11/23 - 02/11/23	ug/m3	0.06	0.17	1.81	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	01/11/23 - 02/11/23	ug/m3	0.30	0.94	3.84	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	01/11/23 - 02/11/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	01/11/23 - 02/11/23	ug/m3	0.60	1.76	8.32	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	01/11/23 - 02/11/23	ug/m3	0.40	1.15	10.56	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Senior Manager

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303170/0400



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

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Sample Number : 23121200-4
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	01/11/23 - 02/11/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	01/11/23 - 02/11/23	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	01/11/23 - 02/11/23	ug/m3	0.20	0.66	30.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	01/11/23 - 02/11/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	01/11/23 - 02/11/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	01/11/23 - 02/11/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	01/11/23 - 02/11/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	01/11/23 - 02/11/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	01/11/23 - 02/11/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

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Sample Number : 23121200-4
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	01/11/23 - 02/11/23	ug/m3	0.50	1.48	1.95	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	01/11/23 - 02/11/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	01/11/23 - 02/11/23	ug/m3	0.30	0.86	21.51	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	01/11/23 - 02/11/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	01/11/23 - 02/11/23	ug/m3	0.11	0.34	Not Detected	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	01/11/23 - 02/11/23	ug/m3	0.60	1.88	15.90	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	01/11/23 - 02/11/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	01/11/23 - 02/11/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	01/11/23 - 02/11/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	01/11/23 - 02/11/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	01/11/23 - 02/11/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121200
Date Received : Nov 02, 2023
Date Reported : Nov 09, 2023
Report Number : 2809527-1

Page 32 of 32

Sample Number : 23121200-4
Sampled Date : Nov 01, 2023
Sample Description : Air Quality
Location : สำนักงานอุตสาหกรรมจังหวัดระยอง (GPS 47P 0731532, 1402561)
Date Analysis Commenced : Nov 03, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	01/11/23 - 02/11/23	ug/m3	0.04	0.13	2.10	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline:
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Warawut Palapa

Remark:
- LOD : Limit of Detection
- "u" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

Page 1 of 32

Sample Number: 23128871-1
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: 11.86.31.10.10 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Dec 08, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	06/12/23 - 07/12/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	06/12/23 - 07/12/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	06/12/23 - 07/12/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	06/12/23 - 07/12/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchorn
Senior Manager

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

Page 2 of 32

Sample Number: 23128871-1
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: 11.86.31.10.10 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Dec 08, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	06/12/23 - 07/12/23	ug/m3	0.08	0.23	<0.23	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	06/12/23 - 07/12/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	06/12/23 - 07/12/23	ug/m3	0.04	0.11	0.62	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	06/12/23 - 07/12/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	06/12/23 - 07/12/23	ug/m3	0.50	1.52	<1.52	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

Page 3 of 32

Sample Number: 23128871-1
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: 11.86.31.10.10 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Dec 08, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	06/12/23 - 07/12/23	ug/m3	0.05	0.18	5.81	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	06/12/23 - 07/12/23	ug/m3	0.08	0.24	13.40	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	06/12/23 - 07/12/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	06/12/23 - 07/12/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	06/12/23 - 07/12/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	06/12/23 - 07/12/23	ug/m3	0.05	0.16	1.53	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	06/12/23 - 07/12/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Senior Manager

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MIS-171 (ENGL)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

Page 4 of 32

Sample Number: 23128871-1
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: 11.86.31.10.10 (GPS 47P 0735193, 1405894)
Date Analysis Commenced: Dec 08, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromochloromethane	06/12/23 - 07/12/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromodorm	06/12/23 - 07/12/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	06/12/23 - 07/12/23	ug/m3	0.06	0.19	0.39	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanol	06/12/23 - 07/12/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	06/12/23 - 07/12/23	ug/m3	0.05	0.16	0.19	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	06/12/23 - 07/12/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	06/12/23 - 07/12/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	06/12/23 - 07/12/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	06/12/23 - 07/12/23	ug/m3	0.08	0.24	0.29	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	06/12/23 - 07/12/23	ug/m3	0.30	1.03	2.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871

Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

Page 5 of 32

Sample Number 23128871-1
Sampled Date Dec 06, 2023
Sample Description Air Quality
Location ต.บ.บ้านใหม่ (GPS 47P 0735193, 1405894)
Date Analysis Commenced Dec 08, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	06/12/23 - 07/12/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	06/12/23 - 07/12/23	ug/m3	0.60	1.72	<1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	06/12/23 - 07/12/23	ug/m3	0.80	2.47	2.67	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	06/12/23 - 07/12/23	ug/m3	0.06	0.17	2.29	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	06/12/23 - 07/12/23	ug/m3	0.30	0.94	7.91	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	06/12/23 - 07/12/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	06/12/23 - 07/12/23	ug/m3	0.60	1.76	2.61	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	06/12/23 - 07/12/23	ug/m3	0.40	1.15	1.61	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

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Dej Changchon
Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871

Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number 23128871-1
Sampled Date Dec 06, 2023
Sample Description Air Quality
Location ต.บ.บ้านใหม่ (GPS 47P 0735193, 1405894)
Date Analysis Commenced Dec 08, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	06/12/23 - 07/12/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	06/12/23 - 07/12/23	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	06/12/23 - 07/12/23	ug/m3	0.20	0.66	7.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	06/12/23 - 07/12/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	06/12/23 - 07/12/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	06/12/23 - 07/12/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871

Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number 23128871-1
Sampled Date Dec 06, 2023
Sample Description Air Quality
Location ต.บ.บ้านใหม่ (GPS 47P 0735193, 1405894)
Date Analysis Commenced Dec 08, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Perthane	06/12/23 - 07/12/23	ug/m3	0.50	1.48	6.73	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	06/12/23 - 07/12/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	06/12/23 - 07/12/23	ug/m3	0.30	0.86	4.44	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	06/12/23 - 07/12/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	06/12/23 - 07/12/23	ug/m3	0.11	0.34	<0.34	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	06/12/23 - 07/12/23	ug/m3	0.60	1.88	3.84	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	06/12/23 - 07/12/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	06/12/23 - 07/12/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	06/12/23 - 07/12/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon
Dej Changchon
Senior Manager

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871

Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number 23128871-1
Sampled Date Dec 06, 2023
Sample Description Air Quality
Location ต.บ.บ้านใหม่ (GPS 47P 0735193, 1405894)
Date Analysis Commenced Dec 08, 2023
Condition of Sample Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	06/12/23 - 07/12/23	ug/m3	0.04	0.13	0.15	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline:
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).
Sampled By : Saknarin Jarasakay

Remark:
LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Dej Changchon
Dej Changchon
Senior Manager

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Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number	23128871-2									Page 9 of 24
Sampled Date	Dec 06, 2023									
Sample Description	Air Quality									
Location	ถนนสายหลวง (GPS 47P 0729820, 1403299)									
Date Analysis Commenced	Dec 08, 2023									
Condition of Sample	Drawn into one 6-L Canister									
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location	
Air Testing										
1,1,1-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,1,2,2-Tetrachloroethane	06/12/23 - 07/12/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compensum Method, TO-15	PCD	Rayong	
1,1,2-Trichloro-1,2,2-Trifluoroethane	06/12/23 - 07/12/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,1,2-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,1-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,1-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,2,3-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,2,4-Trichlorobenzene	06/12/23 - 07/12/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,2,4-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
1,2-Dibromoethane	06/12/23 - 07/12/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compensum Method, TO-15	PCD	Rayong	
1,2-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number	23128871-2								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	ถนนพหลโยธิน (GPS 47P 0729820, 1403299)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.07	0.20	0.24	48	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichloropropane	06/12/23 - 07/12/23	ug/m3	0.08	0.23	<0.23	82	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	06/12/23 - 07/12/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,3-Butadiene	06/12/23 - 07/12/23	ug/m3	0.04	0.11	0.13	5.3	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1,4-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1,4-Dioxane	06/12/23 - 07/12/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compensum Method, TO-15	PCD	Rayong
1-Butanol	06/12/23 - 07/12/23	ug/m3	0.50	1.52	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
1-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
2-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Senior Manager

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number	23128871-2									Page 11 of 24
Sampled Date	Dec 06, 2023									
Sample Description	Air Quality									
Location	อุทราสวัสดิ์ (GPS 47P 0729820, 1403299)									
Date Analysis Commenced	Dec 08, 2023									
Condition of Sample	Drawn into one 6-L Canister									
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location	
Air Testing										
2-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
2-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
3-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
3-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
Acetaldehyde	06/12/23 - 07/12/23	ug/m3	0.05	0.18	5.63	860	Based on US EPA Compensum Method, TO-15	PCD	Rayong	
Acetone	06/12/23 - 07/12/23	ug/m3	0.08	0.24	11.83	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
Acetonitrile	06/12/23 - 07/12/23	ug/m3	0.30	0.84	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong	
Acrolein	06/12/23 - 07/12/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compensum Method, TO-15	PCD	Rayong	
Acrylonitrile	06/12/23 - 07/12/23	ug/m3	0.07	0.22	<0.22	10	Based on US EPA Compensum Method, TO-15	PCD	Rayong	
Benzene	06/12/23 - 07/12/23	ug/m3	0.05	0.16	2.11	7.6	Based on US EPA Compensum Method, TO-15	PCD	Rayong	
Benzyl Chloride	06/12/23 - 07/12/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compensum Method, TO-15	PCD	Rayong	

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Senior Manager

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

Page 12 of 32

Sample Number	23128871-2								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	Uthairat Road (GPS 47P 0729820, 1403299)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	06/12/23 - 07/12/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromoform	06/12/23 - 07/12/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Bromomethane	06/12/23 - 07/12/23	ug/m3	0.06	0.19	0.58	190	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Butanal	06/12/23 - 07/12/23	ug/m3	0.49	1.47	<1.47	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Carbon Disulfide	06/12/23 - 07/12/23	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compensum Method, TO-15	NEB	Rayong
Carbon Tetrachloride	06/12/23 - 07/12/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chlorobenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	06/12/23 - 07/12/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroethane	06/12/23 - 07/12/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong
Chloroform	06/12/23 - 07/12/23	ug/m3	0.08	0.24	0.29	57	Based on US EPA Compensum Method, TO-15	PCD	Rayong
Chloromethane	06/12/23 - 07/12/23	ug/m3	0.30	1.03	3.84	No Standard	Based on US EPA Compensum Method, TO-15	-	Rayong

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Senior Manager

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MS-171 (MAL)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location

Lot ID: 23128871

Date Received : Dec 07, 2023

Date Reported : Dec 14, 2023

Report Number : 2825395-1

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Sample Number : 23128871-2
Sampled Date : Dec 06, 2023
Sample Description : Air Quality
Location : หนองจอก (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Dec 08, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	06/12/23 - 07/12/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	06/12/23 - 07/12/23	ug/m3	0.60	1.72	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	06/12/23 - 07/12/23	ug/m3	0.80	2.47	2.67	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	06/12/23 - 07/12/23	ug/m3	0.06	0.17	1.04	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	06/12/23 - 07/12/23	ug/m3	0.30	0.94	8.54	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	06/12/23 - 07/12/23	ug/m3	0.60	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	06/12/23 - 07/12/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	06/12/23 - 07/12/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Senior Manager

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303-171 (BNA)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location

Lot ID: 23128871

Date Received : Dec 07, 2023

Date Reported : Dec 14, 2023

Report Number : 2825395-1

Page 14 of 32

Sample Number : 23128871-2
Sampled Date : Dec 06, 2023
Sample Description : Air Quality
Location : หนองจอก (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Dec 08, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	06/12/23 - 07/12/23	ug/m3	0.50	1.39	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	06/12/23 - 07/12/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	06/12/23 - 07/12/23	ug/m3	0.20	0.66	9.75	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	06/12/23 - 07/12/23	ug/m3	0.90	2.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	06/12/23 - 07/12/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	06/12/23 - 07/12/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Senior Manager

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303-171 (BNA)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location

Lot ID: 23128871

Date Received : Dec 07, 2023

Date Reported : Dec 14, 2023

Report Number : 2825395-1

Page 15 of 32

Sample Number : 23128871-2
Sampled Date : Dec 06, 2023
Sample Description : Air Quality
Location : หนองจอก (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Dec 08, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	06/12/23 - 07/12/23	ug/m3	0.50	1.48	1.68	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	06/12/23 - 07/12/23	ug/m3	0.50	1.19	<1.19	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	06/12/23 - 07/12/23	ug/m3	0.30	0.86	3.41	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	06/12/23 - 07/12/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	06/12/23 - 07/12/23	ug/m3	0.11	0.34	<0.34	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	06/12/23 - 07/12/23	ug/m3	0.60	1.88	5.31	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	06/12/23 - 07/12/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	06/12/23 - 07/12/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	06/12/23 - 07/12/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Senior Manager

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303-171 (BNA)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location

Lot ID: 23128871

Date Received : Dec 07, 2023

Date Reported : Dec 14, 2023

Report Number : 2825395-1

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Sample Number : 23128871-2
Sampled Date : Dec 06, 2023
Sample Description : Air Quality
Location : หนองจอก (GPS 47P 0729820, 1403299)
Date Analysis Commenced : Dec 08, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	06/12/23 - 07/12/23	ug/m3	0.04	0.13	<0.13	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline :

NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).

Sampled By : Saknarin Jarasak

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Dej Changchon
Dej Changchon
Senior Manager

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Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
S. Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number	23128871-3								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	Surveillance (GPS: 47P 0730823, 1407374)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	06/12/23 - 07/12/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	06/12/23 - 07/12/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	06/12/23 - 07/12/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	06/12/23 - 07/12/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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Analysis / Test Report

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S. Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number	23128871-3									
Sampled Date	Dec 06, 2023									
Sample Description	Air Quality									
Location	Surveillance (GPS 47P 0730823, 1407374)									
Date Analysis Commenced	Dec 08, 2023									
Condition of Sample	Drawn into one 6-L Canister									
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location	
Air Testing										
1,2-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,2-Dichloropropane	06/12/23 - 07/12/23	ug/m3	0.08	0.23	<0.23	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,2-Dichlorotetrafluoroethane	06/12/23 - 07/12/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1,3,5-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1,3-Butadiene	06/12/23 - 07/12/23	ug/m3	0.04	0.11	0.18	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,3-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1,4-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1,4-Dioxane	06/12/23 - 07/12/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
1-Butanol	06/12/23 - 07/12/23	ug/m3	0.50	1.52	<1.52	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
1-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
2-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	

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Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
S. Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number	23128871-3								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	Surveillance (GPS 47P 0730823, 1407374)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	<2.05	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	06/12/23 - 07/12/23	ug/m3	0.05	0.18	2.99	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	06/12/23 - 07/12/23	ug/m3	0.08	0.24	9.79	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	06/12/23 - 07/12/23	ug/m3	0.30	0.84	<0.84	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	06/12/23 - 07/12/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	06/12/23 - 07/12/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	06/12/23 - 07/12/23	ug/m3	0.05	0.16	1.02	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	06/12/23 - 07/12/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
S. Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128871
Date Received Dec 07, 2023
Date Reported Dec 14, 2023
Report Number 2825395-1

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Sample Number	23128871-3								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	Surveillance (GPS 47P 0730823, 1407374)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Bromodichloromethane	06/12/23 - 07/12/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromoform	06/12/23 - 07/12/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Bromomethane	06/12/23 - 07/12/23	ug/m3	0.06	0.19	0.39	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Butanal	06/12/23 - 07/12/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Carbon Disulfide	06/12/23 - 07/12/23	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong
Carbon Tetrachloride	06/12/23 - 07/12/23	ug/m3	0.10	0.31	0.38	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chlorobenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chlorodifluoromethane (HCFC-22)	06/12/23 - 07/12/23	ug/m3	0.60	1.77	<1.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroethane	06/12/23 - 07/12/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Chloroform	06/12/23 - 07/12/23	ug/m3	0.08	0.24	0.29	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Chloromethane	06/12/23 - 07/12/23	ug/m3	0.30	1.03	1.98	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :
Page 21 of 22

Lot ID: 23128871

Date Received : Dec 07, 2023
Date Reported : Dec 14, 2023
Report Number : 2825395-1

Sample Number : 23128871-3
Sampled Date : Dec 06, 2023
Sample Description : Air Quality
Location : Seungruag (GPS 47P 0730823, 1407374)
Date Analysis Commenced : Dec 06, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	06/12/23 - 07/12/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	06/12/23 - 07/12/23	ug/m3	0.60	1.72	<1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	06/12/23 - 07/12/23	ug/m3	0.80	2.47	2.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	06/12/23 - 07/12/23	ug/m3	0.06	0.17	1.88	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	06/12/23 - 07/12/23	ug/m3	0.30	0.94	7.35	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	06/12/23 - 07/12/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	06/12/23 - 07/12/23	ug/m3	0.60	1.76	<1.76	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	06/12/23 - 07/12/23	ug/m3	0.40	1.15	<1.15	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon
Dej Changchon
Senior Manager

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3633 (U) (M4L)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :
Page 22 of 22

Lot ID: 23128871

Date Received : Dec 07, 2023
Date Reported : Dec 14, 2023
Report Number : 2825395-1

Sample Number : 23128871-3
Sampled Date : Dec 06, 2023
Sample Description : Air Quality
Location : Seungruag (GPS 47P 0730823, 1407374)
Date Analysis Commenced : Dec 06, 2023
Condition of Sample : Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	06/12/23 - 07/12/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	06/12/23 - 07/12/23	ug/m3	1.50	4.34	<4.34	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacresol	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	06/12/23 - 07/12/23	ug/m3	0.20	0.66	9.44	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	06/12/23 - 07/12/23	ug/m3	0.90	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	06/12/23 - 07/12/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	06/12/23 - 07/12/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

Dej Changchon
Dej Changchon
Senior Manager

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3633 (U) (M4L)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

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Sample Number	23128871-4								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	สถานีควบคุมคุณภาพอากาศกรมทางหลวง (GPS 47P 0731532, 1402561)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,1,1-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2,2-Tetrachloroethane	06/12/23 - 07/12/23	ug/m3	0.10	0.34	Not Detected	83	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,1,2-Trichloro-1,2,2-Trifluoroethane	06/12/23 - 07/12/23	ug/m3	1.00	3.83	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1,2-Trichloroethane	06/12/23 - 07/12/23	ug/m3	0.90	2.73	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.70	2.02	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,1-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,3-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trichlorobenzene	06/12/23 - 07/12/23	ug/m3	1.20	3.71	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2,4-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,2-Dibromoethane	06/12/23 - 07/12/23	ug/m3	0.10	0.38	Not Detected	370	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Dej Changchon
Senior Manager

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MS-173 (EN)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

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Sample Number	23128871-4								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	สถานีควบคุมคุณภาพอากาศ (GPS 47P 0731532, 1402561)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
1,2-Dichloroethane	06/12/23 - 07/12/23	ug/m3	0.07	0.20	<0.20	48	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichloropropane	06/12/23 - 07/12/23	ug/m3	0.08	0.23	<0.23	82	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,2-Dichlorotetrafluoroethane	06/12/23 - 07/12/23	ug/m3	1.20	3.50	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3,5-Trimethylbenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.46	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,3-Butadiene	06/12/23 - 07/12/23	ug/m3	0.04	0.11	2.08	5.3	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,3-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1,4-Dichlorobenzene	06/12/23 - 07/12/23	ug/m3	0.20	0.60	Not Detected	1100	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1,4-Dioxane	06/12/23 - 07/12/23	ug/m3	0.10	0.36	Not Detected	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
1-Butanol	06/12/23 - 07/12/23	ug/m3	0.50	1.52	1.82	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
1-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

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Senior Manager

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MS-173 (EN)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

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Sample Number	23128871-4								
Sampled Date	Dec 06, 2023								
Sample Description	Air Quality								
Location	สถานีควบคุมคุณภาพอากาศกรมการทหารอากาศ (GPS 47P 0731532, 1402561)								
Date Analysis Commenced	Dec 08, 2023								
Condition of Sample	Drawn into one 6-L Canister								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
2-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
2-Propanol	06/12/23 - 07/12/23	ug/m3	0.40	1.23	<1.23	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Hexanone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
3-Pentanone	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetaldehyde	06/12/23 - 07/12/23	ug/m3	0.05	0.18	3.54	860	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acetone	06/12/23 - 07/12/23	ug/m3	0.08	0.24	10.93	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acetonitrile	06/12/23 - 07/12/23	ug/m3	0.30	0.84	<0.84	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Acrolein	06/12/23 - 07/12/23	ug/m3	0.08	0.23	Not Detected	0.55	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Acrylonitrile	06/12/23 - 07/12/23	ug/m3	0.07	0.22	Not Detected	10	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzene	06/12/23 - 07/12/23	ug/m3	0.05	0.16	1.79	7.6	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Benzyl Chloride	06/12/23 - 07/12/23	ug/m3	0.17	0.52	Not Detected	12	Based on US EPA Compendium Method, TO-15	PCD	Rayong

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Senior Manager

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MS-173 (EN)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

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Sample Number	23128871-4									
Sampled Date	Dec 06, 2023									
Sample Description	Air Quality									
Location	สถานีควบคุมคุณภาพอากาศทางทะเล (GPS 47P 0731532, 1402561)									
Date Analysis Commenced	Dec 08, 2023									
Condition of Sample	Drawn into one 6-L Canister									
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOB)	Result	Guideline Limit	Method	Guideline	Testing Location	
Air Testing										
Bromodichloromethane	06/12/23 - 07/12/23	ug/m3	1.00	3.35	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Bromoform	06/12/23 - 07/12/23	ug/m3	1.00	5.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Bromomethane	06/12/23 - 07/12/23	ug/m3	0.06	0.19	0.47	190	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
Butanol	06/12/23 - 07/12/23	ug/m3	0.49	1.47	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Carbon Disulfide	06/12/23 - 07/12/23	ug/m3	0.05	0.16	<0.16	100	Based on US EPA Compendium Method, TO-15	NEB	Rayong	
Carbon Tetrachloride	06/12/23 - 07/12/23	ug/m3	0.10	0.31	<0.31	150	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
Chlorobenzene	06/12/23 - 07/12/23	ug/m3	0.80	2.30	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Chlorodifluoromethane (HCFC-22)	06/12/23 - 07/12/23	ug/m3	0.60	1.77	8.13	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Chloroethane	06/12/23 - 07/12/23	ug/m3	0.40	1.32	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	
Chloroform	06/12/23 - 07/12/23	ug/m3	0.08	0.24	0.29	57	Based on US EPA Compendium Method, TO-15	PCD	Rayong	
Chloromethane	06/12/23 - 07/12/23	ug/m3	0.30	1.03	2.11	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong	

Approved by

Dej Changchon
Senior Manager

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MS-173 (EN)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

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Sample Number: 23128871-4
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: อู่เก็บน้ำมันและสารเคมีอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced: Dec 06, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
cis-1,2-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
cis-1,3-Dichloropropene	06/12/23 - 07/12/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclohexane	06/12/23 - 07/12/23	ug/m3	0.60	1.72	<1.72	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Cyclopentane	06/12/23 - 07/12/23	ug/m3	0.50	1.43	<1.43	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichlorodifluoromethane (CFC-112)	06/12/23 - 07/12/23	ug/m3	0.80	2.47	2.77	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Dichloromethane	06/12/23 - 07/12/23	ug/m3	0.06	0.17	1.04	210	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Ethanol	06/12/23 - 07/12/23	ug/m3	0.30	0.94	4.86	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Ethyl Benzene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	<2.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexanal	06/12/23 - 07/12/23	ug/m3	0.60	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Hexane	06/12/23 - 07/12/23	ug/m3	0.60	1.76	6.06	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Isobutene	06/12/23 - 07/12/23	ug/m3	0.40	1.15	3.17	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

D. Chongchon

Dej Chongchon
Senior Manager

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3633-470 (THAI)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

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Sample Number: 23128871-4
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: อู่เก็บน้ำมันและสารเคมีอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced: Dec 06, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Isoprene	06/12/23 - 07/12/23	ug/m3	0.50	1.39	<1.39	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
m,p-Xylene	06/12/23 - 07/12/23	ug/m3	1.50	4.34	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methacrolein	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methanol	06/12/23 - 07/12/23	ug/m3	0.20	0.66	11.22	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Ethyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.47	<1.47	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Iodide	06/12/23 - 07/12/23	ug/m3	0.80	2.90	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Isobutyl Ketone	06/12/23 - 07/12/23	ug/m3	0.70	2.05	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl tert butyl ether	06/12/23 - 07/12/23	ug/m3	0.60	1.80	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Methyl Vinyl Ketone	06/12/23 - 07/12/23	ug/m3	0.50	1.43	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
o-Xylene	06/12/23 - 07/12/23	ug/m3	0.70	2.17	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Pentanal	06/12/23 - 07/12/23	ug/m3	0.50	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

D. Chongchon

Dej Chongchon
Senior Manager

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3633-470 (THAI)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

Page 31 of 32

Sample Number: 23128871-4
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: อู่เก็บน้ำมันและสารเคมีอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced: Dec 06, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Pentane	06/12/23 - 07/12/23	ug/m3	0.50	1.48	<1.48	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propanal	06/12/23 - 07/12/23	ug/m3	0.50	1.19	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Propene (Propylene)	06/12/23 - 07/12/23	ug/m3	0.30	0.86	10.36	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Styrene	06/12/23 - 07/12/23	ug/m3	0.70	2.13	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Tetrachloroethylene	06/12/23 - 07/12/23	ug/m3	0.11	0.34	<0.34	400	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Toluene	06/12/23 - 07/12/23	ug/m3	0.60	1.88	4.07	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,2-Dichloroethene	06/12/23 - 07/12/23	ug/m3	0.70	1.98	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
trans-1,3-Dichloropropene	06/12/23 - 07/12/23	ug/m3	0.80	2.27	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Trichloroethylene	06/12/23 - 07/12/23	ug/m3	0.09	0.27	Not Detected	130	Based on US EPA Compendium Method, TO-15	PCD	Rayong
Trichlorofluoromethane (F-11)	06/12/23 - 07/12/23	ug/m3	0.90	2.81	<2.81	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong
Vinyl Acetate	06/12/23 - 07/12/23	ug/m3	0.60	1.76	Not Detected	No Standard	Based on US EPA Compendium Method, TO-15	-	Rayong

Approved by

D. Chongchon

Dej Chongchon
Senior Manager

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3633-470 (THAI)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 23128871
Date Received: Dec 07, 2023
Date Reported: Dec 14, 2023
Report Number: 2825395-1

Page 32 of 32

Sample Number: 23128871-4
Sampled Date: Dec 06, 2023
Sample Description: Air Quality
Location: อู่เก็บน้ำมันและสารเคมีอุตสาหกรรม (GPS 47P 0731532, 1402561)
Date Analysis Commenced: Dec 06, 2023
Condition of Sample: Drawn into one 6-L Canister

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Vinyl Chloride	06/12/23 - 07/12/23	ug/m3	0.04	0.13	5.62	20	Based on US EPA Compendium Method, TO-15	PCD	Rayong

Guideline:
NEB : Notification of National Environment Board, B.E. 2560 (2017)
PCD : Notification of the Pollution Control Department, which was published in the Royal Government Gazette Vol. 126 Special Part 13 D dated January 27, B.E. 2552 (2009).
Sampled By: Saknann Jarassak

Remark:
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

D. Chongchon

Dej Chongchon
Senior Manager

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3633-470 (THAI)

คุณภาพอากาศจากปล่องระบาย



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384381
Date Received : Aug 28, 2023
Date Reported : Sep 05, 2023
Report Number: 2722719-1

Page 1 of 2

Sample Number 2384381-1
Sampled Date Aug 28, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (B) L-5
Date Analysis Commenced Aug 29, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.31	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	36.0	°C	Gas Velocity	20.6	m/s
Type of Fuel	-		Moisture	2.64	%	Flow Rate (Actual O2)	5199	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate	09:40 AM - 10:28 AM	mg/m3	-	0.5	1.4	400	32	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
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Approved by

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384381
Date Received : Aug 28, 2023
Date Reported : Sep 05, 2023
Report Number: 2722719-1

Page 2 of 2

Sample Number 2384381-1
Sampled Date Aug 28, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (B) L-5
Date Analysis Commenced Aug 29, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.31	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	36.0	°C	Gas Velocity	20.6	m/s
Type of Fuel	-		Moisture	2.64	%	Flow Rate (Actual O2)	5199	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	09:40 AM - 10:28 AM	g/s	-	-	0.002	-	0.045	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pubpa

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384382
Date Received : Aug 30, 2023
Date Reported : Sep 07, 2023
Report Number: 2722713-1

Page 1 of 2

Sample Number 2384382-1
Sampled Date Aug 30, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (A) L-6
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.31	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	39.5	°C	Gas Velocity	6.3	m/s
Type of Fuel	-		Moisture	2.91	%	Flow Rate (Actual O2)	1583	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate	09:30 AM - 10:10 AM	mg/m3	-	0.5	<0.5	400	32	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384382
Date Received : Aug 30, 2023
Date Reported : Sep 07, 2023
Report Number: 2722713-1

Page 2 of 2

Sample Number 2384382-1
Sampled Date Aug 30, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (A) L-6
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.31	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	39.5	°C	Gas Velocity	6.3	m/s
Type of Fuel	-		Moisture	2.91	%	Flow Rate (Actual O2)	1583	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate *	09:30 AM - 10:10 AM	g/s	-	-	<0.0002	-	0.045	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Prasarnmit Kueanpet

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

Thanitak

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Scientist (4)
โทรศัพท์ 0-323-9-9447

Approved by

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Dej Changchon
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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2384383

Date Received : Aug 28, 2023

Date Reported : Sep 05, 2023

Report Number: 2722711-1

Page 1 of 2

Sample Number 2384383-1
Sampled Date Aug 28, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (F) L-7
Date Analysis Commenced Aug 29, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.31	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	36.0	°C	Gas Velocity	3.9	m/s
Type of Fuel	-		Moisture	2.47	%	Flow Rate (Actual O2)	979	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate	11:50 AM - 12:38 PM	mg/m3	-	0.5	<0.5	400	32	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)

Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

โทรศัพท์ 323-9-9447

Approved by

Dej Changchon

Dej Changchon
Senior Manager

โทรศัพท์ 323-9-9442

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2384383

Date Received : Aug 28, 2023

Date Reported : Sep 05, 2023

Report Number: 2722711-1

Page 2 of 2

Sample Number 2384383-1
Sampled Date Aug 28, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (F) L-7
Date Analysis Commenced Aug 29, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.31	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	36.0	°C	Gas Velocity	3.9	m/s
Type of Fuel	-		Moisture	2.47	%	Flow Rate (Actual O2)	979	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	11:50 AM - 12:38 PM	g/s	-	-	<0.0001	-	0.045	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)

Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pupba

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

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Approved by

Dej Changchon

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384384
Date Received : Aug 31, 2023
Date Reported : Sep 08, 2023
Report Number: 2722710-1

Page 1 of 2

Sample Number 2384384-1
Sampled Date Aug 31, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (A) L-8
Date Analysis Commenced Sep 02, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.16	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	41.0	°C	Gas Velocity	26.6	m/s
Type of Fuel	-		Moisture	2.57	%	Flow Rate (Actual O2)	1766	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate	10:50 AM - 11:32 AM	mg/m3	-	0.5	<0.5	400	32	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline (1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

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โทร: 0323-9-9447

Approved by

D. H.

Dej Changchon
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โทร: 0323-9-9442

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384384
Date Received : Aug 31, 2023
Date Reported : Sep 08, 2023
Report Number: 2722710-1

Page 2 of 2

Sample Number 2384384-1
Sampled Date Aug 31, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (A) L-8
Date Analysis Commenced Sep 02, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.16	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	41.0	°C	Gas Velocity	26.6	m/s
Type of Fuel	-		Moisture	2.57	%	Flow Rate (Actual O2)	1766	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	10:50 AM - 11:32 AM	g/s	-	-	<0.0002	-	0.016	Calculated	Rayong

Guideline (1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pubpa

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
โทร: 0323-9-9447

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S:\Reports_Air Stack_2GL.rpt (8:52AM)



Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384385
Date Received : Sep 01, 2023
Date Reported : Sep 08, 2023
Report Number: 2722709-1

Page 1 of 2

Sample Number 2384385-1
Sampled Date Sep 01, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (A) L-9
Date Analysis Commenced Sep 02, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.40	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	33.0	°C	Gas Velocity	14.8	m/s
Type of Fuel	-		Moisture	2.69	%	Flow Rate (Actual O2)	6294	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
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Air Testing

Total Suspended Particulate	10:20 AM - 11:02 AM	mg/m3	-	0.5	<0.5	400	50	United States Environmental Protection Agency, EPA Method 5	Rayong
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Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

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Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384385
Date Received : Sep 01, 2023
Date Reported : Sep 08, 2023
Report Number: 2722709-1

Page 2 of 2

Sample Number 2384385-1
Sampled Date Sep 01, 2023
Sample Description Emission from Stationary Source
Location Vent from PVC Silo (A) L-9
Date Analysis Commenced Sep 02, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish and one plastic bottle

Stack Description

Ambient Pressure	754	mmHg	Diameter	0.40	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	33.0	°C	Gas Velocity	14.8	m/s
Type of Fuel	-		Moisture	2.69	%	Flow Rate (Actual O2)	6294	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
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Air Testing

Total Suspended Particulate *	10:20 AM - 11:02 AM	g/s	-	-	<0.001	-	0.082	Calculated	Rayong
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Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pubpa

Remark :

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- "e" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384397
Date Received : Oct 19, 2023
Date Reported : Oct 27, 2023
Report Number: 2722742-1

Page 1 of 2

Sample Number 2384397-1
Sampled Date Oct 19, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-5
Date Analysis Commenced Oct 20, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	52.0	°C	Gas Velocity	18.2	m/s
Type of Fuel	-		Moisture	5.22	%	Flow Rate (Actual O2)	87120	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate	01:50 PM - 02:32 PM	mg/m3	-	0.5	1.8	400	113	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384397
Date Received : Oct 19, 2023
Date Reported : Oct 27, 2023
Report Number: 2722742-1

Page 2 of 2

Sample Number 2384397-1
Sampled Date Oct 19, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-5
Date Analysis Commenced Oct 20, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	52.0	°C	Gas Velocity	18.2	m/s
Type of Fuel	-		Moisture	5.22	%	Flow Rate (Actual O2)	87120	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate *	01:50 PM - 02:32 PM	g/s	-	-	0.042	-	2.282	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Jittakorn Sriwasa , Natthawut Duangpang

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

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Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384397
Date Received : Oct 19, 2023
Date Reported : Oct 27, 2023
Report Number: 2722742-2

Page 1 of 2

Sample Number 2384397-1
Sampled Date Oct 19, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-5
Date Analysis Commenced Oct 20, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	52.0	°C	Gas Velocity	18.2	m/s
Type of Fuel	-		Moisture	5.22	%	Flow Rate (Actual O2)	87120	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	01:50 PM - 02:20 PM	mg/m3	-	0.20	2.48	-	17.6	United States Environmental Protection Agency, EPA Method 18	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384397
Date Received : Oct 19, 2023
Date Reported : Oct 27, 2023
Report Number: 2722742-2

Page 2 of 2

Sample Number 2384397-1
Sampled Date Oct 19, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-5
Date Analysis Commenced Oct 20, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	757	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	52.0	°C	Gas Velocity	18.2	m/s
Type of Fuel	-		Moisture	5.22	%	Flow Rate (Actual O2)	87120	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	01:50 PM - 02:20 PM	g/s	-	-	0.06	-	0.356	Calculated	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Jittakorn Sriwasa, Natthawut Duangpang

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Saranya C.

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384398
Date Received : Aug 30, 2023
Date Reported : Sep 07, 2023
Report Number: 2722736-1

Page 1 of 2

Sample Number 2384398-1
Sampled Date Aug 30, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-6
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	51.8	°C	Gas Velocity	4.0	m/s
Type of Fuel	-		Moisture	5.41	%	Flow Rate (Actual O2)	18969	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate	11:10 AM - 11:50 AM	mg/m3	-	0.5	2.3	400	113	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

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Approved by

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Dej Changchon
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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384398
Date Received : Aug 30, 2023
Date Reported : Sep 07, 2023
Report Number: 2722736-1

Page 2 of 2

Sample Number 2384398-1
Sampled Date Aug 30, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-6
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	51.8	°C	Gas Velocity	4.0	m/s
Type of Fuel	-		Moisture	5.41	%	Flow Rate (Actual O2)	18969	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate *	11:10 AM - 11:50 AM	g/s	-	-	0.012	-	2.080	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Prasannit Kueanpet

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384398
Date Received : Aug 30, 2023
Date Reported : Sep 07, 2023
Report Number: 2722736-2

Page 1 of 2

Sample Number 2384398-1
Sampled Date Aug 30, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-6
Date Analysis Commenced Aug 31, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	51.8	°C	Gas Velocity	4.0	m/s
Type of Fuel	-		Moisture	5.41	%	Flow Rate (Actual O2)	18969	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	11:10 AM - 11:40 AM	mg/m3	-	0.20	8.84	-	17.6	United States Environmental Protection Agency, EPA Method 18	Bangkok

Guideline: Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Approved by

Orawan R.

Orawan Rakhyong
Scientist (3)

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384398
Date Received : Aug 30, 2023
Date Reported : Sep 07, 2023
Report Number: 2722736-2

Page 2 of 2

Sample Number 2384398-1
Sampled Date Aug 30, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-6
Date Analysis Commenced Aug 31, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	51.8	°C	Gas Velocity	4.0	m/s
Type of Fuel	-		Moisture	5.41	%	Flow Rate (Actual O2)	18969	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	11:10 AM - 11:40 AM	g/s	-	-	0.05	-	0.324	Calculated	Bangkok

Guideline: Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Prasanmit Kueanpet

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakhyong
Scientist (3)

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384399
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 272732-1

Page 1 of 2

Sample Number 2384399-1
Sampled Date Aug 29, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-7
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	54.0	°C	Gas Velocity	8.8	m/s
Type of Fuel	-		Moisture	5.59	%	Flow Rate (Actual O2)	41523	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate	09:55 AM - 10:43 AM	mg/m3	-	0.5	32.8	400	113	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
โทรศัพท์ 3-323-9-9447

Approved by

D. Changchon

Dej Changchon
Senior Manager
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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384399
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 272732-1

Page 2 of 2

Sample Number 2384399-1
Sampled Date Aug 29, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-7
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	54.0	°C	Gas Velocity	8.8	m/s
Type of Fuel	-		Moisture	5.59	%	Flow Rate (Actual O2)	41523	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate *	09:55 AM - 10:43 AM	g/s	-	-	0.389	-	2.080	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pulpab

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

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Dej Changchon
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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384399
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 2722732-2

Page 1 of 2

Sample Number 2384399-1
Sampled Date Aug 29, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-7
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	54.0	°C	Gas Velocity	8.8	m/s
Type of Fuel	-		Moisture	5.59	%	Flow Rate (Actual O2)	41523	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	10:00 AM - 10:30 AM	mg/m3	-	0.25	1.68	-	17.6	United States Environmental Protection Agency, EPA Method 18	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384399
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 2722732-2

Page 2 of 2

Sample Number 2384399-1
Sampled Date Aug 29, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-7
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.40	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	54.0	°C	Gas Velocity	8.8	m/s
Type of Fuel	-		Moisture	5.59	%	Flow Rate (Actual O2)	41523	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	10:00 AM - 10:30 AM	g/s	-	-	0.03	-	0.324	Calculated	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pubpa

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

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Saranya Chalermthamrong
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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384400
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 2722728-1

Page 1 of 2

Sample Number 2384400-1
Sampled Date Aug 29, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-8
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.24	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	56.0	°C	Gas Velocity	9.3	m/s
Type of Fuel	-		Moisture	5.83	%	Flow Rate (Actual O2)	34034	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate	11:35 AM - 12:23 PM	mg/m3	-	0.5	0.8	400	113	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

Thanita K.
Thanita Kulsuriwong
Scientist (4)
โทรเลขเลขที่ 3-323-9447

Approved by

D. Chongchon
Dej Chongchon
Senior Manager
โทรเลขเลขที่ 3-323-9442

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384400
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 2722728-1

Page 2 of 2

Sample Number 2384400-1
Sampled Date Aug 29, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-8
Date Analysis Commenced Aug 30, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.24	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	56.0	°C	Gas Velocity	9.3	m/s
Type of Fuel	-		Moisture	5.83	%	Flow Rate (Actual O2)	34034	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Total Suspended Particulate *	11:35 AM - 12:23 PM	g/s	-	-	0.008	-	1.774	Calculated	Rayong

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pubpa

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

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Senior Manager
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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384400
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 2722728-2

Page 1 of 2

Sample Number : 2384400-1
Sampled Date : Aug 29, 2023
Sample Description : Emission from Stationary Source
Location : PVC Plant Drying Scrubber L-8
Date Analysis Commenced : Aug 30, 2023
Condition of Sample : Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.24	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	56.0	°C	Gas Velocity	9.3	m/s
Type of Fuel	-		Moisture	5.83	%	Flow Rate (Actual O2)	34034	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	11:40 AM - 12:10 PM	mg/m3	-	0.25	3.91	-	17.6	United States Environmental Protection Agency, EPA Method 18	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384400
Date Received : Aug 29, 2023
Date Reported : Sep 06, 2023
Report Number: 2722728-2

Page 2 of 2

Sample Number : 2384400-1
Sampled Date : Aug 29, 2023
Sample Description : Emission from Stationary Source
Location : PVC Plant Drying Scrubber L-8
Date Analysis Commenced : Aug 30, 2023
Condition of Sample : Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.24	m	Oxygen	20.9	%
Ambient Temperature	32.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	56.0	°C	Gas Velocity	9.3	m/s
Type of Fuel	-		Moisture	5.83	%	Flow Rate (Actual O2)	34034	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	11:40 AM - 12:10 PM	g/s	-	-	0.04	-	0.277	Calculated	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pubpa

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Saranya C.

Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384401
Date Received : Sep 01, 2023
Date Reported : Sep 08, 2023
Report Number: 2722724-1

Page 1 of 2

Sample Number 2384401-1
Sampled Date Sep 01, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-9
Date Analysis Commenced Sep 02, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.54	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	46.0	°C	Gas Velocity	13.8	m/s
Type of Fuel	-		Moisture	5.13	%	Flow Rate (Actual O2)	81604	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate	11:50 AM - 12:38 PM	mg/m3	-	0.5	<0.5	400	113	United States Environmental Protection Agency, EPA Method 5	Rayong

Guideline: Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
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Approved by

Dej Changchon

Dej Changchon
Senior Manager
โทรศัพท์ 323-9442

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384401
Date Received : Sep 01, 2023
Date Reported : Sep 08, 2023
Report Number: 2722724-1

Page 2 of 2

Sample Number 2384401-1
Sampled Date Sep 01, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-9
Date Analysis Commenced Sep 02, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.54	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	46.0	°C	Gas Velocity	13.8	m/s
Type of Fuel	-		Moisture	5.13	%	Flow Rate (Actual O2)	81604	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Suspended Particulate *	11:50 AM - 12:38 PM	g/s	-	-	<0.011	-	2.282	Calculated	Rayong

Guideline: Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pulpas, Thitipong Budaeng

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)
โทรศัพท์ 323-9447

Approved by

Dej Changchon

Dej Changchon
Senior Manager
โทรศัพท์ 323-9442

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S:\Reports_Air Stack_2GL.rpt (5:32PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384401
Date Received : Sep 01, 2023
Date Reported : Sep 08, 2023
Report Number: 2722724-2

Page 1 of 2

Sample Number 2384401-1
Sampled Date Sep 01, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-9
Date Analysis Commenced Sep 04, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.54	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	46.0	°C	Gas Velocity	13.8	m/s
Type of Fuel	-		Moisture	5.13	%	Flow Rate (Actual O2)	81604	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	11:50 AM - 12:20 PM	mg/m3	-	0.20	<0.20	-	17.6	United States Environmental Protection Agency, EPA Method 18	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Approved by

Orawan R.

Orawan Rak Yong
Scientist (3)

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ADDRESS 104 Phatthanakan 40, Phatthanakan Rd., Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand PHONE +66 0 2760 3000 FAX +66 0 2760 3197
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S:\Reports_Air_Stack_2GL.rpt (5:54PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2384401
Date Received : Sep 01, 2023
Date Reported : Sep 08, 2023
Report Number: 2722724-2

Page 2 of 2

Sample Number 2384401-1
Sampled Date Sep 01, 2023
Sample Description Emission from Stationary Source
Location PVC Plant Drying Scrubber L-9
Date Analysis Commenced Sep 04, 2023
Condition of Sample Extracted into one filter paper placed in plastic petri dish, one plastic bottle and one sorbent tube, refrigerated

Stack Description

Ambient Pressure	754	mmHg	Diameter	1.54	m	Oxygen	20.9	%
Ambient Temperature	30.0	°C	Shape	Circle		Carbon Dioxide	0.0	%
Type of Process	Process		Stack Temperature	46.0	°C	Gas Velocity	13.8	m/s
Type of Fuel	-		Moisture	5.13	%	Flow Rate (Actual O2)	81604	Nm3/hr

Analyte	Sampled Time	Unit	LOD	LOQ (LOR)	Result Emission Rate	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	11:50 AM - 12:20 PM	g/s	-	-	<0.006	-	0.356	Calculated	Bangkok

Guideline : Guideline(1) : Notification of the Ministry of Natural Resources and Environment B.E.2549 (2006)
Notification of the Ministry of Industry 2006 (B.E. 2549) Published in the Royal Government Gazette, Vol.123 Special Part 125 D, dated December 4, 2006 (B.E. 2549)
Guideline(2) : Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampled By : Warawut Pubpa, Thitipong Buadaeng

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

The above results are valid only for the analyzed/tested sample(s) as indicated in this report. No part of this report or certificate may be reproduced in any form without written consent from the Laboratory. ALS Laboratory Group (Thailand) strongly recommends that this report is not reproduced except in full.

Approved by

Orawan R.

Orawan Rak Yong
Scientist (3)

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S:\Reports_Air_Stack_2GL.rpt (5:54PM)

ระดับเสียงโดยทั่วไป



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768626-1

Page 1 of 1

Sample Number 2383885-1
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-N (GPS 47P 0732567, 1404744)
Measurement Date Aug 25 - Aug 26, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623394

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	60.1	77.4	58.4
11:00 AM - 12:00 PM	60.3	87.7	58.4
12:00 PM - 01:00 PM	60.6	76.2	58.6
01:00 PM - 02:00 PM	60.6	83.2	58.7
02:00 PM - 03:00 PM	60.3	80.5	58.5
03:00 PM - 04:00 PM	60.0	76.0	58.5
04:00 PM - 05:00 PM	59.8	81.1	58.3
05:00 PM - 06:00 PM	60.1	79.3	58.3
06:00 PM - 07:00 PM	59.1	81.6	58.0
07:00 PM - 08:00 PM	58.9	68.5	58.0
08:00 PM - 09:00 PM	59.3	72.1	58.5
09:00 PM - 10:00 PM	59.1	69.5	58.3
10:00 PM - 11:00 PM	58.7	73.5	58.0
11:00 PM - 12:00 AM	58.9	71.3	58.2
12:00 AM - 01:00 AM	59.3	69.7	58.7
01:00 AM - 02:00 AM	59.8	79.2	59.0
02:00 AM - 03:00 AM	59.9	70.3	59.1
03:00 AM - 04:00 AM	60.3	75.4	59.3
04:00 AM - 05:00 AM	60.2	76.7	59.3
05:00 AM - 06:00 AM	60.1	71.2	59.3
06:00 AM - 07:00 AM	60.4	75.5	59.3
07:00 AM - 08:00 AM	60.4	76.8	58.4
08:00 AM - 09:00 AM	60.7	88.6	57.0
09:00 AM - 10:00 AM	60.5	85.3	58.1

Leq Average 24 hrs. (dB(A))

59.9

Lmax (dB(A))

88.6

L90 (dB(A))

58.4

Ldn (dB(A))

66.2

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Suppt S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise rpt (4:28PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768627-1

Page 1 of 1

Sample Number 2383885-2
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-N (GPS 47P 0732567, 1404744)
Measurement Date Aug 26 - Aug 27, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623394

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.7	89.6	58.0
11:00 AM - 12:00 PM	59.4	82.6	57.7
12:00 PM - 01:00 PM	58.6	73.5	57.5
01:00 PM - 02:00 PM	59.9	78.2	58.3
02:00 PM - 03:00 PM	60.3	76.3	58.3
03:00 PM - 04:00 PM	60.8	87.4	58.5
04:00 PM - 05:00 PM	60.1	79.9	58.5
05:00 PM - 06:00 PM	60.5	74.7	58.9
06:00 PM - 07:00 PM	59.8	77.4	58.5
07:00 PM - 08:00 PM	59.6	78.2	58.0
08:00 PM - 09:00 PM	59.3	74.4	58.3
09:00 PM - 10:00 PM	59.1	69.1	58.2
10:00 PM - 11:00 PM	59.1	72.0	58.3
11:00 PM - 12:00 AM	59.3	69.5	58.6
12:00 AM - 01:00 AM	59.3	62.5	58.6
01:00 AM - 02:00 AM	59.5	62.7	58.6
02:00 AM - 03:00 AM	59.0	62.9	58.3
03:00 AM - 04:00 AM	59.0	70.6	58.3
04:00 AM - 05:00 AM	59.1	68.1	58.4
05:00 AM - 06:00 AM	59.3	75.7	58.5
06:00 AM - 07:00 AM	59.2	70.7	58.2
07:00 AM - 08:00 AM	59.1	72.4	58.0
08:00 AM - 09:00 AM	60.2	81.6	58.1
09:00 AM - 10:00 AM	59.8	81.4	58.3

Leq Average 24 hrs. (dB(A))

59.7

Lmax (dB(A))

89.6

L90 (dB(A))

58.3

Ldn (dB(A))

65.7

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Suppt S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise rpt (4:28PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768628-1

Page 1 of 1

Sample Number 2383885-3
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-N (GPS 47P 0732567, 1404744)
Measurement Date Aug 27 - Aug 28, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623394

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	59.9	77.2	58.2
11:00 AM - 12:00 PM	60.1	87.5	58.2
12:00 PM - 01:00 PM	60.4	76.0	58.4
01:00 PM - 02:00 PM	60.4	83.0	58.5
02:00 PM - 03:00 PM	60.1	80.3	58.3
03:00 PM - 04:00 PM	59.8	75.8	58.3
04:00 PM - 05:00 PM	59.6	80.9	58.1
05:00 PM - 06:00 PM	59.9	79.1	58.1
06:00 PM - 07:00 PM	58.9	81.4	57.8
07:00 PM - 08:00 PM	58.7	68.3	57.8
08:00 PM - 09:00 PM	59.1	71.9	58.3
09:00 PM - 10:00 PM	58.9	69.3	58.1
10:00 PM - 11:00 PM	58.5	73.3	57.8
11:00 PM - 12:00 AM	58.7	71.1	58.0
12:00 AM - 01:00 AM	59.1	69.5	58.5
01:00 AM - 02:00 AM	59.6	79.0	58.8
02:00 AM - 03:00 AM	59.7	70.1	58.9
03:00 AM - 04:00 AM	60.1	75.2	59.1
04:00 AM - 05:00 AM	60.0	76.5	59.1
05:00 AM - 06:00 AM	59.9	71.0	59.1
06:00 AM - 07:00 AM	60.2	75.3	59.1
07:00 AM - 08:00 AM	60.2	76.6	58.2
08:00 AM - 09:00 AM	61.5	86.9	58.6
09:00 AM - 10:00 AM	61.0	87.3	58.6

Leq Average 24 hrs. (dB(A))

59.8

Lmax (dB(A))

87.5

L90 (dB(A))

58.3

Ldn (dB(A))

66.0

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่ได้จากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4:30PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768629-1

Page 1 of 1

Sample Number 2383885-4
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-N (GPS 47P 0732567, 1404744)
Measurement Date Aug 28 - Aug 29, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623394

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	60.4	78.9	58.5
11:00 AM - 12:00 PM	60.7	88.1	58.2
12:00 PM - 01:00 PM	59.4	79.5	58.0
01:00 PM - 02:00 PM	60.1	74.7	58.3
02:00 PM - 03:00 PM	61.1	89.5	58.4
03:00 PM - 04:00 PM	60.4	84.4	58.2
04:00 PM - 05:00 PM	61.9	76.9	59.0
05:00 PM - 06:00 PM	61.1	79.8	58.9
06:00 PM - 07:00 PM	60.3	81.9	58.4
07:00 PM - 08:00 PM	60.8	83.7	58.7
08:00 PM - 09:00 PM	60.7	86.4	58.9
09:00 PM - 10:00 PM	60.5	89.4	58.4
10:00 PM - 11:00 PM	60.7	88.6	58.6
11:00 PM - 12:00 AM	60.4	84.8	59.0
12:00 AM - 01:00 AM	60.0	68.0	59.1
01:00 AM - 02:00 AM	60.0	68.0	59.2
02:00 AM - 03:00 AM	60.8	80.4	59.6
03:00 AM - 04:00 AM	61.3	82.2	59.3
04:00 AM - 05:00 AM	60.3	79.7	59.2
05:00 AM - 06:00 AM	60.0	68.7	59.2
06:00 AM - 07:00 AM	60.3	76.2	59.1
07:00 AM - 08:00 AM	60.3	74.5	58.8
08:00 AM - 09:00 AM	60.5	79.8	58.7
09:00 AM - 10:00 AM	61.0	84.0	58.8

Leq Average 24 hrs. (dB(A))

60.6

Lmax (dB(A))

89.5

L90 (dB(A))

58.8

Ldn (dB(A))

66.9

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่ได้จากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4:31PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768630-1

Page 1 of 1

Sample Number 2383885-5
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-N (GPS 47P 0732567, 1404744)
Measurement Date Aug 29 - Aug 30, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623394

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	60.5	82.4	58.4
11:00 AM - 12:00 PM	59.7	74.9	58.2
12:00 PM - 01:00 PM	59.5	77.3	57.8
01:00 PM - 02:00 PM	59.4	79.0	57.5
02:00 PM - 03:00 PM	60.5	78.2	57.8
03:00 PM - 04:00 PM	60.4	85.2	58.0
04:00 PM - 05:00 PM	61.3	76.6	58.4
05:00 PM - 06:00 PM	60.9	92.4	58.5
06:00 PM - 07:00 PM	59.7	81.8	57.9
07:00 PM - 08:00 PM	60.0	76.3	58.3
08:00 PM - 09:00 PM	59.9	77.4	58.8
09:00 PM - 10:00 PM	60.4	87.3	59.0
10:00 PM - 11:00 PM	60.1	78.6	59.0
11:00 PM - 12:00 AM	60.6	92.1	58.8
12:00 AM - 01:00 AM	59.6	70.5	58.9
01:00 AM - 02:00 AM	59.7	75.0	59.0
02:00 AM - 03:00 AM	60.1	78.1	59.1
03:00 AM - 04:00 AM	60.5	81.2	59.1
04:00 AM - 05:00 AM	60.2	78.8	59.3
05:00 AM - 06:00 AM	60.3	77.7	59.3
06:00 AM - 07:00 AM	60.1	72.4	59.1
07:00 AM - 08:00 AM	60.2	78.7	58.6
08:00 AM - 09:00 AM	62.2	88.7	59.2
09:00 AM - 10:00 AM	61.0	80.2	58.8

Leq Average 24 hrs. (dB(A))

60.3

Lmax (dB(A))

92.4

L90 (dB(A))

58.8

Ldn (dB(A))

66.6

Standard (dB(A))

70

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanitak.

Thanita Kulsurirong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise rpt (4 32PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768631-1

Page 1 of 1

Sample Number 2383885-6
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-N (GPS 47P 0732567, 1404744)
Measurement Date Aug 30 - Aug 31, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623394

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	60.7	79.1	58.7
11:00 AM - 12:00 PM	60.1	80.4	58.3
12:00 PM - 01:00 PM	61.2	87.7	58.2
01:00 PM - 02:00 PM	60.3	74.9	58.5
02:00 PM - 03:00 PM	61.3	89.7	58.6
03:00 PM - 04:00 PM	60.6	84.6	58.4
04:00 PM - 05:00 PM	62.1	77.1	59.2
05:00 PM - 06:00 PM	61.3	80.0	59.1
06:00 PM - 07:00 PM	60.5	82.1	58.6
07:00 PM - 08:00 PM	61.0	83.9	58.9
08:00 PM - 09:00 PM	60.9	86.6	59.1
09:00 PM - 10:00 PM	60.7	89.6	58.6
10:00 PM - 11:00 PM	60.9	88.8	58.8
11:00 PM - 12:00 AM	60.6	85.0	59.2
12:00 AM - 01:00 AM	60.2	68.2	59.3
01:00 AM - 02:00 AM	60.2	68.2	59.4
02:00 AM - 03:00 AM	61.0	80.6	59.8
03:00 AM - 04:00 AM	60.7	80.0	58.9
04:00 AM - 05:00 AM	61.2	84.2	59.0
05:00 AM - 06:00 AM	60.7	82.6	58.6
06:00 AM - 07:00 AM	60.2	68.9	59.4
07:00 AM - 08:00 AM	60.5	76.4	59.3
08:00 AM - 09:00 AM	60.5	74.7	59.0
09:00 AM - 10:00 AM	60.1	70.2	59.4

Leq Average 24 hrs. (dB(A))

60.8

Lmax (dB(A))

89.7

L90 (dB(A))

58.9

Ldn (dB(A))

67.1

Standard (dB(A))

70

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanitak.

Thanita Kulsurirong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise rpt (4 33PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768632-1

Page 1 of 1

Sample Number 2383885-7
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-N (GPS 47P 0732567, 1404744)
Measurement Date Aug 31 - Sep 01, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623394

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	60.2	79.6	58.3
11:00 AM - 12:00 PM	59.8	76.9	58.3
12:00 PM - 01:00 PM	59.9	83.5	58.2
01:00 PM - 02:00 PM	59.8	77.4	58.5
02:00 PM - 03:00 PM	60.9	84.6	58.5
03:00 PM - 04:00 PM	61.0	78.7	58.9
04:00 PM - 05:00 PM	61.0	77.7	59.0
05:00 PM - 06:00 PM	60.8	78.6	58.9
06:00 PM - 07:00 PM	60.5	75.2	59.0
07:00 PM - 08:00 PM	60.5	80.0	58.9
08:00 PM - 09:00 PM	60.1	83.3	58.6
09:00 PM - 10:00 PM	59.9	70.0	58.9
10:00 PM - 11:00 PM	60.1	74.3	59.2
11:00 PM - 12:00 AM	60.8	89.0	59.2
12:00 AM - 01:00 AM	60.7	90.2	59.0
01:00 AM - 02:00 AM	60.2	84.9	58.7
02:00 AM - 03:00 AM	60.0	70.6	59.2
03:00 AM - 04:00 AM	59.3	69.4	58.6
04:00 AM - 05:00 AM	59.2	64.0	58.5
05:00 AM - 06:00 AM	59.2	62.4	58.6
06:00 AM - 07:00 AM	59.3	71.6	58.7
07:00 AM - 08:00 AM	60.0	83.0	58.8
08:00 AM - 09:00 AM	60.4	81.8	58.2
09:00 AM - 10:00 AM	60.4	86.3	58.2
Leq Average 24 hrs. (dB(A))	60.2		
Lmax (dB(A))		90.2	
L90 (dB(A))			58.7
Ldn (dB(A))	66.4		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศกระทรวงมหาดไทย เรื่อง กำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4 34PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768633-1

Page 1 of 1

Sample Number 2383885-8
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-S (GPS 47P 0732589, 1404055)
Measurement Date Aug 25 - Aug 26, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 465461

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	67.0	81.5	65.9
12:00 PM - 01:00 PM	66.2	78.8	65.5
01:00 PM - 02:00 PM	66.2	76.8	65.8
02:00 PM - 03:00 PM	67.5	83.1	65.9
03:00 PM - 04:00 PM	68.2	84.0	67.5
04:00 PM - 05:00 PM	68.4	83.6	66.9
05:00 PM - 06:00 PM	68.3	79.5	67.0
06:00 PM - 07:00 PM	67.7	71.4	66.6
07:00 PM - 08:00 PM	67.6	69.9	67.3
08:00 PM - 09:00 PM	68.3	83.9	66.7
09:00 PM - 10:00 PM	67.2	68.6	66.8
10:00 PM - 11:00 PM	66.8	67.8	66.7
11:00 PM - 12:00 AM	66.7	67.9	66.5
12:00 AM - 01:00 AM	67.2	85.7	66.2
01:00 AM - 02:00 AM	66.5	67.4	66.3
02:00 AM - 03:00 AM	66.7	68.2	66.5
03:00 AM - 04:00 AM	66.6	76.6	66.3
04:00 AM - 05:00 AM	68.8	84.6	68.1
05:00 AM - 06:00 AM	69.0	80.2	67.7
06:00 AM - 07:00 AM	66.6	69.4	66.4
07:00 AM - 08:00 AM	67.1	78.7	66.5
08:00 AM - 09:00 AM	67.2	73.5	66.8
09:00 AM - 10:00 AM	67.2	72.4	66.9
10:00 AM - 11:00 AM	67.4	84.4	66.4
Leq Average 24 hrs. (dB(A))	67.4		
Lmax (dB(A))		85.7	
L90 (dB(A))			66.5
Ldn (dB(A))	73.8		
Standard (dB(A))	70	115	

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศกระทรวงมหาดไทย เรื่อง กำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4 34PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768634-1

Page 1 of 1

Sample Number 2383885-9
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-S (GPS 47P 0732589, 1404055)
Measurement Date Aug 26 - Aug 27, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 465461

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	67.8	79.9	67.4
12:00 PM - 01:00 PM	67.6	74.4	67.3
01:00 PM - 02:00 PM	67.6	68.9	67.3
02:00 PM - 03:00 PM	67.8	72.5	67.5
03:00 PM - 04:00 PM	67.8	68.8	67.5
04:00 PM - 05:00 PM	67.6	72.9	67.3
05:00 PM - 06:00 PM	67.8	79.5	67.1
06:00 PM - 07:00 PM	67.3	71.3	67.0
07:00 PM - 08:00 PM	67.9	87.9	66.7
08:00 PM - 09:00 PM	67.0	68.5	66.8
09:00 PM - 10:00 PM	67.1	81.5	66.7
10:00 PM - 11:00 PM	66.9	74.7	66.7
11:00 PM - 12:00 AM	67.0	77.3	66.7
12:00 AM - 01:00 AM	66.8	67.7	66.6
01:00 AM - 02:00 AM	67.0	68.3	66.7
02:00 AM - 03:00 AM	67.1	70.5	66.8
03:00 AM - 04:00 AM	66.9	68.3	66.5
04:00 AM - 05:00 AM	66.6	67.7	66.4
05:00 AM - 06:00 AM	66.6	70.4	66.4
06:00 AM - 07:00 AM	67.8	87.6	66.3
07:00 AM - 08:00 AM	67.5	82.7	66.8
08:00 AM - 09:00 AM	67.3	81.6	66.8
09:00 AM - 10:00 AM	67.5	87.3	66.0
10:00 AM - 11:00 AM	67.8	86.7	67.3

Leq Average 24 hrs. (dB(A)) 67.4
Lmax (dB(A)) 87.9
L90 (dB(A)) 66.8
Ldn (dB(A)) 73.5
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise rpt (4.35PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768635-1

Page 1 of 1

Sample Number 2383885-10
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-S (GPS 47P 0732589, 1404055)
Measurement Date Aug 27 - Aug 28, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 465461

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	67.7	70.3	67.3
12:00 PM - 01:00 PM	67.8	86.0	67.3
01:00 PM - 02:00 PM	67.3	75.4	66.8
02:00 PM - 03:00 PM	67.4	85.7	66.9
03:00 PM - 04:00 PM	67.5	71.7	66.9
04:00 PM - 05:00 PM	67.5	70.1	67.1
05:00 PM - 06:00 PM	67.5	74.7	67.1
06:00 PM - 07:00 PM	67.6	81.8	67.0
07:00 PM - 08:00 PM	67.2	79.4	66.8
08:00 PM - 09:00 PM	67.3	74.5	66.9
09:00 PM - 10:00 PM	66.9	69.6	66.5
10:00 PM - 11:00 PM	66.9	69.5	66.6
11:00 PM - 12:00 AM	66.7	71.5	66.4
12:00 AM - 01:00 AM	66.8	74.7	66.4
01:00 AM - 02:00 AM	66.9	69.8	66.5
02:00 AM - 03:00 AM	67.1	76.8	66.7
03:00 AM - 04:00 AM	67.2	69.9	66.8
04:00 AM - 05:00 AM	67.3	77.6	67.0
05:00 AM - 06:00 AM	67.2	69.9	66.9
06:00 AM - 07:00 AM	67.4	74.4	67.0
07:00 AM - 08:00 AM	67.3	70.1	66.9
08:00 AM - 09:00 AM	67.7	81.5	67.0
09:00 AM - 10:00 AM	67.3	87.4	66.6
10:00 AM - 11:00 AM	67.4	79.8	67.0

Leq Average 24 hrs. (dB(A)) 67.3
Lmax (dB(A)) 87.4
L90 (dB(A)) 66.9
Ldn (dB(A)) 73.5
Standard (dB(A)) 70 115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanitak.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise rpt (4.35PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768636-1

Page 1 of 1

Sample Number : 2383885-11
Parameter : Noise (Leq 24 hrs.)
Location : Fence of TPC-S (GPS 47P 0732589, 1404055)
Measurement Date : Aug 28 - Aug 29, 2023
Measurement by : Nantawat Sarin
Sound Level meter : Serial No. 465461

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	67.4	79.1	67.0
12:00 PM - 01:00 PM	67.8	72.7	67.3
01:00 PM - 02:00 PM	67.8	85.7	67.3
02:00 PM - 03:00 PM	67.7	75.9	67.3
03:00 PM - 04:00 PM	67.6	82.4	67.1
04:00 PM - 05:00 PM	67.5	74.1	67.1
05:00 PM - 06:00 PM	67.5	78.4	67.1
06:00 PM - 07:00 PM	67.6	81.6	66.9
07:00 PM - 08:00 PM	67.3	73.8	66.9
08:00 PM - 09:00 PM	67.0	80.2	66.6
09:00 PM - 10:00 PM	66.9	74.5	66.5
10:00 PM - 11:00 PM	66.9	84.7	66.5
11:00 PM - 12:00 AM	67.1	69.9	66.8
12:00 AM - 01:00 AM	68.0	70.8	67.7
01:00 AM - 02:00 AM	67.1	69.7	66.7
02:00 AM - 03:00 AM	67.0	69.6	66.6
03:00 AM - 04:00 AM	67.1	70.0	66.7
04:00 AM - 05:00 AM	67.1	70.0	66.7
05:00 AM - 06:00 AM	67.2	70.0	66.8
06:00 AM - 07:00 AM	67.1	82.5	66.8
07:00 AM - 08:00 AM	67.3	70.3	67.0
08:00 AM - 09:00 AM	67.6	87.0	66.7
09:00 AM - 10:00 AM	67.5	83.1	66.7
10:00 AM - 11:00 AM	67.4	82.8	67.1

Leq Average 24 hrs. (dB(A)) : 67.4
Lmax (dB(A)) : 87.0
L90 (dB(A)) : 66.8
Ldn (dB(A)) : 73.6
Standard (dB(A)) : 70

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศกระทรวงมหาดไทย เรื่อง กำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่ได้จากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamtch
Section Head

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S:\Reports_Air Noise rpt (4:38PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768637-1

Page 1 of 1

Sample Number : 2383885-12
Parameter : Noise (Leq 24 hrs.)
Location : Fence of TPC-S (GPS 47P 0732589, 1404055)
Measurement Date : Aug 29 - Aug 30, 2023
Measurement by : Nantawat Sarin
Sound Level meter : Serial No. 465461

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	67.7	83.9	67.2
12:00 PM - 01:00 PM	67.8	82.4	67.3
01:00 PM - 02:00 PM	67.2	70.9	66.8
02:00 PM - 03:00 PM	67.3	83.4	66.8
03:00 PM - 04:00 PM	67.4	87.4	66.9
04:00 PM - 05:00 PM	67.2	84.5	66.7
05:00 PM - 06:00 PM	67.2	84.8	66.7
06:00 PM - 07:00 PM	67.3	82.8	66.8
07:00 PM - 08:00 PM	67.3	81.6	66.6
08:00 PM - 09:00 PM	65.8	83.1	65.1
09:00 PM - 10:00 PM	65.5	67.3	65.1
10:00 PM - 11:00 PM	65.6	81.6	65.1
11:00 PM - 12:00 AM	66.8	70.6	65.4
12:00 AM - 01:00 AM	67.2	82.8	66.8
01:00 AM - 02:00 AM	67.2	81.2	66.8
02:00 AM - 03:00 AM	67.3	70.0	66.9
03:00 AM - 04:00 AM	67.3	87.3	66.7
04:00 AM - 05:00 AM	68.4	94.5	66.8
05:00 AM - 06:00 AM	67.1	69.9	66.8
06:00 AM - 07:00 AM	67.0	69.7	66.7
07:00 AM - 08:00 AM	67.3	74.5	66.9
08:00 AM - 09:00 AM	67.3	71.5	66.9
09:00 AM - 10:00 AM	67.6	81.7	66.9
10:00 AM - 11:00 AM	67.2	73.8	66.6

Leq Average 24 hrs. (dB(A)) : 67.2
Lmax (dB(A)) : 94.5
L90 (dB(A)) : 66.8
Ldn (dB(A)) : 73.6
Standard (dB(A)) : 70

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศกระทรวงมหาดไทย เรื่อง กำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่ได้จากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamtch
Section Head

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S:\Reports_Air Noise rpt (4:40PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768638-1

Page 1 of 1

Sample Number 2383885-13
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-S (GPS 47P 0732589, 1404055)
Measurement Date Aug 30 - Aug 31, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 465461

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	67.8	85.4	67.3
12:00 PM - 01:00 PM	67.8	70.3	67.3
01:00 PM - 02:00 PM	67.7	71.1	67.2
02:00 PM - 03:00 PM	67.7	78.7	67.3
03:00 PM - 04:00 PM	67.7	72.9	67.3
04:00 PM - 05:00 PM	67.7	74.6	67.2
05:00 PM - 06:00 PM	67.6	78.5	67.2
06:00 PM - 07:00 PM	67.4	83.9	67.0
07:00 PM - 08:00 PM	67.6	81.7	66.9
08:00 PM - 09:00 PM	67.0	72.5	66.7
09:00 PM - 10:00 PM	66.9	69.7	66.6
10:00 PM - 11:00 PM	66.8	70.1	66.5
11:00 PM - 12:00 AM	66.8	72.3	66.4
12:00 AM - 01:00 AM	66.9	69.4	66.6
01:00 AM - 02:00 AM	67.0	70.0	66.6
02:00 AM - 03:00 AM	67.1	69.7	66.7
03:00 AM - 04:00 AM	67.2	69.8	66.8
04:00 AM - 05:00 AM	67.1	70.0	66.7
05:00 AM - 06:00 AM	67.2	69.9	66.8
06:00 AM - 07:00 AM	67.1	69.8	66.7
07:00 AM - 08:00 AM	67.3	79.4	66.9
08:00 AM - 09:00 AM	67.3	73.8	66.9
09:00 AM - 10:00 AM	67.5	81.3	66.8
10:00 AM - 11:00 AM	67.4	84.0	66.9

Leq Average 24 hrs. (dB(A))

67.3

Lmax (dB(A))

85.4

L90 (dB(A))

66.8

Ldn (dB(A))

73.5

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise.rpt (4:40PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768639-1

Page 1 of 1

Sample Number 2383885-14
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-S (GPS 47P 0732589, 1404055)
Measurement Date Aug 31 - Sep 01, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 465461

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
11:00 AM - 12:00 PM	67.5	70.2	67.1
12:00 PM - 01:00 PM	67.5	82.1	67.0
01:00 PM - 02:00 PM	66.9	70.6	66.5
02:00 PM - 03:00 PM	67.0	83.1	66.5
03:00 PM - 04:00 PM	67.1	87.1	66.6
04:00 PM - 05:00 PM	66.9	84.2	66.4
05:00 PM - 06:00 PM	66.9	84.5	66.4
06:00 PM - 07:00 PM	67.0	82.5	66.5
07:00 PM - 08:00 PM	67.0	81.3	66.3
08:00 PM - 09:00 PM	65.5	82.8	64.8
09:00 PM - 10:00 PM	65.2	67.0	64.8
10:00 PM - 11:00 PM	65.3	81.3	64.8
11:00 PM - 12:00 AM	66.5	70.3	65.1
12:00 AM - 01:00 AM	66.9	82.5	66.5
01:00 AM - 02:00 AM	66.9	80.9	66.5
02:00 AM - 03:00 AM	67.0	69.7	66.6
03:00 AM - 04:00 AM	67.0	87.0	66.4
04:00 AM - 05:00 AM	68.1	94.2	66.5
05:00 AM - 06:00 AM	66.8	69.6	66.5
06:00 AM - 07:00 AM	66.7	69.4	66.4
07:00 AM - 08:00 AM	67.0	74.2	66.6
08:00 AM - 09:00 AM	67.0	71.2	66.6
09:00 AM - 10:00 AM	67.3	81.4	66.6
10:00 AM - 11:00 AM	66.9	73.5	66.3

Leq Average 24 hrs. (dB(A))

66.9

Lmax (dB(A))

94.2

L90 (dB(A))

66.5

Ldn (dB(A))

73.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise.rpt (4:43PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768640-1

Page 1 of 1

Sample Number 2383885-15
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-E (GPS 47P 0732810, 1404460)
Measurement Date Aug 25 - Aug 26, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623396

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.7	83.4	60.6
11:00 AM - 12:00 PM	61.6	74.7	60.8
12:00 PM - 01:00 PM	62.4	89.9	60.9
01:00 PM - 02:00 PM	61.9	74.8	61.0
02:00 PM - 03:00 PM	61.8	73.8	60.8
03:00 PM - 04:00 PM	62.2	83.5	60.9
04:00 PM - 05:00 PM	62.5	78.4	61.3
05:00 PM - 06:00 PM	62.3	75.6	61.3
06:00 PM - 07:00 PM	62.0	75.7	61.2
07:00 PM - 08:00 PM	62.1	77.8	61.2
08:00 PM - 09:00 PM	61.9	73.8	61.2
09:00 PM - 10:00 PM	61.2	79.2	60.4
10:00 PM - 11:00 PM	61.0	70.4	60.3
11:00 PM - 12:00 AM	60.6	70.2	60.1
12:00 AM - 01:00 AM	60.8	68.9	60.3
01:00 AM - 02:00 AM	60.8	72.1	60.2
02:00 AM - 03:00 AM	61.3	72.7	60.6
03:00 AM - 04:00 AM	61.1	81.1	60.5
04:00 AM - 05:00 AM	60.9	69.9	60.3
05:00 AM - 06:00 AM	61.0	65.5	60.4
06:00 AM - 07:00 AM	61.0	74.9	60.5
07:00 AM - 08:00 AM	61.4	73.6	60.4
08:00 AM - 09:00 AM	60.8	71.5	60.0
09:00 AM - 10:00 AM	60.6	73.1	60.0

Leq Average 24 hrs. (dB(A))

61.5

Lmax (dB(A))

89.9

L90 (dB(A))

60.5

Ldn (dB(A))

67.5

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4:43PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768641-1

Page 1 of 1

Sample Number 2383885-16
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-E (GPS 47P 0732810, 1404460)
Measurement Date Aug 26 - Aug 27, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623396

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.0	76.9	60.1
11:00 AM - 12:00 PM	60.8	76.0	59.9
12:00 PM - 01:00 PM	60.8	68.5	60.1
01:00 PM - 02:00 PM	61.3	73.6	60.5
02:00 PM - 03:00 PM	61.4	75.9	60.5
03:00 PM - 04:00 PM	61.2	76.8	60.3
04:00 PM - 05:00 PM	61.2	73.7	60.5
05:00 PM - 06:00 PM	62.2	76.3	60.9
06:00 PM - 07:00 PM	61.0	74.0	60.3
07:00 PM - 08:00 PM	61.9	93.9	60.3
08:00 PM - 09:00 PM	60.6	71.5	60.1
09:00 PM - 10:00 PM	60.9	77.7	60.1
10:00 PM - 11:00 PM	60.9	74.2	60.2
11:00 PM - 12:00 AM	61.0	72.2	60.5
12:00 AM - 01:00 AM	61.0	64.4	60.5
01:00 AM - 02:00 AM	60.8	67.3	60.3
02:00 AM - 03:00 AM	60.8	73.9	60.3
03:00 AM - 04:00 AM	60.9	64.2	60.3
04:00 AM - 05:00 AM	60.7	66.4	60.2
05:00 AM - 06:00 AM	60.7	67.9	60.2
06:00 AM - 07:00 AM	60.7	70.3	60.2
07:00 AM - 08:00 AM	61.0	82.2	59.9
08:00 AM - 09:00 AM	60.9	76.2	59.9
09:00 AM - 10:00 AM	60.9	73.1	60.0

Leq Average 24 hrs. (dB(A))

61.0

Lmax (dB(A))

93.9

L90 (dB(A))

60.2

Ldn (dB(A))

67.3

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4:44PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768642-1

Page 1 of 1

Sample Number 2383885-17
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-E (GPS 47P 0732810, 1404460)
Measurement Date Aug 27 - Aug 28, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623396

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.0	74.4	60.0
11:00 AM - 12:00 PM	61.1	76.9	60.1
12:00 PM - 01:00 PM	61.1	73.8	60.3
01:00 PM - 02:00 PM	61.2	73.8	60.1
02:00 PM - 03:00 PM	61.0	76.2	60.0
03:00 PM - 04:00 PM	61.3	89.0	60.0
04:00 PM - 05:00 PM	61.2	78.5	60.1
05:00 PM - 06:00 PM	61.0	75.8	60.0
06:00 PM - 07:00 PM	60.6	72.8	59.9
07:00 PM - 08:00 PM	60.9	71.6	60.2
08:00 PM - 09:00 PM	61.1	76.2	60.2
09:00 PM - 10:00 PM	60.9	76.6	60.0
10:00 PM - 11:00 PM	60.3	72.9	59.8
11:00 PM - 12:00 AM	60.5	64.5	60.0
12:00 AM - 01:00 AM	60.8	70.7	60.2
01:00 AM - 02:00 AM	60.8	71.8	60.2
02:00 AM - 03:00 AM	61.0	80.0	60.2
03:00 AM - 04:00 AM	61.0	71.0	60.4
04:00 AM - 05:00 AM	60.8	71.4	60.3
05:00 AM - 06:00 AM	60.8	67.2	60.3
06:00 AM - 07:00 AM	60.9	71.6	60.3
07:00 AM - 08:00 AM	61.0	72.4	60.2
08:00 AM - 09:00 AM	61.3	73.6	60.6
09:00 AM - 10:00 AM	61.4	73.8	60.7

Leq Average 24 hrs. (dB(A))

61.0

Lmax (dB(A))

89.0

L90 (dB(A))

60.2

Ldn (dB(A))

67.2

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)

Approved by

Supt S

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4:45PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768643-1

Page 1 of 1

Sample Number 2383885-18
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-E (GPS 47P 0732810, 1404460)
Measurement Date Aug 28 - Aug 29, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623396

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.5	74.5	60.7
11:00 AM - 12:00 PM	61.2	71.7	60.5
12:00 PM - 01:00 PM	61.2	72.4	60.4
01:00 PM - 02:00 PM	62.1	91.3	60.3
02:00 PM - 03:00 PM	61.5	74.0	60.4
03:00 PM - 04:00 PM	61.0	76.6	60.1
04:00 PM - 05:00 PM	61.4	77.7	60.4
05:00 PM - 06:00 PM	61.6	79.1	60.4
06:00 PM - 07:00 PM	61.0	78.6	60.3
07:00 PM - 08:00 PM	61.1	76.4	60.3
08:00 PM - 09:00 PM	61.0	81.6	59.8
09:00 PM - 10:00 PM	60.9	76.6	59.8
10:00 PM - 11:00 PM	61.1	72.9	60.3
11:00 PM - 12:00 AM	61.0	73.6	60.4
12:00 AM - 01:00 AM	61.1	74.2	60.5
01:00 AM - 02:00 AM	61.3	75.5	60.6
02:00 AM - 03:00 AM	61.3	73.6	60.6
03:00 AM - 04:00 AM	61.1	72.2	60.4
04:00 AM - 05:00 AM	61.2	76.8	60.5
05:00 AM - 06:00 AM	60.9	73.0	60.4
06:00 AM - 07:00 AM	60.9	73.6	60.4
07:00 AM - 08:00 AM	61.3	76.5	60.3
08:00 AM - 09:00 AM	61.4	77.4	60.3
09:00 AM - 10:00 AM	61.4	77.5	60.2

Leq Average 24 hrs. (dB(A))

61.2

Lmax (dB(A))

91.3

L90 (dB(A))

60.4

Ldn (dB(A))

67.5

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)

Approved by

Supt S

Supot Salamteh
Section Head

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S:\Reports_Air Noise.rpt (4:46PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768644-1

Page 1 of 1

Sample Number 2383885-19
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-E (GPS 47P 0732810, 1404460)
Measurement Date Aug 29 - Aug 30, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623396

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.0	73.2	60.1
11:00 AM - 12:00 PM	61.3	78.5	59.9
12:00 PM - 01:00 PM	60.5	72.7	59.8
01:00 PM - 02:00 PM	61.1	76.1	59.8
02:00 PM - 03:00 PM	61.2	77.6	60.0
03:00 PM - 04:00 PM	61.0	81.8	59.9
04:00 PM - 05:00 PM	60.8	74.5	59.9
05:00 PM - 06:00 PM	61.0	75.5	59.5
06:00 PM - 07:00 PM	60.2	74.0	59.5
07:00 PM - 08:00 PM	60.4	73.5	59.6
08:00 PM - 09:00 PM	60.7	74.4	59.9
09:00 PM - 10:00 PM	60.8	78.6	60.0
10:00 PM - 11:00 PM	60.6	78.9	59.9
11:00 PM - 12:00 AM	60.3	64.0	59.9
12:00 AM - 01:00 AM	60.8	70.6	60.2
01:00 AM - 02:00 AM	60.8	71.9	60.1
02:00 AM - 03:00 AM	61.0	77.5	60.3
03:00 AM - 04:00 AM	60.9	68.8	60.4
04:00 AM - 05:00 AM	61.3	83.0	60.5
05:00 AM - 06:00 AM	60.8	72.1	60.2
06:00 AM - 07:00 AM	60.7	68.4	60.1
07:00 AM - 08:00 AM	61.0	73.4	60.2
08:00 AM - 09:00 AM	61.3	75.9	60.3
09:00 AM - 10:00 AM	61.4	75.0	60.2

Leq Average 24 hrs. (dB(A))

60.9

Lmax (dB(A))

83.0

L90 (dB(A))

60.0

Ldn (dB(A))

67.2

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise rpt (4:46PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768645-1

Page 1 of 1

Sample Number 2383885-20
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-E (GPS 47P 0732810, 1404460)
Measurement Date Aug 30 - Aug 31, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623396

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.5	79.2	60.3
11:00 AM - 12:00 PM	60.7	74.3	60.0
12:00 PM - 01:00 PM	60.3	76.7	59.3
01:00 PM - 02:00 PM	67.5	82.1	59.7
02:00 PM - 03:00 PM	68.5	81.9	59.4
03:00 PM - 04:00 PM	60.1	77.0	59.2
04:00 PM - 05:00 PM	60.7	74.4	60.0
05:00 PM - 06:00 PM	61.5	81.0	60.0
06:00 PM - 07:00 PM	60.9	76.5	60.2
07:00 PM - 08:00 PM	60.8	74.0	60.0
08:00 PM - 09:00 PM	61.0	76.2	60.0
09:00 PM - 10:00 PM	60.6	73.1	60.1
10:00 PM - 11:00 PM	61.1	74.1	60.3
11:00 PM - 12:00 AM	60.7	67.3	60.2
12:00 AM - 01:00 AM	61.1	74.0	60.4
01:00 AM - 02:00 AM	61.2	71.3	60.6
02:00 AM - 03:00 AM	61.0	70.7	60.4
03:00 AM - 04:00 AM	60.9	70.8	60.3
04:00 AM - 05:00 AM	60.9	71.5	60.3
05:00 AM - 06:00 AM	61.0	74.7	60.4
06:00 AM - 07:00 AM	60.7	75.8	60.1
07:00 AM - 08:00 AM	60.8	73.5	60.0
08:00 AM - 09:00 AM	69.9	82.9	59.2
09:00 AM - 10:00 AM	66.9	81.9	60.3

Leq Average 24 hrs. (dB(A))

63.4

Lmax (dB(A))

82.9

L90 (dB(A))

60.1

Ldn (dB(A))

68.0

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป

2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการโรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsurwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise rpt (4:47PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768646-1

Page 1 of 1

Sample Number 2383885-21
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-E (GPS 47P 0732810, 1404460)
Measurement Date Aug 31 - Sep 01, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623396

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	61.1	78.4	59.7
11:00 AM - 12:00 PM	60.8	73.6	60.0
12:00 PM - 01:00 PM	61.1	76.2	60.1
01:00 PM - 02:00 PM	61.3	72.1	60.3
02:00 PM - 03:00 PM	61.5	77.7	60.4
03:00 PM - 04:00 PM	60.9	74.8	60.0
04:00 PM - 05:00 PM	60.7	73.3	60.0
05:00 PM - 06:00 PM	61.1	82.2	59.9
06:00 PM - 07:00 PM	60.8	72.3	60.1
07:00 PM - 08:00 PM	60.9	73.5	60.1
08:00 PM - 09:00 PM	61.0	74.7	60.3
09:00 PM - 10:00 PM	61.0	74.7	60.4
10:00 PM - 11:00 PM	60.7	64.6	60.2
11:00 PM - 12:00 AM	61.0	76.9	60.0
12:00 AM - 01:00 AM	60.6	73.3	60.1
01:00 AM - 02:00 AM	60.3	64.7	59.5
02:00 AM - 03:00 AM	60.4	64.3	60.0
03:00 AM - 04:00 AM	60.2	73.6	59.8
04:00 AM - 05:00 AM	60.1	75.7	59.7
05:00 AM - 06:00 AM	60.2	63.7	59.8
06:00 AM - 07:00 AM	60.4	83.2	59.7
07:00 AM - 08:00 AM	61.6	76.2	59.8
08:00 AM - 09:00 AM	60.8	72.1	60.0
09:00 AM - 10:00 AM	60.8	74.4	60.1

Leq Average 24 hrs. (dB(A))

60.8

Lmax (dB(A))

83.2

L90 (dB(A))

60.0

Ldn (dB(A))

66.9

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : 1. ประกาศคณะกรรมการสิ่งแวดล้อมแห่งชาติ ฉบับที่ 15 (พ.ศ. 2540) เรื่องกำหนดมาตรฐานระดับเสียงโดยทั่วไป
2. ประกาศกระทรวงอุตสาหกรรม เรื่องกำหนดค่าระดับเสียงการรบกวน และระดับเสียงที่เกิดจากการประกอบกิจการ
โรงงาน พ.ศ. 2548

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise.rpt (4:49PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768647-1

Page 1 of 1

Sample Number 2383885-22
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-W (GPS 47P 0732257, 1404663)
Measurement Date Aug 25 - Aug 26, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623395

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	68.9	89.5	67.6
11:00 AM - 12:00 PM	68.6	77.1	67.6
12:00 PM - 01:00 PM	68.7	74.9	67.9
01:00 PM - 02:00 PM	68.5	77.2	67.5
02:00 PM - 03:00 PM	68.2	74.9	67.3
03:00 PM - 04:00 PM	67.8	73.6	67.0
04:00 PM - 05:00 PM	68.3	76.4	67.1
05:00 PM - 06:00 PM	68.0	72.8	67.2
06:00 PM - 07:00 PM	67.6	72.1	66.8
07:00 PM - 08:00 PM	67.4	72.9	66.7
08:00 PM - 09:00 PM	67.4	71.6	66.7
09:00 PM - 10:00 PM	67.0	70.6	66.3
10:00 PM - 11:00 PM	66.7	68.8	66.1
11:00 PM - 12:00 AM	66.8	68.8	66.2
12:00 AM - 01:00 AM	67.2	68.4	66.7
01:00 AM - 02:00 AM	66.9	68.9	66.4
02:00 AM - 03:00 AM	67.2	70.0	66.4
03:00 AM - 04:00 AM	67.3	70.0	66.6
04:00 AM - 05:00 AM	67.4	70.0	66.7
05:00 AM - 06:00 AM	67.3	75.9	66.4
06:00 AM - 07:00 AM	67.3	70.2	66.4
07:00 AM - 08:00 AM	67.0	69.2	66.0
08:00 AM - 09:00 AM	66.9	69.0	66.0
09:00 AM - 10:00 AM	67.3	73.4	66.3

Leq Average 24 hrs. (dB(A))

67.6

Lmax (dB(A))

89.5

L90 (dB(A))

66.7

Ldn (dB(A))

73.7

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise.rpt (4:50PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768648-1

Page 1 of 1

Sample Number : 2383885-23
Parameter : Noise (Leq 24 hrs.)
Location : Fence of TPC-W (GPS 47P 0732257, 1404663)
Measurement Date : Aug 26 - Aug 27, 2023
Measurement by : Nantawat Sarin
Sound Level meter : Serial No. 623395

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	67.2	70.9	66.2
11:00 AM - 12:00 PM	66.9	69.2	65.9
12:00 PM - 01:00 PM	66.3	72.3	65.5
01:00 PM - 02:00 PM	66.3	69.4	65.7
02:00 PM - 03:00 PM	66.6	70.5	65.7
03:00 PM - 04:00 PM	67.2	74.0	66.3
04:00 PM - 05:00 PM	67.2	71.8	66.4
05:00 PM - 06:00 PM	67.1	71.2	66.3
06:00 PM - 07:00 PM	67.1	69.7	66.3
07:00 PM - 08:00 PM	66.6	73.4	66.0
08:00 PM - 09:00 PM	67.0	69.3	66.1
09:00 PM - 10:00 PM	66.9	68.9	66.1
10:00 PM - 11:00 PM	66.9	69.0	66.3
11:00 PM - 12:00 AM	66.8	69.2	66.0
12:00 AM - 01:00 AM	66.6	68.6	66.0
01:00 AM - 02:00 AM	66.8	68.7	66.1
02:00 AM - 03:00 AM	66.8	71.1	66.0
03:00 AM - 04:00 AM	66.7	68.8	66.0
04:00 AM - 05:00 AM	66.7	75.8	65.8
05:00 AM - 06:00 AM	67.0	76.0	65.9
06:00 AM - 07:00 AM	66.4	69.4	65.9
07:00 AM - 08:00 AM	66.5	71.7	66.0
08:00 AM - 09:00 AM	66.4	69.1	65.8
09:00 AM - 10:00 AM	66.0	70.9	65.5

Leq Average 24 hrs. (dB(A))

66.8

Lmax (dB(A))

76.0

L90 (dB(A))

66.0

Ldn (dB(A))

73.2

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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S:\Reports\Air Noise.rpt (4:53PM)



Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768649-1

Page 1 of 1

Sample Number : 2383885-24
Parameter : Noise (Leq 24 hrs.)
Location : Fence of TPC-W (GPS 47P 0732257, 1404663)
Measurement Date : Aug 27 - Aug 28, 2023
Measurement by : Nantawat Sarin
Sound Level meter : Serial No. 623395

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	66.2	75.1	65.6
11:00 AM - 12:00 PM	66.3	69.1	65.8
12:00 PM - 01:00 PM	66.1	69.2	65.4
01:00 PM - 02:00 PM	65.8	67.7	65.4
02:00 PM - 03:00 PM	65.8	69.9	65.4
03:00 PM - 04:00 PM	66.3	76.8	65.6
04:00 PM - 05:00 PM	66.3	68.6	65.8
05:00 PM - 06:00 PM	66.6	68.6	66.2
06:00 PM - 07:00 PM	66.5	71.3	66.2
07:00 PM - 08:00 PM	66.6	69.1	66.2
08:00 PM - 09:00 PM	66.5	67.8	66.2
09:00 PM - 10:00 PM	66.5	68.0	66.2
10:00 PM - 11:00 PM	66.5	67.8	66.2
11:00 PM - 12:00 AM	66.6	68.1	66.2
12:00 AM - 01:00 AM	66.6	74.9	66.2
01:00 AM - 02:00 AM	66.4	68.6	66.0
02:00 AM - 03:00 AM	66.3	67.8	65.9
03:00 AM - 04:00 AM	66.2	69.4	65.9
04:00 AM - 05:00 AM	66.3	76.2	65.9
05:00 AM - 06:00 AM	66.6	76.7	65.8
06:00 AM - 07:00 AM	66.4	69.5	65.9
07:00 AM - 08:00 AM	66.4	76.5	66.0
08:00 AM - 09:00 AM	66.5	79.5	66.0
09:00 AM - 10:00 AM	66.3	70.6	65.8

Leq Average 24 hrs. (dB(A))

66.4

Lmax (dB(A))

79.5

L90 (dB(A))

65.9

Ldn (dB(A))

72.8

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768650-1

Page 1 of 1

Sample Number 2383885-25
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-W (GPS 47P 0732257, 1404663)
Measurement Date Aug 28 - Aug 29, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623395

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	66.4	70.5	66.0
11:00 AM - 12:00 PM	66.2	72.2	65.7
12:00 PM - 01:00 PM	66.0	69.8	65.5
01:00 PM - 02:00 PM	66.0	69.1	65.6
02:00 PM - 03:00 PM	66.2	69.8	65.7
03:00 PM - 04:00 PM	66.4	73.2	65.9
04:00 PM - 05:00 PM	66.5	75.7	66.0
05:00 PM - 06:00 PM	66.4	76.2	66.1
06:00 PM - 07:00 PM	66.6	76.9	66.1
07:00 PM - 08:00 PM	66.5	68.0	66.1
08:00 PM - 09:00 PM	66.6	68.0	66.2
09:00 PM - 10:00 PM	66.5	67.9	66.1
10:00 PM - 11:00 PM	66.3	67.7	66.0
11:00 PM - 12:00 AM	66.6	68.5	66.2
12:00 AM - 01:00 AM	66.6	69.0	66.0
01:00 AM - 02:00 AM	66.6	68.5	66.0
02:00 AM - 03:00 AM	66.6	69.1	66.0
03:00 AM - 04:00 AM	66.8	69.6	66.0
04:00 AM - 05:00 AM	66.9	75.2	66.1
05:00 AM - 06:00 AM	67.2	77.1	66.2
06:00 AM - 07:00 AM	66.9	69.3	66.1
07:00 AM - 08:00 AM	67.1	79.0	66.1
08:00 AM - 09:00 AM	66.7	77.4	66.1
09:00 AM - 10:00 AM	66.6	74.1	65.9

Leq Average 24 hrs. (dB(A))

66.6

Lmax (dB(A))

79.0

L90 (dB(A))

66.0

Ldn (dB(A))

73.1

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2383885

Date Received : Sep 04, 2023

Date Reported : Sep 07, 2023

Report Number: 2768651-1

Page 1 of 1

Sample Number 2383885-26
Parameter Noise (Leq 24 hrs.)
Location Fence of TPC-W (GPS 47P 0732257, 1404663)
Measurement Date Aug 29 - Aug 30, 2023
Measurement by Nantawat Sarin
Sound Level meter Serial No. 623395

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	66.7	77.9	65.9
11:00 AM - 12:00 PM	66.6	75.0	65.7
12:00 PM - 01:00 PM	66.3	68.9	65.6
01:00 PM - 02:00 PM	66.2	70.7	65.5
02:00 PM - 03:00 PM	66.5	74.6	65.7
03:00 PM - 04:00 PM	66.8	70.4	66.1
04:00 PM - 05:00 PM	67.0	70.8	66.2
05:00 PM - 06:00 PM	67.1	70.2	66.2
06:00 PM - 07:00 PM	67.2	74.7	66.3
07:00 PM - 08:00 PM	67.3	74.8	66.4
08:00 PM - 09:00 PM	67.4	70.4	66.5
09:00 PM - 10:00 PM	67.4	69.4	66.8
10:00 PM - 11:00 PM	67.4	69.5	66.8
11:00 PM - 12:00 AM	67.5	69.5	66.7
12:00 AM - 01:00 AM	67.5	69.6	66.8
01:00 AM - 02:00 AM	67.5	69.8	66.8
02:00 AM - 03:00 AM	67.4	69.3	66.8
03:00 AM - 04:00 AM	67.4	69.5	66.7
04:00 AM - 05:00 AM	67.5	75.1	66.8
05:00 AM - 06:00 AM	67.6	76.7	66.7
06:00 AM - 07:00 AM	67.3	76.1	66.7
07:00 AM - 08:00 AM	67.2	76.3	66.5
08:00 AM - 09:00 AM	67.3	70.8	66.5
09:00 AM - 10:00 AM	67.3	72.1	66.6

Leq Average 24 hrs. (dB(A))

67.2

Lmax (dB(A))

77.9

L90 (dB(A))

66.5

Ldn (dB(A))

73.8

Standard (dB(A))

70

115

Reference Method : ISO1996-1 and 1996-2

Standard : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)

Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2383885
Date Received : Sep 04, 2023
Date Reported : Sep 07, 2023
Report Number: 2768652-1

Page 1 of 1

Sample Number : 2383885-27
Parameter : Noise (Leq 24 hrs.)
Location : Fence of TPC-W (GPS 47P 0732257, 1404663)
Measurement Date : Aug 30 - Aug 31, 2023
Measurement by : Nantawat Sarin
Sound Level meter : Serial No. 623395

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	67.2	73.1	66.5
11:00 AM - 12:00 PM	67.2	71.5	66.4
12:00 PM - 01:00 PM	66.9	71.2	66.1
01:00 PM - 02:00 PM	66.8	71.7	66.2
02:00 PM - 03:00 PM	67.0	73.9	66.4
03:00 PM - 04:00 PM	67.2	72.3	66.5
04:00 PM - 05:00 PM	67.2	70.6	66.6
05:00 PM - 06:00 PM	67.3	73.6	66.7
06:00 PM - 07:00 PM	67.4	75.6	66.7
07:00 PM - 08:00 PM	67.2	69.6	66.6
08:00 PM - 09:00 PM	67.3	69.6	66.7
09:00 PM - 10:00 PM	67.5	69.5	66.7
10:00 PM - 11:00 PM	67.1	69.0	66.7
11:00 PM - 12:00 AM	67.3	69.5	66.6
12:00 AM - 01:00 AM	67.0	74.0	66.4
01:00 AM - 02:00 AM	67.0	69.0	66.4
02:00 AM - 03:00 AM	67.0	69.0	66.5
03:00 AM - 04:00 AM	67.0	68.8	66.5
04:00 AM - 05:00 AM	67.0	66.9	66.4
05:00 AM - 06:00 AM	67.2	77.1	66.6
06:00 AM - 07:00 AM	66.8	68.4	66.5
07:00 AM - 08:00 AM	66.9	73.0	66.5
08:00 AM - 09:00 AM	67.0	69.2	66.6
09:00 AM - 10:00 AM	67.0	73.1	66.6

Leq Average 24 hrs. (dB(A)) : 67.1
Lmax (dB(A)) : 77.1
L90 (dB(A)) : 66.5
Ldn (dB(A)) : 73.5
Standard (dB(A)) : 70
Reference Method : ISO1996-1 and 1996-2
Standard : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report



TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2383885
Date Received : Sep 04, 2023
Date Reported : Sep 07, 2023
Report Number: 2768653-1

Page 1 of 1

Sample Number : 2383885-28
Parameter : Noise (Leq 24 hrs.)
Location : Fence of TPC-W (GPS 47P 0732257, 1404663)
Measurement Date : Aug 31 - Sep 01, 2023
Measurement by : Nantawat Sarin
Sound Level meter : Serial No. 623395

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
10:00 AM - 11:00 AM	66.9	74.5	66.5
11:00 AM - 12:00 PM	66.9	75.6	66.5
12:00 PM - 01:00 PM	66.9	68.6	66.5
01:00 PM - 02:00 PM	66.8	68.8	66.3
02:00 PM - 03:00 PM	67.1	74.7	66.7
03:00 PM - 04:00 PM	67.2	71.6	66.7
04:00 PM - 05:00 PM	67.1	69.8	66.6
05:00 PM - 06:00 PM	67.2	69.6	66.7
06:00 PM - 07:00 PM	67.2	75.0	66.9
07:00 PM - 08:00 PM	67.2	68.5	66.8
08:00 PM - 09:00 PM	67.1	68.6	66.8
09:00 PM - 10:00 PM	67.1	68.9	66.7
10:00 PM - 11:00 PM	67.1	68.8	66.7
11:00 PM - 12:00 AM	67.3	69.4	66.8
12:00 AM - 01:00 AM	67.0	68.7	66.5
01:00 AM - 02:00 AM	67.2	69.3	66.7
02:00 AM - 03:00 AM	67.4	69.1	66.8
03:00 AM - 04:00 AM	67.5	69.4	66.9
04:00 AM - 05:00 AM	67.5	69.4	67.0
05:00 AM - 06:00 AM	67.4	76.0	66.9
06:00 AM - 07:00 AM	67.7	79.4	66.8
07:00 AM - 08:00 AM	67.2	69.0	66.8
08:00 AM - 09:00 AM	67.2	72.6	66.7
09:00 AM - 10:00 AM	67.4	69.9	66.9

Leq Average 24 hrs. (dB(A)) : 67.2
Lmax (dB(A)) : 79.4
L90 (dB(A)) : 66.7
Ldn (dB(A)) : 73.7
Standard (dB(A)) : 70
Reference Method : ISO1996-1 and 1996-2
Standard : Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
Remark : The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

Thanita K.

Thanita Kulsuriwong
Scientist (4)

Approved by

Supot S.

Supot Salamteh
Section Head

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2369542

Date Received: Jul 12, 2023

Date Reported: Jul 20, 2023

Report Number: 2685648-1

Client: Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O: PMM-23-14

Project Name: Environmental Testing

Project Location:

Page 1 of 2

Sample Number	2369542-1						
Sampled Date	Jul 12, 2023 10:17 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Jul 12, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G.	Rayong
COD *	mg/L	-	40	58	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 C	Rayong
Color (at Original pH)	ADMI	-	5	16	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	16	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	39.2	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	10680	≤45000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.4	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part N10 (D)	Rayong

Technical Management

N. Banngkit

Approved by

Dej Changchon

Narumon Banchoangkit

Supervisor

Dej Changchon

Senior Manager

โทรศัพท์ 0-323-9945

โทรศัพท์ 0-323-9942

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Analysis / Test Report

TESTING

No.0042

Lot ID: 2369542

Date Received: Jul 12, 2023

Date Reported: Jul 20, 2023

Report Number: 2685648-1

Client: Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O: PMM-23-14

Project Name: Environmental Testing

Project Location:

Page 2 of 2

Sample Number	2369542-1						
Sampled Date	Jul 12, 2023 10:17 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Jul 12, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	<5	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong
Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of the Ministry of Industry dated June 07, B.E.2560 (2017).							
Note: For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd							
Sampling By: Chaiyom Lertnathakunchai โทร ๐๙-๓๒๓-๙461 , Kerdbundit Kitsupavanti โทร ๐๙-๓๐๔-๙000							
Remark:							
- LOD: Limit of Detection							
- * <: Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)							
- Analyte(s) marked * were not included in scope of Accreditation ISO/IEC 17025.							
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.							

Technical Management

N. Banngkit

Approved by

Dej Changchon

Narumon Banchoangkit

Supervisor

Dej Changchon

Senior Manager

โทรศัพท์ 0-323-9945

โทรศัพท์ 0-323-9942

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2369542

Date Received: Jul 12, 2023

Date Reported: Jul 20, 2023

Report Number: 2685648-2

Client: Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O: PMM-23-14

Project Name: Environmental Testing

Project Location:

Page 1 of 1

Sample Number	2369540-1						
Sampled Date	Jul 12, 2023 10:17 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Jul 14, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles; sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Volatile Organics Compounds							
1,2-Dichloroethane *	ug/L	1.5	5	22.3	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok

Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of the Ministry of Industry dated June 07, B.E.2560 (2017).

Note: For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampling By: Chaiyom Lertnathakunchai, Kerdbundit Kitsupavant

Remark:

- LOD: Limit of Detection
- * <: Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * were not included in scope of Accreditation ISO/IEC 17025
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Approved by

Siriluk P.

Siriluk Puengpang

Section Head

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Analysis / Test Report

TESTING

No.0009

Lot ID: 2369542

Date Received: Jul 12, 2023

Date Reported: Jul 20, 2023

Report Number: 2685648-3

Client: Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150

P/O: PMM-23-14

Project Name: Environmental Testing

Project Location:

Page 1 of 1

Sample Number	2369542-1						
Sampled Date	Jul 12, 2023 10:17 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Jul 13, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Conductivity at 25 Degree C	micromhos/cm	-	0.5	17910	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P	mg/L	0.002	0.005	0.085	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of the Ministry of Industry dated June 07, B.E.2560 (2017).

Note: For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampling By: Chaiyom Lertnathakunchai, Kerdbundit Kitsupavant

Remark:

- LOD: Limit of Detection
- * <: Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banngkit

Narumon Banchoangkit

Supervisor

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Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2369545
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2685650-1

Page 1 of 1

Sample Number	2369545-1					
Sampled Date	Jul 12, 2023 10:30 AM					
Sample Description	Wastewater					
Location	บริเวณท่อรับน้ำของอุตสาหกรรมจากท่อระบายน้ำของโรงงาน 50 เมตร (Up stream)					
Date Analysis Commenced	Jul 12, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment-preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	29	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	3040	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 Degree C	mg/L	-	5	23	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chaimuorn Lertmanthakunchai รหัสประจำตัว 3-323-9-9461, Kardsundit Kittsupavant รหัสประจำตัว 3-204-9-0001

Remark:
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banjongkit

Narumon Banjongkit
Supervisor
รหัสประจำตัว 3-323-9-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
รหัสประจำตัว 3-323-9-9442

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Analysis / Test Report

TESTING
No.0009

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2369545
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2685650-2

Page 1 of 1

Sample Number	2369545-1					
Sampled Date	Jul 12, 2023 10:30 AM					
Sample Description	Wastewater					
Location	บริเวณท่อรับน้ำของอุตสาหกรรมจากท่อระบายน้ำของโรงงาน 50 เมตร (Up stream)					
Date Analysis Commenced	Jul 14, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane *	ug/L	1.5	5	18.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok

Sampling By : Chaimuorn Lertmanthakunchai, Kardsundit Kittsupavant

Remark:
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Approved by

Siriluk P.

Siriluk Pumpang
Section Head

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Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2369545
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2685650-3

Page 1 of 1

Sample Number	2369545-1					
Sampled Date	Jul 12, 2023 10:30 AM					
Sample Description	Wastewater					
Location	บริเวณท่อรับน้ำของอุตสาหกรรมจากท่อระบายน้ำของโรงงาน 50 เมตร (Up stream)					
Date Analysis Commenced	Jul 13, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Conductivity at 25 Degree C	micromhos/cm	-	0.5	5088	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P	mg/L	0.002	0.005	0.909	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (C)	Rayong

Sampling By : Chaimuorn Lertmanthakunchai, Kardsundit Kittsupavant

Remark:
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

N. Banjongkit

Narumon Banjongkit
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Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2369546
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2685654-1

Page 1 of 1

Sample Number	2369546-1					
Sampled Date	Jul 12, 2023 10:30 AM					
Sample Description	Wastewater					
Location	บริเวณท่อรับน้ำของอุตสาหกรรมจากท่อระบายน้ำของโรงงาน 50 เมตร (Down stream)					
Date Analysis Commenced	Jul 12, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	4.5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	32	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.4	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	35.2	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	6240	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	21	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chaimuorn Lertmanthakunchai รหัสประจำตัว 3-323-9-9461, Kardsundit Kittsupavant รหัสประจำตัว 3-204-9-0001

Remark:
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Technical Management

N. Banjongkit

Narumon Banjongkit
Supervisor
รหัสประจำตัว 3-323-9-9445

Approved by

D. Changchon

Dej Changchon
Senior Manager
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Analysis / Test Report



TESTING
No.0009

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand 21150
P/O: PPM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 2369546
Date Received: Jul 12, 2023
Date Reported: Jul 20, 2023
Report Number: 2685654-2

Page 1 of 1

Sample Number	2369546-1					
Sampled Date	Jul 12, 2023 10:36 AM					
Sample Description	Wastewater					
Location	บริเวณคลองรับน้ำของโรงงานอุตสาหกรรมจากท่อระบายน้ำลงสู่คลองรับน้ำ 50 เมตร (Down stream)					
Date Analysis Commenced	Jul 14, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organic Compounds						
1,2-Dichloroethane *	ug/L	1.5	5	9.3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok

Sampling By: Chainorn Lertnathakunchai, Kerdbundit Kitisupavant

Remark:
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Approved by

Siriluk P.
Siriluk Puengpang
Section Head

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MSD 171 (BML)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand 21150
P/O: PPM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 2369546
Date Received: Jul 12, 2023
Date Reported: Jul 20, 2023
Report Number: 2685654-3

Page 1 of 1

Sample Number	2369546-1					
Sampled Date	Jul 12, 2023 10:36 AM					
Sample Description	Wastewater					
Location	บริเวณคลองรับน้ำของโรงงานอุตสาหกรรมจากท่อระบายน้ำลงสู่คลองรับน้ำ 50 เมตร (Down stream)					
Date Analysis Commenced	Jul 13, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
Conductivity at 25 Degree C	microhm/cm	-	0.5	10210	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Phosphate as P	mg/L	0.002	0.005	0.620	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (C)	Rayong

Sampling By: Chainorn Lertnathakunchai, Kerdbundit Kitisupavant

Remark:
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Approved by

N. Bangpit
Narumon Banchongkit
Supervisor

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MSD 171 (BML)



Analysis / Test Report



TESTING
No.0042

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand 21150
P/O: PPM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 2369541
Date Received: Jul 12, 2023
Date Reported: Jul 19, 2023
Report Number: 2722556-1

Page 1 of 1

Sample Number	2369541-4					
Sampled Date	Jul 12, 2023 9:40 AM					
Sample Description	Wastewater					
Location	Influent 2					
Date Analysis Commenced	Jul 12, 2023					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	17.8	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	71	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	6.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	46.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	92	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 Degree C	mg/L	-	5	10	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By: Chainorn Lertnathakunchai โทร: 09-9461, Kerdbundit Kitisupavant โทร: 09-9461-9441

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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Dej Changchon
Dej Changchon
Senior Manager
โทร: 09-9461-9442

Technical Management

N. Bangpit
Narumon Banchongkit
Supervisor
โทร: 09-9461-9445

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MSD 171 (BML)



Analysis / Test Report



TESTING
No.0042

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand 21150
P/O: PPM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 2369541
Date Received: Jul 12, 2023
Date Reported: Jul 19, 2023
Report Number: 2722557-1

Page 1 of 1

Sample Number	2369541-5					
Sampled Date	Jul 12, 2023 10:12 AM					
Sample Description	Wastewater					
Location	Influent 3					
Date Analysis Commenced	Jul 12, 2023					
Condition of Sample	Contained in three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	362	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	969	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	10	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.7	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	42.4	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	10680	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	688	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By: Chainorn Lertnathakunchai โทร: 09-9461, Kerdbundit Kitisupavant โทร: 09-9461-9441

Remark:
- LOD: Limit of Detection
- "<" Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Dej Changchon
Dej Changchon
Senior Manager
โทร: 09-9461-9442

Technical Management

N. Bangpit
Narumon Banchongkit
Supervisor
โทร: 09-9461-9445

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ALS LABORATORY GROUP THAILAND CO., LTD. An ALS Limited Company

Life Sciences **www.alsglobal.com**
RIGHT SOLUTIONS RELIABLE. AFFORDABLE. FAST. S (Shrimp), AE (NGL) up (2.00%)

MSD 171 (BML)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

TESTING
No.0042
Lot ID: 2383931
Date Received : Aug 09, 2023
Date Reported : Aug 18, 2023
Report Number : 2721433-1

Page 1 of 2

Sample Number	2383931-1						
Sampled Date	Aug 09, 2023 10:25 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Aug 09, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	15.5	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O-G	Rayong
COD *	mg/L	-	40	≤40	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 C	Rayong
Color (at Original pH)	ADMI	-	5	20	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	18	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	≤3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	7.9	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	37.9	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	12900	≤45000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.9	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NHD (D)	Rayong

Technical Management

N. Banngkit
Nanum Banngkit
Supervisor
โทรศัพท์ 0-323-9-9445

Approved by

D. Chongchon
Dej Chongchon
Senior Manager
โทรศัพท์ 0-323-9-9442

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Analysis / Test Report

TESTING
No.0009

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 2383934
Date Received Aug 09, 2023
Date Reported Aug 18, 2023
Report Number 2721438-2

Page 1 of 1

Sample Number	2383934-1					
Sampled Date	Aug 09, 2023 10:39 AM					
Sample Description	Wastewater					
Location	บริเวณคลองรับน้ำของโรงงานอุตสาหกรรมภาคใต้ของโรงงาน 50 เมตร (Up stream)					
Date Analysis Commenced	Aug 10, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	9.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	7231	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.791	In-house method based on Standard Methods Rayong for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Sampling By : Chainorn Lertnathakunchai, Kerdbundit Kitisupavant

Remark:
- LOD Limit of Detection
- "<" Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Approved by

Nant Somb
Nantawadee Sornbom
Specialist I

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Analysis / Test Report

TESTING
No.0042

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 2383935
Date Received Aug 09, 2023
Date Reported Aug 18, 2023
Report Number 2721445-1

Page 1 of 1

Sample Number	2383935-1						Page 3 of 8
Sampled Date	Aug 09, 2023 10:46 AM						
Sample Description	Wastewater						
Location	บริเวณคลองรับน้ำของโรงงานอุตสาหกรรมภาคใต้ของโรงงาน 50 เมตร (Down stream)						
Date Analysis Commenced	Aug 09, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location	
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	2.9	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong	
COD	mg/L	1.5	25	28	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong	
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong	
pH at 25 degree C *	-	-	-	8.4	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong	
Temperature *	Degree C	-	-	34.3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	6260	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong	
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.9	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part 4500-N (D)	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	14	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong	

Sampling By : Chainorn Lertnathakunchai, Kerdbundit Kitisupavant, Kerdbundit Kitisupavant (Incubator) 204-9-0001

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Technical Management

N. Banongkit
Nanum Banhongkit
Supervisor
โทรศัพท์ 323-9445

Approved by

D. Chongchom
Dej Chongchom
Senior Manager
โทรศัพท์ 323-9442

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Analysis / Test Report

TESTING
No.0009

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 2383935
Date Received Aug 09, 2023
Date Reported Aug 18, 2023
Report Number 2721445-2

Page 1 of 1

Sample Number	2383935-1					
Sampled Date	Aug 09, 2023 10:46 AM					
Sample Description	Wastewater					
Location	บริเวณคลองรับน้ำของโรงงานอุตสาหกรรมภาคใต้ของโรงงาน 50 เมตร (Down stream)					
Date Analysis Commenced	Aug 10, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	5.3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	10680	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.704	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Sampling By : Chainorn Lertnathakunchai, Kerdbundit Kitisupavant

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Approved by

Nant Somb
Nantawadee Sornbom
Specialist I

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Analysis / Test Report

TESTING
No.0042

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 2383929
Date Received Aug 09, 2023
Date Reported Aug 17, 2023
Report Number 2748896-1

Page 1 of 1

Page 1 of 1

Sample Number	2383929-4					
Sampled Date	Aug 09, 2023 9:47 AM					
Sample Description	Wastewater					
Location	Influent 2					
Date Analysis Commenced	Aug 09, 2023					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	14.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	68	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	6.7	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	45.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	81	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	64	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chainorn Lertnathakunchai, Kerdbundit Kitisupavant, Kerdbundit Kitisupavant (Incubator) 204-9-0001

Remark:
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Technical Management

N. Banongkit
Nanum Banhongkit
Supervisor
โทรศัพท์ 323-9445

Approved by

D. Chongchom
Dej Chongchom
Senior Manager
โทรศัพท์ 323-9442

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Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393539-9
Date Received : Aug 09, 2023
Date Reported : Aug 17, 2023
Report Number : 2748997-1

Page 1 of 1

Sample Number	2393529-5					
Sampled Date	Aug 09, 2023 10:19 AM					
Sample Description	Wastewater					
Location	Influent 3					
Date Analysis Commenced	Aug 09, 2023					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment – preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	101	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	620	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	8	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.9	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	41.8	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	14320	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	325	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chainorn Lertnathakunchai รหัสประจำตัว 3-323-9461, Kardburi Kibsupavatt รหัสประจำตัว 3-204-6001

Remark :
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Technical Management : N. Banjongkit
Narumon Banjongkit
Supervisor
รหัสประจำตัว 3-323-9445

Approved by : D. Chongchon
Dej Chongchon
Senior Manager
รหัสประจำตัว 3-323-9442

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Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393539-9
Date Received : Sep 27, 2023
Date Reported : Oct 05, 2023
Report Number : 2742428-1

Page 1 of 2

Sample Number	2393539-1						
Sampled Date	Sep 27, 2023 11:00 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Sep 27, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	6.9	≤20	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	<40	≤120	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 C	Rayong
Color (at Original pH)	ADMI	-	5	14	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	13	≤300	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
pH at 25 degree C *	-	-	-	8.1	5.5-9.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	39.3	≤40	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	9700	≤45000	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	15.5	≤100	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg	Rayong

Technical Management : N. Banjongkit
Narumon Banjongkit
Supervisor
รหัสประจำตัว 3-323-9445

Approved by : D. Chongchon
Dej Chongchon
Senior Manager
รหัสประจำตัว 3-323-9442

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Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393539-9
Date Received : Sep 27, 2023
Date Reported : Oct 05, 2023
Report Number : 2742428-1

Page 2 of 2

Sample Number	2393539-1						
Sample Date	Sep 27, 2023 11:00 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Sep 27, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	8	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of the Ministry of Industry dated June 07, B.E.2560 (2017).

Note : For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampling By : Chainorn Lertnathakunchai รหัสประจำตัว 3-323-9461, Kardburi Kibsupavatt รหัสประจำตัว 3-204-6001

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Technical Management : N. Banjongkit
Narumon Banjongkit
Supervisor
รหัสประจำตัว 3-323-9445

Approved by : D. Chongchon
Dej Chongchon
Senior Manager
รหัสประจำตัว 3-323-9442

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WS-170 (PMS)



Analysis / Test Report

TESTING
No.0008

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393539-9
Date Received : Sep 27, 2023
Date Reported : Oct 05, 2023
Report Number : 2742428-2

Page 1 of 1

Sample Number	2393539-1						
Sample Date	Sep 27, 2023 11:00 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Sep 28, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Volatile Organics Compounds							
1,2-Dichloroethane	ug/L	1.5	5	103	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing							
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	16740	No Standard	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.071	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - P (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of the Ministry of Industry dated June 07, B.E.2560 (2017).

Note : For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampling By : Chainorn Lertnathakunchai, Kardburi Kibsupavatt

Remark :
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Approved by : S. Chaiyapattana
Suvimon Chaiyapattana
Scientist (3)

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Analysis / Test Report

TESTING

No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393540
Date Received : Sep 27, 2023
Date Reported : Oct 05, 2023
Report Number : 2742432-1

Page 1 of 1

Sample Number	2393540-1					
Sampled Date	Sep 27, 2023 11:25 AM					
Sample Description	Wastewater					
Location	บริเวณคลองรับน้ำจากท่อระบายน้ำจากอาคารและโรงงาน 50 เมตร (Up stream)					
Date Analysis Commenced	Sep 27, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	27.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	536	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.7	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	700	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chainumorn Lertnathakunchai โทร: 09-9461-323, Kerdbundit Kitisupavant โทร: 09-9461-204

Remark:
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banongkit
Supervisor
โทร: 09-9461-323, 9445

Approved by

D. Chanchon

Dej Chanchon
Senior Manager
โทร: 09-9461-323, 9442

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S (Phnom), 48 NGL, up (12/09/04)



Analysis / Test Report

TESTING

No.0009

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393540
Date Received : Sep 27, 2023
Date Reported : Oct 05, 2023
Report Number : 2742432-2

Page 1 of 1

Sample Number	2393540-1					
Sample Date	Sep 27, 2023 11:25 AM					
Sample Description	Wastewater					
Location	บริเวณคลองรับน้ำจากท่อระบายน้ำจากอาคารและโรงงาน 50 เมตร (Up stream)					
Date Analysis Commenced	Sep 28, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	576	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	1.398	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong
Sampling By: Chaiusorn Lettanthakanchai, Kirdbundi Kittisupavant						
Remark						
- LOD Limit of Detection						
- L*Q Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)						
- Analyte(s) marked * were not included in scope of Accreditation ISO/IEC 17025						
The laboratory has been accepted as an accredited laboratory by the ISO/IEC 17025						

Sampling By : Chainumorn Lertnathakunchai , Kerdbundit Kitisupavant

Remark:
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

S. Chaiyavong

Sudamon Chaiyavong
Scientist (3)

ACD/616/104 Phatthanakan 40 Phatthanakan Rd. Khwaeng Phatthanakan, Khet Suan Luang, Bangkok 10250 Thailand PHONE: +66 0 2760 3000 FAX: +66 0 2760 3197
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S (Phnom), 48 NGL, up (12/09/04)



Analysis / Test Report

TESTING

No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393541
Date Received : Sep 27, 2023
Date Reported : Oct 05, 2023
Report Number : 2742433-1

Page 1 of 1

Sample Number	2393541-1						Page 1 of 1
Sample Date	Sep 27, 2023 11:33 AM						
Sample Description	Wastewater						
Location	บริเวณคลองรับน้ำจากท่อระบายน้ำจากอาคารและโรงงาน 50 เมตร (Down stream)						
Date Analysis Commenced	Sep 27, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location	
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	—	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong	
COD	mg/L	1.5	25	<25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong	
Oil & Grease *	mg/L	—	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong	
pH at 25 degree C *				8.6	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong	
Temperature *	Degree C			27.8	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong	
Total Dissolved Solids Dried at 180 degree C	mg/L	—	5	608	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong	
Total Kjeldahl Nitrogen as N	mg/L	—	1.0	2.6	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong	
Total Suspended Solids Dried at 103-105 degree C	mg/L	—	5	636	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong	

Sampling By : Chainumorn Lertnathakunchai โทร: 09-9461-323, Kerdbundit Kitisupavant โทร: 09-9461-204

Remark:
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit

Narumon Banongkit
Supervisor
โทร: 09-9461-323, 9445

Approved by

D. Chanchon

Dej Chanchon
Senior Manager
โทร: 09-9461-323, 9442

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Analysis / Test Report

TESTING

No.0009

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2393541
Date Received : Sep 27, 2023
Date Reported : Oct 05, 2023
Report Number : 2742433-2

Page 1 of 1

Sample Number	2393541-1					
Sample Date	Sep 27, 2023 11:33 AM					
Sample Description	Wastewater					
Location	บริเวณคลองรับน้ำจากท่อระบายน้ำจากอาคารและโรงงาน 50 เมตร (Down stream)					
Date Analysis Commenced	Sep 28, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	195	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	—	0.5	764	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.758	In-house method based on Standard Methods: Rayong for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong
Sampling By : Chaiusorn Lertnanthakunchai , Kantbundit Kiksupavant						
Remark						
- LOD Limit of Detection						
- * " " Lower than: LOQ (Limit of Quantitation) / LOR (Limit of Reporting)						
- Analyte(s) marked * where not included in scope of Accreditation ISO/IEC 17025						
The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.						

Sampling By : Chainumorn Lertnathakunchai , Kerdbundit Kitisupavant

Remark:
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

S. Chaiyavong

Sudamon Chaiyavong
Scientist (3)

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TESTING
No.0042

Lot ID: 2393537
Date Received Sep 27, 2023
Date Reported Oct 04, 2023
Report Number 2797253-1

Page 1 of 1

Sampling By : Chainusorn Lertnanthakunchai ทะเบียนเลขที่ ๖-323-๖-9461 , Kardbundit Kitisupavanit ทะเบียนเลขที่ ๖-204-๖-0001

Approved by 
Dej Changchon
Senior Manager
หมายเลขโทรศัพท์ ๖-323-๙442

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TESTING
No.0042

Lot ID: 2393537
Date Received : Sep 27, 2023
Date Reported : Oct 04, 2023
Report Number : 2797254-1

Page 1 of 1

Sampling By : Chainusorn Lertnanthakunchai โทร.08-9461 , Kairbundit Kitisupavanit โทร.08-0001

Technical Management

Narumon Bancho
Supervisor
โทรศัพท์ 7-323-

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TESTING
No. 0042

Lot ID: 23110479
Date Received : Oct 11, 2023
Date Reported : Oct 20, 2023
Report Number : 2784583-1

Page 1 of 1

Technical Management		Approved by	
	Narumon Banchongkit Supervisor Tel. 02-261-1115		Dej Changchon Senior Manager Tel. 02-261-1115

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TESTING
No. 0042

Lot ID: 23110479
Date Received Oct 11, 2023
Date Reported Oct 20, 2023
Report Number 2784583-1

Page 2 of 2

Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and

effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By : Chaiyusorn Lertnanthakunchai n:(Bauwien) 1-323-4-9461 , Samart Kh

NR - 1.5

Narumon Banchongkit

ทะเบียนเลขที่ 7-323-4-9445

AC 2435 616/10 Moo 5-7 Maenam Khu A Phrakdaeng Rayong 21140 TH

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23110479
Date Received: Oct 11, 2023
Date Reported: Oct 20, 2023
Report Number: 2784583-2

Page 1 of 1

Page 2 of 2

Sample Number	23110479-1						
Sample Date	Oct 11, 2023 10:20 AM						
Sample Description	Wastewater						
Location	EPCT 3						
Date Analysis Commenced	Oct 12, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Volatile Organics Compounds							
1,2-Dichloroethane	ug/L	1.5	5	<5	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing							
Conductivity at 25 Degree C	micromhos/cm	-	0.5	18790	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P	mg/L	0.002	0.005	0.071	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of the Ministry of Industry dated June 07, B.E.2560 (2017).

Note: For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampling By: Chansorn Lertnathakunchai, Samart Khumplee

Remark:
- LOD: Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Siriluk P.
Siriluk Puengpang
Section Head

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903-172 (IND) 5 (Specimen, All NG/LOI (2.00H))



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

TESTING
No 0042

Lot ID: 23110484
Date Received: Oct 11, 2023
Date Reported: Oct 20, 2023
Report Number: 2784585-1

Page 1 of 1

Sample Number	23110484-1					
Sample Date	Oct 11, 2023 10:30 AM					
Sample Description	Wastewater					
Location	บริเวณคลอง/บึงน้ำของโรงงานอุตสาหกรรมภายในเขตโรงงาน/บึงน้ำ 50 เมตร (Up stream)					
Date Analysis Commenced	Oct 11, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	32.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2940	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	19	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By: Chansorn Lertnathakunchai โทร: 323-9461, Samart Khumplee โทร: 324-97830

Remark:
- LOD: Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit
Narumon Banhongkit
Supervisor
โทร: 323-9445

Approved by

D. Chanchon
Dej Chanchon
Senior Manager
โทร: 323-9442

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903-172 (IND) 5 (Specimen, All NG/LOI (2.00H))



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23110484
Date Received: Oct 11, 2023
Date Reported: Oct 20, 2023
Report Number: 2784585-2

Page 1 of 1

							Page 1 of 1
Sample Number	23110484-1						
Sample Date	Oct 11, 2023 10:30 AM						
Sample Description	Wastewater						
Location	บริเวณคลอง/บึงน้ำของโรงงานอุตสาหกรรมภายในเขตโรงงาน/บึงน้ำ 50 เมตร (Up stream)						
Date Analysis Commenced	Oct 12, 2023						
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location	
Volatile Organics Compounds							
1,2-Dichloroethane	ug/L	1.5	5	17.2	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok	
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok	
Water Testing							
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	4574	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong	
Phosphate as P *	mg/L	0.002	0.005	0.838	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong	

Sampling By: Chansorn Lertnathakunchai, Samart Khumplee

Remark:
- LOD: Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * is/are not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Approved by

Siriluk P.
Siriluk Puengpang
Section Head

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903-172 (IND) 5 (Specimen, All NG/LOI (2.00H))



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location:

TESTING
No 0042

Lot ID: 23110485
Date Received: Oct 11, 2023
Date Reported: Oct 20, 2023
Report Number: 2784587-1

Page 1 of 1

Sample Number	23110485-1					
Sample Date	Oct 11, 2023 10:40 AM					
Sample Description	Wastewater					
Location	บริเวณคลอง/บึงน้ำของโรงงานอุตสาหกรรมภายในเขตโรงงาน/บึงน้ำ 50 เมตร (Down stream)					
Date Analysis Commenced	Oct 11, 2023					
Condition of Sample	Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	46	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	5080	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	3.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	19	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By: Chansorn Lertnathakunchai โทร: 323-9461, Samart Khumplee โทร: 324-97830

Remark:
- LOD: Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banongkit
Narumon Banhongkit
Supervisor
โทร: 323-9445

Approved by

D. Chanchon
Dej Chanchon
Senior Manager
โทร: 323-9442

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903-172 (IND) 5 (Specimen, All NG/LOI (2.00H))



Analysis / Test Report

TESTING
No.0009

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110485
Date Received : Oct 11, 2023
Date Reported : Oct 26, 2023
Report Number : 2784587-2

Page 1 of 1

Sample Number : 23110485-1
Sample Date : Oct 11, 2023 10:40 AM
Sample Description : Wastewater
Location : เก็บตัวอย่างน้ำทิ้งจากท่อระบายน้ำลงสู่คลองในเขตพื้นที่รับน้ำ 50 เมตร (Down stream)
Date Analysis Commenced : Oct 12, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatiles Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	16.3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	8288	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.732	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Sampling By : Chamsorn Lertnathakunchai, Samart Khumplee

Remark :
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Approved by

Siriluk P.
Siriluk Pongwang
Section Head

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S (Waste), AL NGC-01 (10PM)



Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110473
Date Received : Oct 11, 2023
Date Reported : Oct 19, 2023
Report Number : 2811499-1

Page 1 of 1

Sample Number : 23110473-4
Sample Date : Oct 14, 2023 9:35 AM
Sample Description : Wastewater
Location : Influent 2
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	77	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 Degree C *	-	-	-	7.1	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	46.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	96	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong

Sampling By : Chamsorn Lertnathakunchai, Siriluk Pongwang

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Technical Management

N. Banthong
Narumon Banthongkit
Supervisor
โทร: 09-00000000-323-9-9445

Approved by

D. Chongchong
Dej Chongchong
Senior Manager
โทร: 09-00000000-323-9-9442

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S (Waste), AL NGC-01 (10PM)



Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110473
Date Received : Oct 11, 2023
Date Reported : Oct 19, 2023
Report Number : 2811500-1

Page 1 of 1

Sample Number : 23110473-5
Sample Date : Oct 14, 2023 10:15 AM
Sample Description : Wastewater
Location : Influent 3
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	457	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	1498	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	17	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 Degree C *	-	-	-	9.1	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	44.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	11760	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	1019	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong

Sampling By : Chamsorn Lertnathakunchai, Siriluk Pongwang

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Technical Management

N. Banthong
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Supervisor
โทร: 09-00000000-323-9-9445

Approved by

D. Chongchong
Dej Chongchong
Senior Manager
โทร: 09-00000000-323-9-9442

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S (Waste), AL NGC-01 (10PM)



Analysis / Test Report

TESTING
No.0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121586
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2810289-1

Page 1 of 2

Sample Number : 23121586-1
Sample Date : Nov 08, 2023 10:28 AM
Sample Description : Wastewater
Location : EPTC 3
Date Analysis Commenced : Nov 08, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD *	mg/L	-	40	58	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Color (at Original pH)	ADMI	-	5	19	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	17	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 Degree C *	-	-	-	8.4	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	38.7	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	14680	≤45000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	5.0	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NHD (D)	Rayong

Technical Management

N. Banthong
Narumon Banthongkit
Supervisor
โทร: 09-00000000-323-9-9445

Approved by

D. Chongchong
Dej Chongchong
Senior Manager
โทร: 09-00000000-323-9-9442

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S (Waste), AL NGC-01 (10PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :



TESTING
No.0042
Lot ID: 23121586
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2810289-1

Page 2 of 2

Sample Number : 23121586-1
Sampled Date : Nov 08, 2023 10:26 AM
Sample Description : Wastewater
Location : EFC 3
Date Analysis Commenced : Nov 08, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	9	550	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and efficient standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Note : For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampling By : Chaisorn Lerthanakunchai โทร: 09-9461, Kerdbundit Kitsuapant โทร: 09-9461-0001

Remark :
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Technical Management

N. Banchook

Narumen Banchookit
Supervisor
โทรศัพท์: 09-9461-9445

Approved by

D. Chongchun

Dej Chongchun
Senior Manager
โทรศัพท์: 09-9461-9442

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :



TESTING
No.0009
Lot ID: 23121586
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2810289-2

Page 1 of 1

Sample Number : 23121586-1
Sampled Date : Nov 08, 2023 10:28 AM
Sample Description : Wastewater
Location : EFC 3
Date Analysis Commenced : Nov 09, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and four plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOQ)	Result	Guideline / Specification	Method	Testing Location
Volatile Organic Compounds							
1,2-Dichloroethane	ug/L	1.5	5	6.5	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok

Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
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Water Testing							
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	24360	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.165	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 P (E)	Rayong

Guideline : Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and efficient standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

(1) Total Dissolved Solids when discharged to receiving water having TDS > 3,000 mg/L. TDS in the to-be-discharged wastewater can exceed the TDS already found in the receiving water by not higher than 5,000 mg/L.

Note : For Total Dissolved Solids guideline set by Environmental Impact Assessment Report of Thai Plastic & Chemicals Public Co., Ltd.

Sampling By : Chaisorn Lerthanakunchai, Kerdbundit Kitsuapant

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Approved by

S. Chaiyapant

Sommon Chaiyapant
Scientist (3)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :



TESTING
No.0042
Lot ID: 23121588
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2810300-1

Page 1 of 1

Sample Number : 23121588-1
Sampled Date : Nov 08, 2023 10:47 AM
Sample Description : Wastewater
Location : บริเวณคลองน้ำทิ้งของโรงงานอุตสาหกรรมแห่งหนึ่งตอนต้นน้ำประมาณ 50 เมตร (Up stream)
Date Analysis Commenced : Nov 08, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOQ)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 5200 - O G	Rayong
COD	mg/L	1.5	25	<25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.8	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	2160	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.9	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 N (C), part N (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	31	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chaisorn Lerthanakunchai โทร: 09-9461, Kerdbundit Kitsuapant โทร: 09-9461-0001

Remark :
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Technical Management

N. Banchook

Approved by

D. Chongchun

Dej Chongchun
Senior Manager
โทรศัพท์: 09-9461-9442

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :



TESTING
No.0009
Lot ID: 23121588
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2810300-2

Page 1 of 1

Sample Number : 23121588-1
Sampled Date : Nov 08, 2023 10:47 AM
Sample Description : Wastewater
Location : บริเวณคลองน้ำทิ้งของโรงงานอุตสาหกรรมแห่งหนึ่งตอนต้นน้ำประมาณ 50 เมตร (Up stream)
Date Analysis Commenced : Nov 09, 2023
Condition of Sample : Contained in two glass vials, one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	11.3	Standard Methods for the Examination of	Bangkok

Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
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Water Testing							
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	3208	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.504	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 P (E)	Rayong

Sampling By : Chaisorn Lerthanakunchai, Kerdbundit Kitsuapant

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Approved by

S. Chaiyapant

Sommon Chaiyapant
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Analysis / Test Report

TESTING
No. 0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121589
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2810307-1

Page 1 of 1

Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.7	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	33.7	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	7220	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Nitrogen (C), part 1003 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	26	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chaimuorn Lertnathakunchai รหัสประจำตัว 3-323-4-9461, Kambudint Kittisupavant รหัสประจำตัว 3-204-4-0001

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
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Technical Management

N. Bangphit

Approved by

D. Chongchong

Dej Chongchong
Senior Manager
รหัสประจำตัว 3-323-4-9442

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S (Approx.) All INCL. (R 12-4700)



Analysis / Test Report

TESTING
No. 0009

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121589
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2810307-2

Page 1 of 1

Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Volatiles Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	6.8	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylenic)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	7064	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2510 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.545	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Sampling By : Chaimuorn Lertnathakunchai รหัสประจำตัว 3-323-4-9461, Kambudint Kittisupavant รหัสประจำตัว 3-204-4-0001

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Analysis / Test Report

TESTING
No. 0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121204
Date Received : Nov 08, 2023
Date Reported : Nov 15, 2023
Report Number : 2836383-1

Page 1 of 1

Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	34.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	113	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	7.4	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	45.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	94	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chaimuorn Lertnathakunchai รหัสประจำตัว 3-323-4-9461, Kambudint Kittisupavant รหัสประจำตัว 3-204-4-0001

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Technical Management

N. Bangphit

Approved by

D. Chongchong

Dej Chongchong
Senior Manager
รหัสประจำตัว 3-323-4-9442

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Analysis / Test Report

TESTING
No. 0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23121204
Date Received : Nov 08, 2023
Date Reported : Nov 15, 2023
Report Number : 2836384-1

Page 1 of 1

Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	404	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	981	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	8.6	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	41.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	13100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	186	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chaimuorn Lertnathakunchai รหัสประจำตัว 3-323-4-9461, Kambudint Kittisupavant รหัสประจำตัว 3-204-4-0001

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

TESTING
No. 0042
Lot ID: 23128889
Date Received: Dec 13, 2023
Date Reported: Dec 21, 2023
Report Number: 2859942-1

Page 1 of 2

Sample Number	23128889-1						
Sampled Date	Dec 13, 2023 10:21 AM						
Sample Description	Wastewater						
Location	EFCT 3						
Date Analysis Commenced	Dec 13, 2023						
Condition of Sample	Contained in one amber glass bottle, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOB)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	≤20	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 O-G	Rayong
COD *	mg/L	-	40	55	≤120	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 C	Rayong
Color (at Original pH)	ADMI	-	5	14	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Color (at pH 7.0)	ADMI	-	5	13	≤300	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2120 F	Rayong
Oil & Grease *	mg/L	-	3	<3	≤5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-		8.2	5.5-9.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 H (B)	Rayong
Temperature *	Degree C	-		37.9	≤40	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	13500	≤45000	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	2.4	≤100	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part 100 (D)	Rayong

Technical Management

N. Banongkit

Approved by

D. Chongchon

Narumon Banchoangkit
Supervisor
โทร: 09-9445-9445

Dej Chongchon
Senior Manager
โทร: 09-9445-9442

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RIGHT SOLUTIONS

3633-171 (RM)

5 (Report), 48 (CL up (11 RM))



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

TESTING
No. 0042
Lot ID: 23128889
Date Received: Dec 13, 2023
Date Reported: Dec 21, 2023
Report Number: 2859942-1

Page 2 of 2

Sample Number	23128889-1						
Sampled Date	Dec 13, 2023 10 21 AM						
Sample Description	Wastewater						
Location	EPCT 3						
Date Analysis Commenced	Dec 13, 2023						
Condition of Sample	Contained in one amber glass bottle, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)						
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location
Water Testing							
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	7	≤50	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong
Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017)							
Sampling By: Chansorn Lertnathakunchai โทร: 09-9445-9461, Samart Khumphlee โทร: 09-9445-9462							
Remark							
- LOD: Limit of Detection							
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Technical Management

N. Banongkit

Approved by

D. Chongchon

Narumon Banchoangkit
Supervisor
โทร: 09-9445-9445

Dej Chongchon
Senior Manager
โทร: 09-9445-9442

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3633-171 (RM)

5 (Report), 48 (CL up (11 RM))



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

TESTING
No. 0009
Lot ID: 23128889
Date Received: Dec 13, 2023
Date Reported: Dec 21, 2023
Report Number: 2859942-2

Page 1 of 1

Sample Number	23128889-1							Page 1 of 1
Sampled Date	Dec 13, 2023 10:21 AM							
Sample Description	Wastewater							
Location	EFCT 3							
Date Analysis Commenced	Dec 14, 2023							
Condition of Sample	Contained in one amber glass bottle, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)							
Analyte	Unit	LOD	LOQ (LOR)	Result	Guideline / Specification	Method	Testing Location	
Volatile Organics Compounds								
1,2-Dichloroethane	ug/L	1.5	5	5.1	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 8200 B	Bangkok	
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 8200 B	Bangkok	
Water Testing								
Conductivity at 25 Degree C *	microhm/cm	-	0.5	22740	No Standard	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong	
Phosphate as P *	mg/L	0.002	0.005	0.051	No Standard	In-house method based on Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (B)	Rayong	

Guideline: Effluent standard for factories, industrial estate and industrial park set by Notification of the Ministry of Natural Resource and Environment and effluent standard for factories and industrial park set by Notification of The Ministry of Industry dated June 07, B.E.2560 (2017).

Sampling By: Chansorn Lertnathakunchai, Samart Khumphlee

Remark:

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Approved by

Summon Charnasuvit

Scientist (3)

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

TESTING
No. 0042
Lot ID: 23128892
Date Received: Dec 13, 2023
Date Reported: Dec 21, 2023
Report Number: 2825425-1

Page 1 of 1

Page 1 of 2

Sample Number	23128892-1					
Sampled Date	Dec 13, 2023 10:32 AM					
Sample Description	Wastewater					
Location	บริเวณบ่อบำบัดน้ำเสียของโรงงานปิโตรเคมี/โรงงาน 50 (Up stream)					
Date Analysis Commenced	Dec 13, 2023					
Condition of Sample	Contained in one amber glass bottle, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	<25	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *		-		8.6	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 H (B)	Rayong
Temperature *	Degree C	-		33.0	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	4600	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.7	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part 100 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	16	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By: Chansorn Lertnathakunchai โทร: 09-9445-9461, Samart Khumphlee โทร: 09-9445-9462

Remark:

- LOD: Limit of Detection
- "<" Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * were not included in scope of Accreditation ISO/IEC 17025
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Technical Management

N. Banongkit

Approved by

D. Chongchon

Narumon Banchoangkit
Supervisor
โทร: 09-9445-9445

Dej Chongchon
Senior Manager
โทร: 09-9445-9442

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RIGHT SOLUTIONS

3633-171 (RM)

5 (Report), 48 (CL up (11 RM))



Analysis / Test Report

TESTING
No. 0009

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23128892
Date Received : Dec 13, 2023
Date Reported : Dec 21, 2023
Report Number : 2825425-2

Page 1 of 1

Sample Number	23128892-1					
Sample Date	Dec 13, 2023 10:32 AM					
Sample Description	Wastewater					
Location	บริเวณคลองน้ำทิ้งของโรงงานอุตสาหกรรมภายในเขตอุตสาหกรรมโรงงาน 50 เมตร (Up stream)					
Date Analysis Commenced	Dec 14, 2023					
Condition of Sample	Contained in one amber glass bottle, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	9.9	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	6537	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2530 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.772	In-house method based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Sampling By : Chansorn Lertnathakunchai, Samart Khumpluee

Remark :
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Approved by

Summon C
Summon Chansangwut
Scientist (3)

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313-171 (ENG) S (Version) At: INGL (pt 1) (1/1) (1/1)



Analysis / Test Report

TESTING
No. 0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23128895
Date Received : Dec 13, 2023
Date Reported : Dec 21, 2023
Report Number : 2825428-1

Page 1 of 1

Sample Number	23128895-1					
Sample Date	Dec 13, 2023 10:39 AM					
Sample Description	Wastewater					
Location	บริเวณคลองน้ำทิ้งของโรงงานอุตสาหกรรมภายในเขตอุตสาหกรรมโรงงาน 50 เมตร (Down stream)					
Date Analysis Commenced	Dec 13, 2023					
Condition of Sample	Contained in one amber glass bottle, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOB)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	<2.0	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	39	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 Degree C *	-	-	-	8.6	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	34.5	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	7260	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Kjeldahl Nitrogen as N	mg/L	-	1.0	1.1	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-Norg (C), part NH3 (D)	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	17	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chansorn Lertnathakunchai, Samart Khumpluee

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : value not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banjmit
Nanum Banchoangkit
Supervisor
โทรศัพท์ 1-323-9-9445

Approved by

D. Chanchong
Dej Chanchong
Senior Manager
โทรศัพท์ 1-323-9-9442

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313-171 (ENG) S (Version) At: INGL (pt 1) (1/1) (1/1)



Analysis / Test Report

TESTING
No. 0009

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23128895
Date Received : Dec 13, 2023
Date Reported : Dec 21, 2023
Report Number : 2825428-2

Page 1 of 1

Sample Number	23128895-1					
Sample Date	Dec 13, 2023 10:39 AM					
Sample Description	Wastewater					
Location	บริเวณคลองน้ำทิ้งของโรงงานอุตสาหกรรมภายในเขตอุตสาหกรรมโรงงาน 50 เมตร (Down stream)					
Date Analysis Commenced	Dec 14, 2023					
Condition of Sample	Contained in one amber glass bottle, two glass vials and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Volatile Organics Compounds						
1,2-Dichloroethane	ug/L	1.5	5	6.8	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Vinyl chloride (Chloroethylene)	ug/L	1.5	5	Not Detected	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 6200 B	Bangkok
Water Testing						
Conductivity at 25 Degree C *	micromhos/cm	-	0.5	11990	Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 2530 B	Rayong
Phosphate as P *	mg/L	0.002	0.005	0.626	In-house method based on Standard Methods for the Examination of Water and Wastewater, APHA, AWWA & WEF, 23rd ed., 2017, part 4500-P (E)	Rayong

Sampling By : Chansorn Lertnathakunchai, Samart Khumpluee

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : value not included in scope of Accreditation ISO/IEC 17025.
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Approved by

Summon C
Summon Chansangwut
Scientist (3)

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313-171 (ENG) S (Version) At: INGL (pt 1) (1/1) (1/1)



Analysis / Test Report

TESTING
No. 0042

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23128886
Date Received : Dec 13, 2023
Date Reported : Dec 20, 2023
Report Number : 2868493-1

Page 1 of 1

Sample Number	23128886-4					
Sample Date	Dec 13, 2023 9:36 AM					
Sample Description	Wastewater					
Location	Influent 2					
Date Analysis Commenced	Dec 13, 2023					
Condition of Sample	Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment - preservation standards (APHA, USEPA)					
Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	16.3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O G	Rayong
COD	mg/L	1.5	25	87	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	7.6	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	44.5	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	84	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	159	Standard Methods for the Examination of Water and Wastewater: APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chansorn Lertnathakunchai, Samart Khumpluee

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
- Analyte(s) marked * : value not included in scope of Accreditation ISO/IEC 17025.
- The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025.

Technical Management

N. Banjmit
Nanum Banchoangkit
Supervisor
โทรศัพท์ 1-323-9-9445

Approved by

D. Chanchong
Dej Chanchong
Senior Manager
โทรศัพท์ 1-323-9-9442

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Analysis / Test Report

TESTING
No.0042

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Mapthaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23128886
Date Received Dec 13, 2023
Date Reported Dec 20, 2023
Report Number 2808494-1

Page 1 of 1

Sample Number 23128886-5
Sampled Date Dec 13, 2023 10:13 AM
Sample Description Wastewater
Location Influent 3
Date Analysis Commenced Dec 13, 2023
Condition of Sample Contained in one amber glass bottle and three plastic bottles, sample containers comply to pretreatment preservation standards (APHA, USEPA)

Analyte	Unit	LOD	LOQ (LOR)	Result	Method	Testing Location
Water Testing						
BOD (5 days at 20 Degree C)	mg/L	-	2.0	146	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 5210 B, part 4500 - O-G	Rayong
COD	mg/L	1.5	25	500	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 5220 D	Rayong
Oil & Grease *	mg/L	-	3	<3	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 5520 B	Rayong
pH at 25 degree C *	-	-	-	9.5	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 4500 - H (B)	Rayong
Temperature *	Degree C	-	-	43.5	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 5550 B	Rayong
Total Dissolved Solids Dried at 180 degree C	mg/L	-	5	10020	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 2540 C	Rayong
Total Suspended Solids Dried at 103-105 degree C	mg/L	-	5	145	Standard Methods for the Examination of Water and Wastewater APHA, AWWA & WEF, 23rd ed., 2017, part 2540 D	Rayong

Sampling By : Chansorn Lertsathakunchai ๓๓๓๓๓๓ ๓-323-๙-9461, Samart Khumplee ๓๓๓๓๓๓ ๓-204-๙-7830

Remarks
LOD Limit of Detection
"c" Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)
Analyte(s) marked * are not included in scope of Accreditation ISO/IEC 17025
The laboratory has been accepted as an accredited laboratory complying with the ISO/IEC 17025

Technical Management

N. Banthit

Narumen Banchongkit
Supervisor
๓๓๓๓๓๓ ๓-323-๙-9445

Approved by

D. Chanchon

Dej Chanchon
Senior Manager
๓๓๓๓๓๓ ๓-323-๙-9442

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2371211
Date Received: Jul 04, 2023
Date Reported: Jul 12, 2023
Report Number: 2690234-1

Page 1 of 15

Sample Number: 2371211-1
Sampled Date: Jul 03, 2023
Sample Description: Air Quality
Location: Polymerizer unit L-5
Date Analysis Commenced: Jul 06, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 753 mmHg
Atmospheric Temperature: 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standards	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline: 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Nathaphon Jengwareewong

Remark: LOD: Limit of Detection
* < Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2371211
Date Received: Jul 04, 2023
Date Reported: Jul 12, 2023
Report Number: 2690234-1

Page 2 of 15

Sample Number: 2371211-2
Sampled Date: Jul 03, 2023
Sample Description: Air Quality
Location: VCM Recovery Unit L-5
Date Analysis Commenced: Jul 06, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 753 mmHg
Atmospheric Temperature: 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standards	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline: 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Nathaphon Jengwareewong

Remark: LOD: Limit of Detection
* < Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2371211
Date Received: Jul 04, 2023
Date Reported: Jul 12, 2023
Report Number: 2690234-1

Page 3 of 15

Sample Number: 2371211-3
Sampled Date: Jul 03, 2023
Sample Description: Air Quality
Location: Slurry Storage Tank L-5
Date Analysis Commenced: Jul 06, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 753 mmHg
Atmospheric Temperature: 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline: 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Nathaphon Jengwareewong

Remark: LOD: Limit of Detection
* < Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2371211
Date Received: Jul 04, 2023
Date Reported: Jul 12, 2023
Report Number: 2690234-1

Page 4 of 15

Sample Number: 2371211-4
Sampled Date: Jul 03, 2023
Sample Description: Air Quality
Location: Dryer unit L-5
Date Analysis Commenced: Jul 06, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 753 mmHg
Atmospheric Temperature: 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline: 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Nathaphon Jengwareewong

Remark: LOD: Limit of Detection
* < Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 5 of 15

Sample Number : 2371211-5
Sampled Date : Jul 03, 2023
Sample Description : Air Quality
Location : Polymerizer unit L-6
Date Analysis Commenced : Jul 06, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 30.8 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Natthapon Jengwareewong

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakyoung
Scientist (3)

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MS-17U (BAG)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jan 19, 2024
Report Number : 2887382-1 Rev. No.1

Page 1 of 1

Sample Number : 2371211-6
Sampled Date : Jul 03, 2023
Sample Description : Air Quality
Location : VCM Recovery Unit L-6
Date Analysis Commenced : Jul 06, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH) (2023)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Note : This Analysis test report is reissued to supersede report No.2690234-1, Date Reported : Dec 07, 2023 due to revise analytical information.

Sampled By : Natthapon Jengwareewong

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Thanitak.
Thanita Kulurivong
Scientist (4)

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ALS LABORATORY GROUP THAILAND CO., LTD. An ALS Limited Company

Life Sciences RIGHT SOLUTIONS 011-448-8100-10000 5 (Shaping) Air Working 25.0pt (1.41MM)

MS-17U (BAG)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 7 of 15

Sample Number : 2371211-7
Sampled Date : Jul 03, 2023
Sample Description : Air Quality
Location : Slurry Storage Tank L-6
Date Analysis Commenced : Jul 06, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Natthapon Jengwareewong

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakyoung
Scientist (3)

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MS-17U (BAG)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : PVC Plant

Lot ID: 2385157
Date Received : Jul 21, 2023
Date Reported : Jul 31, 2023
Report Number : 2774228-1

Page 1 of 1

Sample Number : 2385157-1
Sampled Date : Jul 21, 2023
Sample Description : Air Quality
Location : VCM Recovery Unit L-6
Date Analysis Commenced : Jul 24, 2023
Condition of Sample : Drawn into two sorbent tubes, refrigerated
Barometric Pressure : 754 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilas

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Saranya C.
Saranya Chaleemthamrong
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MS-17U (BAG)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 8 of 15

Sample Number	2371211-8
Sampled Date	Jul 03, 2023
Sample Description	Air Quality
Location	Dryer unit L-6
Date Analysis Commenced	Jul 06, 2023
Condition of Sample	Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure	753 mmHg
Atmospheric Temperature	30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Nathapong Jengwareewong

Remark :
LOD : Limit of Detection
* < * : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakkyong
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363 (17) (RM)

5 (Report), Air Working 20, set 1 (4-6) (RM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 9 of 15

Sample Number	2371211-9
Sampled Date	Jul 04, 2023
Sample Description	Air Quality
Location	Polymerizer unit L-7
Date Analysis Commenced	Jul 06, 2023
Condition of Sample	Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure	753 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	0.11	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Nathapong Jengwareewong

Remark :
LOD : Limit of Detection
* < * : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

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5 (Report), Air Working 20, set 1 (4-6) (RM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 10 of 15

Sample Number	2371211-10
Sampled Date	Jul 04, 2023
Sample Description	Air Quality
Location	VCM Recovery Unit L-7
Date Analysis Commenced	Jul 06, 2023
Condition of Sample	Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure	753 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	0.25	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Nathapong Jengwareewong

Remark :
LOD : Limit of Detection
* < * : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

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5 (Report), Air Working 20, set 1 (4-6) (RM)



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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 11 of 15

Sample Number	2371211-11
Sampled Date	Jul 04, 2023
Sample Description	Air Quality
Location	Slurry Storage Tank L-7
Date Analysis Commenced	Jul 06, 2023
Condition of Sample	Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure	753 mmHg
Atmospheric Temperature	32.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	0.11	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Nathapong Jengwareewong

Remark :
LOD : Limit of Detection
* < * : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

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5 (Report), Air Working 20, set 1 (4-6) (RM)



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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 12 of 15

Sample Number : 2371211-12
Sampled Date : Jul 04, 2023
Sample Description : Air Quality
Location : Dryer unit L-7
Date Analysis Commenced : Jul 06, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 32.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	0.14	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)
Sampled By : Natthapon Jengwareewong

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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363-151 (ENG)



Analysis / Test Report

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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2690234-1

Page 13 of 15

Sample Number : 2371211-21
Sampled Date : Jul 03, 2023
Sample Description : Air Quality, Personal 8 hrs.
Location : Worker in L-5
Personal Sampling : อนุภาคนิวคลีอิก (Vinyl chloride)
Date Analysis Commenced : Jul 06, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)
Sampled By : Natthapon Jengwareewong

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2379812
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2710651-1

Page 1 of 10

Sample Number : 2379812-1
Sampled Date : Jul 10, 2023
Sample Description : Air Quality
Location : Polymerizer unit L-8
Date Analysis Commenced : Jul 13, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 31.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Pipat Napatsead
Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Swanya C.
Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2379812
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2710651-1

Page 2 of 10

Sample Number : 2379812-2
Sampled Date : Jul 10, 2023
Sample Description : Air Quality
Location : VCM Recovery Unit L-8
Date Analysis Commenced : Jul 13, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 31.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Pipat Napatsead
Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Swanya C.
Saranya Chalermthamrong
Scientist (4)

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Analysis / Test Report

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21150
P/O : PMH-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2379812
Date Received: Jul 12, 2023
Date Reported: Jul 20, 2023
Report Number: 2710651-1

Page 3 of 10

Sample Number: 2379812-3
Sampled Date: Jul 10, 2023
Sample Description: Air Quality
Location: Slurry Storage Tank L-8
Date Analysis Commenced: Jul 13, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 757 mmHg
Atmospheric Temperature: 31.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline: 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Pipat Nipatad

Remark:
- LOD: Limit of Detection
- <LQ: Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Saranyu Chalermsamrong
Scientist (4)

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MSD 17U (MAL) 5 (Pages) Air Working 30.0 (1.33PM)



Analysis / Test Report

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21150
P/O : PMH-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2379812
Date Received: Jul 12, 2023
Date Reported: Jul 20, 2023
Report Number: 2710651-1

Page 4 of 10

Sample Number: 2379812-4
Sampled Date: Jul 10, 2023
Sample Description: Air Quality
Location: Dryer unit L-8
Date Analysis Commenced: Jul 13, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 757 mmHg
Atmospheric Temperature: 31.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline: 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Pipat Nipatad

Remark:
- LOD: Limit of Detection
- <LQ: Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Saranyu Chalermsamrong
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MSD 17U (MAL) 5 (Pages) Air Working 30.0 (1.33PM)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMH-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2379812
Date Received: Jul 12, 2023
Date Reported: Jul 20, 2023
Report Number: 2710651-1

Page 5 of 10

Sample Number: 2379812-5
Sampled Date: Jul 11, 2023
Sample Description: Air Quality
Location: Polymerizer unit L-9
Date Analysis Commenced: Jul 13, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 757 mmHg
Atmospheric Temperature: 32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline: 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Pipat Nipatad

Remark:
- LOD: Limit of Detection
- <LQ: Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Saranyu Chalermsamrong
Scientist (4)

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MSD 17U (MAL) 5 (Pages) Air Working 30.0 (1.33PM)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand
21150
P/O : PMH-23-14
Project Name: Environmental Testing
Project Location

Lot ID: 2379812
Date Received: Jul 12, 2023
Date Reported: Jul 20, 2023
Report Number: 2710651-1

Page 6 of 10

Sample Number: 2379812-6
Sampled Date: Jul 11, 2023
Sample Description: Air Quality
Location: VCM Recovery Unit L-9
Date Analysis Commenced: Jul 13, 2023
Condition of Sample: Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure: 757 mmHg
Atmospheric Temperature: 32.0 °C

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

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**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By: Pipat Nipatad

Remark:
- LOD: Limit of Detection
- <LQ: Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2379812
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2710651-1

Page 7 of 10

Sample Number : 2379812-7
Sampled Date : Jul 11, 2023
Sample Description : Air Quality
Location : Slurry Storage Tank L-9
Date Analysis Commenced : Jul 13, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 32.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m3	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
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**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)
Sampled By : Pipat Nipattad

Remark :
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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Saranya Chalermsilhanong
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303-171 (RM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2379812
Date Received : Jul 12, 2023
Date Reported : Jul 20, 2023
Report Number : 2710651-1

Page 6 of 10

Sample Number : 2379812-8
Sampled Date : Jul 11, 2023
Sample Description : Air Quality
Location : Dryer unit L-9
Date Analysis Commenced : Jul 13, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 757 mmHg
Atmospheric Temperature : 32.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m3	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

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2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)

**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)
Sampled By : Pipat Nipattad

Remark :
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303-171 (RM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2650234-1

Page 14 of 15

Sample Number : 2371211-22
Sampled Date : Jul 03, 2023
Sample Description : Air Quality, Personal 8 hrs.
Location : Worker in L-6
Personal Sampling : 8hrs (Vinyl chloride)
Date Analysis Commenced : Jul 06, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m3	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	0.17	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
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**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)
Sampled By : Natthapon Jengwareeewong

Remark :
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Approved by

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Orawan Rakying
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303-171 (RM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371211
Date Received : Jul 04, 2023
Date Reported : Jul 12, 2023
Report Number : 2650234-1

Page 15 of 15

Sample Number : 2371211-23
Sampled Date : Jul 04, 2023
Sample Description : Air Quality, Personal 8 hrs.
Location : Worker in L-7
Personal Sampling : 8hrs (Vinyl chloride)
Date Analysis Commenced : Jul 06, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 753 mmHg
Atmospheric Temperature : 32.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m3	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
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**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)
Sampled By : Natthapon Jengwareeewong

Remark :
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Orawan R.

Orawan Rakying
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303-171 (RM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :
Page 3 of 23

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances
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2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakying
Scientist (3)

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353-175 (EN)

3 (Specimen), Air Working, 20, up (1.30PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :
Page 4 of 23

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

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Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances
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**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakying
Scientist (3)

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353-175 (EN)

3 (Specimen), Air Working, 20, up (1.30PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :
Page 5 of 23

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

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**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
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Approved by

Orawan R.

Orawan Rakying
Scientist (3)

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353-175 (EN)

3 (Specimen), Air Working, 20, up (1.30PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :
Page 6 of 23

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

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**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
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Orawan R.

Orawan Rakying
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3 (Specimen), Air Working, 20, up (1.30PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
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21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 7 of 25

Sample Number : 23110956-7
Sampled Date : Oct 03, 2023
Sample Description : Air Quality
Location : Slurry Storage Tank L-6
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

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**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
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Approved by

Orawan R.
Orawan Rakying
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303-170-0040 5 (Pages), Air Working 25.00 (3.00PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 8 of 25

Sample Number : 23110956-8
Sampled Date : Oct 03, 2023
Sample Description : Air Quality
Location : Dryer unit L-6
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

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**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Orawan Rakying
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303-170-0040 5 (Pages), Air Working 25.00 (3.00PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 9 of 25

Sample Number : 23110956-9
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : Polymerizer Unit L-7
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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303-170-0040 5 (Pages), Air Working 25.00 (3.00PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

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Sample Number : 23110956-10
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : VCM Recovery Unit L-7
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Analysis / Test Report

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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

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Sample Number : 23110956-11
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : Slurry Storage Tank L-7
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- <LOQ : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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5 (Pages), Air Working 20. (p) (1.30M)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

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Sample Number : 23110956-12
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : Dryer unit L-7
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- <LOQ : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 13 of 25

Sample Number : 23110956-13
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : Polymerizer unit L-6
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- <LOQ : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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Client : Thai Plastic & Chemicals Public Co., Ltd.
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P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

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Sample Number : 23110956-14
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : VCM Recovery Unit L-8
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- <LOQ : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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5 (Pages), Air Working 20. (p) (1.30M)



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21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

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Sample Number : 23110956-15
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : Slurry Storage Tank L-8
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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310-171/0940

5 (Report), Air Working 20, set 1 (BMP)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mactaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 16 of 25

Sample Number : 23110956-16
Sampled Date : Oct 02, 2023
Sample Description : Air Quality
Location : Dryer unit L-8
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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5 (Report), Air Working 20, set 1 (BMP)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mactaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Jan 17, 2024
Report Number : 2887500-1

Page 1 of 1

Sample Number : 23110956-17
Sampled Date : Oct 09, 2023
Sample Description : Air Quality
Location : Polymerizer unit L-9
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH) (2023)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Note : This Analysis test report is reissued to supersede report No.2785529-1, Date Reported : Oct 18, 2023 due to revise analytical information

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Thanitak K.
Thanitak Kulurwong
Scientist (4)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mactaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 18 of 25

Sample Number : 23110956-18
Sampled Date : Oct 09, 2023
Sample Description : Air Quality
Location : VCM Recovery Unit L-9
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	0.14	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration ; Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (3)

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5 (Report), Air Working 20, set 1 (BMP)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Environmental Testing

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 19 of 25

Sample Number	23110956-19								
Sampled Date	Oct 09, 2023								
Sample Description	Air Quality								
Location	Slurry Storage Tank L-9								
Date Analysis Commenced	Oct 11, 2023								
Condition of Sample	Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated								
Barometric Pressure	756 mmHg								
Atmospheric Temperature	30.0 °C								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m3	–	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	–	0.10	0.12	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances
Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)

**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakying
Scientist (3)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Environmental Testing

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

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Sample Number	23110956-20								
Sampled Date	Oct 09, 2023								
Sample Description	Air Quality								
Location	Dryer unit L-9								
Date Analysis Commenced	Oct 11, 2023								
Condition of Sample	Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated								
Barometric Pressure	756 mmHg								
Atmospheric Temperature	30.0 °C								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m3	–	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	–	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances
Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)

**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakying
Scientist (3)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : PVC Plant

Lot ID: 23128326
Date Received : Nov 08, 2023
Date Reported : Nov 16, 2023
Report Number : 2838476-1

Page 1 of 1

Sample Number	23128326-1								
Sampled Date	Nov 07, 2023								
Sample Description	Air Quality								
Location	Polymerizer unit L-9								
Date Analysis Commenced	Nov 09, 2023								
Condition of Sample	Drawn into two sorbent tubes, refrigerated								
Barometric Pressure	756 mmHg								
Atmospheric Temperature	29.0 °C								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances
Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH) (2023)

**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Nantawat Sern

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Saranya C.

Saranya Chalerthamrong
Scientist (4)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate 1-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Environmental Testing

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 21 of 25

Sample Number	23110956-21								
Sampled Date	Oct 03, 2023								
Sample Description	Air Quality, Personal 8 hrs.								
Location	Worker in L-5								
Personal Sampling	บุคคล 8 ชั่วโมง								
Date Analysis Commenced	Oct 11, 2023								
Condition of Sample	Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated								
Barometric Pressure	756 mmHg								
Atmospheric Temperature	30.0 °C								
Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m3	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances
Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)

**Recommended concentration, Appendix B : Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- "<" : Lower than : LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.

Orawan Rakying
Scientist (3)

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Analysis / Test Report

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8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand

P/O : 1999-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 22 of 25

Sample Number : 23110956-22
Sampled Date : Oct 03, 2023
Sample Description : Air Quality_Personal 8 hrs
Location : Worker in L-6
Personal Sampling : รวณ รักษ์
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- ** : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (1)

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand

P/O : 1999-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 23 of 25

Sample Number : 23110956-23
Sampled Date : Oct 02, 2023
Sample Description : Air Quality_Personal 8 hrs
Location : Worker in L-7
Personal Sampling : รวณ รักษ์
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- ** : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
Scientist (1)

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3 (Phuket), Air Working 22, opt (3.80%)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphud, Muang, Rayong Thailand

P/O : 1999-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 24 of 25

Sample Number : 23110956-24
Sampled Date : Oct 02, 2023
Sample Description : Air Quality_Personal 8 hrs
Location : Worker in L-8
Personal Sampling : รวณ รักษ์
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- ** : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Orawan R.
Orawan Rakying
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P/O : 1999-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110956
Date Received : Oct 09, 2023
Date Reported : Oct 18, 2023
Report Number : 2785529-1

Page 25 of 25

Sample Number : 23110956-25
Sampled Date : Oct 09, 2023
Sample Description : Air Quality_Personal 8 hrs
Location : Worker in L-9
Personal Sampling : รวณ รักษ์
Date Analysis Commenced : Oct 11, 2023
Condition of Sample : Drawn into one filter paper placed in plastic cassette and one sorbent tube, refrigerated
Barometric Pressure : 756 mmHg
Atmospheric Temperature : 30.0 °C

Analyte	Sampled Date/Time	Unit	LOD	LOQ (LOR)	Result	Guideline (1)	Guideline (2)	Method	Testing Location
Air Testing									
Total Dust	09:00 AM - 05:00 PM	mg/m ³	-	0.15	<0.15	No Standard	10**	Based on NIOSH (1994), 0500	Rayong
Vinyl chloride	09:00 AM - 05:00 PM	ppm	-	0.10	<0.10	1	1	NIOSH (1994), 1007	Bangkok

Guideline :
Guideline : 1.) Announcement of the Department of Labour Protection and Welfare on Threshold Limit Values of Hazardous Chemical Substances Dated August 3, B.E. 2560 (2017)
2.) The American Conference of Governmental Industrial Hygiene, The 6th edition of the Documentation of the Threshold Limit Values and Biological Exposure Indices (ACGIH)
**Recommended concentration, Appendix B: Particles (insoluble or poorly soluble)

Sampled By : Apichart Wilars

Remark :
- LOD : Limit of Detection
- ** : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

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Orawan Rakying
Scientist (1)

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ระดับเสียงภายในสถานประกอบการ



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371212
Date Received Jul 05, 2023
Date Reported Jul 07, 2023
Report Number: 2709215-1

Page 1 of 1

Sample Number : 2371212-1
Parameter : Noise (Leq 8 hrs.)
Location : Polymerizer unit L-5
Measurement Date : Jul 03, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	82.9	93.8	82.1
10:00 AM - 11:00 AM	83.5	97.5	82.8
11:00 AM - 12:00 PM	83.1	88.4	82.5
12:00 PM - 01:00 PM	83.3	101.8	80.3
01:00 PM - 02:00 PM	83.5	102.0	80.5
02:00 PM - 03:00 PM	80.2	102.9	78.0
03:00 PM - 04:00 PM	81.7	90.0	75.8
04:00 PM - 05:00 PM	82.7	101.2	79.7
Leq Average 8 hrs. (dB(A))	82.7		
Lmax (dB(A))		102.9	
Standard (dB(A))	90	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประเทศไทย:กระทรวงอุตสาหกรรม, เรื่อง: ประกาศกระทรวงอุตสาหกรรมว่าด้วย เกณฑ์มาตรฐานการวัดและควบคุมการปล่อยมลพิษทางอากาศในโรงงานอุตสาหกรรม พ.ศ. ๒๕๖๕			

Technical Management

Thanitak.
Thanita Kulsurawong
Scientist (4)

Approved by

Supt S
Supt Salameh
Section Head

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3653-17U) ENGL

3-Vaportek_Air Noise rpt (3.33PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371212
Date Received Jul 05, 2023
Date Reported Jul 07, 2023
Report Number: 2709216-1

Page 1 of 1

Sample Number : 2371212-2
Parameter : Noise (Leq 8 hrs.)
Location : Centrifuge unit L-5
Measurement Date : Jul 03, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	81.8	90.8	81.6
10:00 AM - 11:00 AM	82.0	91.0	81.8
11:00 AM - 12:00 PM	81.9	83.1	81.7
12:00 PM - 01:00 PM	81.8	89.7	81.6
01:00 PM - 02:00 PM	81.7	90.2	81.4
02:00 PM - 03:00 PM	81.9	83.2	81.7
03:00 PM - 04:00 PM	81.9	92.5	81.6
04:00 PM - 05:00 PM	81.8	90.3	81.5
Leq Average 8 hrs. (dB(A))	81.9		
Lmax (dB(A))		92.5	
Standard (dB(A))	90	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประเทศไทย:กระทรวงอุตสาหกรรม, เรื่อง: ประกาศกระทรวงอุตสาหกรรมว่าด้วย เกณฑ์มาตรฐานการวัดและควบคุมการปล่อยมลพิษทางอากาศในโรงงานอุตสาหกรรม พ.ศ. ๒๕๖๕			

Technical Management

Thanitak.
Thanita Kulsurawong
Scientist (4)

Approved by

Supt S
Supt Salameh
Section Head

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3653-17U) ENGL

3-Vaportek_Air Noise rpt (3.33PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371212
Date Received Jul 05, 2023
Date Reported Jul 07, 2023
Report Number: 2709217-1

Page 1 of 1

Sample Number : 2371212-3
Parameter : Noise (Leq 8 hrs.)
Location : Pneumatic Conveyor unit L-5
Measurement Date : Jul 03, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	83.9	87.8	83.0
10:00 AM - 11:00 AM	82.7	86.2	82.1
11:00 AM - 12:00 PM	81.8	84.3	81.1
12:00 PM - 01:00 PM	82.3	84.6	81.4
01:00 PM - 02:00 PM	83.0	87.0	82.4
02:00 PM - 03:00 PM	82.3	84.7	81.5
03:00 PM - 04:00 PM	83.1	86.5	82.3
04:00 PM - 05:00 PM	82.5	85.9	81.7
Leq Average 8 hrs. (dB(A))	82.7		
Lmax (dB(A))		87.8	
Standard (dB(A))	90	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประเทศไทย:กระทรวงอุตสาหกรรม, เรื่อง: ประกาศกระทรวงอุตสาหกรรมว่าด้วย เกณฑ์มาตรฐานการวัดและควบคุมการปล่อยมลพิษทางอากาศในโรงงานอุตสาหกรรม พ.ศ. ๒๕๖๕			

Technical Management

Thanitak.
Thanita Kulsurawong
Scientist (4)

Approved by

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Supt Salameh
Section Head

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3-Vaportek_Air Noise rpt (3.33PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371212
Date Received Jul 05, 2023
Date Reported Jul 07, 2023
Report Number: 2709218-1

Page 1 of 1

Sample Number : 2371212-4
Parameter : Noise (Leq 8 hrs.)
Location : Recovery Tank L-5
Measurement Date : Jul 03, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	84.8	88.6	84.1
10:00 AM - 11:00 AM	84.8	91.9	84.4
11:00 AM - 12:00 PM	84.9	86.0	84.4
12:00 PM - 01:00 PM	84.6	86.6	84.0
01:00 PM - 02:00 PM	84.7	84.7	84.7
02:00 PM - 03:00 PM	84.7	84.7	84.7
03:00 PM - 04:00 PM	84.5	89.2	83.9
04:00 PM - 05:00 PM	84.6	86.6	84.0
Leq Average 8 hrs. (dB(A))	84.7		
Lmax (dB(A))		91.9	
Standard (dB(A))	90	140	
Reference Method : ISO1996-1 and 1996-2			
Standard : ประเทศไทย:กระทรวงอุตสาหกรรม, เรื่อง: ประกาศกระทรวงอุตสาหกรรมว่าด้วย เกณฑ์มาตรฐานการวัดและควบคุมการปล่อยมลพิษทางอากาศในโรงงานอุตสาหกรรม พ.ศ. ๒๕๖๕			

Technical Management

Thanitak.
Thanita Kulsurawong
Scientist (4)

Approved by

Supt S
Supt Salameh
Section Head

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3653-17U) ENGL

3-Vaportek_Air Noise rpt (3.34PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number: 2709219-1

Page 1 of 1

Sample Number	2371212-5		
Parameter	Noise (Leq 8 hrs.)		
Location	Polymerizer unit L-6		
Measurement Date	Jul 03, 2023		
Measurement by	Nathapon Jengwareewong		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	82.4	90.4	81.6
10:00 AM - 11:00 AM	81.7	88.6	81.4
11:00 AM - 12:00 PM	83.6	100.2	80.4
12:00 PM - 01:00 PM	83.8	95.1	82.3
01:00 PM - 02:00 PM	83.3	97.1	82.5
02:00 PM - 03:00 PM	83.3	85.4	83.0
03:00 PM - 04:00 PM	83.2	88.3	82.7
04:00 PM - 05:00 PM	83.5	90.4	83.2
Leq Average 8 hrs. (dB(A))	83.1	100.2	
Lmax (dB(A))		140	
Standard (dB(A))	90		
Reference Method	ISO1996-1 and 1996-2		
Standard	เป็นมาตรฐานของประเทศไทย สำหรับ การทำการทดสอบการปล่อยเสียง ในกรณีการทดสอบการปล่อยเสียงในอาคารและในโรงงานอุตสาหกรรม พ.ร.บ.ร.ด.ร.		

Technical Management

Thanita K.
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5 Vapors_Air Noise rpt (3.35PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number: 2709220-1

Page 1 of 1

Sample Number	2371212-6		
Parameter	Noise (Leq 8 hrs.)		
Location	Centrifuge unit L-6		
Measurement Date	Jul 03, 2023		
Measurement by	Nathapon Jengwareewong		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	82.9	84.1	82.7
10:00 AM - 11:00 AM	83.0	85.8	82.7
11:00 AM - 12:00 PM	84.3	90.3	82.7
12:00 PM - 01:00 PM	85.0	99.4	84.7
01:00 PM - 02:00 PM	85.1	102.0	84.7
02:00 PM - 03:00 PM	84.9	85.5	84.7
03:00 PM - 04:00 PM	84.8	85.4	84.6
04:00 PM - 05:00 PM	84.6	90.6	83.0
Leq Average 8 hrs. (dB(A))	84.4	102.0	
Lmax (dB(A))		140	
Standard (dB(A))	90		
Reference Method	ISO1996-1 and 1996-2		
Standard	เป็นมาตรฐานของประเทศไทย สำหรับ การทำการทดสอบการปล่อยเสียง ในกรณีการทดสอบการปล่อยเสียงในอาคารและในโรงงานอุตสาหกรรม พ.ร.บ.ร.ด.ร.		

Technical Management

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Analysis / Test Report

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P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number: 2709221-1

Page 1 of 1

Sample Number	2371212-7		
Parameter	Noise (Leq 8 hrs.)		
Location	Pneumatic Compressor unit L-6		
Measurement Date	Jul 03, 2023		
Measurement by	Nathapon Jengwareewong		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	82.8	85.3	81.6
10:00 AM - 11:00 AM	82.8	89.4	81.9
11:00 AM - 12:00 PM	82.1	85.9	81.8
12:00 PM - 01:00 PM	82.0	85.7	81.8
01:00 PM - 02:00 PM	82.2	87.2	81.9
02:00 PM - 03:00 PM	81.8	84.6	81.4
03:00 PM - 04:00 PM	82.1	84.9	81.7
04:00 PM - 05:00 PM	82.7	86.5	82.4
Leq Average 8 hrs. (dB(A))	82.3	89.4	
Lmax (dB(A))		140	
Standard (dB(A))	90		
Reference Method	ISO1996-1 and 1996-2		
Standard	เป็นมาตรฐานของประเทศไทย สำหรับ การทำการทดสอบการปล่อยเสียง ในกรณีการทดสอบการปล่อยเสียงในอาคารและในโรงงานอุตสาหกรรม พ.ร.บ.ร.ด.ร.		

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Analysis / Test Report

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P/O : PMM-23-14
Project Name : Environmental Testing
Project Location

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number: 2709222-1

Page 1 of 1

Sample Number	2371212-8		
Parameter	Noise (Leq 8 hrs.)		
Location	Recovery Tank L-6		
Measurement Date	Jul 03, 2023		
Measurement by	Nathapon Jengwareewong		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	81.9	97.5	79.8
10:00 AM - 11:00 AM	80.9	101.4	80.3
11:00 AM - 12:00 PM	81.2	88.9	80.1
12:00 PM - 01:00 PM	81.0	89.4	80.4
01:00 PM - 02:00 PM	81.7	92.1	80.4
02:00 PM - 03:00 PM	81.6	86.7	80.9
03:00 PM - 04:00 PM	81.4	91.8	80.1
04:00 PM - 05:00 PM	81.3	101.8	80.7
Leq Average 8 hrs. (dB(A))	81.4	101.8	
Lmax (dB(A))		140	
Standard (dB(A))	90		
Reference Method	ISO1996-1 and 1996-2		
Standard	เป็นมาตรฐานของประเทศไทย สำหรับ การทำการทดสอบการปล่อยเสียง ในกรณีการทดสอบการปล่อยเสียงในอาคารและในโรงงานอุตสาหกรรม พ.ร.บ.ร.ด.ร.		

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Analysis / Test Report

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P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Environmental Testing

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number : 2709223-1

Page 1 of 1

Sample Number : 2371212-9
Parameter : Noise (Leq 8 hrs.)
Location : Polymerizer unit L-7
Measurement Date : Jul 04, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	84.6	94.4	83.7
10:00 AM - 11:00 AM	84.4	89.2	83.9
11:00 AM - 12:00 PM	83.4	87.2	81.4
12:00 PM - 01:00 PM	83.5	95.2	82.3
01:00 PM - 02:00 PM	83.1	95.9	82.5
02:00 PM - 03:00 PM	82.7	88.1	82.3
03:00 PM - 04:00 PM	82.6	93.9	81.1
04:00 PM - 05:00 PM	82.7	95.5	82.1
Leq Average 8 hrs. (dB(A))	83.4		
Lmax (dB(A))		95.9	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
Standard	ประเทศไทย:พระราชบัญญัติว่าด้วยการกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554 ไทยประจํา:กรมการโรงงานอุตสาหกรรมกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554		

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3 Vapors/Air Noise rpt (3.36PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Environmental Testing

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number : 2709224-1

Page 1 of 1

Sample Number : 2371212-10
Parameter : Noise (Leq 8 hrs.)
Location : Centrifuge unit L-7
Measurement Date : Jul 04, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	83.9	94.9	83.7
10:00 AM - 11:00 AM	82.9	85.5	82.8
11:00 AM - 12:00 PM	82.8	84.3	82.6
12:00 PM - 01:00 PM	83.8	94.9	77.2
01:00 PM - 02:00 PM	84.6	94.7	67.5
02:00 PM - 03:00 PM	82.2	102.7	81.5
03:00 PM - 04:00 PM	82.1	96.2	81.2
04:00 PM - 05:00 PM	82.5	103.0	81.8
Leq Average 8 hrs. (dB(A))	83.2		
Lmax (dB(A))		103.0	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
Standard	ประเทศไทย:พระราชบัญญัติว่าด้วยการกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554 ไทยประจํา:กรมการโรงงานอุตสาหกรรมกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554		

Technical Management

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3 Vapors/Air Noise rpt (3.36PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Environmental Testing

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number : 2709225-1

Page 1 of 1

Sample Number : 2371212-11
Parameter : Noise (Leq 8 hrs.)
Location : Pneumatic Conveyer unit L-7
Measurement Date : Jul 04, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	81.1	92.3	80.6
10:00 AM - 11:00 AM	82.3	88.1	81.0
11:00 AM - 12:00 PM	81.2	86.0	80.7
12:00 PM - 01:00 PM	81.1	92.5	80.5
01:00 PM - 02:00 PM	82.6	93.4	80.7
02:00 PM - 03:00 PM	81.4	87.8	80.5
03:00 PM - 04:00 PM	82.0	90.2	80.5
04:00 PM - 05:00 PM	81.6	89.8	80.1
Leq Average 8 hrs. (dB(A))	81.7		
Lmax (dB(A))		93.4	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
Standard	ประเทศไทย:พระราชบัญญัติว่าด้วยการกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554 ไทยประจํา:กรมการโรงงานอุตสาหกรรมกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554		

Technical Management

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3 Vapors/Air Noise rpt (3.37PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location : Environmental Testing

Lot ID: 2371212
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number : 2709226-1

Page 1 of 1

Sample Number : 2371212-12
Parameter : Noise (Leq 8 hrs.)
Location : Recovery Tank L-7
Measurement Date : Jul 04, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	83.6	94.8	83.1
10:00 AM - 11:00 AM	83.6	86.1	83.2
11:00 AM - 12:00 PM	83.7	86.8	83.4
12:00 PM - 01:00 PM	83.6	92.6	83.2
01:00 PM - 02:00 PM	83.9	92.0	82.7
02:00 PM - 03:00 PM	83.8	86.0	82.9
03:00 PM - 04:00 PM	83.9	87.6	83.5
04:00 PM - 05:00 PM	83.9	87.6	83.5
Leq Average 8 hrs. (dB(A))	83.8		
Lmax (dB(A))		94.8	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
Standard	ประเทศไทย:พระราชบัญญัติว่าด้วยการกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554 ไทยประจํา:กรมการโรงงานอุตสาหกรรมกำหนดค่ามาตรฐานเสียงและผลกระทบต่อสุขภาพ พ.ศ. 2554		

Technical Management

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3 Vapors/Air Noise rpt (3.37PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718074-1

Page 1 of 1

Sample Number	2378699-1			
Parameter	Noise (Leq 8 hrs.)			
Location	Polymerizer unit L-8			
Measurement Date	Jul 10, 2023			
Measurement by	Natthapon Jengwareewong			
	Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
	09:00 AM - 10:00 AM	84.8	97.3	84.1
	10:00 AM - 11:00 AM	84.7	90.5	84.0
	11:00 AM - 12:00 PM	83.7	90.7	82.0
	12:00 PM - 01:00 PM	84.8	94.2	84.4
	01:00 PM - 02:00 PM	84.3	98.0	83.9
	02:00 PM - 03:00 PM	84.6	95.3	84.1
	03:00 PM - 04:00 PM	84.4	91.4	82.7
	04:00 PM - 05:00 PM	84.1	94.8	83.6
	Leq Average 8 hrs. (dB(A))	84.4		
	Lmax (dB(A))		98.0	
	Standard (dB(A))	90	140	
	Reference Method	ISO1996-1 and 1996-2		
	Standard	ประเทศไทย: พระราชบัญญัติว่าด้วยการกำหนดค่ามาตรฐานเสียง ในกรณีการปล่อยเสียงจากโรงงานอุตสาหกรรมและอาคารพาณิชย์ พ.ศ. ๒๕๖๑		

Technical Management

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Supot Salamteh
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3 Vapors_Air Noise rpt (10.48AM)



Analysis / Test Report

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8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718075-1

Page 1 of 1

Sample Number	2378699-2		
Parameter	Noise (Leq 8 hrs.)		
Location	Centrifuge unit L-8		
Measurement Date	Jul 10, 2023		
Measurement by	Natthapon Jengwareewong		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	84.0	97.4	83.6
10:00 AM - 11:00 AM	83.7	85.7	83.5
11:00 AM - 12:00 PM	83.8	86.0	83.5
12:00 PM - 01:00 PM	83.6	85.6	83.3
01:00 PM - 02:00 PM	83.6	98.4	83.2
02:00 PM - 03:00 PM	83.7	94.8	83.3
03:00 PM - 04:00 PM	83.5	85.7	83.2
04:00 PM - 05:00 PM	83.3	85.3	83.0
Leq Average 8 hrs. (dB(A))	83.7		
Lmax (dB(A))		98.4	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประกาศกระทรวงอุตสาหกรรม เรื่อง กำหนดการควบคุมค่ามาตรฐานเสียง ในกรณีการปล่อยเสียงจากโรงงานอุตสาหกรรมและอาคารพาณิชย์ พ.ศ. ๒๕๖๑		

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Supot S.
Supot Salamteh
Section Head

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3653-17U (ENGL)

3 Vapors_Air Noise rpt (10.48AM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718076-1

Page 1 of 1

Sample Number	2378699-3		
Parameter	Noise (Leq 8 hrs.)		
Location	Pneumatic Conveyor unit L-8		
Measurement Date	Jul 10, 2023		
Measurement by	Natthapon Jengwareewong		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	84.8	95.8	84.0
10:00 AM - 11:00 AM	84.5	87.2	84.1
11:00 AM - 12:00 PM	84.4	87.2	84.0
12:00 PM - 01:00 PM	84.4	87.3	84.0
01:00 PM - 02:00 PM	84.5	96.2	83.9
02:00 PM - 03:00 PM	84.3	93.9	83.9
03:00 PM - 04:00 PM	84.1	87.0	83.7
04:00 PM - 05:00 PM	84.0	86.7	83.6
Leq Average 8 hrs. (dB(A))	84.4		
Lmax (dB(A))		96.2	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย: พระราชบัญญัติว่า ด้วย การกำหนดค่ามาตรฐานเสียง ในกรณีการปล่อยเสียงจากโรงงานอุตสาหกรรม และอาคารพาณิชย์ พ.ศ. ๒๕๖๑		

Technical Management

Thanitak.
Thanita Kulnirong
Scientist (4)

Approved by

Supot S.
Supot Salamteh
Section Head

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3 Vapors_Air Noise rpt (10.48AM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718077-1

Page 1 of 1

Sample Number	2378699-4			
Parameter	Noise (Leq 8 hrs.)			
Location	Recovery Tank L-8			
Measurement Date	Jul 10, 2023			
Measurement by	Natthapon Jengwareewong			
	Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
	09:00 AM - 10:00 AM	84.7	95.8	84.1
	10:00 AM - 11:00 AM	84.2	92.1	84.1
	11:00 AM - 12:00 PM	84.2	85.7	84.0
	12:00 PM - 01:00 PM	84.1	92.0	83.9
	01:00 PM - 02:00 PM	84.1	87.7	83.8
	02:00 PM - 03:00 PM	84.2	92.2	83.7
	03:00 PM - 04:00 PM	84.4	92.4	83.9
	04:00 PM - 05:00 PM	84.4	92.3	84.3
	Leq Average 8 hrs. (dB(A))	84.3		
	Lmax (dB(A))		95.8	
	Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2			
Standard	ประเทศไทย: พระราชบัญญัติว่าด้วยการกำหนดค่ามาตรฐานเสียงในกรณีการปล่อยเสียงจากโรงงานอุตสาหกรรมและอาคารพาณิชย์ พ.ศ. ๒๕๖๑			

Technical Management

Thanitak.
Thanita Kulnirong
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Supot Salamteh
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3 Vapors_Air Noise rpt (10.48AM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718078-1

Page 1 of 1

Sample Number : 2378699-5
Parameter : Noise (Leq 8 hrs.)
Location : Polymerizer unit L-9
Measurement Date : Jul 11, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	83.9	88.0	82.7
10:00 AM - 11:00 AM	83.5	100.5	82.0
11:00 AM - 12:00 PM	84.0	84.9	83.6
12:00 PM - 01:00 PM	83.4	95.1	82.2
01:00 PM - 02:00 PM	83.8	91.3	83.3
02:00 PM - 03:00 PM	83.8	91.3	83.3
03:00 PM - 04:00 PM	83.5	92.8	82.4
04:00 PM - 05:00 PM	82.6	90.5	82.1
Leq Average 8 hrs. (dB(A))	83.6		
Lmax (dB(A))		100.5	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
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S. Vajratorn, Air Noise (pt) (10-48AM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718079-1

Page 1 of 1

Sample Number : 2378699-6
Parameter : Noise (Leq 8 hrs.)
Location : Centrifuge unit L-9
Measurement Date : Jul 11, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	84.2	86.1	83.6
10:00 AM - 11:00 AM	84.1	86.2	83.6
11:00 AM - 12:00 PM	84.0	85.5	83.5
12:00 PM - 01:00 PM	83.4	85.7	83.0
01:00 PM - 02:00 PM	83.4	87.1	83.0
02:00 PM - 03:00 PM	83.9	90.1	83.5
03:00 PM - 04:00 PM	84.0	87.3	83.6
04:00 PM - 05:00 PM	84.0	91.6	83.6
Leq Average 8 hrs. (dB(A))	83.9		
Lmax (dB(A))		91.6	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
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P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718080-1

Page 1 of 1

Sample Number : 2378699-7
Parameter : Noise (Leq 8 hrs.)
Location : Pneumatic Conveyer unit L-9
Measurement Date : Jul 11, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	83.6	104.5	83.2
10:00 AM - 11:00 AM	83.4	86.9	83.2
11:00 AM - 12:00 PM	83.3	87.1	83.1
12:00 PM - 01:00 PM	83.3	85.8	83.1
01:00 PM - 02:00 PM	83.1	90.7	82.7
02:00 PM - 03:00 PM	83.5	88.5	83.3
03:00 PM - 04:00 PM	83.3	88.3	83.1
04:00 PM - 05:00 PM	83.5	93.1	83.1
Leq Average 8 hrs. (dB(A))	83.4		
Lmax (dB(A))		104.5	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
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P/O : PMH-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2378699
Date Received : Jul 12, 2023
Date Reported : Jul 18, 2023
Report Number : 2718081-1

Page 1 of 1

Sample Number : 2378699-8
Parameter : Noise (Leq 8 hrs.)
Location : Recovery Tank L-9
Measurement Date : Jul 11, 2023
Measurement by : Natthapon Jengwareewong

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	82.9	86.9	81.9
10:00 AM - 11:00 AM	82.8	87.9	81.8
11:00 AM - 12:00 PM	81.6	84.7	81.1
12:00 PM - 01:00 PM	81.8	85.2	80.9
01:00 PM - 02:00 PM	83.9	104.3	82.3
02:00 PM - 03:00 PM	83.7	92.0	83.2
03:00 PM - 04:00 PM	83.1	85.6	82.1
04:00 PM - 05:00 PM	83.3	103.7	81.7
Leq Average 8 hrs. (dB(A))	83.0		
Lmax (dB(A))		104.3	
Standard (dB(A))	90	140	
Reference Method	ISO 1996-1 and 1996-2		
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Analysis / Test Report

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P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804353-1

Page 1 of 1

Sample Number	23110958-1		
Parameter	Noise (Leq 8 hrs.)		
Location	Polymerizer unit L-5		
Measurement Date	Oct 03, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:20 AM - 09:20 AM	82.1	99.2	78.1
09:20 AM - 10:20 AM	81.7	98.8	77.7
10:20 AM - 11:20 AM	82.4	97.1	77.6
11:20 AM - 12:20 PM	84.8	93.9	84.0
12:20 PM - 01:20 PM	80.3	93.0	77.6
01:20 PM - 02:20 PM	84.1	96.5	76.8
02:20 PM - 03:20 PM	87.1	98.9	85.2
03:20 PM - 04:20 PM	89.0	94.6	88.4
Leq Average 8 hrs. (dB(A))	84.9	99.2	
Lmax (dB(A))		140	
Standard (dB(A))	90		
Reference Method	ISO1996-1 and 1996-2		
Standard	ใช้มาตรฐานของกรมอนามัย กระทรวงสาธารณสุขในการวัดค่าเสียงตามข้อกำหนดของกรมอนามัย พ.ศ.๒๕๖๓		

Technical Management

Thanita K.
Thanita Kulsurwong
Scientist (4)

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Supot S.
Supot Salameth
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3 Reports_Air Noise rpt (2.50PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804354-1

Page 1 of 1

Sample Number	23110958-2		
Parameter	Noise (Leq 8 hrs.)		
Location	Centrifuge unit L-5		
Measurement Date	Oct 03, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:43 AM - 09:43 AM	84.6	85.5	84.3
09:43 AM - 10:43 AM	84.5	95.1	84.2
10:43 AM - 11:43 AM	84.4	87.8	84.2
11:43 AM - 12:43 PM	84.9	85.8	84.6
12:43 PM - 01:43 PM	84.7	85.8	84.5
01:43 PM - 02:43 PM	84.8	93.1	84.6
02:43 PM - 03:43 PM	84.7	93.4	84.5
03:43 PM - 04:43 PM	84.6	93.3	84.4
Leq Average 8 hrs. (dB(A))	84.7		
Lmax (dB(A))		95.1	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ใช้มาตรฐานของกรมอนามัย กระทรวงสาธารณสุขในการวัดค่าเสียงตามข้อกำหนดของกรมอนามัย พ.ศ.๒๕๖๓		

Technical Management

Thanita K.
Thanita Kulsurwong
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Analysis / Test Report

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P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804355-1

Page 1 of 1

Sample Number	23110958-3		
Parameter	Noise (Leq 8 hrs.)		
Location	Pneumatic Conveyor unit L-5		
Measurement Date	Oct 03, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:24 AM - 09:24 AM	82.8	89.8	81.8
09:24 AM - 10:24 AM	82.6	89.6	81.6
10:24 AM - 11:24 AM	82.7	90.5	81.5
11:24 AM - 12:24 PM	84.8	86.2	84.6
12:24 PM - 01:24 PM	84.4	86.0	84.0
01:24 PM - 02:24 PM	84.7	89.8	84.1
02:24 PM - 03:24 PM	85.0	90.6	84.6
03:24 PM - 04:24 PM	85.1	95.9	84.8
Leq Average 8 hrs. (dB(A))	84.1		
Lmax (dB(A))		90.6	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ใช้มาตรฐานของกรมอนามัย กระทรวงสาธารณสุขในการวัดค่าเสียงตามข้อกำหนดของกรมอนามัย พ.ศ.๒๕๖๓		

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P/O : PHM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804356-1

Page 1 of 1

Sample Number	23110958-4		
Parameter	Noise (Leq 8 hrs.)		
Location	Recovery Tank L-5		
Measurement Date	Oct 03, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:44 AM - 09:44 AM	81.9	92.9	81.0
09:44 AM - 10:44 AM	81.8	90.1	81.4
10:44 AM - 11:44 AM	83.4	94.4	82.5
11:44 AM - 12:44 PM	83.2	96.0	80.7
12:44 PM - 01:44 PM	83.4	96.2	80.9
01:44 PM - 02:44 PM	83.0	95.8	80.5
02:44 PM - 03:44 PM	83.3	94.3	82.4
03:44 PM - 04:44 PM	82.0	90.3	81.6
Leq Average 8 hrs. (dB(A))	82.8		
Lmax (dB(A))		96.2	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ใช้มาตรฐานของกรมอนามัย กระทรวงสาธารณสุขในการวัดค่าเสียงตามข้อกำหนดของกรมอนามัย พ.ศ.๒๕๖๓		

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RIGHT SOLUTIONS

3653-17U/ENGL

3 Reports_Air Noise rpt (2.50PM)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphut, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804357-1

Page 1 of 1

Sample Number : 23110958-5
Parameter : Noise (Leq 8 hrs.)
Location : Polymerizer unit L-6
Measurement Date : Oct 03, 2023
Measurement by : Apichart Wilars

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:27 AM - 09:27 AM	83.6	93.3	82.4
09:27 AM - 10:27 AM	83.8	93.5	82.6
10:27 AM - 11:27 AM	84.6	94.5	83.4
11:27 AM - 12:27 PM	84.3	96.7	83.7
12:27 PM - 01:27 PM	83.6	96.9	82.1
01:27 PM - 02:27 PM	83.5	99.8	81.3
02:27 PM - 03:27 PM	84.7	88.5	83.4
03:27 PM - 04:27 PM	84.6	88.4	83.3

Leq Average 8 hrs. (dB(A)) : 84.1
Lmax (dB(A)) : 99.8
Standard (dB(A)) : 90
Reference Method : ISO1996-1 and 1996-2
Standard : มาตรฐานการตรวจวัดและประเมินผลกระทบทางสิ่งแวดล้อม
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Technical Management

Thanitak
Thanita Kulsurwong
Scientist (4)

Approved by

Supt S
Supt Salameh
Section Head

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3653-17U, ENGL

3 Vapors/Air Noise rpt (3.50PM)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphut, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804358-1

Page 1 of 1

Sample Number : 23110958-6
Parameter : Noise (Leq 8 hrs.)
Location : Centrifuge unit L-6
Measurement Date : Oct 03, 2023
Measurement by : Apichart Wilars

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:31 AM - 09:31 AM	84.4	100.9	83.8
09:31 AM - 10:31 AM	84.2	100.7	83.6
10:31 AM - 11:31 AM	84.1	95.2	83.9
11:31 AM - 12:31 PM	83.8	92.1	83.6
12:31 PM - 01:31 PM	83.7	89.6	83.5
01:31 PM - 02:31 PM	83.9	96.7	83.6
02:31 PM - 03:31 PM	84.3	100.1	84.0
03:31 PM - 04:31 PM	84.6	100.2	84.1

Leq Average 8 hrs. (dB(A)) : 84.1
Lmax (dB(A)) : 100.9
Standard (dB(A)) : 90
Reference Method : ISO1996-1 and 1996-2
Standard : มาตรฐานการตรวจวัดและประเมินผลกระทบทางสิ่งแวดล้อม
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Technical Management

Thanitak
Thanita Kulsurwong
Scientist (4)

Approved by

Supt S
Supt Salameh
Section Head

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3 Vapors/Air Noise rpt (3.50PM)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphut, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804359-1

Page 1 of 1

Sample Number : 23110958-7
Parameter : Noise (Leq 8 hrs.)
Location : Pneumatic Conveyor unit L-6
Measurement Date : Oct 03, 2023
Measurement by : Apichart Wilars

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:30 AM - 09:30 AM	82.9	89.6	82.6
09:30 AM - 10:30 AM	83.0	89.7	82.7
10:30 AM - 11:30 AM	82.8	89.5	82.5
11:30 AM - 12:30 PM	84.8	95.3	83.4
12:30 PM - 01:30 PM	84.2	86.3	83.2
01:30 PM - 02:30 PM	84.2	91.4	83.2
02:30 PM - 03:30 PM	84.2	88.0	83.4
03:30 PM - 04:30 PM	84.2	88.5	83.0

Leq Average 8 hrs. (dB(A)) : 83.8
Lmax (dB(A)) : 95.3
Standard (dB(A)) : 90
Reference Method : ISO1996-1 and 1996-2
Standard : มาตรฐานการตรวจวัดและประเมินผลกระทบทางสิ่งแวดล้อม
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Technical Management

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3 Vapors/Air Noise rpt (3.51PM)



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphut, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804360-1

Page 1 of 1

Sample Number : 23110958-8
Parameter : Noise (Leq 8 hrs.)
Location : Recovery Tank L-6
Measurement Date : Oct 03, 2023
Measurement by : Apichart Wilars

Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:29 AM - 09:29 AM	81.5	90.5	80.7
09:29 AM - 10:29 AM	81.7	88.5	81.2
10:29 AM - 11:29 AM	82.0	88.8	81.5
11:29 AM - 12:29 PM	82.5	94.7	81.7
12:29 PM - 01:29 PM	81.9	84.8	81.5
01:29 PM - 02:29 PM	81.7	90.7	80.9
02:29 PM - 03:29 PM	81.5	89.5	80.7
03:29 PM - 04:29 PM	81.5	84.9	81.1

Leq Average 8 hrs. (dB(A)) : 81.8
Lmax (dB(A)) : 94.7
Standard (dB(A)) : 90
Reference Method : ISO1996-1 and 1996-2
Standard : มาตรฐานการตรวจวัดและประเมินผลกระทบทางสิ่งแวดล้อม
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3 Vapors/Air Noise rpt (3.51PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number: 2804361-1

Page 1 of 1

Sample Number	23110958-9			
Parameter	Noise (Leq 8 hrs.)			
Location	Polymerizer unit L-7			
Measurement Date	Oct 02, 2023			
Measurement by	Apichart Wilars			
	Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
	08:41 AM - 09:41 AM	84.6	87.4	83.8
	09:41 AM - 10:41 AM	84.1	85.7	83.3
	10:41 AM - 11:41 AM	84.8	87.6	84.0
	11:41 AM - 12:41 PM	84.3	85.9	83.5
	12:41 PM - 01:41 PM	85.1	88.9	84.3
	01:41 PM - 02:41 PM	85.1	89.9	84.7
	02:41 PM - 03:41 PM	84.3	89.3	82.2
	03:41 PM - 04:41 PM	83.5	89.0	82.6
	Leq Average 8 hrs. (dB(A))	84.5		
	Lmax (dB(A))		89.9	
	Standard (dB(A))	90	140	
	Reference Method	ISO1996-1 and 1996-2		
	Standard	ประเทศไทย:กระทรวงอุตสาหกรรม, ราชบัณฑิตยสถานและกรมมาตรฐาน ไทย:กรมมาตรฐานการโรงงานและกรมมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ.๒๕๕๖		

Technical Management

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Supot Salameh
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3653-171/ENGL

3 Vapors/Air Noise rpt (3.57PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number: 2804362-1

Page 1 of 1

Sample Number	23110958-10		
Parameter	Noise (Leq 8 hrs.)		
Location	Centrifuge unit L-7		
Measurement Date	Oct 02, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:29 AM - 09:29 AM	84.8	87.1	84.4
09:29 AM - 10:29 AM	84.6	86.9	84.2
10:29 AM - 11:29 AM	84.5	86.8	84.1
11:29 AM - 12:29 PM	84.4	87.3	83.9
12:29 PM - 01:29 PM	85.0	88.2	84.3
01:29 PM - 02:29 PM	84.1	87.9	83.6
02:29 PM - 03:29 PM	84.8	87.4	84.2
03:29 PM - 04:29 PM	84.3	86.3	83.9
Leq Average 8 hrs. (dB(A))	84.6		
Lmax (dB(A))		88.2	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย: มาตรฐานกรม (เรื่อง มาตรฐาน) ของกรมการปกครอง ไทย: มาตรฐานการโรงงานและมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ.๒๕๕๖		

Technical Management

Thanitak.
Thanita Kulurwong
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Supot Salameh
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3 Vapors/Air Noise rpt (3.57PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number: 2804361-1

Page 1 of 1

Sample Number	23110958-11		
Parameter	Noise (Leq 8 hrs.)		
Location	Pneumatic Conveyor unit L-7		
Measurement Date	Oct 02, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:26 AM - 09:26 AM	84.9	88.1	84.2
09:26 AM - 10:26 AM	84.3	86.3	83.9
10:26 AM - 11:26 AM	84.9	87.2	84.5
11:26 AM - 12:26 PM	84.7	87.6	84.2
12:26 PM - 01:26 PM	85.2	88.4	84.5
01:26 PM - 02:26 PM	84.7	88.5	84.2
02:26 PM - 03:26 PM	84.9	87.5	84.3
03:26 PM - 04:26 PM	84.6	86.6	84.2
Leq Average 8 hrs. (dB(A))	84.8		
Lmax (dB(A))		88.5	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย:กระทรวงอุตสาหกรรม, ราชบัณฑิตยสถานและกรมมาตรฐาน ไทย:กรมมาตรฐานการโรงงานและกรมมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ.๒๕๕๖		

Technical Management

Thanitak.
Thanita Kulurwong
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Supot Salameh
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3653-171/ENGL

3 Vapors/Air Noise rpt (3.52PM)



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PPM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number: 2804364-1

Page 1 of 1

Sample Number	23110958-12		
Parameter	Noise (Leq 8 hrs.)		
Location	Recovery Tank L-7		
Measurement Date	Oct 02, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:35 AM - 09:35 AM	81.7	87.3	80.8
09:35 AM - 10:35 AM	81.8	85.8	81.4
10:35 AM - 11:35 AM	82.2	87.2	81.8
11:35 AM - 12:35 PM	81.7	85.7	81.3
12:35 PM - 01:35 PM	81.7	84.0	81.2
01:35 PM - 02:35 PM	82.6	87.4	81.7
02:35 PM - 03:35 PM	81.8	87.4	80.9
03:35 PM - 04:35 PM	81.2	84.5	80.9
Leq Average 8 hrs. (dB(A))	81.9	87.4	
Lmax (dB(A))			
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย:กระทรวงอุตสาหกรรม, ราชบัณฑิตยสถานและกรมมาตรฐาน ไทย:กรมมาตรฐานการโรงงานและกรมมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ.๒๕๕๖		

Technical Management

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3 Vapors/Air Noise rpt (3.52PM)

Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23110958
Date Received Oct 09, 2023
Date Reported Oct 11, 2023
Report Number 2804365-1

Page 1 of 1

Sample Number	23110958-13		
Parameter	Noise (Leq 8 hrs.)		
Location	Polymerizer unit L-8		
Measurement Date	Oct 02, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dBA)	Lmax (dBA)	L90 (dBA)
08:26 AM - 09:26 AM	84.2	95.6	82.2
09:26 AM - 10:26 AM	84.8	97.3	84.1
10:26 AM - 11:26 AM	84.0	95.4	82.0
11:26 AM - 12:26 PM	84.7	89.4	84.4
12:26 PM - 01:26 PM	85.0	97.5	84.3
01:26 PM - 02:26 PM	84.9	92.2	84.5
02:26 PM - 03:26 PM	85.3	96.6	84.6
03:26 PM - 04:26 PM	83.3	96.6	82.6
Leq Average 8 hrs. (dBA)	84.6		
Lmax (dBA)		96.6	
Standard (dBA)	90	140	
Reference Method	ISO 1996-1 and 1996-2		
Standard	วัตถุประสงค์การวัดเสียง : เพื่อตรวจสอบการปฏิบัติตามเงื่อนไข วัตถุประสงค์การรายงานผลการวัดเสียงตามเงื่อนไขมาตรฐาน ม.ร.ร.สง.สง.		

Technical Management

Thanita K.
Thanita Kulsuriwong
Scientist (4)

Approved by _____

Supot Salamteh
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 365-171/ EMAIL: info@atsglobal.com S:\Reports\Air Noise.rpt / 3:52PM



Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O: PMM-23-14
Project Name: Environmental Testing
Project Location:

Lot ID: 23110958
Date Received: Oct 09, 2023
Date Reported: Oct 11, 2023
Report Number: 2804366-1

Page 1 of 1

Sample Number	23110958-14			
Parameter	Noise (Leq & hrs)			
Location	Centrifuge unit L-8			
Measurement Date	Oct 02, 2023			
Measurement by	Apichart Wilars			
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))	
08:33 AM - 09:33 AM	82.7	86.4	82.2	
09:33 AM - 10:33 AM	82.6	95.5	82.0	
10:33 AM - 11:33 AM	84.2	99.7	81.9	
11:33 AM - 12:33 PM	82.6	93.2	82.2	
12:33 PM - 01:33 PM	82.6	86.3	82.1	
01:33 PM - 02:33 PM	84.6	100.1	82.3	
02:33 PM - 03:33 PM	82.8	95.7	82.2	
03:33 PM - 04:33 PM	82.7	86.0	82.2	
Leq Average 8 hrs. (dB(A))	83.2	100.1		
Lmax (dB(A))				
Standard (dB(A))	90	140		
Reference Method	ISO1996-1 and 1996-2			
Standard	ประกาศกระทรวงสาธารณสุข (เรื่อง วิธีการทดลองการวัดผลเสียง) โดยมีประกาศกระทรวงสาธารณสุขฉบับที่ 160 ลงวันที่ 10 ตุลาคม 2557			

Technical Management

Thanita K.
Thanita Kulsuriwong
Scientist (4)

Approved by

Supot Salamteh
Section Head

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 3653-171/ EMAIL S:\Reports\Air Noise.rpt 3/3/2016



Analysis / Test Report

Client Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23110958
Date Received Oct 09, 2023
Date Reported Oct 11, 2023
Report Number 2804367-1

Page 1 of 1

Sample Number	23110958-15			
Parameter	Noise (Leq 8 hrs.)			
Location	Pneumatic Conveyer unit 1-8			
Measurement Date	Oct 02, 2023			
Measurement by	Apichart Wilars			
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))	
08:35 AM - 09:35 AM	82.7	86.3	82.3	
09:35 AM - 10:35 AM	82.6	87.4	82.1	
10:35 AM - 11:35 AM	82.6	86.2	82.2	
11:35 AM - 12:35 PM	82.5	86.2	82.2	
12:35 PM - 01:35 PM	82.7	89.2	82.2	
01:35 PM - 02:35 PM	82.7	87.5	82.2	
02:35 PM - 03:35 PM	82.6	94.0	82.2	
03:35 PM - 04:35 PM	82.4	93.8	82.0	
Leq Average 8 hrs. (dB(A))	82.6		94.0	
Lmax (dB(A))				
Standard (dB(A))	90	140		
Reference Method	ISO 1996-1 and 1996-2			
Standard	ประกาศกระทรวงอุตสาหกรรม เรื่อง มาตรฐานการตรวจวัดมลพิษทางเสียง พ.ศ. 2561			
	กฎหมายว่าด้วยการตรวจวัดมลพิษทางเสียง พ.ศ. 2561			

Technical Management

Thanita K.
Thanita Kulsuriwong
Scientist (A)

Approved by _____

Supot Salamteh
Section Head

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Analysis / Test Report

Client: Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Mapthaphut, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name Environmental Testing
Project Location

Lot ID: 23110958
Date Received Oct 09, 2023
Date Reported Oct 11, 2023
Report Number 2804368-1

Page 1 of 1

Sample Number	23110958-16		
Parameter	Noise (Leq 8 hrs.)		
Location	Recovery Tank I-8		
Measurement Date	Oct 02, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
08:33 AM - 09:33 AM	81.8	86.6	81.5
09:33 AM - 10:33 AM	81.9	86.4	81.7
10:33 AM - 11:33 AM	82.0	86.5	81.8
11:33 AM - 12:33 PM	81.9	86.8	81.5
12:33 PM - 01:33 PM	81.7	86.5	81.4
01:33 PM - 02:33 PM	82.0	84.6	81.7
02:33 PM - 03:33 PM	82.0	96.1	81.6
03:33 PM - 04:33 PM	81.8	95.9	81.4
Leq Average 8 hrs. (dB(A))	81.9		
Lmax (dB(A))		96.1	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	มาตรฐานการวัดและประเมินค่าเสียงตามข้อกำหนดของประเทศไทย		
	โดยปกติแล้วค่าเสียงที่เกินค่ามาตรฐานตามที่กำหนดในกฎหมาย ก.ด.จะถือว่า		

Technical Management

Thanita Kulsuriwong
Scientist (A)

Approved by _____

Supot Salarmitih
Section Head

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804369-1

Page 1 of 1

Sample Number	23110958-17		
Parameter	Noise (Leq 8 hrs.)		
Location	Polymerizer Unit L-9		
Measurement Date	Oct 09, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	84.8	92.4	82.3
10:00 AM - 11:00 AM	84.2	88.5	81.1
11:00 AM - 12:00 PM	84.4	89.6	82.8
12:00 PM - 01:00 PM	82.8	90.1	81.3
01:00 PM - 02:00 PM	81.9	96.0	80.9
02:00 PM - 03:00 PM	82.0	94.9	80.1
03:00 PM - 04:00 PM	80.1	93.9	79.3
04:00 PM - 05:00 PM	82.5	89.8	81.0
Leq Average 8 hrs. (dB(A))	83.1		
Lmax (dB(A))		96.0	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย:กระทรวงสาธารณสุข, โรงงานอุตสาหกรรมที่ขอตรวจประเมินผล โดยกรมควบคุมมลพิษ/โรงงานอุตสาหกรรมที่ขอตรวจประเมินผลโดยกรมควบคุมมลพิษ พ.ศ.๒๕๖๕		

Technical Management

Thanitak.
Thanika Kulnirong
Scientist (4)

Approved by

Supot S.
Supot Salameth
Section Head

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804370-1

Page 1 of 1

Sample Number	23110958-18		
Parameter	Noise (Leq 8 hrs.)		
Location	Centrifuge Unit L-9		
Measurement Date	Oct 09, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	85.0	102.9	84.5
10:00 AM - 11:00 AM	84.4	85.8	83.9
11:00 AM - 12:00 PM	84.2	85.5	83.9
12:00 PM - 01:00 PM	84.3	85.6	84.0
01:00 PM - 02:00 PM	85.2	103.8	84.0
02:00 PM - 03:00 PM	84.8	103.1	83.5
03:00 PM - 04:00 PM	84.5	103.1	83.9
04:00 PM - 05:00 PM	84.4	85.7	84.1
Leq Average 8 hrs. (dB(A))	84.6		
Lmax (dB(A))		103.8	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย:กระทรวงสาธารณสุข, โรงงานอุตสาหกรรมที่ขอตรวจประเมินผล โดยกรมควบคุมมลพิษ/โรงงานอุตสาหกรรมที่ขอตรวจประเมินผลโดยกรมควบคุมมลพิษ พ.ศ.๒๕๖๕		

Technical Management

Thanitak.
Thanika Kulnirong
Scientist (4)

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Supot S.
Supot Salameth
Section Head

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804371-1

Page 1 of 1

Sample Number	23110958-19		
Parameter	Noise (Leq 8 hrs.)		
Location	Pneumatic Conveyor unit L-9		
Measurement Date	Oct 09, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	84.9	92.4	84.4
10:00 AM - 11:00 AM	84.6	85.6	84.2
11:00 AM - 12:00 PM	84.5	85.6	84.1
12:00 PM - 01:00 PM	84.4	85.5	84.1
01:00 PM - 02:00 PM	84.6	94.3	84.1
02:00 PM - 03:00 PM	84.2	95.8	83.5
03:00 PM - 04:00 PM	84.6	93.3	83.8
04:00 PM - 05:00 PM	84.6	85.7	84.2
Leq Average 8 hrs. (dB(A))	84.6		
Lmax (dB(A))		95.8	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย:กระทรวงสาธารณสุข, โรงงานอุตสาหกรรมที่ขอตรวจประเมินผล โดยกรมควบคุมมลพิษ/โรงงานอุตสาหกรรมที่ขอตรวจประเมินผลโดยกรมควบคุมมลพิษ พ.ศ.๒๕๖๕		

Technical Management

Thanitak.
Thanika Kulnirong
Scientist (4)

Approved by

Supot S.
Supot Salameth
Section Head

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Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand 21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110958
Date Received : Oct 09, 2023
Date Reported : Oct 11, 2023
Report Number : 2804372-1

Page 1 of 1

Sample Number	23110958-20		
Parameter	Noise (Leq 8 hrs.)		
Location	Recovery Tank L-9		
Measurement Date	Oct 09, 2023		
Measurement by	Apichart Wilars		
Time	Leq (dB(A))	Lmax (dB(A))	L90 (dB(A))
09:00 AM - 10:00 AM	82.5	91.7	80.5
10:00 AM - 11:00 AM	81.8	85.3	80.2
11:00 AM - 12:00 PM	82.1	85.9	80.8
12:00 PM - 01:00 PM	80.9	84.3	80.0
01:00 PM - 02:00 PM	80.9	93.4	80.2
02:00 PM - 03:00 PM	81.2	93.7	80.0
03:00 PM - 04:00 PM	80.2	92.9	79.3
04:00 PM - 05:00 PM	81.8	85.6	80.5
Leq Average 8 hrs. (dB(A))	81.5		
Lmax (dB(A))		93.7	
Standard (dB(A))	90	140	
Reference Method	ISO1996-1 and 1996-2		
Standard	ประเทศไทย:กระทรวงสาธารณสุข, โรงงานอุตสาหกรรมที่ขอตรวจประเมินผล โดยกรมควบคุมมลพิษ/โรงงานอุตสาหกรรมที่ขอตรวจประเมินผลโดยกรมควบคุมมลพิษ พ.ศ.๒๕๖๕		

Technical Management

Thanitak.
Thanika Kulnirong
Scientist (4)

Approved by

Supot S.
Supot Salameth
Section Head

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3 Vapors_Air Noise rpt (3.54PM)

ระดับเสียงติดตัวบุคคล



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2371216

Date Received : Jul 05, 2023

Date Reported : Jul 07, 2023

Report Number : 2690237-1

Page 1 of 3

Sample Number 2371216-1

Sampled Date Jul 03, 2023

Sample Description Noise Dose

Location Worker in L-5

Personal Sampling ผู้ปฏิบัติงาน แสดงสัญญาณ

Date Analysis Commenced Jul 07, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	4.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	71.9	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)

2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jengwareewong

Remark :

- LOD : Limit of Detection

- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

Wichan Choonharat

Wichan Choonharat
Assistant Manager

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3650-171/09A



Measurement Summary Report

Lot. 2371216-1

Name 11

Time 7/3/2023 08:43:00 AM

Person

Place

Project

Duration 8

Instrument CB1532, CR:110A

Calibration

Before 7/1/2023 06:15 PM

Offset -0.50 dB

After

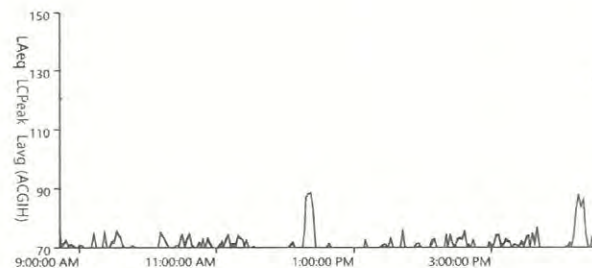
Offset

Peak & Max Values

LCPeak 126.6 dB

ACGIH

Lavg	71.9 dB
TWA	71.9 dB
Dose	5%
Est. Dose	5%



M91E20100000005 Cirrus Research NoiseTools

Page 1 of 1 ReportId



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2371216
Date Received : Jul 05, 2023
Date Reported : Jul 07, 2023
Report Number : 2690237-1

Page 2 of 3

Sample Number	2371216-2								
Sampled Date	Jul 03, 2023								
Sample Description	Noise Dose								
Location	Worker in L-6								
Personal Sampling	บุคคล พืชสวน								
Date Analysis Commenced	Jul 07, 2023								
Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	51.3	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	82.1	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jiengwarewong

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

Wichan Choonharat

Wichan Choonharat
Assistant Manager

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Measurement Summary Report

Lot. 2371216-2

Name 12
Time 7/3/2023 08:43:00 AM **Person** **Place** **Project**
Duration 8
Instrument CB1533, CR:110A

Calibration

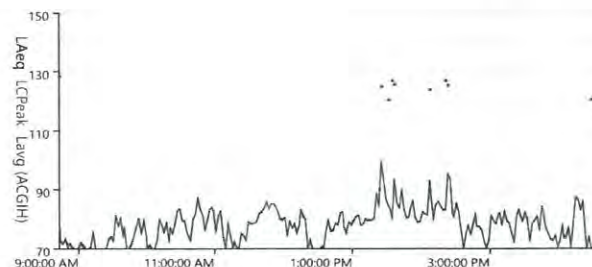
Before 7/1/2023 06:18 PM **Offset** 0.20 dB **After** **Offset**

Peak & Max Values

LCPeak 128.5 dB

ACGIH

Lavg 82.1 dB
TWA 82.1 dB
Dose 51%
Est. Dose 51%





Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2371216

Date Received : Jul 05, 2023

Date Reported : Jul 07, 2023

Report Number : 2690237-1

Page 3 of 3

Sample Number	2371216-3
Sampled Date	Jul 04, 2023
Sample Description	Noise Dose
Location	Worker in L-7
Personal Sampling	บุคคลากร ประจำโรงงาน
Date Analysis Commenced	Jul 07, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	7.9	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	74.0	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)

2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jengwareewong

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

Wichan Choonharat

Wichan Choonharat
Assistant Manager

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3653-171/ EMAIL



Measurement Summary Report

Lot. 2371216-3

Name 11
Time 7/4/2023 08:41:00 AM Person Place Project
Duration 8
Instrument CB1532, CR:110A

Calibration

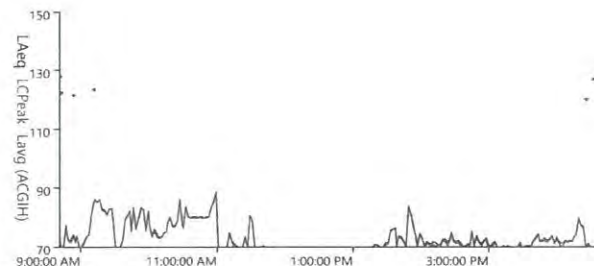
Before 7/3/2023 05:37 PM Offset -0.40 dB After Offset

Peak & Max Values

LCPeak 128.0 dB

ACGIH

Lavg 74.0 dB
TWA 74.0 dB
Dose 8%
Est. Dose 8%



M877C0100000001 Cirrus Research NoiseTools

Page 1 of 1 ReportId



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 2380358
Date Received : Jul 12, 2023
Date Reported : Jul 17, 2023
Report Number : 2712434-1

Page 1 of 2

Sample Number	2380358-1
Sampled Date	Jul 10, 2023
Sample Description	Noise Dose
Location	Worker in L-8
Personal Sampling	คุณพิรศักดิ์ วงศ์พิทักษ์
Date Analysis Commenced	Jul 14, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	28.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	79.5	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jiengwarewong

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Approved by

Wichan Choonharat

Wichan Choonharat
Assistant Manager

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3657-171/EMAIL



Measurement Summary Report

Lot: 2380358-1

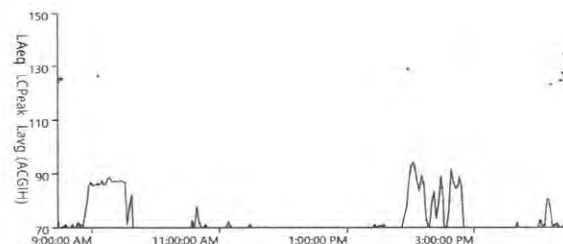
Name 5
Time 7/10/2023 08:27:00 AM Person Place Project
Duration 8
Instrument CB1534, CR:110A

Calibration

Before 7/7/2023 03:38 PM Offset -0.40 dB After Offset

Peak & Max Values	
LCPeak	134.5 dB

ACGIH	
Lavg	79.5 dB
TWA	79.5 dB
Dose	28%
Est. Dose	28%





Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand

21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 2380358

Date Received : Jul 12, 2023

Date Reported : Jul 17, 2023

Report Number : 2712434-1

Page 2 of 2

Sample Number	2380358-2								
Sampled Date	Jul 11, 2023								
Sample Description	Noise Dose								
Location	Worker in L-9								
Personal Sampling	ทดสอบอาชีวอนามัย								
Date Analysis Commenced	Jul 14, 2023								
Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	1.7	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	67.4	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)

2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jengwareewong

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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7/11/2023



Measurement Summary Report

Lot. 2380358-2

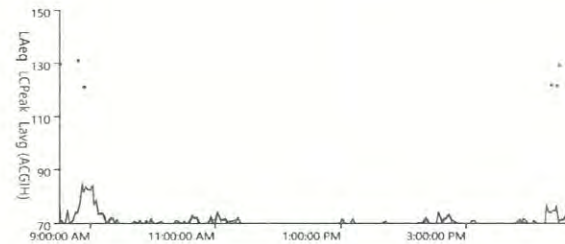
Name 9
Time 7/11/2023 08:30:00 AM Person Place Project
Duration 8
Instrument CB1534, CR:110A

Calibration

Before 7/10/2023 05:47 PM Offset -0.40 dB After Offset

Peak & Max Values	
LCPeak	131.1 dB

ACGIH	
Lavg	67.4 dB
TWA	67.4 dB
Dose	2%
Est. Dose	2%



M91E2010000009 Cirrus Research NoiseTools

Page 1 of 1 ReportId



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110959
Date Received : Oct 10, 2023
Date Reported : Oct 12, 2023
Report Number : 2785542-1

Page 1 of 5

Sample Number 23110959-1
Sampled Date Oct 03, 2023
Sample Description Noise Dose
Location Worker in L-5
Personal Sampling ในโรงงาน
Date Analysis Commenced Oct 11, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	83.2	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	84.2	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jiengwareewong

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Wichan Choonharat

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Measurement Summary Report

Lot. 23110959-1

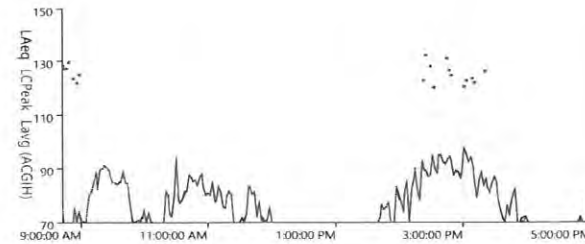
Name 173
Time 10/3/2023 08:42:00 AM Person Place Project
Duration 8
Instrument YF573, CR:110A

Calibration

Before 10/2/2023 06:46 PM Offset -0.10 dB After Offset

Peak & Max Values	
LCPeak	132.4 dB

ACGIH	
Lavg	84.2 dB
TWA	84.2 dB
Dose	83%
Est. Dose	83%





Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 23110959

Date Received : Oct 10, 2023

Date Reported : Oct 12, 2023

Report Number : 2785542-1

Page 2 of 5

Sample Number	23110959-2
Sampled Date	Oct 03, 2023
Sample Description	Noise Dose
Location	Worker in L-6
Personal Sampling	การวัด พลังงานเสียง
Date Analysis Commenced	Oct 11, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	25.7	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	79.1	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

- MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jiengwareewong

Remark :

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- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Assistant Manager

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10/3/2023



Measurement Summary Report

Lot. 23110959-2

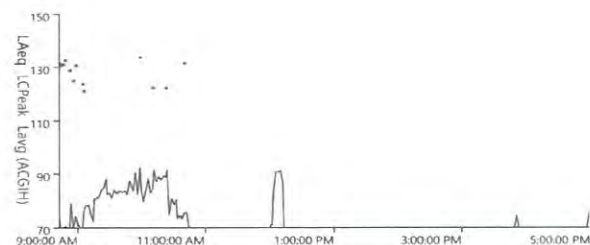
Name 172
Time 10/3/2023 08:42:00 AM Person Place Project
Duration 8
Instrument YF572, CR:110A

Calibration

Before 10/2/2023 06:47 PM Offset -0.30 dB After Offset

Peak & Max Values	
LCPeak	133.8 dB

ACGIH	
Lavg	79.1 dB
TWA	79.1 dB
Dose	26%
Est. Dose	26%



M877C010000009B Cirrus Research NoiseTools

Page 1 of 1 ReportId



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110959
Date Received : Oct 10, 2023
Date Reported : Oct 12, 2023
Report Number : 2785542-1

Page 3 of 5

Sample Number 23110959-3
Sampled Date Oct 02, 2023
Sample Description Noise Dose
Location Worker in L-7
Personal Sampling คนประจำเครื่อง
Date Analysis Commenced Oct 11, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	38.0	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	80.8	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)

2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jiengwareewong

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

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Assistant Manager

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10/2/2023

Measurement Summary Report

Lot. 23110959-3

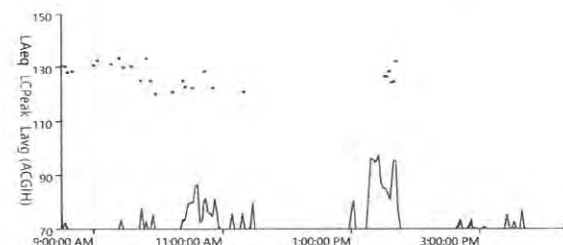
Name 23110959-3
Time 10/2/2023 08:29:00 AM Person Place Project
Duration 8
Instrument YF572, CR:110A

Calibration

Before 9/30/2023 04:22 PM Offset -0.50 dB After Offset

Peak & Max Values	
LCPeak	133.5 dB

ACGIH	
Lavg	80.8 dB
TWA	80.8 dB
Dose	38%
Est. Dose	38%



M877C010000009A Cirrus Research NoiseTools

Page 1 of 1 ReportId



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.

8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150

P/O : PMM-23-14

Project Name : Environmental Testing

Project Location :

Lot ID: 23110959

Date Received : Oct 10, 2023

Date Reported : Oct 12, 2023

Report Number : 2785542-1

Page 4 of 5

Sample Number	23110959-4
Sampled Date	Oct 02, 2023
Sample Description	Noise Dose
Location	Worker in L-8
Personal Sampling	อุปกรณ์การวัดเสียง
Date Analysis Commenced	Oct 11, 2023

Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	10.0	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	75.0	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)

2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jengwareewong

Remark :

- LOD : Limit of Detection
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Measurement Summary Report

Lot. 23110959-4

Name 23110959-4
Time 10/2/2023 08:29:00 AM Person Place Project
Duration 8
Instrument YF573, CR:110A

Calibration

Before 10/1/2023 03:58 PM Offset 0.00 dB After Offset

Peak & Max Values	
LCPeak	129.6 dB

ACGIH	
Lavg	75.0 dB
TWA	75.0 dB
Dose	10%
Est. Dose	10%



M877C0100000099 Cirrus Research NoiseTools

Page 1 of 1 ReportId



Analysis / Test Report

Client : Thai Plastic & Chemicals Public Co., Ltd.
8, Map Ta Phut Industrial Estate I-1 Road, Maptaphud, Muang, Rayong Thailand
21150
P/O : PMM-23-14
Project Name : Environmental Testing
Project Location :

Lot ID: 23110959
Date Received : Oct 10, 2023
Date Reported : Oct 12, 2023
Report Number : 2785542-1

Page 5 of 5

Sample Number	23110959-5								
Sampled Date	Oct 09, 2023								
Sample Description	Noise Dose								
Location	Worker in L-9								
Personal Sampling	บุคคลในเขต แหล่งทำงาน								
Date Analysis Commenced	Oct 11, 2023								
Analyte	Sampled Date/time	Unit	LOD	LOQ (LOR)	Result	Guideline Limit	Method	Guideline	Testing Location
Air Testing									
Noise Dose (8 hrs.)	08:30 AM - 04:30 PM	%	-	1	44.7	No Standard	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok
TWA (8 hrs.)	08:30 AM - 04:30 PM	dB(A)	-	-	81.5	85	MOL, Department Labour Protection and Welfare (B.E.2561)	MOL	Bangkok

Guideline :

MOL : 1. Notification of Department Labour Protection and Welfare on the Criteria and Procedures for Measurement and Analysis of Working Conditions in relation to Heat, Light or Noise Levels, including Duration and Types of Business that must perform (B.E. 2561)
2. Notification of Department of Labour Protection and Welfare on the Standard of Time Weighted Average (TWA) Noise Level (B.E. 2561)

Sampled By : Natthapon Jiengwareewong

Remark :

- LOD : Limit of Detection
- "<" : Lower than LOQ (Limit of Quantitation) / LOR (Limit of Reporting)

Approved by

Wichan Choonharat

Wichan Choonharat
Assistant Manager

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2653-171/ENR



Measurement Summary Report

Lot. 23110959-5

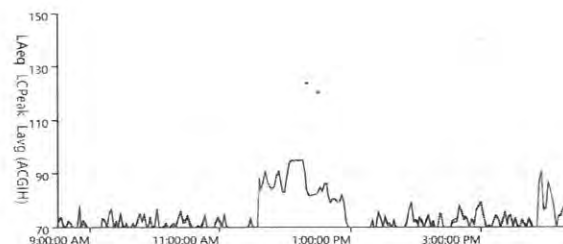
Name 6
Time 10/9/2023 08:30:00 AM Person Place Project
Duration 8
Instrument YF572, CR:110A

Calibration

Before 10/9/2023 06:54 AM Offset -0.30 dB After Offset

Peak & Max Values	
LCPeak	123.8 dB

ACGIH	
Lavg	81.5 dB
TWA	81.5 dB
Dose	45%
Est. Dose	45%



M877C01000001BD Cirrus Research NoiseTools

Page 1 of 1 ReportId

ภาคผนวก จ

ข้อมูลการสอบเทียบเครื่องมือ (Calibration Data Sheets)

Sartorius (Thailand) Co., Ltd.
129 Thane Road, Sukhumvit Road, Bangkok 10110
Tel: (66) 241 831-14 / Fax: (66) 241 831-20 e-mail: service.hair@sartorius.com

SARTORIUS

Certificate of Calibration

Model Number LA1205F
Description Analytical Balance
Serial Number 25429504
(I) No. RYD_EN6001
Manufacturer Sartorius

Certificate No. 228001119
Issued Date Friday March 03, 2022
Reference No. 2043331

Page No. 2 of 2

Calibration Results : Without Adjustment

Repeatability

The repeatability is the ability of a weighing instrument to produce closely similar results when a particular mass under test is repeatedly weighed on the same load after a minimum dwell time has elapsed (increased if the weighing pan or the same load is moved). The repeatability should be 0.001 to maximum repeatability as indicated.

Normal Value (g, Unit Load)	100	10	1	0.1	0.01	0.001
100 g	0.001	0.001	0.001	0.001	0.001	0.001
10 g	0.001	0.001	0.001	0.001	0.001	0.001
1 g	0.001	0.001	0.001	0.001	0.001	0.001
0.1 g	0.001	0.001	0.001	0.001	0.001	0.001
0.01 g	0.001	0.001	0.001	0.001	0.001	0.001
0.001 g	0.001	0.001	0.001	0.001	0.001	0.001
Repeatability Deviation	0.001	0.001	0.001	0.001	0.001	0.001

Eccentricity (Off-center loading error)

The off-center weighing error is caused by the difference between the measuring pan height and the height of the sample or the weight of the sample on the weighing pan and placement error of an additional measurement point. The maximum allowable eccentricity is 0.001 g/10 g.

Normal Value	100	10	1	0.1	0.01	0.001
100 g	0.001	0.001	0.001	0.001	0.001	0.001
10 g	0.001	0.001	0.001	0.001	0.001	0.001
1 g	0.001	0.001	0.001	0.001	0.001	0.001
0.1 g	0.001	0.001	0.001	0.001	0.001	0.001
0.01 g	0.001	0.001	0.001	0.001	0.001	0.001
0.001 g	0.001	0.001	0.001	0.001	0.001	0.001
Eccentricity Deviation	0.001	0.001	0.001	0.001	0.001	0.001

Linearity

The linearity is the measured accuracy. It is the difference of the comparison result of a measured object between the actual value

Reference	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Normal Value	Conventional Mass Value	Observed Value	Deviation	Linearity	Linearity	Linearity
100 g	100.0000	100.0000	0.0000	0.0000	0.0000	0.0000
10 g	10.0000	10.0000	0.0000	0.0000	0.0000	0.0000
1 g	1.0000	1.0000	0.0000	0.0000	0.0000	0.0000
0.1 g	0.1000	0.1000	0.0000	0.0000	0.0000	0.0000
0.01 g	0.0100	0.0100	0.0000	0.0000	0.0000	0.0000
0.001 g	0.0010	0.0010	0.0000	0.0000	0.0000	0.0000
Linearity Deviation	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Print of Report

SOP-IMP-23-03 February 2022

High Volume Air Sampler Calibration Worksheet

Project Site: The Plastic & Chemical Public Co. Ltd. Barometric Pressure (mm Hg) 776

Calibrator Location: 25-Aug-22 Temperature (°C) 33

Calibrator Date: 25-Aug-22 High Volume ID: RYO_P10136

Calibrator Sheet No.: C-250823-RYO_P10136 High Volume Model: TE-50038

Calibrator ID: RYO_P10136 High Volume S/N: 4761

Calibrator Model: TE-50286 Calibrator Slope: 0.9414

Calibrator S/N: 1316 Calibrator Intercept: -0.0292

Test No.	Inlet H ₂ O (m³)	Q _a (m³/min)	T-Chart (CFM)	Linear Regression
1	2.0	0.96	30	Slope: 43.209
2	2.4	1.05	34	Intercept: -1.1174
3	3.0	1.195	40	Correlation Coefficient: 0.9997
4	3.4	1.291	44	
5	4.4	1.426	50	

Calibrated by: [Signature] Approved by: [Signature]

(No. N/A) (No. N/A) (No. N/A) (No. N/A)

FORM NO. FSA-074 REVISION NO. 0001 DATE: 14/03/16

High Volume Air Sampler Calibration Worksheet

Project Site: The Plastic & Chemical Public Co. Ltd. Barometric Pressure (mm Hg) 776

Calibrator Location: 25-Aug-22 Temperature (°C) 33

Calibrator Date: 25-Aug-22 High Volume ID: RYO_P10136

Calibrator Sheet No.: C-250823-RYO_P10136 High Volume Model: TE-50038

Calibrator ID: RYO_P10136 High Volume S/N: 4761

Calibrator Model: TE-50286 Calibrator Slope: 0.9414

Calibrator S/N: 1316 Calibrator Intercept: -0.0292

Test No.	Inlet H ₂ O (m³)	Q _a (m³/min)	T-Chart (CFM)	Linear Regression
1	2.0	0.96	30	Slope: 50.5729
2	2.4	1.05	34	Intercept: -19.2435
3	3.0	1.195	40	Correlation Coefficient: 0.9997
4	3.4	1.291	44	
5	4.4	1.426	50	

Calibrated by: [Signature] Approved by: [Signature]

(No. N/A) (No. N/A) (No. N/A) (No. N/A)

FORM NO. FSA-074 REVISION NO. 0001 DATE: 14/03/16

High Volume Air Sampler Calibration Worksheet

Project Site: The Plastic & Chemical Public Co. Ltd. Barometric Pressure (mm Hg) 776

Calibrator Location: 25-Aug-22 Temperature (°C) 33

Calibrator Date: 25-Aug-22 High Volume ID: RYO_P10136

Calibrator Sheet No.: C-250823-RYO_P10136 High Volume Model: TE-50038

Calibrator ID: RYO_P10136 High Volume S/N: 4761

Calibrator Model: TE-50286 Calibrator Slope: 0.92145

Calibrator S/N: 1543 Calibrator Intercept: -0.0095

Test No.	Inlet H ₂ O (m³)	Q _a (m³/min)	T-Chart (CFM)	Linear Regression
1	1.2	0.762	32	Slope: 29.9416
2	1.7	0.905	36	Intercept: 9.9080
3	2.7	1.051	40	Correlation Coefficient: 0.9949
4	3.0	1.199	44	
5	3.4	1.276	48	

Calibrated by: [Signature] Approved by: [Signature]

(No. N/A) (No. N/A) (No. N/A) (No. N/A)

FORM NO. FSA-074 REVISION NO. 0001 DATE: 14/03/16

High Volume Air Sampler Calibration Worksheet

Project Site: The Plastic & Chemical Public Co. Ltd. Barometric Pressure (mm Hg) 776

Calibrator Location: 25-Aug-22 Temperature (°C) 33

Calibrator Date: 25-Aug-22 High Volume ID: RYO_P10136

Calibrator Sheet No.: C-250823-RYO_P10136 High Volume Model: TE-50038

Calibrator ID: RYO_P10136 High Volume S/N: 4761

Calibrator Model: TE-50286 Calibrator Slope: 0.92145

Calibrator S/N: 1543 Calibrator Intercept: -0.0095

Test No.	Inlet H ₂ O (m³)	Q _a (m³/min)	T-Chart (CFM)	Linear Regression
1	1.2	0.762	32	Slope: 30.1569
2	1.7	0.905	36	Intercept: 8.2150
3	2.7	1.051	40	Correlation Coefficient: 0.9914
4	3.0	1.199	44	
5	3.4	1.276	48	

Calibrated by: [Signature] Approved by: [Signature]

(No. N/A) (No. N/A) (No. N/A) (No. N/A)

FORM NO. FSA-074 REVISION NO. 0001 DATE: 14/03/16

High Volume Air Sampler Calibration Worksheet

Project Site: The Plastic & Chemical Public Co. Ltd. Barometric Pressure (mm Hg) 776

Calibrator Location: 25-Aug-22 Temperature (°C) 33

Calibrator Date: 25-Aug-22 High Volume ID: RYO_P10136

Calibrator Sheet No.: C-250823-RYO_P10136 High Volume Model: TE-50038

Calibrator ID: RYO_P10136 High Volume S/N: 4761

Calibrator Model: TE-50286 Calibrator Slope: 0.92145

Calibrator S/N: 1543 Calibrator Intercept: -0.0095

Test No.	Inlet H ₂ O (m³)	Q _a (m³/min)	T-Chart (CFM)	Linear Regression
1	1.2	0.762	32	Slope: 30.1270
2	1.7	0.905	36	Intercept: 8.2147
3	2.7	1.051	40	Correlation Coefficient: 0.9913
4	3.0	1.199	44	
5	3.4	1.276	48	

Calibrated by: [Signature] Approved by: [Signature]

(No. N/A) (No. N/A) (No. N/A) (No. N/A)

FORM NO. FSA-074 REVISION NO. 0001 DATE: 14/03/16

Certificate of System Qualification

GC-02 - GCMS-02

System ID: RYO_E40136

Organization Name: ALS Laboratory Group (Thailand) Co. Ltd.

Organization Location: 61619 Moo 3, Tambon Mae Nam Koo, A Phukdang, Haeng, 21140, Thailand

Date: July 7, 2023 11:27:53 AM

EQP Name: Agilent Recommended: Agilent Recommended

EQP Revision: GC-02 GCMS-02-02

Overall Qualification Status: Pass

REVIEW BY: [Signature] APPROVED BY: [Signature] NEXT CAL DATE: 09/01/24

CDS Login Verification - GC

Login: [Signature]

Overall CDS Login Verification - GC Test Status: Pass

System Inspection and Basic Safety and Operation

Name: [Signature]

Setup Status: Pass

Overall System Inspection and Basic Safety and Operation Test Status: Pass

Initial Pressure Accuracy

Name: [Signature]

Front: [Signature]

Setup Status: Pass

Initial Pressure: [Signature]

Actual: [Signature]

Accuracy: [Signature]

Agilent Recommended: [Signature]

Date: July 7, 2023 11:27:53 AM

System ID: RYO_E40136

Page 1 / 17

GC Oven Temperature Accuracy Test Status

Pass

GC Oven Temperature Accuracy

Name: 7890

Setup Status: Pass

Zone: Oven

Temperature: 230.0 230.8 °C

Accuracy: 0.8 °C

Agilent Recommended: ±1.0 °C

Setup Status: Pass

Zone: Oven

Temperature: 100.0 99.9 °C

Accuracy: 0.1 °C

Agilent Recommended: ±1.0 °C

Overall GC Oven Temperature Accuracy Test Status: Pass

GC Oven Temperature Stability

Name: 7890

Setup Status: Pass

Zone: Oven

Temperature: 100.0 99.91667 °C

Stability: 0.1 °C

Agilent Recommended: ±0.5 °C

Overall GC Oven Temperature Stability Test Status: Pass

Date: July 7, 2023 11:27:53 AM

System ID: RYO_E40136

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Log Amp

Tested Combination: Front SSL / External SQ

Name: 50778

Setup Status: Pass

Overall Log Amp Test Status: Pass

RPPA

Tested Combination: Front SSL / External SQ

Name: 50778

Setup Status: Pass

Amplitude: 1000 mV

Drift After Five Minutes: 1.1 mV

RPPA Voltage: 479 mV

Agilent Recommended: ±1.0 mV

Overall RPPA Test Status: Pass

Time EI

Tested Combination: Front SSL / External SQ

Name: 50778

Setup Status: Pass

Flame: 1

Setup Status: Pass

Flame: 2

Overall Time EI Test Status: Pass

Signal to Noise EI

Date: July 7, 2023 11:27:53 AM

System ID: RYO_E40136

Page 3 / 17

Signal to Noise EI Test Status

Pass

Signal to Noise EI

Tested Combination: Front SSL / External SQ

Name: 50778

Setup Status: Pass

Source: EI-Extractor

Flame: 1

Setup Status: Pass

Signal to Noise: 7485

Agilent Recommended: ±1200

Source: EI-Extractor

Flame: 2

Setup Status: Pass

Signal to Noise: 2087

Agilent Recommended: ±1200

This test's 2 comment(s) and 7 deviation(s) are available in the Attachments section.

Overall Signal to Noise EI Test Status: Pass

Date: July 7, 2023 11:27:53 AM

System ID: RYO_E40136

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Purpose
This section describes the as found system configuration.

Details	
System	
System ID	RYG_EN0136
Manufacturer	Aqilent Technologies
Name	7890
Flow Data Input	Manual Data
Temperature Data Input	Manual Data or Other Data Logging

Tested Combination	
Injection Technique	Manual injection
Inlet	Front
Detector	External
LTM Inducted?	No
Sampler 1	
Manufacturer	Agilent Technologies
Type	Manual Injection
Usage	Samples injection
Syringe Volume (uL)	10
Machine 1	
Manufacturer	Agilent Technologies
Name	7890
Model Number	G3462B
Serial Number	CN16462238
Firmware Revision	B.02.04.3
Component ID/Asset No.	081117000239
Overl. Type	Standard

Date: July 7, 2022 11:27:53 AM
System ID: RYG_EH0156

part 1		
Manufacturer	Agilent Technologies	
Name	7830	
Type	SSL	
Location	Front	
Carrier Gas	Helium	
Control Type	Electronic Pressure Control (EPC)	
Purge Gas	Yes	
Detector 1		
Manufacturer	Agilent Technologies	
Name	Mass Spectrometer	
Type	Mass Spectrometer	
Location	External	
Mass Spectrometer 1		
Manufacturer	Agilent Technologies	
Type	50	
Name	68778	
Serial Number	US1910008	
Firmware Revision	6972.00.34	
High Vacuum System	Turbo Pump	
Solving Run Standard	QSO 940	
Component ID/Asset No.	081117700250	
M/S ID Source 1		
Manufacturer	Agilent Technologies	
Source Type	DI - Extractor	
Number of Channels	2	

Date: July 7, 2022 11:27:53 AM
System ID: RVC_7303136

Agilent CrossLab Compliance Services

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Details	
Full Name of Signer:	Eaknarin Puangsope
Logged On User Name:	eaknarin_puangsope@agilent.com
Signature Creation Date:	July 7, 2022
Reason for Signature:	Executed protocol and published this original version of document

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Date: July 7, 2022 11:27:53 AM
System ID: RYC-EN0136

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Date: July 1, 2022, 11:27:53 AM
System ID: RYG_EH0136

[illegible]

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Date: July 7, 2022 11:27:53 AM
System ID: RYD_SH0136

User Name: walterw_pjorgensen Homework: A337701010					
System No: RT2C_000170					
Print Date: July 1, 2012 11:27:00 AM					
A33_701_01010 Transaction Log					
Date	Transaction	Activity	Type of Transaction	Optional Information	
		Performed			
Jul 3, 2012 1:34:43 PM	End	Cancellation	GC Over Temperature Alarm: 17800 Temperature Clear: 17850 F, 1 m 1.0 AND 1 m 1.5 seconds in 0	Run Count: 1	
Jul 3, 2012 1:34:45 PM	Start	Execution	GC Over Temperature Stability Tests 17800 Temperature (Start) 17850 Temperature (End)		
Jul 3, 2012 1:59:30 PM	End	Stop	GC Over Temperature Stability Monitor Data Entry 17800 Temperature (Start) 17850 F, 1 m 1.0		
Jul 3, 2012 1:59:31 PM	End	Execution	GC Over Temperature Stability Monitor Data Entry 17800 Temperature (Start) 17850 F, 1 m 1.0		
Jul 3, 2012 1:59:31 PM	End	Execution	Log File: 16779 GC - Source: Run E: Extractor		
Jul 3, 2012 1:59:32 PM	End	Execution	Log File: 16779 GC - Source: Run Count: 1 E: Extractor		
Jul 3, 2012 1:59:33 PM	End	Execution	MPLS: 16779 GC - Source: F1 Name Extract		
Jul 3, 2012 2:00:24 PM	End	Execution	MPLS: 16779 GC - Source: F1 Run Count: 1 Extract		
Jul 3, 2012 2:00:24 PM	Start	Execution	Turn on 16779 GC - Source: Run Condition: Non-Volatility Unlocked		
Jul 3, 2012 2:04:48 PM	End	Qualification	Source: GC		
Jul 3, 2012 2:04:48 PM	End	Reporting	Source: None		None
Jul 3, 2012 2:04:48 PM	End	Reporting	Source: None		None
Jul 3, 2012 2:04:48 PM	End	Configuration	Source: None		None
Jul 3, 2012 2:04:48 PM	End	Configuration	Source: None		None

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Date: Jul 7, 2002 11:27:59 AM
System ID: RYC-EN0136

User Name: wharfedale_pragmatism			System ID: RYS_000108	
Instance: A087700002			Print Date: 2012-11-27 15:48	
A087700002 Transaction Log				
Date	Transaction Date	Activity Particular	Type of Transaction	Optional Information
JAN 6, 2012 2:14 PM PM	Jan	Classification	Insertion	CO
JAN 6, 2012 2:14 PM PM	Jan	Examination	Form ID: 00778-003, Source: None ID: Excessive Plagiarism 1 (Classification: No suspicious anomalies)	None
JAN 6, 2012 2:14 PM PM	Jan	Examination	Form ID: 00778-003, Source: Alan Clark 1 ID: Excessive Plagiarism 1 (Classification: No suspicious anomalies)	None
JAN 6, 2012 2:14 PM PM	Jan	Examination	Form ID: 00778-003, Source: None ID: Excessive Plagiarism 2 (Classification: No suspicious anomalies)	None
JAN 6, 2012 2:14 PM PM	Jan	Classification	Insertion	CO
JAN 6, 2012 2:14 PM PM	Jan	Recovery	Insertion	None
JAN 6, 2012 2:14 PM PM	Jan	Recovery	Insertion	None
JAN 6, 2012 2:14 PM PM	Jan	Classification	Insertion	UC
JAN 6, 2012 2:14 PM PM	Jan	Examination	Form ID: 00778-003, Source: None ID: Excessive Plagiarism 2 (Classification: No suspicious anomalies)	None
JAN 6, 2012 2:15 PM PM	Jan	Classification	Insertion	DIS
JAN 6, 2012 2:15 PM PM	Jan	Recovery	Insertion	None
JAN 6, 2012 2:15 PM PM	Jan	Recovery	Insertion	None
JAN 6, 2012 2:15 PM PM	Jan	Classification	Insertion	CO
JAN 6, 2012 2:15 PM PM	Jan	Examination	Form ID: 00778-003, Source: None ID: Excessive Plagiarism 2 (Classification: No suspicious anomalies)	None

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Date: July 7, 2022 11:27:53 AM
Exam ID: PPG-EN0136

[illegible]

Page 5 of 10

Date: July 7, 2022 11:27:53 AM
System ID: RYG-S40536

User Name: webmaster_pragmatics			System ID: RYFC_000115	
Host Name: ADM2070162			Host Date: July 7, 2012 11:27:18 AM	
AUX_T012_200712 Transaction Log				
Time	Transaction Status	Activity Description	Types of Transactions	Definitive Information
July 7, 2012 8:58 AM	End	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1230	Run Command	Run Command - 1
July 7, 2012 10:17:46 AM	Start	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1230	Execution	Execution Start for Run Command
July 7, 2012 10:31:44 AM	Start	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1230	Execution	None
July 7, 2012 10:40:00 AM	End	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1230	End	Data Not Filled D=000220FV_M_P01-D
July 7, 2012 10:58:48 AM	End	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1230	Execution	Run Command - 2
July 7, 2012 10:58:52 AM	Start	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1240	Execution	Execution Start for Run Command
July 7, 2012 12:01:35 AM	Start	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1240	Execution	None
July 7, 2012 10:58:44 AM	End	Signal to Helix D - Local variables: From BSL, SCL Status: D - Local Parameter 1: i = 1240	End	Data Not Filled D=000220FV_M_P01-D

Page 8 of 10

Date: July 7, 2022 11:27:53 A
System ID: RYD-EN0136

[illegible]

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[illegible][illegible]

			
		<h1 style="text-align: center;">Calibration Certificate</h1>	
		Certificate No: C65042 Date of issue: 24-Jun-23	
Instrument description: H-60 g Analytical			
Instrument model: 62537-14			
Instrument serial no: R7C, F2044			
ID no or control no: TENG SE & LUI 8544			
Manufacturer:			
Probe description:			
Probe model:			
Probe serial:			
Customer name: ALL LABS (M) GROUP (THAILAND) CO., LTD			
Customer address: 104 Phrayanuwat Rd, Muangnong Road, Klongkum District, Klong San Luang, Bangkok, 10110 (Thailand)			
Total pages of certificate: 7 pages			
Issuing date: 24-Jun-23			
Parameter of calibration: 1. Mass Calibration (Weight) 2. Mass 100.001 g 3. Mass 1.0001 g 4. Mass 0.10001 g 5. Mass 0.010001 g 6. Mass 0.0010001 g 7. Mass 0.00010001 g			
Condition of UUC: Used			
Ambient condition: All of the Measurement were done under the reference condition			
Humidity: 55.6 ± 0.4 %RH			
Temperature: 23.6 ± 0.1 °C			
Calibration plane: 1. 100.001 g 2. 1.0001 g 3. 0.10001 g 4. 0.010001 g 5. 0.0010001 g 6. 0.00010001 g			
Calibration procedure no.: M1-31-01			
<p>The calibration certificate is prepared according to the measurement standards in the standards of measurement of mass (National Institute of Standards and Technology, NIST) and the measurement standards of the International Union of Pure and Applied Chemistry (IUPAC). This certificate is valid only for the purpose of the measurement of mass.</p> <p>This certificate is valid only for the purpose of the measurement of mass and the purpose of the measurement of mass.</p> <p>The calibration certificate is valid only for the purpose of the measurement of mass and the purpose of the measurement of mass.</p>			
Date of calibration: 23-Jun-23			
			
Mr. Sathish Marudhi Calibration Technician		Mr. Hongkai Wang Technical Manager	
ENTECH		DAK	

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Overall Log Amp Test Status
Pass []

RFFA

Tested Combination From: MMU / External SQ

Name SDRSC port KL with TAD

Setup Point Status Pass

Filament: 1

Setup Point Status Pass

Filament: 2

Overall: Tune B1 Test Status
Pass []

Tune E1

Tested Combination From: MMU / External SQ

Name SDRSC port KL with TAD

Setup Point Status Pass

Filament: 1

Setup Point Status Pass

Filament: 2

Overall: Tune E1 Test Status
Pass []

Scouting Run

Tested Combination From: MMU / External SQ

Name Reaction Tower

Source: TESA

 E1 - Start

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Agilent CrossLab Compliance Services

Mesa Ratio Precision

Tested Combination:	Fruit	MRI	/ External	DG
Name:	7805A			
Source:	EI - msn			

Subjected Status:

Pass

Injection Volume in Column:

1.0	µL
-----	----

RSD:

Area Mean I Abundance's	%
1.86	%
** [0.05]	%
Pass	

Agent Recommendation:

0.39	%
** [0.05]	%
Pass	

Overall Mesa Ratio Precision Test Status

Pass

Date: April 18, 2023 2:15:29 PM
 System ID: QM-1

Page 5 | 10

2023 by Agilent Technologies		Agilent GreenLab Compliance Services
Instrument Details		
Purpose		
This section describes the as found system configuration		
Details		
System		
System ID	GM-2	
Manufacturer	Agilent Technologies	
Name	7890	
Flow Data Input	Manual Data	
Temperature Data Input	Manual Data or Other Data Logging	
Test: Combustion I		
Injection Technique	Injection: Tower	
Jet	Front	
Detector	External	
LTM Included?	No	
Sample 1		
Manufacturer	Agilent Technologies	
Type	Injection: Tower	
Name	7890A	
Model Number	G4213A	
Serial Number	CN10126123	
Firmware Revision	A.10.08	
Usage	Sample Injection	
Location	Front	
Syringe Volume (uL)	10	

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Sample 2		
Manufacturer	Agilent Technologies	
Type	Tray	
Name	79336	
Model Number	G4514A	
Serial Number	C710200009	
Firmware Revision	A.10.16	
Valid Hardware	Not installed	
Scan frame 1		
Manufacturer	Agilent Technologies	
Name	7890	
Model Number	G3440A	
Serial Number	C110141049	
Firmware Revision	A.81.18	
Oven Type	Standard	
Inlet 1		
Manufacturer	Agilent Technologies	
Name	7890	
Type	MSL	
Location	Inlet	
Carrier Gas	Helium	
Carrier Type	Electronic Pressure Control (EPC)	
Purged Inlet	Yes	
Detector 1		
Manufacturer	Agilent Technologies	
Name	Mass Spectrometer	
Type	Mass Spectrometer	
Location	External	

Date:

April 18, 2023 3:18:20 PM

System ID:

SM-2

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Signator's Creation Date:
Reason for Signature:

Dusanka Nonamonghar
dusan.namonghar@agilent.com
Apr 16, 2023

Executed protocol and published this original version of document

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Date:
Printed By:

April 16, 2023 9:15:25 PM
Dna-2

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User Name: <u>agilent\agilent\agilent</u> Hostname: <u>0011310000</u> AL31042 Transmission log				System ID: <u>001</u> FileID: <u>Auto_Aut_131131_133030</u>	
Time	Transaction Date	Activity Performed	Type of Transaction	Optional Information	
April 18, 2023 13:42:30 PM	Auto	Reagent Addition	Reagent	None	
April 18, 2023 14:13:30 PM	Auto	Cleanliness	Assess	None	
April 18, 2023 14:34:30 PM	Auto	Calibration	Calibration	User ID: <u>FieldEngineer</u> and User role: <u>technician</u> on which mode	
April 18, 2023 15:04:30 PM	Auto	Equipment	Reagent	EOP reason for primary reagent: <u>OK</u> Pin name: <u>Prevent reuse of Configuration</u> command: <u>131131_133030</u> EOP for reuse: <u>OK</u> EOP ID: <u>131131_133030</u> EOP reason: <u>Prevent reuse of Configuration</u> on transaction: <u>OK</u> EOP reason for configuration: <u>Prevent reuse of Configuration</u> Pin name:	
April 18, 2023 15:28:30 PM	End	Configuration	Reagent	Pin name: <u>Prevent reuse of Configuration</u> command: <u>131131_133030</u> EOP for reuse: <u>OK</u> EOP ID: <u>131131_133030</u> EOP reason: <u>Prevent reuse of Configuration</u> on transaction: <u>OK</u> EOP reason for configuration: <u>Prevent reuse of Configuration</u> Pin name:	
April 18, 2023 16:01:30 PM	End	Configuration	Reagent	None	
April 18, 2023 16:11:30 PM	End	Configuration	Reagent	None	
April 18, 2023 16:31:30 PM	End	Configuration	Reagent	None	
April 18, 2023 17:31:30 PM	End	Configuration	Reagent	None	

[illegible]

Date: April 18, 2023 3:15:25 PM
System ID: GM-2

[illegible]

Date: April 18, 2023 3:15:26 PM
System ID: GMA-2

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Sartorius (Thailand) Co., Ltd.
 Certificate of Calibration
 148 Moo 6, Bang Khen Sub-township, Bangkok 10150
 Tel: +66 (0)2 625 8100 E-mail: sales.thailand@sartorius.com

SARTORIUS

Certificate of Calibration

Model Number: MSE150-109-OU Description: Semi-micro Balance Serial Number: 200100693 ID No.: RYU-EN2004 Manufacturer: Sartorius	Certificate No.: 200020114 Issued Date: Friday, March 03, 2023 Expiry Date: 2004023 Page No.: 2 of 2
--	---

Calibration Results : Without Adjustment

Repeatability	Eccentricity (Off-center loading error)
<p>The repeatability is the ability of weighing a substance in different positions. Repeatability is measured by weighing a substance in different positions and comparing the results. The standard deviation is used to determine the repeatability of the weighing.</p> <p>Normal Value (100 Load) ≤ 0.00015 g</p> <p>Measured Value 0.00015 g</p> <p>Normal Value (High Load) 100 g</p> <p>Measured Value 0.00015 g</p> <p style="text-align: center;">Standard Deviation 0.00015 g</p>	<p>The eccentricity loading error is caused by the difference between the center of rotation and the center of gravity. The eccentricity is calculated by the difference of the weighing on a left pan and a right pan.</p> <p>Normal value ≤ 0.00015 g</p> <p>Measured value 0.00015 g</p> <p style="text-align: center;">Distance 2 3 4 5 6</p>

Linearity
 The linearity is the ability to measure the quantity of the substance in a wide range of weighing. The linearity is determined by the following table.

Normal Value	Measured Value	Displayed Value	Calculated	Linearity
0	0.0000	0.0000	0.0000	0.0000
10	0.0001	0.0001	0.0001	0.0001
20	0.0002	0.0002	0.0002	0.0002
30	0.0003	0.0003	0.0003	0.0003
40	0.0004	0.0004	0.0004	0.0004
50	0.0005	0.0005	0.0005	0.0005
60	0.0006	0.0006	0.0006	0.0006
70	0.0007	0.0007	0.0007	0.0007
80	0.0008	0.0008	0.0008	0.0008
90	0.0009	0.0009	0.0009	0.0009
100	0.0010	0.0010	0.0010	0.0010
110	0.0011	0.0011	0.0011	0.0011
120	0.0012	0.0012	0.0012	0.0012
130	0.0013	0.0013	0.0013	0.0013
140	0.0014	0.0014	0.0014	0.0014
150	0.0015	0.0015	0.0015	0.0015

End of Report

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

43/43/11 Sathorn Rd., Bangrak, Bangkok 10700 THAILAND
Tel: 02-435-8801 Fax: 02-431-1629 e-mail: cal@cal.sithiporn.com http://www.sithiporn.com



Calibration Certificate

Equipment : SOUND CALIBRATOR
Manufacturer : RION
Model : NC-75
Serial No. : 35002756
ID No. : RYO-350406

Condition As Found : GOOD

Customer : A&S LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHEU SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location :
Ambient Temperature : $(23.0 \pm 3.3) ^\circ\text{C}$
Pressure : $(101.3 \pm 3.3) \text{ kPa}$
Relative Humidity : $(50.0 \pm 2.0) \%$
Received Date : 06 JAN 2021
Calibration Date : 17 JANUARY 2021
Date of Issue : 19 JANUARY 2021

Calibrated by : Juthakorn Pichumee

Approved by : T. Pichumee
(Juthakorn Pichumee)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory.

QP-TS/2-04-04-020604

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACC23005
Job No. : VC6AC0024
Pages : 2 of 3

Calibration Procedure : CP-01, 03

Calibration Method :
This equipment was calibrated by based on IEC 60942:2003 Standard.
The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone.

Condition of this result of calibration :

Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	33511B	MY5230242	IE-0009-22	04-Feb-23
Digital Multimeter	34401A	MY5220104	IE1-BP-04-0265	09-Feb-23
Digital Multimeter	34401A	MY5220176	IE1-BP-13-0265	09-Feb-23
Digital Multimeter	34401A	MY6024273	IE1-BP-15-0265	09-Feb-23
Programmable Attenuator	NAT-1070	62100114	IE-0009-22	07-Feb-23
Condenser Microphone	4130	2977000	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA	34560495	AA-3003-22	22-Feb-23
Audio Analyzer	AYR-7360A	V74486369	IE-0012-22	07-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.
3. This certificate is traceable to the international system of units maintained at:
(1) National Institute of Metrology (Thailand)
(2) Thailand Institute of Scientific and Technological Research (TISTR).

QP-TS/2-04-04-020604

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACC23005
Job No. : VC6AC0024
Pages : 3 of 3

Result of calibration :

1. Sound pressure level

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (dB)	Tolerance limit (dB)
90	93.06	-0.02	0.14	0.40

2. Frequency

Specified Frequency (Hz)	Measured value (Hz)	Deviated value (Hz)	Uncertainty (%)	Tolerance limit (%)
1000	1000.0	0.0	0.1	1.0

3. Total distortion

Measured value (%)	Uncertainty (%)	Tolerance limit (%)
0.25	0.10	3.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ (95%) value following calculation providing a level of confidence of approximately 95%.

End of Calibration Certificate

QP-TS/2-04-04-020604

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

43/43/11 Sathorn Rd., Bangrak, Bangkok 10700 THAILAND
Tel: 02-435-8801 Fax: 02-431-1629 e-mail: cal@cal.sithiporn.com http://www.sithiporn.com



Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NR-43A Microphone UC-33 / Pre-amplifier NH-24
Serial No. : 00623394 / 18841 / 20422
ID No. : -

Condition As Found : GOOD

Customer : A&S LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN 40, PHATTHANAKAN ROAD,
KHWAENG PHATTHANAKAN, KHEU SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location :
Ambient Temperature : $(23.0 \pm 3.3) ^\circ\text{C}$
Pressure : $(101.3 \pm 3.3) \text{ kPa}$
Relative Humidity : $(50.0 \pm 2.0) \%$
Received Date : 07 OCTOBER 2021
Calibration Date : 20-21 OCTOBER 2021
Date of Issue : 21 OCTOBER 2021

Calibrated by : Juthakorn Pichumee

Approved by : T. Pichumee
(Juthakorn Pichumee)

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACL22240
Job No. : VC6AC0009
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :
This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Instruments.
For tests results of each item were made by observation of each instrument display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	33511B	MY48017076	IE-0007-22	04-Feb-23
Waveform Generator	33511B	MY5230242	IE-0009-22	04-Feb-23
Digital Multimeter	34401A	MY5220104	IE1-BP-140565	09-Feb-23
Digital Multimeter	34401A	MY5220176	IE1-BP-130265	09-Feb-23
Digital Multimeter	34401A	MY6024273	IE1-BP-10-0265	09-Feb-23
Programmable Attenuator	NAT-1070	62100114	IE-0009-22	07-Feb-23
Condenser Microphone	4180	2977001	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA	34560495	AA-3003-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.
3. This certificate is traceable to the international system of units maintained at:
(1) National Institute of Metrology (Thailand)
(2) Thailand Institute of Scientific and Technological Research (TISTR).

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACL22240
Job No. : VC6AC0009
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓	-	0.3	0.8
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	✓	-	0.2	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak-C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High-level stability	✓	-	0.1	0.1

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACL22240
Job No. : VC6AC0009
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.0 (93.98)	93.4	0.0	±0.3

2. Self-generated noise

2.1 Normal use

Measured Value (dB)
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured Value (dB)
A-weight	10.8
C-weight	17.1
Flat	23.0

3. Acoustical signal tests of frequency weightings

Minor free-field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from typical frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.1	0.1	0.1	+1.5
1000	0.0	0.0	0.0	-1.0
8000	0.1	0.1	0.1	+5.0

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACL22240
Job No. : VC6AC0009
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency (Hz)	Deviation from typical frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
43	0.1	0.1	0.0	±2.0
125	0.0	0.0	0.1	±1.5
250	0.1	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.1	±1.0
2000	0.0	0.0	0.1	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.1	0.0	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±0.1
Slow	94.0	0.0	±0.1
Log	94.0	0.0	±0.1

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.1	0.1	±0.3

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No. : ACL22240
Job No. : VC6AC0009
Pages : 6 of 8

7. Level linearity on the reference level range

Assigned Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.5
136.0	136.0	0.0	±1.3
135.0	135.1	0.1	±1.3
134.0	134.1	0.1	±1.3
133.0	133.0	0.0	±1.3
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.3
119.0	119.0	0.0	±1.3
114.0	114.0	0.0	±1.3
109.0	109.0	0.0	±1.3
104.0	104.1	0.1	±1.3
99.0	99.0	0.0	±1.3
94.0	94.0	0.0	±1.3
89.0	89.0	0.0	±1.3
84.0	84.0	0.0	±1.3
79.0	79.0	0.0	±1.3
74.0	74.0	0.0	±1.3
69.0	69.0	0.0	±1.3
64.0	64.0	0.0	±1.3
59.0	59.0	0.0	±1.3
54.0	54.0	0.0	±1.3
49.0	49.0	0.0	±1.3
44.0	44.0	0.0	±1.3
39.0	39.0	0.0	±1.3
34.0	34.0	0.0	±1.3
29.0	29.0	0.0	±1.3
24.0	24.0	0.0	±1.3
19.0	19.0	0.0	±1.3
14.0	14.0	0.0	±1.3
9.0	9.0	0.0	±1.3
4.0	4.0	0.0	±1.3
-1.0	-1.0	0.0	±1.3
-6.0	-6.0	0.0	±1.3
-11.0	-11.0	0.0	±1.3
-16.0	-16.0	0.0	±1.3
-21.0	-21.0	0.0	±1.3
-26.0	-26.0	0.0	±1.3
-31.0	-31.0	0.0	±1.3
-36.0	-36.0	0.0	±1.3
-41.0	-41.0	0.0	±1.3
-46.0	-46.0	0.0	±1.3
-51.0	-51.0	0.0	±1.3
-56.0	-56.0	0.0	±1.3
-61.0	-61.0	0.0	±1.3
-66.0	-66.0	0.0	±1.3
-71.0	-71.0	0.0	±1.3
-76.0	-76.0	0.0	±1.3
-81.0	-81.0	0.0	±1.3
-86.0	-86.0	0.0	±1.3
-91.0	-91.0	0.0	±1.3
-96.0	-96.0	0.0	±1.3
-101.0	-101.0	0.0	±1.3
-106.0	-106.0	0.0	±1.3
-111.0	-111.0	0.0	±1.3
-116.0	-116.0	0.0	±1.3
-121.0	-121.0	0.0	±1.3
-126.0	-126.0	0.0	±1.3
-131.0	-131.0	0.0	±1.3
-136.0	-136.0	0.0	±1.3
-141.0	-141.0	0.0	±1.3
-146.0	-146.0	0.0	±1.3
-151.0	-151.0	0.0	±1.3
-156.0	-156.0	0.0	±1.3
-161.0	-161.0	0.0	±1.3
-166.0	-166.0	0.0	±1.3
-171.0	-171.0	0.0	±1.3
-176.0	-176.0	0.0	±1.3
-181.0	-181.0	0.0	±1.3
-186.0	-186.0	0.0	±1.3
-191.0	-191.0	0.0	±1.3
-196.0	-196.0	0.0	±1.3
-201.0	-201.0	0.0	±1.3
-206.0	-206.0	0.0	±1.3
-211.0	-211.0	0.0	±1.3
-216.0	-216.0	0.0	±1.3
-221.0	-221.0	0.0	±1.

Cert. No. : ACL22240
Job No. : VC66AC0089
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Time burst response

Time	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	128.0	127.9	-0.1	1.5, ±0.0
	2	8	117.0	116.9	-0.1	1.0, ±0.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	107.9	-0.1	1.5, ±0.0
	200	800	127.4	127.4	0.0	±0.5
	0.25	1	99.0	99.8	+0.8	1.5, ±0.0
SEL	2	8	108.0	108.0	0.0	1.0, ±0.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±1.0
One	136.4	136.3	-0.1	±1.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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Cert. No. : ACL22240
Job No. : VC66AC0089
Pages : 8 of 8

11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one half cycle	Negative one half cycle		
89.6	89.6	0.0	±1.5

12. High level stability

Frequency	SIM Display at initial (dB)	SIM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Weighting				
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k=2$ at any value following calibration, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QP 1512-04-04-02064

Cert. No. : ACL23038
Job No. : VC66AC0024
Pages : 1 of 9

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : BIOR
Model : SL-21, Microphone UC-52 / Pre-amplifier SP-21
Serial No. : 0068561 / 10801 / 1913
ID No. : RYQ PS/07

Condition As Found : GOOD

Customer : S.S. SITHIPORN ASSOCIATES CO., LTD.
104 PHU THANAKAN, R. PHATHANAKAN ROAD,
KHUANG PHATHANAKAN, KHUANG SUAN 1, LANG,
BANGKOK, 10250 THAILAND

Location :
Ambient Temperature : (23.1 ± 0.1) °C
Pressure : (1013.2 ± 0.1) hPa
Relative Humidity : (55.0 ± 2.0) %
Received Date : 06 JANUARY 2023
Calibration Date : 19 JANUARY 2023
Date of Issue : 19 JANUARY 2023

Calibrated by : Natchanon Puchan

Approved by : T. Puchan
Thirakul Puchan

This certificate is issued in accordance with the requirements of ISO 17025 standard, may not be reproduced without the prior written approval of the head of the laboratory.

QP 1512-04-04-02064

Cert. No. : ACL23038
Job No. : VC66AC0024
Pages : 2 of 9

Calibration Procedure : JF-AU-02

Calibration Method :

The equipment was calibrated by based on IEC 61673-3 (2015) Standard for sound level meter (SLM).
The SLM had tests in Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Instruments.

For test results of each item were made by observation of each instrument display and also with SLM display.

Condition of this result of calibration :

Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	33210A	MS 4801576	11-0607-22	04-Feb-23
Waveform Generator	33511B	MS 5250242	11-0008-22	04-Feb-23
Digital Multimeter	3446-6	MS 5220104	11-10-16-03	09-Feb-23
Digital Multimeter	3446-6	MS 5220076	11-10-16-03	09-Feb-23
Digital Multimeter	3446A	MS 6002773	11-10-16-03	09-Feb-23
Programmable Attenuator	MSA 1070	62100-14	11-0609-22	07-Feb-23
Condenser Microphone	4180	2977000	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-428A	3476603	AA-3003-22	22-Feb-23

2- This result of calibration was based on the data and place of calibration for this calibration item only.

3- This certificate is traceable to the international system of unit maintained at

3- National Institute of Metrology (NIM)

3-2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL23038
Job No. : VC66AC0024
Pages : 3 of 9

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum permitted uncertainty (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.3	0.6
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
3150 Hz	✓	-	0.4	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
For 10 Hz to 4 kHz	✓	-	0.3	0.7
For 4 kHz to 1 kHz	✓	-	0.3	1.0
For 1 kHz to 20 kHz	✓	-	0.2	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.3
6. Long-term stability	✓	-	0.2	0.3
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Time burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.3
11. Overload indication	✓	-	0.2	0.3
12. High level stability	✓	-	0.3	0.3

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Cert. No. : ACL23038
Job No. : VC66AC0024
Pages : 4 of 9

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
93.9 (93.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal tone

Measured Value (dB)
23.5

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency	Measured value (dB)
Weighting	
A-weight	22.2
C-weight	21.6
Flat	22.2

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 84 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
125	0.2	0.2	0.2	±1.5
1000	0.1	0.0	0.0	±1.0
4000	0.1	0.2	0.2	±1.0

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Cert. No. : ACL23038
Job No. : VC66AC0024
Pages : 5 of 9

4. Electrical signal tests of frequency weightings

Weighting accuracy response with reference to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	0.0	±2.0
125	-0.1	-0.1	-0.1	±1.5
250	-0.1	-0.1	-0.1	±1.0
500	-0.1	-0.1	-0.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.1	0.1	0.0	±2.0
4000	0.1	0.0	0.0	±1.0
8000	0.1	0.1	0.1	±1.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Weighting			
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.2 Time-weighting at 1 kHz

Frequency	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Weighting			
Fast	94.0	0.0	±1.1
Slow	94.0	0.0	±1.1
Long	94.0	0.0	±1.1

6. Long-term stability

Frequency	SIM Display at initial (dB)	SIM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Weighting				
A-weight	94.0	94.0	0.0	±0.3

QP 1512-04-04-02064

Cert. No. : ACL23038
Job No. : VC66AC0024
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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1

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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	94.0	94.0	0.0	±0.5
150	94.0	94.0	0.0	±0.5
110	94.0	94.0	0.0	±0.5
100	94.0	94.0	0.0	±0.5
90	94.0	94.0	0.0	±0.5

Level linearity on each level range

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130	43.0	43.0	0.0	±0.5
120	33.0	32.6	-0.4	±0.5

9. Time burst response

Time	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	128.0	127.9	-0.1	1.5, ±0.0
	2	8	117.0	117.0	0.0	1.0, ±0.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5, ±0.0
	200	800	127.4	127.4	0.0	±0.5
	0.25	1	99.0	99.9	+0.9	1.5, ±0.0
SEL	2	8	108.0	108.0	0.0	1.0, ±0.5
	200	800	128.0	128.0	0.0	±1.0

QP 1512-04-04-02064

Cert. No. : ACL22308
Job No. : VCSAC0024
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10. Peak C sound level

Number of cycle n test signal	Anticipated Value (dB)	Measured Value, Typical (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	137.0	137.0	0.0	-
One	136.4	135.9	-0.5	±0.0

Number of cycle n test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	137.0	137.0	0.0	-
Positive half cycle	135.4	135.0	-0.4	±2.0
Negative half cycle	135.4	135.0	-0.4	±2.0

11. Overload indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	-0.1	±1.5
Negative one-half cycle	-0.1	±1.5

QP-TS-1-04-04-02064

Cert. No. : ACL22308
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12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor k = 2
or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

QP-TS12-04-04-02064

401-451/5 Southern Rd., Bangpuem, Bangkok 10150 THAILAND
Tel: 02-2415-6030 Fax: 02-2415-1679 e-mail: calcenter@sithiporn.com http://www.sithiporn.com



Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42A/ Microphone U-52 / Pre-amplifier N91-2
Serial No. : 0062396 / 19843 / 26424
ID No. : -

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN RD. PHATTHANAKAN ROAD,
KHWANG-SU PHATTHANAKAN KHE SUKSA (LAMA)
BANGKOK, 10250 THAILAND.

Location :
Ambient Temperature : (23.0 ± 3) °C
Pressure : (101.3 ± 3) kPa
Relative Humidity : (50.0 ± 20) %
Received Date : 07 OCTOBER 2022
Calibration Date : 20-21 OCTOBER 2022
Date of Issue : 21 OCTOBER 2022

Calibrated by : Validation Physique

Approved by : T. R. R. (Thasakul Prichai)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced
other than in full, except with the prior written approval of the head of Calibration Laboratory

QP-TS12-04-04-02064

Cert. No. : ACL22342
Job No. : VCSAC0009
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM)
The SLM has been tested to Acoustical and Electrical signal tests of frequency weighting with Ambient chamber and Reference
Standard Instruments.

For test results of each item were made by observation of each Instruments Display and also with SLM's display

Condition of this result of calibration :

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	33210A	831 4801 7676	IF-000-22	04-Feb-23
Waveform Generator	33210B	MY5220742	IF-000-22	04-Feb-23
Digital Multimeter	33401A	MY53220104	EEL-RP-030245	09-Feb-23
Digital Multimeter	33401A	MY5322076	EEL-RP-030245	09-Feb-23
Digital Multimeter	34401A	MY6024273	EEL-RP-030245	09-Feb-23
Programmable Attenuator	MAT 1070	62110114	IF-000-22	07-Feb-23
Condenser Microphone	4193	2977800	AA-1013-02	24-Feb-23
Measuring Amplifier	NA-42KAI	3450085	AA-0002-02	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only

3. This certificate is traceable to the international system of unit maintained at:

- National Institute of Metrology (Thailand);
- Thailand Institute of Scientific and Technological Research (TISTR);

QP-TS-1-04-04-02064

Cert. No. : ACL22342
Job No. : VCSAC0009
Pages : 3 of 8

Summary of Measurement Results:

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.3	0.6
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
Flat 10 Hz to 4 kHz	✓	-	0.3	0.7
Flat 5 kHz to 10 kHz	✓	-	0.3	0.7
Flat 10 kHz to 20 kHz	✓	-	0.3	0.7
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.3
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Time burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

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Cert. No. : ACL22342
Job No. : VCSAC0009
Pages : 4 of 8

Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
93.0 (93.95)	93.9	0.9	±0.3

2. Self-generated noise

Measured Value (dB)
18.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting (dB)	Measured Value (dB)
A-weight	17.0
C-weight	17.1
Flat	22.9

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 94 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits (dB)
125	0.2	0.2	0.2	± 1.5
1000	0.0	0.0	0.0	± 1.0
8000	0.2	0.2	0.2	± 5.0

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Job No. : VCSAC0009
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits (dB)
63	0.0	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±0.5
250	0.0	0.0	-0.1	±0.3
500	0.0	0.0	0.0	±0.3
1000	0.0	0.0	0.0	±0.0
2000	0.0	0.0	0.0	±0.0
4000	0.0	0.0	0.0	±0.0
8000	0.0	0.1	0.1	±0.0

5. Frequency and time weightings at 1 kHz

Frequency Weighting (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.5

Frequency Weighting (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±0.1
Slow	94.0	0.0	±0.1
Long	94.0	0.0	±0.1

6. Long-term stability

Frequency Weighting (dB)	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

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Cert. No. : ACL22342
Job No. : VCSAC0009
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
128.0	128.0	0.0	±1.1
127.0	127.0	0.0	±1.1
126.0	126.0	0.0	±1.1
125.0	125.0	0.0	±1.1
124.0	124.0	0.0	±1.1
123.0	123.0	0.0	±1.1
122.0	122.0	0.0	±1.1
121.0	121.0	0.0	±1.1
120.0	120.0	0.0	±1.1
119.0	119.0	0.0	±1.1
118.0	118.0	0.0	±1.1
117.0	117.0	0.0	±1.1
116.0	116.0	0.0	±1.1
115.0	115.0	0.0	±1.1
114.0	114.0	0.0	±1.1
113.0	113.0	0.0	±1.1
112.0	112.0	0.0	±1.1
111.0	111.0	0.0	±1.1
110.0	110.0	0.0	±1.1
109.0	109.0	0.0	±1.1
108.0	108.0	0.0	±1.1
107.0	107.0	0.0	±1.1
106.0	106.0	0.0	±1.1
105.0	105.0	0.0	±1.1
104.0	104.0	0.0	±1.1
103.0	103.0	0.0	±1.1
102.0	102.0	0.0	±1.1
101.0	101.0	0.0	±1.1
100.0	100.0	0.0	±1.1
99.0	99.0	0.0	±1.1
98.0	98.0	0.0	±1.1
97.0	97.0	0.0	±1.1
96.0	96.0	0.0	±1.1
95.0	95.0	0.0	±1.1
94.0	94.0	0.0	±1.1
93.0	93.0	0.0	±1.1
92.0	92.0	0.0	±1.1
91.0	91.0	0.0	±1.1
90.0	90.0	0.0	±1.1
89.0	89.0	0.0	±1.1
88.0	88.0	0.0	±1.1
87.0	87.0	0.0	±1.1
86.0	86.0	0.0	±1.1
85.0	85.0	0.0	±1.1
84.0	84.0	0.0	±1.1
83.0	83.0	0.0	±1.1
82.0	82.0	0.0	±1.1
81.0	81.0	0.0	±1.1
80.0	80.0	0.0	±1.1
79.0	79.0	0.0	±1.1
78.0	78.0	0.0	±1.1
77.0	77.0	0.0	±1.1
76.0	76.0	0.0	±1.1
75.0	75.0	0.0	±1.1
74.0	74.0	0.0	±1.1
73.0	73.0	0.0	±1.1
72.0	72.0	0.0	±1.1
71.0	71.0	0.0	±1.1
70.0	70.0	0.0	±1.1
69.0	69.0	0.0	±1.1
68.0	68.0	0.0	±1.1
67.0	67.0	0.0	±1.1
66.0	66.0	0.0	±1.1
65.0	65.0	0.0	±1.1
64.0	64.0	0.0	±1.1
63.0	63.0	0.0	±1.1
62.0	62.0	0.0	±1.1
61.0	61.0	0.0	±1.1
60.0	60.0	0.0	±1.1
59.0	59.0	0.0	±1.1
58.0	58.0	0.0	±1.1
57.0	57.0	0.0	±1.1
56.0	56.0	0.0	±1.1
55.0	55.0	0.0	±1.1
54.0	54.0	0.0	±1.1
53.0	53.0	0.0	±1.1
52.0	52.0	0.0	±1.1
51.0	51.0	0.0	±1.1
50.0	50.0	0.0	±1.1
49.0	49.0	0.0	±1.1
48.0	48.0	0.0	±1.1
47.0	47.0	0.0	±1.1
46.0	46.0	0.0	±1.1
45.0	45.0	0.0	±1.1
44.0	44.0	0.0	±1.1
43.0	43.0	0.0	±1.1
42.0	42.0	0.0	±1.1
41.0	41.0	0.0	±1.1
40.0	40.0	0.0	±1.1
39.0	39.0	0.0	±1.1
38.0	38.0	0.0	±1.1
37.0	37.0	0.0	±1.1
36.0	36.0	0.0	±1.1
35.0	35.0	0.0	±1.1
34.0	34.0	0.0	±1.1
33.0	33.0	0.0	±1.1
32.0	32.0	0.0	±1.1
31.0	31.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	29.0	0.0	±1.1
28.0	28.0	0.1	±1.1
27.0	27.1	0.1	±1.1
26.0	26.1	0.1	±1.1
25.0	25.1	0.1	±1.1
24.0	24.1	0.1	±1.1

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11. Overall indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limits
Positive one-half cycle	Negative one-half cycle	
99.5	99.5	±0.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation providing a level of confidence of approximately 95 %.

End of Calibration Certificate

QF-TS-2-04-04-02064

43-451/1 Soi Nongnuek, Bangkum, Bangkok 10700 THAILAND
Tel: 2423-8842 Fax: 2423-8879 e-mail: cal@stiporn.com Web: www.stiporn.com



Cert. No. : ACL22241
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NC-42A Microphone UC-52 / Prampolifer M0-24
Serial No. : 0962395 / 19642 / 26423
ID No. :

Condition As Found : GOOD

Customer : S.I.S. LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATHANAKAN 40, PHATHANAKAN ROAD,
KHUWAENG PHATHANAKAN, KHET SUAN LUANG,
BANGKOK 10250 THAILAND.

Location :
Ambient Temperature : (23.0 ± 3.) °C
Pressure : (101.3 ± 3.) kPa
Relative Humidity : (50.0 ± 20.) %

Received Date : 07 OCTOBER 2022
Calibration Date : 20-21 OCTOBER 2022
Date of Issue : 21 OCTOBER 2022

Calibrated by : Natchanon Pongpavan

Approved by : *T. Petchum*
(Thanakul Petchum)

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QF-TS-2-04-04-02064

Cert. No. : ACL22241
Job No. : VCK5AC0009
Pages : 3 of 8

Calibration Procedure : CP AC-G1

Calibration Method :

This equipment was calibrated by based on IEC 61672-1 (2013) Standard for sound level meter (SLM).
The SLM had tests in Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Instruments.
For tests results of each item were made by observation of each instrument display and also with SLM display.

Condition of this result of calibration :

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	33210A	MY52027076	IF-0007-22	04-Feb-23
Waveform Generator	33511-B	MY52027072	IF-0008-22	04-Feb-23
Digital Multimeter	33461A	MY52201004	EEL-07-040203	09-Feb-23
Digital Multimeter	33461A	MY52201006	EEL-07-040203	09-Feb-23
Digital Multimeter	34461A	MY60024273	EEL-07-040203	09-Feb-23
Programmable Attenuator	MAT-1070	62100113	IF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42KA1	34564495	AA-1008-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration, for this calibrated item only.

3. This certificate is inseparable to the international system of unit maintained at

3.1 National Institute of Metrology (Thailand).

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

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Cert. No. : ACL22241
Job No. : VCK5AC0009
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.3	0.5
125 Hz	✓	-	0.3	0.5
1000 Hz	✓	-	0.3	0.5
1000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
For 10 Hz to 4 kHz	✓	-	0.3	0.6
For > 4 kHz to 10 kHz	✓	-	0.3	0.7
For > 10 kHz to 20 kHz	✓	-	0.3	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
5. Long-term stability	✓	-	0.1	0.3
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overall indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.3

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Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
93.9 (93.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
14.2

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured Value (dB)
A-weight	9.9
C-weight	16.4
Flat	22.1

3. Acoustical signal tests of frequency weightings

Mean free-field acoustic response at a level of 94 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits (dB)
125	0.3	0.3	0.3	±1.5
1000	0.0	0.0	0.0	±1.0
5000	0.4	0.5	0.5	±0.0

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Job No. : VCK5AC0009
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4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits (dB)
45	0.0	0.0	0.0	±2.0
125	0.0	0.1	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±0.1
Slow	94.0	0.0	±0.1
Imp	94.0	0.0	±0.1

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

QF-TS-2-04-04-02064

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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
130.0	130.0	0.0	±1.3
135.0	135.0	0.0	±1.3
140.0	140.0	0.0	±1.3
145.0	145.0	0.0	±1.3
150.0	150.0	0.0	±1.3
155.0	155.0	0.0	±1.3
160.0	160.0	0.0	±1.3
165.0	165.0	0.0	±1.3
170.0	170.0	0.0	±1.3
175.0	175.0	0.0	±1.3
180.0	180.0	0.0	±1.3
185.0	185.0	0.0	±1.3
190.0	190.0	0.0	±1.3
195.0	195.0	0.0	±1.3
200.0	200.0	0.0	±1.3
205.0	205.0	0.0	±1.3
210.0	210.0	0.0	±1.3
215.0	215.0	0.0	±1.3
220.0	220.0	0.0	±1.3
225.0	225.0	0.0	±1.3
230.0	230.0	0.0	±1.3
235.0	235.0	0.0	±1.3
240.0	240.0	0.0	±1.3
245.0	245.0	0.0	±1.3
250.0	250.0	0.0	±1.3

QF-TS-2-04-04-02064

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Job No. : VCK5AC0009
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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.2

9. Tone burst response

Time	Tone burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Weighting	0.25	1	108.0	107.9	-0.1	1.5-5.0
	2	8	117.0	117.0	0.0	1.0-2.5
	200	800	134.0	134.1	0.1	±0.0
Slow	0.25	1	108.0	108.0	0.0	1.5-5.0
	2	800	127.6	127.6	0.0	±0.0
	2	8	99.0	98.9	-0.1	1.5-5.0
SEL	2	8	108.0	108.0	0.0	1.0-2.5
	200	800	128.0	128.1	0.1	±0.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±0.3
One	136.4	136.3	-0.1	±0.3
Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.1	0.1	±0.3
Positive half cycle	133.4	133.2	-0.2	±0.6
Negative half cycle	133.4	133.2	-0.2	±0.6

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11. Overall indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limits
Positive one-half cycle	Negative one-half cycle	
99.5	99.5	±0.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation providing a level of confidence of approximately 95 %.

End of Calibration Certificate

QF-TS-2-04-04-02064

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

45-45/1-5 Wiroon Rd., Bangna, Bangkok 10700 THAILAND
Tel: 2435-8800 Fax: 2431-1679 e-mail: cal-center@sithiporn.com http://www.sithiporn.com



Cert. No.: ACC23009
Page: 1 of 3

Calibration Certificate

Equipment: SOUND CALIBRATOR
Manufacturer: RYD
Model: NC 24
Serial No.: 34173121
ID No.: RYQ-F50213

Condition As Found: GOOD

Customer: ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATHANAKAN 40 PHATHANAKAN ROAD,
KHWAENG PHATHANAKAN KHIT SUAN LUANG,
BANGKOK 10250 THAILAND

Location:
Ambient Temperature: $(23.0 \pm 0.3) ^\circ\text{C}$
Pressure: $(101.3 \pm 0.3) \text{ kPa}$
Relative Humidity: $(50.2 \pm 2.0) \%$
Received Date: 26 JANUARY 2022
Calibration Date: 26 JANUARY 2022
Date of Issue: 27 JANUARY 2022

Calibrated by: Nithakul Pichuan

Approved by: T. Pichuan
(Thakul Pichuan)

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QF-TS12-04-04-020044

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No.: ACC23009
Job No.: VC6AC0831
Page: 2 of 3

Calibration Procedure: CP-AL-03

Calibration Method:

This equipment was calibrated by based on IEC 60942-2003 Standard.
The sound pressure level, frequency and total distortion of the sound calibrator was measured using the reference microphone

Condition of this result of calibration:

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	3311B	MY5202742	EE-0008-22	04-Feb-22
Digital Multimeter	3440A	MY5122106	EE-0010-22	09-Feb-22
Digital Multimeter	3440A	MY5122076	EE-0010-22	09-Feb-22
Digital Multimeter	3440A	MY6002427	EE-0010-22	09-Feb-22
Programmable Attenuator	MA1107	62100114	EE-0009-22	07-Feb-22
Condenser Microphone	4180	297990	AA-1013-22	24-Feb-22
Measuring Amplifier	NA-47CA1	M460495	AA-1005-22	22-Feb-22
Audio Analyser	AVR-336A	V7400609	EE-0010-22	07-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at:

3.1 National Institute of Metrology (Thailand)

3.2 Thailand Institute of Scientific and Technological Research (TISTR)

QF-TS12-04-04-020044

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No.: ACC23009
Job No.: VC6AC0831
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Result of calibration:

1. Sound pressure level

Specified sound pressure level (dB)	Measured value (dB)	Deviated value (dB)	Uncertainty (%)	Tolerance limit (dB)
90	94.16	4.16	±1.4	0.40

2. Frequency

Specified Frequency (Hz)	Measured value (Hz)	Deviated value (%)	Uncertainty (%)	Tolerance limit (%)
1000	1001.2	0.1	0.1	±0.0

3. Total distortion

Measured value (%)	Uncertainty (%)	Tolerance limit (%)
1.97	0.10	±0.0

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$
or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

QF-TS12-04-04-020044

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

45-45/1-5 Wiroon Rd., Bangna, Bangkok 10700 THAILAND
Tel: 2435-8800 Fax: 2431-1679 e-mail: cal-center@sithiporn.com http://www.sithiporn.com



Cert. No.: ACC22181
Page: 1 of 8

Calibration Certificate

Equipment: SOUND LEVEL METER
Manufacturer: RION
Model: NR-42 Microphone UC-52 / Pre-amplifier NH-24
Serial No.: 00873057 / 171591 / 73333
ID No.: RYQ-F50301

Condition As Found: GOOD

Customer: ALS LABORATORY GROUP (THAI) AND CO., LTD.
104 PHATHANAKAN 40 PHATHANAKAN ROAD,
KHWAENG PHATHANAKAN KHIT SUAN LUANG,
BANGKOK 10250 THAILAND

Location:
Ambient Temperature: $(23.0 \pm 0.3) ^\circ\text{C}$
Pressure: $(101.3 \pm 0.3) \text{ kPa}$
Relative Humidity: $(50.2 \pm 2.0) \%$
Received Date: 22 AUGUST 2022
Calibration Date: 26-31 AUGUST 2022
Date of Issue: 02 SEPTEMBER 2022

Calibrated by: Nithakul Pichuan

Approved by: T. Pichuan
(Thakul Pichuan)

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No.: ACC22181
Job No.: VC6AC0877
Page: 2 of 8

Calibration Procedure: CP-AC-01

Calibration Method:

This equipment was calibrated by based on IEC 61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests in Acoustical and Electrical signal tests of frequency weighting with A-weight, C-weight and Reference Standard Instruments.

For test results of each item were made by observation of each instrument display and also with SI M's display

Condition of this result of calibration:

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	3311B	MY48017076	EE-0007-22	04-Feb-22
Waveform Generator	3311B	MY5202742	EE-0007-22	04-Feb-22
Digital Multimeter	3440A	MY5122106	EE-0010-22	09-Feb-22
Digital Multimeter	3440A	MY5122076	EE-0010-22	09-Feb-22
Digital Multimeter	3440A	MY6002427	EE-0010-22	09-Feb-22
Programmable Attenuator	MA1107	62100114	EE-0009-22	07-Feb-22
Condenser Microphone	4180	297990	AA-1013-22	24-Feb-22
Measuring Amplifier	NA-47CA1	M460495	AA-1005-22	22-Feb-22

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at:

3.1 National Institute of Metrology (Thailand)

3.2 Thailand Institute of Scientific and Technological Research (TISTR)

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No.: ACC22181
Job No.: VC6AC0877
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Summary of Measurement Result:

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	✗	0.2	N/A
2. Self-generated noise	✓	✗	0.2	N/A
3. Acoustical signal tests of frequency weighting	✓	✗	0.5	0.6
3.1 125 Hz	✓	✗	0.5	0.6
3.2 1000 Hz	✓	✗	0.5	0.6
3.3 8000 Hz	✓	✗	0.4	0.5
4. Electrical signal tests of frequency weighting	✓	✗	0.2	0.6
4.1 For 10 Hz to 4 kHz	✓	✗	0.2	0.6
4.2 For 4 kHz to 10 kHz	✓	✗	0.3	0.7
4.3 For 10 kHz to 20 kHz	✓	✗	0.2	1.0
5. Frequency and time weighting at 1 kHz	✓	✗	0.2	0.2
6. Long-term stability	✓	✗	0.1	0.1
7. Level linearity on the reference level range	✓	✗	0.2	0.2
8. Level linearity including the level range control	✓	✗	0.2	0.2
9. Time-weight response	✓	✗	0.2	0.3
10. Peak-to-peak level	✓	✗	0.2	0.3
11. On-axis detection	✓	✗	0.2	0.2
12. High level stability	✓	✗	0.1	0.1

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

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Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.8 (93.85)	93.8	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency	Measured value (dB)
Weighting	12.0
A-weight	12.3
C-weight	12.3
Flat	24.0

3. Acoustical signal tests of frequency weighting

Mean free-field acoustic response at a level of 94 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)	Acceptance Limit
25	0.2	0.2
100	0.0	0.0
1000	0.0	0.0
8000	0.2	0.2

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

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4. Electrical signal tests of frequency weighting

Weighting network response with relative to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	-0.3	-0.1	-0.4	±0.6
125	-0.1	0.0	-0.1	±0.5
250	0.0	0.0	-0.1	±0.3
500	0.0	0.0	-0.1	±0.3
1000	0.0	0.0	0.0	±0.0
2000	0.0	0.0	0.0	±0.0
4000	0.0	0.0	0.0	±0.0
8000	0.0	0.0	0.0	±0.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.2 Time weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±0.1
Slow	94.0	0.0	±0.1
Imp	94.0	0.0	±0.1

6. Long-term stability

Frequency Weighting	SI M Display at start (dB)	SI M Display at End (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

Continuation of Calibration Certificate

Cert. No.: ACC22181
Job No.: VC6AC0877
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7. Level linearity on the reference level range

Assigned Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.1	0.1	±1.3
136.0	136.1	0.1	±1.3
135.0	135.1	0.1	±1.3
134.0	134.1	0.1	±1.3
133.0	133.0	0.0	±1.3
132.0	132.0	0.0	±1.3
131.0	131.0	0.0	±1.3
129.0	129.1	0.1	±1.3
124.0	124.1	0.1	±1.3
119.0	119.1	0.1	±1.3
114.0	114.1	0.1	±1.3
109.0	109.1	0.1	±1.3
104.0	104.1	0.1	±1.3
99.0	99.0	0.0	±1.3
94.0	94.0	0.0	±1.3
89.0	89.0	0.0	±1.3
84.0	84.0	0.0	±1.3
79.0	79.0	0.0	±1.3
74.0	74.0	0.0	±1.3
69.0	69.0	0.0	±1.3
64.0	64.0	0.0	±1.3
59.0	59.0	0.0	±1.3
54.0	54.0	0.0	±1.3
49.0	49.0	0.0	±1.3
44.0	44.0	0.0	±1.3
39.0	39.0	0.0	±1.3
34.0	34.0	0.0	±1.3
29.0	29.0	0.0	±1.3
24.0	24.0	0.0	±1.3
19.0	19.0	0.0	±1.3
14.0	14.0	0.0	±1.3
9.0	9.0	0.0	±1.3

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Continuation of Calibration Certificate

Cert. No.: ACL22181
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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±1.5

9. Time burst response

Time Weighting	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	106.0	107.9	+1.9	1.5; -5.0
	2	8	117.0	117.0	0.0	1.0; -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	0.25	1	106.0	108.0	+2.0	1.5; -5.0
	2	8	127.6	127.6	0.0	±1.0
	200	800	134.0	134.0	0.0	±1.0
SEL	0.25	1	99.0	98.9	-0.1	1.5; -4.0
	2	8	106.0	106.0	0.0	1.0; -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±1.0
One	136.4	136.4	0.0	±1.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±1.0
Positive half cycle	135.4	135.4	0.0	±2.0
Negative half cycle	135.4	135.4	0.0	±2.0

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T. Petch...

Continuation of Calibration Certificate

Cert. No.: ACL22181
Job No.: VC65AC0077
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11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
99.5	99.6	0.1	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial	SLM Display at final	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.2

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor k = 2 or any value following calculation, providing a level of confidence of approximately 95 %

End of Calibration Certificate

QR-TS-04-004-0096

T. Petch...

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Job No.: VC65AC0077
Pages: 1 of 8

Calibration Certificate

Equipment: SOUND LEVEL METER
Manufacturer: RION
Model: SL-42 Microphone UC-42 / Transducer SH-74
Serial No.: 0877109 / 17482 / 77485
ID No.: RYO FS0754

Condition As Found: GOOD

Customer: ALC LABORATORY (0909) (THAI) AND CO., LTD.
106 PHATHANAKAN 40 PHATHANAKAN ROAD,
KHU AEON PHATHANAKAN, KHU SIAM LUANG,
BANGKOK, 10259 THAILANDLocation: 25.150 x 1.310 °N
Ambient Temperature: 101.3 x 1.3 °C
Pressure: 1.013 x 1.3 kPa
Relative Humidity: 1.800 x 2.0 %
Received Date: 22 AUGUST 2022
Calibration Date: 28-31 AUGUST 2022
Date of Issue: 02 SEPTEMBER 2022

Calibrated by: Sathiporn Petchum...

Approved by: T. Petchum
(Thirakul Petchum)

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Continuation of Calibration Certificate

Cert. No.: ACL22182
Job No.: VC65AC0077
Pages: 2 of 8

Calibration Procedure: CP-AC-01

Calibration Method:

The equipment was calibrated by based on IEC 61672-3 (2013) standard for sound level meter (SLM).
The SLM had been to Acoustical and Electrical signal tests of frequency weighting with Acoustics chamber and Reference Standard Instruments.

For test results of each item were made by observation of each instrument display and also with SLM's display.

Condition of this result of calibration:

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	332105	MY40017076	13-0007-22	04-Feb-23
Waveform Generator	335110	MY5320742	13-0008-22	04-Feb-23
Digital Multimeter	33401A	MY5320104	13-10-040205	09-Feb-23
Digital Multimeter	33401A	MY5320104	13-10-040205	09-Feb-23
Digital Multimeter	34401A	MY4002173	13-10-050205	09-Feb-23
Programmable Attenuator	MAT-1070	6210-114	13-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-425A	34560493	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration, for this calibrated item only

3. This certificate is transferable to the international system of unit maintained at

3. National Institute of Metrology (Thailand)

3.2 Thailand Institute of Scientific and Technological Research (ISTEC)

QR-TS-04-004-0096

T. Petch...

Continuation of Calibration Certificate

Cert. No.: ACL22182
Job No.: VC65AC0077
Pages: 3 of 8

Summary of Measurement Result:

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓		0.2	N/A
2. Self-generated noise	✓		0.2	N/A
3. Acoustical signal tests of frequency weightings	✓		0.1	0.6
(200 Hz)	✓		0.1	0.6
(8000 Hz)	✓		0.4	0.7
4. Electrical signal tests of frequency weightings	✓		0.1	0.6
For 10 Hz to 10 kHz	✓		0.1	0.6
For 4 kHz to 10 kHz	✓		0.1	1.0
For 10 kHz to 20 kHz	✓		0.1	1.0
5. Frequency and time weightings at 1 kHz	✓		0.2	0.2
6. Long-term stability	✓		0.1	0.1
7. Level linearity on the reference level range	✓		0.2	0.3
8. Level linearity including the level range control	✓		0.2	0.3
9. Time burst response	✓		0.2	0.7
10. Peak - sound level	✓		0.2	0.2
11. Overload indication	✓		0.2	0.2
12. High level stability	✓		0.1	0.1

QR-TS-04-004-0096

T. Petch...

Continuation of Calibration Certificate

Cert. No.: ACL22182
Job No.: VC65AC0077
Pages: 4 of 8

Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (0.95)	93.9	0.0	±0.3

2. Self-generated noise

Measured Value (dB)
16.5

2.2 The microphone of the sound level meter was replaced by electrical signal input device:

Frequency Weighting	Measured value (dB)
A-weight	17.2
C-weight	17.6
Flat	23.3

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 94 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
125	0.4	0.5	0.5	±1.5
1000	0.0	0.0	0.0	±1.0
2000	-2.4	2.4	2.4	±5.0

QR-TS-04-004-0096

T. Petch...

Continuation of Calibration Certificate

Cert. No.: ACL22182
Job No.: VC65AC0077
Pages: 5 of 8

4. Electrical signal tests of frequency weightings

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	0.0	0.0	-0.1	±1.5
250	-0.1	-0.1	-0.1	±1.5
500	-0.1	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±2.0
2000	0.0	0.0	0.0	±3.0
4000	0.0	0.0	0.0	±5.0
8000	0.0	0.0	0.0	±5.0

5. Frequency and time weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±1.5
C-weight	94.0	0.0	±1.5
Flat	94.0	0.0	±1.5

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±1.5
Slow	94.0	0.0	±1.5
1 sec	94.0	0.0	±1.5

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.1

QR-TS-04-004-0096

T. Petch...

Continuation of Calibration Certificate

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Job No.: VC65AC0077
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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
137.0	137.1	0.1	±1.5
136.0	136.1	0.1	±1.5
135.0	135.1	0.1	±1.5
134.0	134.1	0.1	±1.5
133.0	133.0	0.0	±1.5
132.0	132.0	0.0	±1.5
131.0	131.0	0.0	±1.5
130.0	130.0	0.0	±1.5
129.0	129.1	0.1	±1.5
128.0	128.1	0.1	±1.5
127.0	127.1	0.1	±1.5
126.0	126.1	0.1	±1.5
125.0	125.0	0.0	±1.5
124.0	124.0	0.0	±1.5
123.0	123.0	0.0	±1.5
122.0	122.0	0.0	±1.5
121.0	121.0	0.0	±1.5
120.0	120.0	0.0	±1.5
119.0	119.0	0.0	±1.5
118.0	118.0	0.0	±1.5
117.0	117.0	0.0	±1.5
116.0	116.0	0.0	±1.5
115.0	115.0	0.0	±1.5
114.0	114.0	0.0	±1.5
113.0	113.0	0.0	±1.5
112.0	112.0	0.0	±1.5
111.0	111.0	0.0	±1.5
110.0	110.0	0.0	±1.5
109.0	109.0	0.0	±1.5
108.0	108.0	0.0	±1.5
107.0	107.0	0.0	±1.5
106.0	106.1	0.1	±1.5
105.0	105.0	0.0	±1.5
104.0	104.1	0.1	±1.5
103.0	103.0	0.0	±1.5
102.0	102.0	0.0	±1.5
101.0	101.0	0.0	±1.5
100.0	100.0	0.0	±1.5
99.0	99.0	0.0	±1.5
98.0	98.0	0.0	±1.5
97.0	97.0	0.0	±1.5
96.0	96.0	0.0	±1.5
95.0	95.0	0.0	±1.5
94.0	94.0	0.0	±1.5
93.0	93.0	0.0	±1.5
92.0	92.0	0.0	±1.5
91.0	91.0	0.0	±1.5
90.0	90.0	0.0	±1.5
89.0	89.0	0.0	±1.5
88.0	88.0	0.0	±1.5
87.0	87.0	0.0	±1.5
86.0	86.0	0.0	±1.5
85.0	85.0	0.0	±1.5
84.0	84.0	0.0	±1.5
83.0	83.0	0.0	±1.5
82.0	82.0	0.0	±1.5
81.0	81.0	0.0	±1.5
80.0	80.0	0.0	±1.5
79.0	79.0	0.0	±1.5
78.0	78.0	0.0	±1.5
77.0	77.0	0.0	±1.5
76.0	76.0	0.0	±1.5
75.0	75.0	0.0	±1.5
74.0	74.0	0.0	±1.5
73.0	73.0	0.0	±1.5
72.0	72.0	0.0	±1.5
71.0	71.0	0.0	±1.5
70.0	70.0	0.0	±1.5
69.0	69.0	0.0	±1.5
68.0	68.0	0.0	±1.5
67.0	67.0	0.0	±1.5
66.0	66.0	0.0	±1.5
65.0	65.0	0.0	±1.5
64.0	64.0	0.0	±1.5
63.0	63.0	0.0	±1.5
62.0	62.0	0.0	±1.5
61.0	61.0	0.0	±1.5
60.0	60.0	0.0	±1.5
59.0	59.0	0.0	±1.5
58.0	58.0	0.0	±1.5
57.0	57.0	0.0	±1.5
56.0	56.0	0.0	±1.5
55.0	55.0	0.0	±1.5
54.0	54.0	0.0	±1.5
53.0	53.0	0.0	±1.5
52.0	52.0	0.0	±1.5
51.0	51.0	0.0	±1.5
50.0	50.0	0.0	±1.5
49.0	49.0	0.0	±1.5
48.0	48.0	0.0	±1.5
47.0	47.0	0.0	±1.5
46.0	46.0	0.0	±1.5
45.0	45.0	0.0	±1.5
44.0	44.0	0.0	±1.5
43.0	43.0	0.0	±1.5
42.0	42.0	0.0	±1.5
41.0	41.0	0.0	±1.5
40.0	40.0	0.0	±1.5
39.0	39.0	0.0	±1.5
38.0	38.0	0.0	±1.5
37.0	37.0	0.0	±1.5
36.0	36.0	0.0	±1.5
35.0	35.0	0.0	±1.5
34.0	34.0	0.0	±1.5
33.0	33.0	0.0	±1.5
32.0	32.0	0.0	±1.5
31.0	31.0	0.0	±1.5
30.0	30.0	0.0	±1.5
29.0	29.0	0.0	±1.5
28.0	28.0	0.0	±1.5
27.0	27.0	0.0	±1.5
26.0	26.0	0.0	±1.5
25.0	25.0	0.0	±1.5
24.0	24.0	0.0	±1.5
23.0	23.0	0.0	±1.5
22.0	22.0	0.0	±1.5
21.0	21.0	0.0	±1.5
20.0	20.0	0.0	±1.5
19.0	19.0	0.0	±1.5
18.0	18.0	0.0	±1.5
17.0	17.0	0.0	±1.5
16.0	16.0	0.0	±1.5
15.0	15.0	0.0	±1.5
14.0	14.0	0.0	±1.5
13.0	13.0	0.0	±1.5
12.0	12.0	0.0	±1.5
11.0	11.0	0.0	±1.5
10.0	10.0	0.0	±1.5
9.0	9.0	0.0	±1.5
8.0	8.0	0.0	±1.5
7.0	7.0	0.0	±1.5
6.0	6.0	0.0	±1.5
5.0	5.0	0.0	±1.5
4.0	4.0	0.0	±1.5
3.0	3.0	0.0	±1.5
2.0	2.0	0.0	±1.5
1.0	1.0	0.0	±1.5
0.0	0.0	0.0	±1.5

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11. Overload indication

Measured value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	-0.5	+1.5
Negative one-half cycle	+0.5	-1.5

12. High level stability

Frequency Weighting	S.M Display at initial (dB)	S.M Display at final (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor k = 2 or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

QR TS-10444-02044

T. Petch

41-41/15 Sathorn Rd., Bangkok, Bangkok 10120 THAILAND
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Cert. No. : ACL22181
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Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 Microphone UC-52 / Preamplifier NH-24
Serial No. : 01073423 / 159513 / 73684
ID No. : RVG P30186

Condition As Found : GOOD

Customer : ALSI LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATHANAKAN 40, PHATHANAKAN ROAD,
KHWAENG PHATHANAKAN, KHUET SUAN 1 UANG,
BANGKOK, 10250 THAILAND

Location :
Ambient Temperature : 23.0 ± 0.1 °C
Pressure : 1013.2 ± 0.1 hPa
Relative Humidity : 58.0 ± 2.0 %
Received Date : 22 AUGUST 2022
Calibration Date : 20-31 AUGUST 2022
Date of Issue : 02 SEPTEMBER 2022

Calibrated by : Nathani Petchum

Approved by : T. Petchum
(Thani Petchum)

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QR TS17-04-04-02044

Cert. No. : ACL22181
Job No. : VCK5AC0077
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tone of frequency weightings	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.7
4. Electrical signal tone of frequency weightings	✓	-	0.3	0.6
For 10 Hz to 4 kHz	✓	-	0.3	0.7
For 4 kHz to 10 kHz	✓	-	0.3	1.0
For 10 kHz to 20 kHz	✓	-	0.2	0.7
5. Frequency and time weightings at 1 kHz	✓	-	0.1	0.1
6. Long-term stability	✓	-	0.2	0.3
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Time hard response	✓	-	0.2	0.3
10. Peak-C sound level	✓	-	0.2	0.3
11. Overload indication	✓	-	0.2	0.3
12. High level stability	✓	-	0.1	0.1

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Job No. : VCK5AC0077
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Result of calibration :

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
93.9 (0.95)	93.9	0.0	±0.3

2. Self-generated noise

Measured Value (dB)
134

2.2 The microphone of the second level meter was replaced by electrical signal input device.

Frequency Weighting	Measured Value (dB)
A-weight	123.0
C-weight	116.0
Flat	114.5

3. Acoustical signal tone of frequency weightings

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits (dB)
125	0.2	0.2	0.3	±0.5
1000	0.1	0.1	0.1	±0.5
8000	1.5	1.5	1.6	±0.5

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4. Electrical signal tone of frequency weightings

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits (dB)
63	0.0	0.0	0.0	±0.0
125	0.0	0.1	0.0	±0.5
250	0.0	0.0	0.0	±0.5
500	0.0	0.0	0.0	±0.5
1000	0.0	0.0	0.0	±0.5
2000	0.0	0.0	0.0	±0.5
4000	0.0	0.0	0.0	±0.5
8000	0.0	0.0	0.0	±0.5

5. Frequency and time weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±0.2
Slow	94.0	0.0	±0.2
Imp	94.0	0.0	±0.2

6. Long-term stability

Frequency Weighting	S.M Display at initial (dB)	S.M Display at final (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.1	0.1	±0.3

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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±0.3
136.0	136.0	0.0	±0.3
135.0	135.0	0.0	±0.3
134.0	134.0	0.0	±0.3
133.0	133.0	0.0	±0.3
132.0	132.0	0.0	±0.3
131.0	131.0	0.0	±0.3
129.0	129.0	0.0	±0.3
124.0	124.0	0.0	±0.3
119.0	119.0	0.0	±0.3
114.0	114.0	0.0	±0.3
109.0	109.0	0.0	±0.3
104.0	104.0	0.0	±0.3
99.0	99.0	0.0	±0.3
94.0	94.0	0.0	±0.3
89.0	89.0	0.0	±0.3
84.0	84.0	0.0	±0.3
79.0	79.0	0.0	±0.3
74.0	74.0	0.0	±0.3
69.0	69.0	0.0	±0.3
64.0	64.0	0.0	±0.3
59.0	59.0	0.0	±0.3
54.0	54.0	0.0	±0.3
49.0	49.0	0.0	±0.3
44.0	44.0	0.0	±0.3
39.0	39.0	0.0	±0.3
34.0	34.0	0.0	±0.3
29.0	29.0	0.0	±0.3
24.0	24.0	0.0	±0.3
19.0	19.0	0.0	±0.3
14.0	14.0	0.0	±0.3
9.0	9.0	0.0	±0.3

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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±0.3

9. Time burst response

Time Weighting	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	100.0	100.0	0.0	±0.3
	2	8	117.0	117.0	0.0	±0.3
	200	800	134.0	134.1	0.1	±0.3
Slow	2	8	100.0	100.0	0.0	±0.3
	200	800	127.0	127.0	0.0	±0.3
	0.25	1	90.0	90.0	-0.1	±0.3
SR	2	8	100.0	100.0	0.0	±0.3
	200	800	128.0	128.1	0.1	±0.3

10. Peak-C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±0.3
One	136.0	135.8	-0.2	±0.3

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.1	0.1	±0.3
Positive half cycle	133.0	133.2	+0.2	±0.3
Negative half cycle	133.0	133.2	+0.2	±0.3

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Job No. : VCK5AC0077
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11. Overload indication

Measured value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	-0.7	±1.5
Negative one-half cycle	+0.7	±1.5

12. High level stability

Frequency Weighting	S.M Display at initial (dB)	S.M Display at final (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor k = 2 or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

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Tel: 0-2435-8832 Fax: 0-2435-1679 e-mail: cal@calibrationlab.com http://www.sithiporn.com



Cert. No. : ACL22181
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 Microphone UC-52 / Preamplifier NH-24
Serial No. : 01073408 / 172151 / 83748
ID No. : RYO P30187

Condition As Found : GOOD

Customer : ALSI LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATHANAKAN 40, PHATHANAKAN ROAD,
KHWAENG PHATHANAKAN, KHUET SUAN 1 UANG,
BANGKOK, 10250 THAILAND

Location :
Ambient Temperature : 23.0 ± 0.1 °C
Pressure : 1013.2 ± 0.1 hPa
Relative Humidity : 58.0 ± 2.0 %
Received Date : 03 OCTOBER 2022
Calibration Date : 18-19 OCTOBER 2022
Date of Issue : 20 OCTOBER 2022

Calibrated by : Nathani Petchum

Approved by : T. Petchum
(Thani Petchum)

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Continuation of Calibration Certificate

Cert. No. : ACL22234
Job No. : VC65AC0088
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Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests in Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Instruments.

For test results of each item were made by observation of each instrument display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	13210A	MY9407576	LI-0509-22	04-Feb-23
Waveform Generator	33511B	MY5282142	LI-0509-22	04-Feb-23
Digital Multimeter	34461A	MY3325014	ET-10-04-0265	09-Feb-23
Digital Multimeter	34461A	MY3250797	ET-10-04-0265	09-Feb-23
Digital Multimeter	34461A	MY6004273	EEL-10-05-0265	09-Feb-23
Programmable Attenuator	MAT 1070	62100114	ET-0609-22	07-Feb-23
Condenser Microphone	4180	2P7901	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-42CAI	M360495	AA-3005-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at:

3.1 National Institute of Metrology (Thailand);

3.2 Thailand Institute of Scientific and Technological Research (TISTR).

QR-TS-2304-04-0266

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22234
Job No. : VC65AC0088
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Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.3	0.6
120 Hz	✓	-	0.3	0.6
3000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
Pre- & A-Weight	✓	-	0.3	0.7
Pre- & A-Weight	✓	-	0.3	0.7
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.2	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Tone burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.3
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QR-TS-2304-04-0266

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Continuation of Calibration Certificate

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Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.0 (93.95)	93.9	0.0	±0.3

2. Self-generated noise

Measured Value (dB)
17.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	72.0
C-weight	78.1
Flat	73.8

3. Acoustical signal tests of frequency weightings

Main field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.4	0.3	0.4	±1.3
1000	0.0	0.0	0.0	±1.0
4000	1.0	0.9	0.9	±2.0

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4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	-0.1	0.0	-0.1	±1.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	-0.1	±1.5
1000	0.0	0.0	0.0	±2.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.1	0.1	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±0.1
Slow	94.0	0.0	±0.1
1 sec	94.0	0.0	±0.1

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

QR-TS-2304-04-0266

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22234
Job No. : VC65AC0088
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.1	0.1	±1.1
79.0	79.0	0.0	±1.1
74.0	74.1	0.1	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.1	0.1	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1
34.0	34.0	0.0	±1.1
29.0	29.0	0.0	±1.1
24.0	24.0	0.0	±1.1
19.0	19.0	0.0	±1.1
14.0	14.0	0.0	±1.1
9.0	9.0	0.0	±1.1
4.0	4.0	0.0	±1.1

QR-TS-2304-04-0266

T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22234
Job No. : VC65AC0088
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time Weighting	Time burst duration, Th (ms)	Cycles	Anticipated Value (dB)				Measured Value (dB)				Deviated Value (dB)				Acceptance Limits (dB)				
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Fast	0.25	8	108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
Slow	0.25	8	108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
SPL	0.25	8	108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4
			108.0	107.9	107.8	107.7	107.6	107.5	107.4	107.3	107.2	107.1	107.0	106.9	106.8	106.7	106.6	106.5	106.4

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)				Measured Value, LeqdB (dB)				Deviated Value (dB)				Acceptance Limits (dB)			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Continuous	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4

Number of cycle in test signal	Anticipated Value (dB)				Measured Value, LeqdB (dB)				Deviated Value (dB)				Acceptance Limits (dB)			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Continuous	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4

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T. Petch.

Continuation of Calibration Certificate

Cert. No. : ACL22234
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Pages : 8 of 8

11. Overload indication

Measured value (dB)	Deviated Value (dB)		Acceptance Limits (dB)
	Positive one-half cycle	Negative one-half cycle	
119.6	39.7	-29.9	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)		SLM Display at final (dB)		Deviated Value (dB)	Acceptance Limits (dB)
	1	2	1	2		
A-weight	137.0	137.0	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k=2$
or any value following calculation, providing a level of confidence of approximately 95 %.

End of Calibration Certificate

QR-TS-2304-04-0266

T. Petch.

10-431/Thailand: 80, Singha Park, Bangkok 10700 Thailand
Tel: 02-6455-882 Fax: 02-6455-1478 e-mail: info@sithiporn.com, http://www.sithiporn.comCert. No. : ACL22234
Job No. : VC65AC0088
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NI-42 Microphone UC-52 / Pre-amplifier NI-24
Serial No. : 0117369 / 172170 / 74021
ID No. : RVL150388

Condition As Found :

GOOD

Customer :

AI S LABORATORY GROUP (THAI) AND CO., LTD.
104 PHAT THANAKAN 30 PHAT THANAKAN ROAD,
KHAO YAI PHAT THANAKAN KHE THAI SAAN 1 AENG,
BANGKOK 10250 THAILAND

Location :

23/3 (1/1)

Ambient Temperature :

101.2 ± 0.3 °C

Pressure :

1013 ± 0.1 hPa

Relative Humidity :

50.0 ± 2.0 %

Received Date :

03 OCTOBER 2022

Calibration Date :

10-19 OCTOBER 2022

Date of Issue :

20 OCTOBER 2022

Calibrated by :

Nattakorn Petchum

Cert. No. : AC122235
Job No. : VC65AC0008
Page : 5 of 8

Summary of Measurement Results:

Parameter	Pass	Fail	Uncertainty (dB)	Maximum permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.2	N/A
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
10000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
For 10 Hz to 4 kHz	✓	-	0.2	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Time burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QR: TST-04-04-020404

T. Reth

Cert. No. : AC122235
Job No. : VC65AC0008
Page : 6 of 8

Results of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (93.9)	93.9	0.0	±0.3

2. Self-generated noise

Measured Value (dB)
17

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequencies Weighting	Measured Value (dB)
A-weight	17.0
C-weight	18.0
Flat	23.7

3. Acoustical signal tests of frequency weightings

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)	Acceptance Limit (dB)
Flat	-0.2	±1.2
125	0.2	±1.2
1000	0.0	±1.0
3000	-0.5	±1.0

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T. Reth

Cert. No. : AC122235
Job No. : VC65AC0008
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4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz.

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limit
63	-0.1	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.1	0.1	0.1	±5.1

5. Frequency and time weightings at 1 kHz

Frequencies Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.1 Time weighting at 1 kHz

Frequencies Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Fast	94.0	0.0	±0.1
Slow	94.0	0.0	±0.1
Leq	94.0	0.0	±0.1

6. Long-term stability

Frequencies Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limit (dB)
A-weight	94.0	94.0	0.0	±0.1

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T. Reth

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Job No. : VC65AC0008
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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
137.0	137.0	0.0	±0.1
136.0	136.0	0.0	±0.1
135.0	135.0	0.0	±0.1
134.0	134.0	0.0	±0.1
133.0	133.0	0.0	±0.1
132.0	132.0	0.0	±0.1
131.0	131.0	0.0	±0.1
129.0	129.0	0.0	±0.1
124.0	124.0	0.0	±0.1
119.0	119.0	0.0	±0.1
114.0	114.0	0.0	±0.1
109.0	109.0	0.0	±0.1
104.0	104.0	0.0	±0.1
99.0	99.0	0.0	±0.1
94.0	94.0	0.0	±0.1
89.0	89.0	0.0	±0.1
84.0	84.0	0.0	±0.1
79.0	79.0	0.0	±0.1
74.0	74.0	0.0	±0.1
69.0	69.0	0.0	±0.1
64.0	64.0	0.0	±0.1
59.0	59.0	0.0	±0.1
54.0	54.0	0.0	±0.1
49.0	49.0	0.0	±0.1
44.0	44.0	0.0	±0.1
39.0	39.0	0.0	±0.1
34.0	34.0	0.0	±0.1
29.0	29.0	0.0	±0.1
24.0	24.0	0.0	±0.1
19.0	19.0	0.0	±0.1
14.0	14.0	0.0	±0.1
9.0	9.0	0.0	±0.1
4.0	4.0	0.0	±0.1

QR: TST-04-04-020404

T. Reth

Cert. No. : AC122235
Job No. : VC65AC0008
Page : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Auto	94.0	94.0	0.0	±0.1

9. Time burst response

Time Weighting	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5, ±0.0
	2	3	117.0	117.0	0.0	1.0, ±2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	3	108.0	108.0	0.0	1.5, ±5.0
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	99.0	-0.1	1.5, ±0.0
SLI	2	3	108.0	108.0	0.0	1.0, ±2.5
	200	800	129.0	129.0	0.0	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Continuous	135.0	135.0	0.0	-
One	136.4	135.6	-0.8	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Continuous	135.0	135.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

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Job No. : VC65AC0008
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11. Overload indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Positive one-half cycle	99.5	±1.5
Negative one-half cycle	99.5	±1.5

12. High level stability

Frequencies Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limit (dB)
A-weight	137.0	137.0	0.0	±0.1

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor k = 2 or any value following calibration procedures providing a level of confidence of approximately 95 %

End of Calibration Certificate

QR: TST-04-04-020404

T. Reth

43/45/1 Sathorn Rd, Bangkok, Bangkok 10730 THAILAND
Tel: 2465 8801 Fax: 2461 1819 e-mail: contact@sithiporn.com Web: www.sithiporn.com



Cert. No. : AC122236
Page : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 Microphone UC-32 / Pre-amplifier 301-24
Serial No. : 0117610 - 14345 / 23019
ID No. : RYO TSC-349

Condition As Found : GOOD

Customer : AL S1 LABORATORY GROUP (THAI) AND CO., LTD.
154 PHATHANAKAN 40 PHATHANAKAN ROAD,
KIEW ASOMPATTHANAKAN KHEU SAN LUANG,
BANGKOK, 10210 THAILAND

Location :
Ambient Temperature : $(23.0 \pm 1.0) ^\circ\text{C}$
Pressure : $(1.01 \pm 0.1) \text{ hPa}$
Relative Humidity : $(40.0 \pm 2.0) \%$

Received Date : 03 OCTOBER 2022
Calibration Date : 18 OCTOBER 2022
Date of Issue : 20 OCTOBER 2022

Calibrated by : Natchanon Pongpattana

Approved by : T. Reth

(Thailand Pongpattana)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced other than in full, except with the prior written approval of the head of Calibration Laboratory

QR: TST-04-04-020404

Cert. No. : AC122236
Job No. : VC65AC0008
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Calibration Procedure : (C.P. AC-1)

Calibration Method :

This equipment was calibrated by based on IEC 61672-1:2013 Standard for sound level meter (SLM). The SLM had been to Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Instruments.

For test results of each item were made by observation of each instrument display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	3321A	MY3407076	11-0007-22	09-Feb-23
Waveform Generator	331110	MY3236742	11-0020-22	09-Feb-23
Digital Multimeter	33401A	MY3320134	11-11-19-05-0505	09-Feb-23
Digital Multimeter	33401A	MY3320076	11-11-19-05-0505	09-Feb-23
Digital Multimeter	34401A	MY6002473	11-11-19-05-0505	09-Feb-23
Programmable Attenuator	34411070	62100114	11-0409-22	07-Feb-23
Condenser Microphone	4-290	297906	AA-1013-21	24-Feb-21
Measuring Amplifier	NA-AC1-M	34563495	AA-3005-22	22-Feb-23

2. The result of calibration was issued to customer as shown on date and place of calibration for this certified item only

3. The certificate is available to the international system of unit maintained as:

(1) National Institute of Technology (NIST)

(2) Thailand Institute of Scientific and Technological Research (TISTR)

Cert. No. : AC122236
Job No. : VC65AC0008
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Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.2	N/A
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
10000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
For 10 Hz to 4 kHz	✓	-	0.2	0.7
For > 10 kHz to 20 kHz	-	-	-	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Time burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QR: TST-04-04-020404

T. Reth

Continuation of Calibration Certificate

Cert. No. : ACL22226
Job No. : VC65AC0088
Pages : 4 of 8

Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (2.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal use

Measured Value (dB)
18.5

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency (Hz)	Measured value (dB)
Weighting	18.1
A-weight	21.2
C-weight	27.0

3. Acoustical signal tests of frequency weightings

Meter free field acoustic response at a level of 84 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.0	0.2	0.1	± 1.5
1000	0.0	0.0	0.0	± 1.0
5000	0.4	0.5	0.5	± 5.0

SR-1502-04-000004

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22226
Job No. : VC65AC0088
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with reference to 1 kHz

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	0.0	0.0	0.0	±2.0
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0	0.0	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	±0.3
Slow	94.0	0.0	±0.3
Imp	94.0	0.0	±0.3

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

QR-1502-04-000004

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22226
Job No. : VC65AC0088
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	-0.1	±1.1
34.0	34.0	-0.1	±1.1
29.0	29.0	-0.1	±1.1
24.0	24.0	-0.1	±1.1
19.0	19.0	-0.1	±1.1
14.0	14.0	-0.1	±1.1
9.0	9.0	-0.1	±1.1
4.0	4.0	-0.1	±1.1

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T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22226
Job No. : VC65AC0088
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Time burst response

Time Weighting	Time burst duration, 10 (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5, -5.0
	2	8	117.0	117.0	0.0	1.0, -2.5
	200	800	134.0	134.1	0.1	±1.0
Slow	2	3	108.0	108.0	0.0	1.5, -5.0
	200	800	137.8	137.9	0.0	±1.0
SF:	0.25	1	108.0	107.9	-0.1	1.5, -5.0
	2	3	108.0	108.0	0.0	1.0, -2.5
	200	800	128.0	128.1	0.1	±1.0

10. Peak-C sound level

Number of cycle at test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.3	-0.1	±3.0

Number of cycle at test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

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T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22226
Job No. : VC65AC0088
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11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.5	0.0	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.1	137.0	-0.1	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor k = 2
or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

QR-1502-04-000004

T. Petch

421-015 Sriwit Rd, Bangna, Bangkok 10710 Thailand
Tel: 0-2435-8000 Fax: 0-2431-1679 e-mail: sithiporn@sithiporn.com http://www.sithiporn.comCert. No. : ACL22227
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NE-42 Microphone UC-52 / Pre-amplifier NH-24
Serial No. : R177811-17217 / 16022
ID No. : RYG FSC090

Condition As Found : (GPO)

Customer : AIST LABORATORY GROUP (THAI) CO., LTD.
34 PHATTANAKAN 40, PHATTANAKAN ROAD,
KHUANG PHATTANAKAN, KUT-U-SAN UANG,
BANGKOK 10250 THAILANDLocation :
Ambient Temperature : 1 25.0 ± 3.1 °C
Pressure : 1 101.5 ± 3.1 kPa
Relative Humidity : 1 50.0 ± 2.0 %
Received Date : 03 OCTOBER 2022
Calibration Date : 18-19 OCTOBER 2022
Date of Issue : 20 OCTOBER 2022

Calibrated by : Natchanon Petchum

Approved by : T. Petch
(Thamchai Petchum)This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced
unless it is in full, except with the prior written approval of the head of the calibration laboratory.

QR-1502-04-000004

Continuation of Calibration Certificate

Cert. No. : ACL22227
Job No. : VC65AC0088
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by using the IEC 61672-2 (2013) Standard for sound level meter (SLM).
The SLM had been tested by Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Instruments.

For test results of each item were made by observation of each Instruments display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	53210A	MY48017078	13-0097-22	04-Feb-23
Waveform Generator	33511B	MY12302-242	13-0098-22	04-Feb-23
Digital Multimeter	34461A	MY1220104	13-0100-22	06-Feb-23
Digital Multimeter	34461A	MY1225676	13-0101-22	06-Feb-23
Digital Multimeter	34461A	MY10024773	13-0102-22	06-Feb-23
Programmable Amplifier	MA1 1070	6210014	13-0099-22	07-Feb-23
Condenser Microphone	4140	2977960	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-429-AH	34504895	AA-3055-22	23-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of units maintained at:

- 1. National Institute of Metrology (France)
- 2. Thailand Institute of Scientific and Technological Research (TISTR)

QR-1502-04-000004

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22227
Job No. : VC65AC0088
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.3	0.8
425 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
3000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
Fast 10 Hz to 4 kHz	✓	-	0.3	0.7
Fast 4 kHz to 20 kHz	✓	-	0.3	1.0
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Time burst response	✓	-	0.2	0.3
10. Peak-C sound level	✓	-	0.2	0.35
11. Overload indication	✓	-	0.2	1.25
12. High level stability	✓	-	0.3	0.1

QR-1502-04-000004

T. Petch

Continuation of Calibration Certificate

Cert. No. : ACL22227
Job No. : VC65AC0088
Pages : 4 of 8

Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.9 (2.95)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal use

Measured Value (dB)
18.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency (Hz)	Measured value (dB)
Weighting	12.6
A-weight	14.1
C-weight	18.9
Flat	23.9

3. Acoustical signal tests of frequency weightings

Meter free field acoustic response at a level of 84 dB

Motor free-field acoustic response at a level of 94 dBS				
Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			Acceptance Limits
	Flat	C-weight	A-weight	
125	0.5	+0.4	0.5	± 1.5
1000	0.0	0.0	0.0	± 1.0
5000	-0.2	-0.2	-0.3	± 5.0

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T. Petch

Cert. No. : ACL22237
Job No. : VC6AC0808
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4. Electrical signal tests of frequency weightings

Weighting network response with reference to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	+2.0
125	0.0	0.0	0.0	+1.5
250	0.0	0.0	0.0	+1.5
500	0.0	0.0	0.0	+1.5
1000	0.0	0.0	0.0	+1.0
2000	0.0	0.0	0.0	+2.0
4000	0.0	0.0	0.0	+3.0
8000	0.0	0.0	0.0	+5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	+0.2
C-weight	94.0	0.0	+0.2
Flat	94.0	0.0	+0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	+0.1
Slow	94.0	0.0	+0.1
Log	94.0	0.0	+0.1

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	+0.2

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T. Retch

Cert. No. : ACL22237
Job No. : VC6AC0808
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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	+1.3
136.0	136.0	0.0	+1.3
135.0	135.0	0.0	+1.3
134.0	134.0	0.0	+1.3
133.0	133.0	0.0	+1.3
132.0	132.0	0.0	+1.3
131.0	131.0	0.0	+1.3
129.0	129.0	0.0	+1.3
124.0	124.0	0.0	+1.3
119.0	119.0	0.0	+1.3
114.0	114.0	0.0	+1.3
109.0	109.0	0.0	+1.3
104.0	104.0	0.0	+1.3
99.0	99.0	0.0	+1.3
94.0	94.0	0.0	+1.3
89.0	89.0	0.0	+1.3
84.0	84.0	0.0	+1.3
79.0	79.0	0.0	+1.3
74.0	74.0	0.0	+1.3
69.0	69.0	0.0	+1.3
64.0	64.0	0.0	+1.3
59.0	59.0	0.0	+1.3
54.0	54.0	0.0	+1.3
49.0	49.0	0.0	+1.3
44.0	44.0	0.0	+1.3
39.0	39.0	0.0	+1.3
34.0	34.0	0.0	+1.3
29.0	29.0	0.0	+1.3
24.0	24.0	0.0	+1.3
19.0	19.0	0.0	+1.3
14.0	14.0	0.0	+1.3
9.0	9.0	0.0	+1.3
4.0	4.0	0.0	+1.3

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T. Retch

Cert. No. : ACL22237
Job No. : VC6AC0808
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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	+1.1

9. Time burst response

Time Weighting	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5, -5.0
	2	3	117.0	117.0	0.0	1.0, -2.5
Slow	200	600	116.0	116.1	0.1	+1.0
	2	3	116.0	116.0	0.0	1.5, -5.0
SF2	200	800	127.8	127.8	0.0	+1.0
	0.25	1	99.0	98.9	-0.1	1.5, -5.0
	2	3	116.0	116.0	0.0	1.0, -2.5
	200	800	128.0	128.0	0.0	+1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.6	133.6	0.0	0.0
One	138.4	138.4	-0.0	+0.3

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	0.0
Positive half cycle	139.4	135.2	-4.2	+2.0
Negative half cycle	139.4	135.2	-4.2	+2.0

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T. Retch

Cert. No. : ACL22078
Job No. : VC6AC0801
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11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limit (dB)
Positive one-half cycle	Negative one-half cycle		
89.6	89.6	0.0	±1.3

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	+0.3

The reported accuracy is based on a standard uncertainty multiplied by coverage factor k = 2 or any other value following calibration (providing a level of confidence of approximately 95 %)

End of Calibration Certificate

QR 1512-04-02064

T. Retch

151-10171 Srinakharin Rd., Bangkok, Bangkok 10170 THAILAND
Tel: 0-2435-8090 Fax: 0-2435-1679 e-mail: calcenter@sithiporn.com http://www.sithiporn.com



Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : NL-42 Microphone UC-92 / Preamplifier M1-24
Serial No. : 0298515 / 179119 / 87326
ID No. : RYO / PS042

Condition As Found : GOOD

Customer : A181 LABORATORY GROUP (THAI) AND CO., LTD.
104 PHATHANAKAN 40 PHATHANAKAN ROAD,
KHU AEUNG PHATHANAKAN, KUT-I-SUAN LUANG,
BANGKOK, 10250 THAILAND.

Location :
Ambient Temperature : 23.0 ± 0.3 °C
Pressure : 101.3 ± 0.1 kPa
Relative Humidity : 50.0 ± 2.0 %

Received Date : 24 JANUARY 2021
Calibration Date : 25-26 JANUARY 2021
Date of Issue : 27 JANUARY 2021

Calibrated by : Natchanon Pichayon

Approved by : T. Retch
(Thamchai Pichayon)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard; only not be reproduced other than in full except with the prior written approval of the head of Calibration Laboratory.

QR 1512-04-02064

T. Retch

Cert. No. : ACL22078
Job No. : VC6AC0801
Page : 2 of 8

Calibration Procedure : (FAC)

Calibration Method :

The equipment was calibrated by based on IEC-61672-3 (2013) standard for sound level meter (SLM).
The SLM had tests to Acoustical and Electrical signal tests of Frequency weighting with Acoustic chamber and Reference Standard Instruments.
For tests results of each item were made by observation of each instrument display and also with SLM's display.

Condition of this result of calibration :

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	337210A	M14017076	11-0997-23	04-Feb-23
Waveform Generator	33511B	M14725742	11-0606-22	04-Feb-21
Digital Multimeter	33961 V	M151220104	11-1010-21	09-Feb-21
Digital Multimeter	33961 V	M151220104	11-1010-21	09-Feb-21
Digital Multimeter	3440 A	M14602427	11-1010-21	09-Feb-21
Programmable Attenuator	MAT-1070	6216114	11-0997-23	07-Feb-23
Condenser Microphone	4189	2675960	AS-0193-22	24-Feb-21
Measuring Amplifier	NK-428, N	3456045	AA-9000-22	22-Feb-23

2. This result of calibration was found accurate as shown on date and place of calibration for this calibration item only.

3. This certificate is traceable to the international system of unit maintained at:

1. National Institute of Metrology (Thailand).

2. Thailand Institute of Scientific and Technological Research (TISTR).

QR 1512-04-02064

T. Retch

Cert. No. : ACL22078
Job No. : VC6AC0801
Page : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.3	0.6
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
8000 Hz	✓	-	0.3	0.6
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
Fast = 4 kHz to 10 kHz	✓	-	0.3	0.6
Fast = 10 kHz to 20 kHz	✓	-	0.3	0.6
5. Frequency and time weightings at 1 kHz	✓	-	0.1	0.1
6. Long-term stability	✓	-	0.1	0.1
7. Level linearity on the reference level range	✓	-	0.2	0.3
8. Level linearity including the level range control	✓	-	0.2	0.3
9. Time burst response	✓	-	0.2	0.3
10. Peak C sound level	✓	-	0.2	0.3
11. Overload indication	✓	-	0.2	0.25
12. High level stability	✓	-	0.1	0.1

QR 1512-04-02064

T. Retch

Cert. No. : ACL22078
Job No. : VC6AC0801
Page : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
93.0 (93.0)	93.9	0.9	+0.3

2. Self-generated noise

Measured Value (dB)
14.8

2.2 The microphone of the sound level meter was replaced by electrical signal generator.

Frequency Weighting	Measured value (dB)
A-weight	17.6
C-weight	7.7
Flat	25.4

3. Acoustical signal tests of frequency weightings

Main free-field acoustic response at a level of 80 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
125	1.0	0.0	0.0	+1.5
1000	-0.1	-0.1	-0.1	+1.0
10000	-0.4	-0.3	-0.3	+5.0

QR 1512-04-02064

T. Retch

Cert. No. : ACL22078
Job No. : VC6AC0801
Page : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with reference to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	+2.0
125	0.0	0.1	0.0	+1.5
250	0.0	0.0	0.0	+1.5
500	0.0	0.0	0.0	+1.5
1000	0.0	0.0	0.0	+1.0
2000	0.0	0.0	0.0	+2.0
4000	0.0	0.0	0.0	+3.0
8000	0.0	0.0	0.0	+5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	+0.2
C-weight	94.0	0.0	+0.2
Flat	94.0	0.0	+0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	+0.1
Slow	94.0	0.0	+0.1
Log	94.0	0.0	+0.1

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	+0.2

QR 1512-04-02064

T. Retch

Cert. No. : ACL23079
Job No. : VC66AC0031
Pages : 4 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	+1.1
136.0	136.0	0.0	+1.1
135.0	135.0	0.0	+1.1
134.0	134.0	0.0	+1.1
133.0	133.0	0.0	+1.1
132.0	132.0	0.0	+1.1
131.0	131.0	0.0	+1.1
129.0	129.0	0.0	+1.1
124.0	124.0	0.0	+1.1
119.0	119.0	0.0	+1.1
114.0	114.0	0.0	+1.1
109.0	109.0	0.0	+1.1
104.0	104.0	0.0	+1.1
99.0	99.0	0.0	+1.1
94.0	94.0	0.0	+1.1
89.0	89.0	0.0	+1.1
84.0	84.0	0.0	+1.1
79.0	79.0	0.0	+1.1
74.0	74.0	0.0	+1.1
69.0	69.0	0.0	+1.1
64.0	64.0	0.0	+1.1
59.0	59.0	0.0	+1.1
54.0	54.0	0.0	+1.1
49.0	49.0	0.0	+1.1
44.0	44.0	0.0	+1.1
39.0	39.0	0.0	+1.1
34.0	33.9	-0.1	+1.1
29.0	28.9	-0.1	+1.1
24.0	24.0	0.0	+1.1
19.0	19.0	0.0	+1.1
14.0	14.0	0.0	+1.1
9.0	9.0	0.0	+1.1
4.0	4.0	0.0	+1.1

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23079
Job No. : VC66AC0031
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	+1.1

9. Tone burst response

Time	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	+1.5/-0.5
	2	8	115.0	114.9	-0.1	+1.5/-0.5
Slow	2	8	108.0	108.0	0.0	+1.5/-0.5
	200	800	127.6	127.6	0.0	+1.5/-0.5
SEL	0.25	1	99.0	98.9	-0.1	+1.5/-0.5
	2	8	106.0	106.0	0.0	+1.5/-0.5
	200	800	128.0	128.1	+0.1	+1.5/-0.5

10. Peak C-weight level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, L _{peak} (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Continuous	135.0	135.0	0.0	+1.0
One	136.4	136.2	-0.2	+1.0

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23079
Job No. : VC66AC0031
Pages : 8 of 8

11. Overload indication

Measured value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	-0.1	+1.5
Negative one-half cycle	-0.1	+1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	+0.2

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor k = 2 or any value following calibration procedure a level of confidence of approximately 95 %

End of Calibration Certificate

QR 7512-04-04-02066

T. Pich

SITHIPORN ASSOCIATES CO.,LTD.
CALIBRATION LABORATORY

85-433/1 Srinakharinwirot Rd., Bangrak, Bangkok 10700 THAILAND
Tel: 0-243-8803 Fax: 0-243-1676 e-mail: cal@sihaiporn.com Web: www.sihaporn.com



Cert. No. : ACL23083
Job No. : VC66AC0031
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RHOE
Model : NL-42 Microphone UC-52 / Piezoelectric NH-54
Serial No. : 00734225 / 157777 / 22653
ID No. : RYG 15000

Condition As Found : GOOD

Customer : ALS LABORATORY GROUP (THAILAND) CO., LTD.
104 PHATTHANAKAN RD. PHATTHANAKAN ROAD,
KHAO ANU PHATTHANAKAN, KHUET SUAN LUANG,
BANGKOK 10250 THAILAND

Location :
Ambient Temperature : 21.6 ± 0.1 °C
Pressure : 1013.3 ± 0.1 kPa
Relative Humidity : 50.0 ± 0.1 %

Received Date : 24 JANUARY 2023
Calibration Date : 25 JANUARY 2023
Date of Issue : 27 JANUARY 2023

Calibrated by : Nattakorn Pongmanee

Approved by : T. Pich
(T. Pich)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard; may not be reproduced
other than in full, except with the prior written approval of the Issuer Calibration Laboratory.

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23083
Job No. : VC66AC0031
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :
This equipment was calibrated by based on IEC-61672-3 (2013) Standard for sound level meter (SLM).
The SLM had tests in Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Instruments.
For tests results of each item were made by observation of each Instruments display and also with SLM display.

Conditions of this result of calibration :

- Reference Standard Instruments :

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	33210A	MY48017076	ET-0007-22	04-Feb-23
Waveform Generator	33511B	MY53107542	ET-0008-22	04-Feb-23
Digital Multimeter	33401A	MY53220104	ET-1000-06/0262	09-Feb-23
Digital Multimeter	3341A	MY53220708	ET-1000-06/0264	09-Feb-23
Digital Multimeter	33461A	MY60024273	ET-1000-08/0265	09-Feb-23
Programmable Attenuator	NAI-1070	62100134	FF-0009-22	07-Feb-23
Condenser Microphone	4180	2977900	AA-1013-22	24-Feb-23
Measuring Amplifier	NA-428A	34566405	AA-0009-22	23-Feb-23
- This result of calibration was found accurate at shown on date and place of calibration, for this calibrated item only.
- This certificate is suitable to the international system of unit maintained at :
 - National Institute of Metrology (Thailand).
 - Thailand Institute of Scientific and Technological Research (TISTR).

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23083
Job No. : VC66AC0031
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	✓	0.2	N/A
2. Self-generated noise	✓	✓	0.2	N/A
3. Acoustic signal tests of frequency weightings	✓	✓	0.3	0.6
125 Hz	✓	✓	0.3	0.6
1000 Hz	✓	✓	0.3	0.6
8000 Hz	✓	✓	0.3	0.6
4. Electrical signal tests of frequency weightings	✓	✓	0.3	0.6
Fast = 4 kHz to 10 kHz	✓	✓	0.3	0.7
Fast = 10 kHz to 20 kHz	✓	✓	0.3	1.0
5. Frequency and time weightings at 1 kHz	✓	✓	0.2	0.2
6. Temp. - term stability	✓	✓	0.1	0.1
7. Level linearity on the reference level range	✓	✓	0.2	0.3
8. Level linearity including the level range control	✓	✓	0.2	0.3
9. Time burst response	✓	✓	0.2	0.3
10. Peak C-weight level	✓	✓	0.2	0.3
11. Overload indication	✓	✓	0.2	0.25
12. High level stability	✓	✓	0.1	0.1

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23083
Job No. : VC66AC0031
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
93.9 (93.95)	93.9	0.0	+0.3

2. Self-generated noise

Measured Value (dB)
19.1

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	13.1
C-weight	10.1
Fine	24.9

3. Acoustic signal tests of frequency weightings

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
125	0.3	0.3	0.2	+1.5
1000	0.0	0.0	0.0	+1.0
8000	1.0	1.1	1.0	+2.0

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23083
Job No. : VC66AC0031
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	0.0	+2.0
125	0.0	0.0	0.0	+1.5
250	0.0	0.0	0.0	+1.5
500	0.0	0.0	0.0	+1.5
1000	0.0	0.0	0.0	+1.0
2000	0.0	0.0	0.0	+2.0
4000	0.0	0.0	0.0	+3.0
8000	0.0	0.0	0.0	+5.0

5. Frequency and time weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	+1.5
C-weight	94.0	0.0	+1.5
Fine	94.0	0.0	+1.5

5.2 Time weighting at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
Fast	94.0	0.0	+1.5
Slow	94.0	0.0	+1.5
Low	94.0	0.0	+1.5

6. Long term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviation Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.1	+0.1	+1.5

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23083
Job No. : VC66AC0031
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviation Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	+1.1
136.0	136.0	0.0	+1.1
135.0	135.0	0.0	+1.1
134.0	134.0	0.0	+1.1
133.0	133.0	0.0	+1.1
132.0	132.0	0.0	+1.1
131.0	131.0	0.0	+1.1
129.0	129.0	0.0	+1.1
124.0	124.0	0.0	+1.1
119.0	119.0	0.0	+1.1
114.0	114.0	0.0	+1.1
109.0	109.0	0.0	+1.1
104.0	104.0	0.0	+1.1
99.0	99.0	0.0	+1.1
94.0	94.0	0.0	+1.1
89.0	89.0	0.0	+1.1
84.0	84.0	0.0	+1.1
79.0	79.0	0.0	+1.1
74.0	74.0	0.0	+1.1
69.0	69.0	0.0	+1.1
64.0	64.0	0.0	+1.1
59.0	59.0	0.0	+1.1
54.0	54.0	0.0	+1.1
49.0	49.0	0.0	+1.1
44.0	44.0	0.0	+1.1
39.0	39.0	0.0	+1.1
34.0	34.0	0.0	+1.1
29.0	29.0	0.0	+1.1
24.0	24.0	0.0	+1.1
19.0	19.0	0.0	+1.1
14.0	14.0	0.0	+1.1
9.0	9.0	0.0	+1.1
4.0	4.0	0.0	+1.1

QR 7512-04-04-02066

T. Pich

Cert. No. : ACL23083
Job No. : VC66AC0803
Pages : 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.0

9. Time burst response

Time Weighting	Time burst duration, T_b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.5	-0.5	1.5/-0.5
	2	8	117.0	117.0	0.0	1.0/-0.5
	250	800	134.0	134.1	0.1	±1.0
Slow	2	8	108.0	108.0	0.0	1.5/-0.5
	250	800	127.6	127.6	0.0	±1.0
	250	1	99.0	99.0	-0.1	1.5/-0.5
SEL	2	8	108.0	108.0	0.0	1.0/-0.5
	250	800	129.0	129.1	0.1	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	-
One	136.4	136.0	-0.4	±3.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.1	0.1	-
Positive half cycle	135.4	135.2	-0.2	±2.0
Negative half cycle	135.4	135.2	-0.2	±2.0

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Cert. No. : ACL23083
Job No. : VC66AC0803
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11. Overload indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	49.6	0.0
Negative one-half cycle	49.6	±1.5

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.1	-0.1	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k=2$ or any value following calibration providing a level of confidence of approximately 95 %

End of Calibration Certificate

QP 7517-04-00-07-004

T. Pich

Cert. No. : ACL23249
Job No. : VC66AC0805
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : N1-42 Microphone UC-52 Preamplifier N10-24
Serial No. : 00754218 / 146937 / 34366
ID No. : RYUJ P8007

Condition As Found : GOOD

Customer : ALESA GROUP CO., LTD.
104 PHUATBANANAN RD. PHUATBANANAN ROAD,
KIRIRANG PHUATBANANAN RD. PHUATBANANAN ROAD,
BANGKOK 10250 THAILAND

Location :
Ambient Temperature : 27.0 ± 1.1 °C
Pressure : 1.013 ± 0.3 hPa
Relative Humidity : 50.0 ± 2.0 %
Received Date : 11 JULY 2023
Calibration Date : 10 AUGUST 2023
Date of Issue : 11 AUGUST 2023

Calibrated by :

Signature: Pichaporn

Approved by :

T. Pich
(Tharadol Pichaporn)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard. It may not be reproduced or used in any form without the prior written approval of the head of the Calibration Laboratory.

QP 7517-04-00-07-004

Cert. No. : ACL23249
Job No. : VC66AC0805
Pages : 2 of 8

Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC 61672-2 (2013) Standard for sound level meter (SLM). The SLM has tests to Acoustic and Electrical signal tests of frequency weighting with Amplitude and Reference Standard Instruments.

For test results of each item were made by observation of each instrument display and also with SLM's display

Condition of this result of calibration :

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	3322A	447481/3976	11-0509-24	07-11-24
Waveform Generator	3322A	447481/3976	11-0509-24	07-11-24
Digital Multimeter	3446A	MY1220104	11-10-2024	13-11-24
Digital Multimeter	3446A	MY1220104	11-10-2024	13-11-24
Digital Multimeter	3446A	MY1220104	11-10-2024	13-11-24
Programmable Attenuator	3446A	MY1220104	11-10-2024	13-11-24
Constant Microphone	4400	2977008	AA1001-03	14-11-24
Measuring Amplifier	55A-475A	3456095	AA1001-03	14-11-24

2. This result of calibration was found accurate as the way on device and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit (SI) (BIPM).

4. National Institute of Metrology (Thailand).
5. Thailand Institute of Scientific and Technological Research (TISTR).

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T. Pich

Cert. No. : ACL23249
Job No. : VC66AC0805
Pages : 3 of 8

Summary of Measurement Result :

Parameter	Plan	Full	Uncertainty (dB)	Maximum permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	✓	0.2	N/A
2. Self-generated noise	✓	✓	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	✓	0.3	0.6
125 Hz	✓	✓	0.3	0.6
1000 Hz	✓	✓	0.3	0.6
4. Electrical signal tests of frequency weightings	✓	✓	0.2	0.3
For 10 Hz to 4 kHz	✓	✓	0.3	0.6
For 4 kHz to 10 kHz	✓	✓	0.3	0.7
For 10 kHz to 20 kHz	✓	✓	1.0	-
5. Frequency and time weightings at 1 kHz	✓	✓	0.2	0.3
6. Long-term stability	✓	✓	0.1	0.3
7. Level linearity on the reference level range	✓	✓	0.2	0.3
8. Level linearity including the level range control	✓	✓	0.2	0.3
9. Time burst response	✓	✓	0.2	0.3
10. Peak C sound level	✓	✓	0.2	0.3
11. Overload indication	✓	✓	0.2	0.3
12. High level stability	✓	✓	0.1	0.3

Note : Pass / Fail evaluation for each parameter.

Self-generated noise and the Maximum permitted uncertainty of measurement

QP 7517-04-00-07-004

T. Pich

Cert. No. : ACL23249
Job No. : VC66AC0805
Pages : 4 of 8

Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
93.9 (93.9)	93.9	0.0	±0.3

2. Self-generated noise

Measured Value (dB)
21.7

2.2 The measurement of the self-generated noise was reduced by means of signal input device.

Frequency Weighting	Measured value (dB)
A-weight	14.8
C-weight	16.7
Flat	17.7

3. Acoustical signal tests of frequency weightings

Meter free-field acoustic response at a level of 94 dB

Frequency (Hz)	Flat	A-weight	A-weight	Acceptance Limits
125	0.7	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
10000	0.2	0.1	0.1	±1.0

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T. Pich

Cert. No. : ACL23249
Job No. : VC66AC0805
Pages : 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with relative to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	-0.1	-0.1	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±1.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.1	0.1	±1.0

5. Frequency and time weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.2
C-weight	94.0	94.0	0.0	±0.2
Flat	94.0	94.0	0.0	±0.2

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.2

QP 7517-04-00-07-004

T. Pich

Cert. No. : ACL23249
Job No. : VC66AC0805
Pages : 6 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
130.0	130.0	0.0	±1.1
129.0	129.0	0.0	±1.1
128.0	128.0	0.0	±1.1
127.0	127.0	0.0	±1.1
126.0	126.0	0.0	±1.1
125.0	125.0	0.0	±1.1
124.0	124.0	0.0	±1.1
123.0	123.0	0.0	±1.1
122.0	122.0	0.0	±1.1
121.0	121.0	0.0	±1.1
120.0	120.0	0.0	±1.1
119.0	119.0	0.0	±1.1
118.0	118.0	0.0	±1.1
117.0	117.0	0.0	±1.1
116.0	116.0	0.0	±1.1
115.0	115.0	0.0	±1.1
114.0	114.0	0.0	±1.1
113.0	113.0	0.0	±1.1
112.0	112.0	0.0	±1.1
111.0	111.0	0.0	±1.1
110.0	110.0	0.0	±1.1
109.0	109.0	0.0	±1.1
108.0	108.0	0.0	±1.1
107.0	107.0	0.0	±1.1
106.0	106.0	0.0	±1.1
105.0	105.0	0.0	±1.1
104.0	104.0	0.0	±1.1
103.0	103.0	0.0	±1.1
102.0	102.0	0.0	±1.1
101.0	101.0	0.0	±1.1
100.0	100.0	0.0	±1.1
99.0	99.0	0.0	±1.1
98.0	98.0	0.0	±1.1
97.0	97.0	0.0	±1.1
96.0	96.0	0.0	±1.1
95.0	95.0	0.0	±1.1
94.0	94.0	0.0	±1.1
93.0	93.0	0.0	±1.1
92.0	92.0	0.0	±1.1
91.0	91.0	0.0	±1.1
90.0	90.0	0.0	±1.1
89.0	89.0	0.0	±1.1
88.0	88.0	0.0	±1.1
87.0	87.0	0.0	±1.1
86.0	86.0	0.0	±1.1
85.0	85.0	0.0	±1.1
84.0	84.0	0.0	±1.1
83.0	83.0	0.0	±1.1
82.0	82.0	0.0	±1.1
81.0	81.0	0.0	±1.1
80.0	80.0	0.0	±1.1
79.0	79.0	0.0	±1.1
78.0	78.0	0.0	±1.1
77.0	77.0	0.0	±1.1
76.0	76.0	0.0	±1.1
75.0	75.0	0.0	±1.1
74.0	74.0	0.0	±1.1
73.0	73.0	0.0	±1.1
72.0	72.0	0.0	±1.1
71.0	71.0	0.0	±1.1
70.0	70.0	0.0	±1.1
69.0	69.0	0.0	±1.1
68.0	68.0	0.0	±1.1
67.0	67.0	0.0	±1.1
66.0	66.0	0.0	±1.1
65.0	65.0	0.0	±1.1
64.0	64.0	0.0	±1.1
63.0	63.0	0.0	±1.1
62.0	62.0	0.0	±1.1
61.0	61.0	0.0	±1.1
60.0	60.0	0.0	±1.1
59.0	59.0	0.0	±1.1
58.0	58.0	0.0	±1.1
57.0	57.0	0.0	±1.1
56.0	56.0	0.0	±1.1
55.0	55.0	0.0	±1.1
54.0	54.0	0.0	±1.1
53.0	53.0	0.0	±1.1
52.0	52.0	0.0	±1.1
51.0	51.0	0.0	±1.1
50.0	50.0	0.0	±1.1
49.0	49.0	0.0	±1.1
48.0	48.0	0.0	±1.1
47.0	47.0	0.0	±1.1
46.0	46.0	0.0	±1.1
45.0	45.0	0.0	±1.1
44.0	44.0	0.0	±1.1
43.0	43.0	0.0	±1.1
42.0	42.0	0.0	±1.1
41.0	41.0	0.0	±1.1
40.0	40.0	0.0	±1.1
39.0	39.0	0.0	±1.1
38.0	38.0	0.0	±1.1
37.0	37.0	0.0	±1.1
36.0	36.0	0.0	±1.1
35.0	35.0	0.0	±1.1
34.0	34.0	0.0	±1.1
33.0	33.0	0.0	±1.1
32.0	32.0	0.0	±1.1
31.0	31.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	29.0	0.0	±1.1
28.0	28.0	0.0	±1.1
27.0	27.0	0.0	±1.1
26.0	26.0	0.0	±1.1
25.0	25.0	0.0	±1.1
24.0	24.0	0.0	±1.1

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Job No. : YC66AC0094
Pages : 3 of 8

11. Overload indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle	
89.6	89.5	-0.1 +1.5

12. High level stability

Frequency Weighting	SI M Display at initial (dB)	SI M Display at final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k = 2$ or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

QI-TN-21004-01/094

41/41/1 Siamkorn Rd, Banglamung, Bangkok 10700 Thailand
Tel: 02-612-8031 Fax: 02-612-8032 E-mail: cal@csithiporn.com http://www.sithiporn.comCert. No. : AC123242
Job No. : YC66AC0094
Pages : 1 of 8

Calibration Certificate

Equipment : SOUND LEVEL METER
Manufacturer : RION
Model : N-42 Microphone LU-02, Pre-amplifier N01-24
Serial No. : 0032361 170308 / 32099
ID No. : RYO 150500

Condition As Found : GOOD

Customer : SITHIPORN ASSOCIATES CO.,LTD.
101 PHAI (HANAKAN) RD PHAI HANAKAN ROAD,
KHUATUNG PHATHANAKAN KHUATUNG LIANG,
BANGKOK 10250 THAILAND

Location :
Ambient Temperature : 23.0 ± 0.3 °C
Pressure : 1013 ± 0.3 hPa
Relative Humidity : 50.0 ± 20.0 %

Received Date : 21 AUGUST 2021
Calibration Date : 01 SEPTEMBER 2021
Date of Issue : 04 SEPTEMBER 2021

Calibrated by : Natchanon Pichanun

Approved by : T. Pichanun
(Natchanon Pichanun)

This certificate is issued in accordance with the requirements of ISO/IEC 17025 standard, may not be reproduced unless this is fully comply with the pass without opinion of the test of Calibration Laboratory

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Cert. No. : AC123242
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Calibration Procedure : CP-AC-01

Calibration Method :

This equipment was calibrated by based on IEC 61672-1 (2013) Standard for sound level meter (SLM).
The SLM test is in Acoustic and Electrical signal test of frequency weighting with Ambient chamber and Reference Standard Instruments.

For test results of each item were made by observation of each Instruments display and also with SLM calibrator.

Condition of this result of calibration :

Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	13710A	MY24017076	11-0009-21	07-01-24
Waveform Generator	13511B	MY24017076	11-0010-21	07-01-24
Digital Multimeter	34401A	MY24017076	11-0011-21	13-01-24
Digital Multimeter	34401A	MY24017076	11-0012-21	13-01-24
Digital Multimeter	34401A	MY24017076	11-0013-21	13-01-24
Programmable Attenuator	MAT-1070	8210014	11-0014-21	08-01-24
Condenser Microphone	4182	2975000	AA-001-21	14-01-24
Measuring Amplifier	NA-426A1	14576035	AA-002-21	14-01-24

2. This result of calibration was found accurate as shown on date and place of calibration for this calibration only.

3. This certificate is traceable to the international system of unit measurement as:

1. National Institute of Metrology (Thailand)

2. 13th Asia Institute of Scientific and Technological Research (ISTAR)

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Summary of Measurement Result :

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓		0.2	N/A
2. Self-generated noise	✓		0.2	N/A
3. Acoustical signal test of frequency weightings				
125 Hz	✓		0.5	0.5
1000 Hz	✓		0.5	0.5
8000 Hz	✓		0.5	0.7
4. Electrical signal test of frequency weightings				
For 10 Hz to 4 kHz	✓		0.3	0.6
For 4 kHz to 10 kHz	✓		0.3	0.7
For 10 kHz to 20 kHz	✓		0.2	0.2
5. Frequency and time weightings at 1 kHz	✓		0.2	0.2
6. Long-term stability	✓		0.1	0.1
7. Level stability on the reference level range	✓		0.2	0.3
8. Level stability including the level range control	✓		0.2	0.3
9. Tone burst response	✓		0.2	0.3
10. Peak C-weight level	✓		0.2	0.35
11. Overload indication	✓		0.2	0.25
12. High level stability	✓		0.1	0.1

Note : Pass/Fail evaluation for each item is based on the acceptance limit and the Maximum-permitted uncertainty of measurement.

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Result of calibration :

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
92.9 (93.0)	93.5	0.6	±0.3

2. Self-generated noise

2.1 Noise test

Measured Value (dB)
16

2.2 The microphone of the sound level meter was replaced by electrical signal input device

Frequency Weighting	Measured value (dB)
A-weight	120
C-weight	182
Flat	240

3. Acoustical signal test of frequency weightings

Mean free field acoustic response at a level of 94 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance limits
125	-0.2	-0.2	-0.2	±1.5
1000	-0.1	-0.1	-0.1	±1.0
8000	0.1	0.1	0.1	±0.5

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4. Electrical signal test of frequency weightings

Weighting network response with reference 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits (dB)
25	0.0	-0.1	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.1	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.1	0.0	±2.0
4000	0.0	0.0	0.0	±1.5
8000	0.0	0.1	0.1	±1.0

5. Frequency and time weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.2
C-weight	94.0	94.0	0.0	±0.2
Flat	94.0	94.0	0.0	±0.2

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	±0.1
Slow	94.0	94.0	0.0	±0.1
Long	94.0	94.0	0.0	±0.1

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	±0.1
Slow	94.0	94.0	0.0	±0.1
Long	94.0	94.0	0.0	±0.1

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7. Level stability on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
130.0	130.0	0.0	±1.1
129.0	129.0	0.0	±1.1
128.0	128.0	0.0	±1.1
127.0	127.0	0.0	±1.1
126.0	126.0	0.0	±1.1
125.0	125.0	0.0	±1.1
124.0	124.0	0.0	±1.1
123.0	123.0	0.0	±1.1
122.0	122.0	0.0	±1.1
121.0	121.0	0.0	±1.1
120.0	120.0	0.0	±1.1
119.0	119.0	0.0	±1.1
118.0	118.0	0.0	±1.1
117.0	117.0	0.0	±1.1
116.0	116.0	0.0	±1.1
115.0	115.0	0.0	±1.1
114.0	114.0	0.0	±1.1
113.0	113.0	0.0	±1.1
112.0	112.0	0.0	±1.1
111.0	111.0	0.0	±1.1
110.0	110.0	0.0	±1.1
109.0	109.0	0.0	±1.1
108.0	108.0	0.0	±1.1
107.0	107.0	0.0	±1.1
106.0	106.0	0.0	±1.1
105.0	105.0	0.0	±1.1
104.0	104.0	0.0	±1.1
103.0	103.0	0.0	±1.1
102.0	102.0	0.0	±1.1
101.0	101.0	0.0	±1.1
100.0	100.0	0.0	±1.1
99.0	99.0	0.0	±1.1
98.0	98.0	0.0	±1.1
97.0	97.0	0.0	±1.1
96.0	96.0	0.0	±1.1
95.0	95.0	0.0	±1.1
94.0	94.0	0.0	±1.1
93.0	93.0	0.0	±1.1
92.0	92.0	0.0	±1.1
91.0	91.0	0.0	±1.1
90.0	90.0	0.0	±1.1
89.0	89.0	0.0	±1.1
88.0	88.0	0.0	±1.1
87.0	87.0	0.0	±1.1
86.0	86.0	0.0	±1.1
85.0	85.0	0.0	±1.1
84.0	84.0	0.0	±1.1
83.0	83.0	0.0	±1.1
82.0	82.0	0.0	±1.1
81.0	81.0	0.0	±1.1
80.0	80.0	0.0	±1.1
79.0	79.0	0.0	±1.1
78.0	78.0	0.0	±1.1
77.0	77.0	0.0	±1.1
76.0	76.0	0.0	±1.1
75.0	75.0	0.0	±1.1
74.0	74.0	0.0	±1.1
73.0	73.0	0.0	±1.1
72.0	72.0	0.0	±1.1
71.0	71.0	0.0	±1.1
70.0	70.0	0.0	±1.1
69.0	69.0	0.0	±1.1
68.0	68.0	0.0	±1.1
67.0	67.0	0.0	±1.1
66.0	66.0	0.0	±1.1
65.0	65.0	0.0	±1.1
64.0	64.0	0.0	±1.1
63.0	63.0	0.0	±1.1
62.0	62.0	0.0	±1.1
61.0	61.0	0.0	±1.1
60.0	60.0	0.0	±1.1
59.0	59.0	0.0	±1.1
58.0	58.0	0.0	±1.1
57.0	57.0	0.0	±1.1
56.0	56.0	0.0	±1.1
55.0	55.0	0.0	±1.1
54.0	54.0	0.0	±1.1
53.0	53.0	0.0	±1.1
52.0	52.0	0.0	±1.1
51.0	51.0	0.0	±1.1
50.0	50.0	0.0	±1.1
49.0	49.0	0.0	±1.1
48.0	48.0	0.0	±1.1
47.0	47.0	0.0	±1.1
46.0	46.0	0.0	±1.1
45.0	45.0	0.0	±1.1
44.0	44.0	0.0	±1.1
43.0	43.0	0.0	±1.1
42.0	42.0	0.0	±1.1
41.0	41.0	0.0	±1.1
40.0	40.0	0.0	±1.1
39.0	39.0	0.0	±1.1
38.0	38.0	0.0	±1.1
37.0	37.0	0.0	±1.1
36.0	36.0	0.0	±1.1
35.0	35.0	0.0	±1.1
34.0	34.0	0.0	±1.1
33.0	33.0	0.0	±1.1
32.0	32.0	0.0	±1.1
31.0	31.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	29.0	0.0	±1.1
28.0	28.0	0.0	±1.1
27.0	27.0	0.0	±1.1
26.0	26.0	0.0	±1.1
25.0	25.0	0.0	±1.1

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8. Level stability including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Tone burst response

Time	Time burst duration, 10 ms	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	100.0	100.0	0.0	±1.5 ±0.9
	2	1	117.0	117.0	0.0	±1.5 ±2.5
	200	800	130.0	130.0	0.0	±1.5
Slow	2	1	100.0	100.0	0.0	±1.5 ±0.9
	200	800	130.0	130.0	0.0	±1.5
SI	0.25	1	99.0	99.0	0.0	±1.5 ±0.9
	2	1	116.0	116.0	0.0	±1.5 ±2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak C-weight level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	115.0	115.0	0.0	±1.0
One	116.0	116.0	0.0	±1.0

Number of

SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

45/45/15 Srinakharinwirot, Bangkok 10110 THAILAND
Tel: 02-213-8430 Fax: 02-213-1679 E-mail: info@sithiporn.com http://www.sithiporn.com



Cert. No.: AUL22231
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Calibration Certificate

Equipment: SOUND LEVEL METER
Manufacturer: RION
Model: NR-42 Microphone UC-52 / Preamplifier MU-24
Serial No.: 0647126 / 176915 / 00180
ID No.: RYO / PS001

Condition As Found: GOOD

Customer: A/S LABORATORY GROUP CHAI AND CO., LTD.
104 PHA THANAKAN 40 PHAT THANAKAN ROAD,
KHU MONG PHUT THANAKAN, KHU SUKUMVIT 1,
BANGKOK 10250 THAILAND

Location: Ambient Temperature: $+23.0 \pm 0.1$ °C
Pressure: $+101.3 \pm 0.1$ kPa
Relative Humidity: $+50.0 \pm 0.1$ %

Received Date: 07 OCTOBER 2022
Calibration Date: 18 OCTOBER 2022
Date of Issue: 20 OCTOBER 2022

Calibrated by: Natchanon Pongpattana

Approved by: T. Pongpattana
(Thakul Pongpattana)

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QR: 15-10-04-02-004

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Continuation of Calibration Certificate

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Calibration Procedure: (C) AC-40

Calibration Method:

This equipment was calibrated by based on IEC-61672-2 (2013) Standard for sound level meter (SLM).
The SLM had been in Acoustical and Electrical signal tests of frequency weighting with Acoustic chamber and Reference Standard Calibrator.
For more results of each item were made by observation of each instrument display and also with SLM's display.

Condition of this result of calibration:

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	33210A	MS 800 776	13-0307-22	04-Feb-23
Waveform Generator	33410B	MY 5232742	13-0307-22	04-Feb-23
Digital Multimeter	3540A	MY 5120104	EEL-10 / 050265	06-Feb-23
Digital Multimeter	3540A	MY 5120076	EEL-10 / 050265	06-Feb-23
Digital Multimeter	3440A	MY 0604273	EEL-10 / 050265	09-Feb-23
Programmable Attenuator	MAT 1070	62100114	13-0307-22	07-Feb-23
Combiner Microphone	4010	287569	AA 1003-22	24-Feb-23
Measuring Amplifier	NA-425A1	M450405	AA-3005-22	23-Feb-23

2. This result of calibration was found accurate in system in date and place of calibration for this calibrated item only.

3. This certificate is transferable to the international system of unit maintained at:

- National Institute of Metrology (Thailand).
- Thailand Institute of Scientific and Technological Research (TISTR).

QR: 15-10-04-02-004

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Summary of Measurement Result:

Parameter	Pass	Fail	Uncertainty (dB)	Maximum-permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	✗	0.2	N/A
2. Self-generated noise	✓	✗	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	✗	0.3	0.6
4. Frequency and time weightings at 1 kHz	✓	✗	0.3	0.6
5. Frequency and time weightings at 1 kHz	✓	✗	0.3	0.6
6. Long-term stability	✓	✗	0.1	0.1
7. Level linearity on the reference level range	✓	✗	0.2	0.3
8. Level linearity including the level range control	✓	✗	0.2	0.3
9. Time burst response	✓	✗	0.2	0.3
10. Peak-C sound level	✓	✗	0.2	0.3
11. On-sound evaluation	✓	✗	0.2	0.3
12. High-level stability	✓	✗	0.1	0.1

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Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
93.8 (93.9)	93.9	0.0	±0.1

2. Self-generated noise

2.1 Normal use

Measured Value (dB)
14.8

2.2 The microphone of the sound level meter was repaired by electrical signal input device.

Frequency Weighting	Measured Value (dB)
A-weight	9.9
C-weight	16.7
Flat	22.5

3. Acoustical signal tests of frequency weightings

3.1 Free-field acoustic response at a level of 94 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	-7.6	-7.6	-7.3	±1.5
1000	0.5	0.5	0.5	±1.0
10000	-5.1	-5.1	-5.1	±5.0

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SITHIPORN ASSOCIATES CO.,LTD. CALIBRATION LABORATORY

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4. Electrical signal tests of frequency weightings

4.1 Deviation from various frequency weighting response curve (dB)

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
63	-6.1	-6.1	-6.1	±2.0
125	0.0	0.0	-6.1	±1.5
250	0.0	0.0	-6.1	±1.5
500	0.0	0.0	-6.1	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±3.0
8000	0.0	0.0	0.0	±5.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	±0.2
C-weight	94.0	94.0	±0.2
Flat	94.0	94.0	±0.2

5.2 Time weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	±0.1
Slow	94.0	94.0	±0.1
Imp	94.0	94.0	±0.1

6. Long-term stability

Frequency Weighting	SLM Display at Initial (dB)	SLM Display at Final (dB)	Deviated Value (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.1

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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
130.0	130.0	0.0	±1.1
129.0	129.0	0.0	±1.1
128.0	128.0	0.0	±1.1
127.0	127.0	0.0	±1.1
126.0	126.0	0.0	±1.1
125.0	125.0	0.0	±1.1
124.0	124.0	0.0	±1.1
123.0	123.0	0.0	±1.1
122.0	122.0	0.0	±1.1
121.0	121.0	0.0	±1.1
120.0	120.0	0.0	±1.1
119.0	119.0	0.0	±1.1
118.0	118.0	0.0	±1.1
117.0	117.0	0.0	±1.1
116.0	116.0	0.0	±1.1
115.0	115.0	0.0	±1.1
114.0	114.0	0.0	±1.1
113.0	113.0	0.0	±1.1
112.0	112.0	0.0	±1.1
111.0	111.0	0.0	±1.1
110.0	110.0	0.0	±1.1
109.0	109.0	0.0	±1.1
108.0	108.0	0.0	±1.1
107.0	107.0	0.0	±1.1
106.0	106.0	0.0	±1.1
105.0	105.0	0.0	±1.1
104.0	104.0	0.0	±1.1
103.0	103.0	0.0	±1.1
102.0	102.0	0.0	±1.1
101.0	101.0	0.0	±1.1
100.0	100.0	0.0	±1.1
99.0	99.0	0.0	±1.1
98.0	98.0	0.0	±1.1
97.0	97.0	0.0	±1.1
96.0	96.0	0.0	±1.1
95.0	95.0	0.0	±1.1
94.0	94.0	0.0	±1.1
93.0	93.0	0.0	±1.1
92.0	92.0	0.0	±1.1
91.0	91.0	0.0	±1.1
90.0	90.0	0.0	±1.1
89.0	89.0	0.0	±1.1
88.0	88.0	0.0	±1.1
87.0	87.0	0.0	±1.1
86.0	86.0	0.0	±1.1
85.0	85.0	0.0	±1.1
84.0	84.0	0.0	±1.1
83.0	83.0	0.0	±1.1
82.0	82.0	0.0	±1.1
81.0	81.0	0.0	±1.1
80.0	80.0	0.0	±1.1
79.0	79.0	0.0	±1.1
78.0	78.0	0.0	±1.1
77.0	77.0	0.0	±1.1
76.0	76.0	0.0	±1.1
75.0	75.0	0.0	±1.1
74.0	74.0	0.0	±1.1
73.0	73.0	0.0	±1.1
72.0	72.0	0.0	±1.1
71.0	71.0	0.0	±1.1
70.0	70.0	0.0	±1.1
69.0	69.0	0.0	±1.1
68.0	68.0	0.0	±1.1
67.0	67.0	0.0	±1.1
66.0	66.0	0.0	±1.1
65.0	65.0	0.0	±1.1
64.0	64.0	0.0	±1.1
63.0	63.0	0.0	±1.1
62.0	62.0	0.0	±1.1
61.0	61.0	0.0	±1.1
60.0	60.0	0.0	±1.1
59.0	59.0	0.0	±1.1
58.0	58.0	0.0	±1.1
57.0	57.0	0.0	±1.1
56.0	56.0	0.0	±1.1
55.0	55.0	0.0	±1.1
54.0	54.0	0.0	±1.1
53.0	53.0	0.0	±1.1
52.0	52.0	0.0	±1.1
51.0	51.0	0.0	±1.1
50.0	50.0	0.0	±1.1
49.0	49.0	0.0	±1.1
48.0	48.0	0.0	±1.1
47.0	47.0	0.0	±1.1
46.0	46.0	0.0	±1.1
45.0	45.0	0.0	±1.1
44.0	44.0	0.0	±1.1
43.0	43.0	0.0	±1.1
42.0	42.0	0.0	±1.1
41.0	41.0	0.0	±1.1
40.0	40.0	0.0	±1.1
39.0	39.0	0.0	±1.1
38.0	38.0	0.0	±1.1
37.0	37.0	0.0	±1.1
36.0	36.0	0.0	±1.1
35.0	35.0	0.0	±1.1
34.0	34.0	0.0	±1.1
33.0	33.0	0.0	±1.1
32.0	32.0	0.0	±1.1
31.0	31.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	29.0	0.0	±1.1
28.0	28.0	0.0	±1.1
27.0	27.0	0.0	±1.1
26.0	26.0	0.0	±1.1
25.0	25.0	0.0	±1.1

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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Time burst response

Time Weighting	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	1.5 / -0.8
	2	8	117.0	117.6	0.6	1.0 / -2.5
	200	800	134.0	134.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	1.5 / -0.8
	200	800	127.6	127.6	0.0	±1.0
	0.25	1	99.0	99.0	0.0	1.5 / -0.8
SPL	2	8	108.0	108.0	0.0	1.0 / -2.5
	200	800	128.0	128.0	0.0	±1.0

10. Peak-C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Legal (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.6	0.6	±1.0
Positive half cycle	133.0	133.6	0.6	±1.0
Negative half cycle	133.0	133.6	0.6	±1.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviate Value (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	—
Positive half cycle	135.4	135.4	-0.1	±2.0
Negative half cycle	135.4	135.4	+0.1	±2.0

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Calibration Procedure: CP-AC-01

Calibration Method:

This equipment was calibrated by based on IEC 61072-3 (2013) Standard for sound level meter (SLM).
The SLM had tests on Acoustical and Electrical signal tests of frequency weighting with Audiotek character and Reference Standard Instruments.

For test results of each item were made by observation of each instrument's display and also with SLM's display.

Condition of this result of calibration:

1. Reference Standard Instruments:

Instrument	Model	Serial No.	Cert. No.	Exp. Date
Waveform Generator	332-1A	MY54017639	11-009-23	07-11-24
Waveform Generator	335-1B	MY55160142	11-009-23	07-11-24
Digital Multimeter	334A/A	MY5320104	11-009-23	13-10-24
Digital Multimeter	334B/A	MY5320076	11-009-23	13-10-24
Digital Multimeter	334B/A	MY5320076	11-009-23	13-10-24
Programmable Attenuator	MA1-107	2576014	11-001-23	08-10-24
Condenser Microphone	4300	2977600	AA-1001-23	14-11-24
Measuring Amplifier	NA-42K/A	3366405	AA-3002-23	14-11-24

2. The result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of units (SI) maintained at:

- National Institute of Metrology (Thailand).
- Thailand Institute of Standards and Technological Research (TISTR).

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Summary of Measurement Result:

Parameter	Pass	Fail	Uncertainty (dB)	Maximum permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓		0.2	N/A
2. Self-generated noise	✓		0.2	N/A
3. Acoustical signal tests of frequency weightings				
125 Hz	✓		0.3	0.6
1000 Hz	✓		0.3	0.6
8200 Hz	✓		0.3	0.7
4. Acoustical signal tests of frequency weightings				
For 10 Hz to 4 kHz	✓		0.3	0.6
For 4 kHz to 10 kHz	✓		0.3	0.7
For 10 kHz to 20 kHz	✓		0.3	1.0
5. Frequency and time weightings at 1 kHz	✓		0.2	0.2
6. Long-term stability	✓		0.3	0.3
7. Level linearity on the reference level range	✓		0.2	0.3
8. Level linearity including the level range control	✓		0.2	0.3
9. Time burst response	✓		0.2	0.3
10. Peak sound level	✓		0.2	0.3
11. Overload indication	✓		0.2	0.25
12. High level stability	✓		0.1	0.1

Note: Practical resolution for each parameter will be considered together from the acceptance limit and the Maximum permitted uncertainty of measurement.

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Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limit (dB)
93.0 (93.0)	93.9	0.9	±0.3

2. Self-generated noise

Measured Value (dB)
19.0

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting (dB)	Measured value (dB)
A-weight	17.8
C-weight	26.3
Flat	25.9

3. Acoustical signal tests of frequency weightings

Measure five-field acoustic response at a level of 94 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limit
125	0.1	0.1	0.1	±1.2
1000	-0.1	-0.1	0.2	±1.0
8000	0.8	0.3	0.3	±0.9

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4. Electrical signal tests of frequency weightings

Weighting network response with reference to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limit
63	0.0	0.0	-0.1	±2.0
125	0.0	0.0	0.0	±1.3
250	0.0	0.0	0.0	±1.3
500	0.0	0.0	0.0	±1.3
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.1	0.1	±1.0

5. Frequency and time weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
A-weight	94.0	94.0	0.0	±0.2
C-weight	94.0	94.0	0.0	±0.2
Flat	94.0	94.0	0.0	±0.2

5.2 Time weighting at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Fast	94.0	94.0	0.0	±0.1
Slow	94.0	94.0	0.0	±0.1
1 sec	94.0	94.0	0.0	±0.1

6. Long-term stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limit (dB)
A-weight	94.0	94.0	0.0	±0.1

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7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
130.0	130.0	0.0	±1.1
129.0	129.0	0.0	±1.1
128.0	128.0	0.0	±1.1
127.0	127.0	0.0	±1.1
126.0	126.0	0.0	±1.1
125.0	125.0	0.0	±1.1
124.0	124.0	0.0	±1.1
123.0	123.0	0.0	±1.1
122.0	122.0	0.0	±1.1
121.0	121.0	0.0	±1.1
120.0	120.0	0.0	±1.1
119.0	119.0	0.0	±1.1
118.0	118.0	0.0	±1.1
117.0	117.0	0.0	±1.1
116.0	116.0	0.0	±1.1
115.0	115.0	0.0	±1.1
114.0	114.0	0.0	±1.1
113.0	113.0	0.0	±1.1
112.0	112.0	0.0	±1.1
111.0	111.0	0.0	±1.1
110.0	110.0	0.0	±1.1
109.0	109.0	0.0	±1.1
108.0	108.0	0.0	±1.1
107.0	107.0	0.0	±1.1
106.0	106.0	0.0	±1.1
105.0	105.0	0.0	±1.1
104.0	104.0	0.0	±1.1
103.0	103.0	0.0	±1.1
102.0	102.0	0.0	±1.1
101.0	101.0	0.0	±1.1
100.0	100.0	0.0	±1.1
99.0	99.0	0.0	±1.1
98.0	98.0	0.0	±1.1
97.0	97.0	0.0	±1.1
96.0	96.0	0.0	±1.1
95.0	95.0	0.0	±1.1
94.0	94.0	0.0	±1.1
93.0	93.0	0.0	±1.1
92.0	92.0	0.0	±1.1
91.0	91.0	0.0	±1.1
90.0	90.0	0.0	±1.1
89.0	89.0	0.0	±1.1
88.0	88.0	0.0	±1.1
87.0	87.0	0.0	±1.1
86.0	86.0	0.0	±1.1
85.0	85.0	0.0	±1.1
84.0	84.0	0.0	±1.1
83.0	83.0	0.0	±1.1
82.0	82.0	0.0	±1.1
81.0	81.0	0.0	±1.1
80.0	80.0	0.0	±1.1
79.0	79.0	0.0	±1.1
78.0	78.0	0.0	±1.1
77.0	77.0	0.0	±1.1
76.0	76.0	0.0	±1.1
75.0	75.0	0.0	±1.1
74.0	74.0	0.0	±1.1
73.0	73.0	0.0	±1.1
72.0	72.0	0.0	±1.1
71.0	71.0	0.0	±1.1
70.0	70.0	0.0	±1.1
69.0	69.0	0.0	±1.1
68.0	68.0	0.0	±1.1
67.0	67.0	0.0	±1.1
66.0	66.0	0.0	±1.1
65.0	65.0	0.0	±1.1
64.0	64.0	0.0	±1.1
63.0	63.0	0.0	±1.1
62.0	62.0	0.0	±1.1
61.0	61.0	0.0	±1.1
60.0	60.0	0.0	±1.1
59.0	59.0	0.0	±1.1
58.0	58.0	0.0	±1.1
57.0	57.0	0.0	±1.1
56.0	56.0	0.0	±1.1
55.0	55.0	0.0	±1.1
54.0	54.0	0.0	±1.1
53.0	53.0	0.0	±1.1
52.0	52.0	0.0	±1.1
51.0	51.0	0.0	±1.1
50.0	50.0	0.0	±1.1
49.0	49.0	0.0	±1.1
48.0	48.0	0.0	±1.1
47.0	47.0	0.0	±1.1
46.0	46.0	0.0	±1.1
45.0	45.0	0.0	±1.1
44.0	44.0	0.0	±1.1
43.0	43.0	0.0	±1.1
42.0	42.0	0.0	±1.1
41.0	41.0	0.0	±1.1
40.0	40.0	0.0	±1.1
39.0	39.0	0.0	±1.1
38.0	38.0	0.0	±1.1
37.0	37.0	0.0	±1.1
36.0	36.0	0.0	±1.1
35.0	35.0	0.0	±1.1
34.0	34.0	0.0	±1.1
33.0	33.0	0.0	±1.1
32.0	32.0	0.0	±1.1
31.0	31.0	0.0	±1.1
30.0	30.0	0.0	±1.1
29.0	29.0	0.0	±1.1
28.0	28.0	0.0	±1.1
27.0	27.0	0.0	±1.1
26.0	26.0	0.0	±1.1
25.0	25.0	0.0	±1.1
24.0	24.0	0.0	±1.1
23.0	23.0	0.0	±1.1
22.0	22.0	0.0	±1.1
21.0	21.0	0.0	±1.1
20.0	20.0	0.0	±1.1
19.0	19.0	0.0	±1.1
18.0	18.0	0.0	±1.1
17.0	17.0	0.0	±1.1
16.0	16.0	0.0	±1.1
15.0	15.0	0.0	±1.1
14.0	14.0	0.0	±1.1
13.0	13.0	0.0	±1.1
12.0	12.0	0.0	±1.1
11.0	11.0	0.0	±1.1
10.0	10.0	0.0	±1.1
9.0	9.0	0.0	±1.1
8.0	8.0	0.0	±1.1
7.0	7.0	0.0	±1.1
6.0	6.0	0.0	±1.1
5.0	5.0	0.0	±1.1
4.0	4.0	0.0	±1.1
3.0	3.0	0.0	±1.1
2.0	2.0	0.0	±1.1
1.0	1.0	0.0	±1.1
0.0	0.0	0.0	±1.1

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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Auto	94.0	94.0	0.0	±1.1

9. Time burst response

Time Weighting	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Fast	0.25	1	108.0	107.9	-0.1	±1.5, ±1.0
	2	8	117.0	117.0	0.0	±1.0, ±2.5
	200	800	124.0	124.0	0.0	±1.0
Slow	0.25	1	108.0	108.0	0.0	±1.5, ±1.0
	2	8	117.0	117.0	0.0	±1.0, ±2.5
	200	800	124.0	124.0	0.0	±1.0

10. Peak sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Continuous	133.0	133.0	0.0	±1.0
One cycle	136.0	136.0	0.0	±1.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Continuous	133.0	133.0	0.0	±1.0
One cycle	136.0	136.0	0.0	±1.0

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11. Overload indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limit (dB)
Positive one-half cycle	94.0	±1.1
Negative one-half cycle	94.0	±1.1

12. High level stability

Frequency Weighting	SLM Display at initial (dB)	SLM Display at final (dB)	Deviated Value (dB)	Acceptance Limit (dB)
A-weight	137.0	137.0	0.0	±1.1

The reported uncertainty is based on a standard uncertainty multiplied by an coverage factor k = 2, at any value following calibration providing a level of confidence of approximately

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Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
93.9 (93.9)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.0

Frequency Weighting	Measured value (dB)
A-weight	9.7
C-weight	15.9
Flat	21.8

3. Acoustical signal tests of frequency weightings

Note: Free-field acoustic response at a level of 94 dB

Frequency (Hz)	Deviation from various frequency weighting response curve (dB)			
	Flat	C-weight	A-weight	Acceptance Limits
125	-0.3	-0.3	-0.3	± 1.5
1000	-0.1	-0.1	-0.1	± 1.0
3000	-1.4	-1.5	-1.5	± 5.0

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4. Electrical signal tests of frequency weightings

Weighting network response with reference to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±2.0
125	0.0	0.0	0.0	±1.5
250	0.0	0.0	0.0	±1.5
500	0.0	0.0	0.0	±1.5
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.0	0.0	±1.0

5. Frequency and time weightings at 1 kHz

5.1 Frequency weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.2
C-weight	94.0	94.0	0.0	±0.2
Flat	94.0	94.0	0.0	±0.2

5.2 Time weightings at 1 kHz

Frequency Weighting	Anticipated Value (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
Fast	94.0	94.0	0.0	±0.1
Slow	94.0	94.0	0.0	±0.1
Long	94.0	94.0	0.0	±0.1

6. Long-term stability

Frequency Weighting	SUM Display at initial (dB)	SUM Display at final (dB)	Deviation (dB)	Acceptance Limits (dB)
A-weight	94.0	94.1	0.1	±0.3

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8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±0.1

9. Time burst response

Time Weighting	Time burst duration, T _b (ms)	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
Fast	0.25	1	108.0	107.9	-0.1	±1.5
	2	8	117.0	116.9	-0.1	±1.0
Slow	200	800	118.0	117.9	-0.1	±1.5
	0.25	1	99.5	99.8	+0.2	±1.5
SIL	2	8	108.0	108.0	0.0	±1.0
	200	800	128.0	127.9	-0.1	±1.0

10. Peak C-weight level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±1.0
One	136.4	135.3	-0.9	±1.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
Continuous	133.0	133.0	0.0	±2.0
Positive half cycle	135.4	135.1	-0.3	±2.0
Negative half cycle	135.4	135.1	-0.3	±2.0

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11. Overload indication

Measured value (dB)		Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	Negative one-half cycle		
89.5	89.6	0.1	± 0.5

12. High level stability

Frequency Weighting	SUM Display at initial (dB)	SUM Display at final (dB)	Deviation (dB)	Acceptance Limits (dB)
A-weight	137.0	137.0	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k=2$ or any value following calculation providing a level of confidence approximately 95 %

End of Calibration Certificate

Q1: TS-14-04-0304

T. Petch

45/45/11 Sukhumvit 46, Bangkok, Thailand 10110, Thailand
Tel: 02-6351-8678 Fax: 02-6351-8679 Email: info@sithiporn.com http://www.sithiporn.comCert. No.: AC122241
Job No.: VC6AC0894
Pages: 1 of 8

Calibration Certificate

Equipment: SOUND LEVEL METER
Manufacturer: RION
Model: SL-42 Microphone UC-52 / Preamplifier NRP-24
Serial No.: 01973608 127153 / 85748
ID No.: RYG TS0367

Condition As Found: (NONE)
Customer: A/S LABORATORY GROUP (THAILAND) CO., LTD.
10/THANAKAN 40 PHATHANAKAN ROAD,
KJWASU PHATHANAKAN, KHE 1 SUAN LANG,
BANGKOK, 10250 THAILAND

Location: Ambient Temperature: 23.0 ± 1.1 °C
Pressure: 1013.2 ± 1.7 hPa
Relative Humidity: 50.0 ± 2.0 %
Received Date: 10 OCTOBER 2022
Calibration Date: 10-19 OCTOBER 2022
Date of Issue: 20 OCTOBER 2022

Calibrated by: Nithiporn Petchum

Approved by: T. Petch
(Thakorn Petchum)

This certificate is issued in accordance with the requirements of ISO/IEC 17025:2017 and may not be reproduced other than as full, except as in the print version approval of the Head of Calibration Laboratory.

Q1: TS-14-04-0304

Cert. No.: AC122241
Job No.: VC6AC0894
Pages: 7 of 8

Calibration Procedure: UP-AC-01

Calibration Method:

This equipment was calibrated by based on IEC-61673-2 (2015) Standard for sound level meter (SLM). The SLM has tests in Acoustical and Electrical signal tests of frequency weightings with Acoustic chamber and Reference Standard Instruments.

For test results of each item were made by observation of each instrument display and also with SLM display.

Condition of this result of calibration:

1. Reference Standard Instruments

Instrument	Model	Serial No.	Cert. No.	Due Date
Waveform Generator	33210A	MY45017079	13-0607-22	04-Feb-23
Waveform Generator	33211B	MY45017079	13-0607-22	04-Feb-23
Digital Multimeter	3440A	MY51220476	11-0607-22	09-Feb-23
Digital Multimeter	3440A	MY51220476	11-0607-22	09-Feb-23
Digital Multimeter	3440A	MY51220476	11-0607-22	09-Feb-23
Programmable Amplifier	MAT 1070	62-08114	11-0607-22	07-Feb-23
Customer Microphone	4188	2677000	AS-1013-22	24-Feb-23
Measuring Amplifier	NA-628A	4050409	AS-1013-22	22-Feb-23

2. The result of calibration was found accurate as shown on date and place of calibration for this calibrated item only.

3. This certificate is traceable to the international system of unit maintained at:

- 3.1 National Institute of Metrology (NIM)
- 3.2 Thailand Institute of Scientific and Technological Research (TISTR)

Q1: TS-14-04-0304

T. Petch

Cert. No.: AC122241
Job No.: VC6AC0894
Pages: 3 of 8

Summary of Measurement Result:

Parameter	Pos	Fall	Uncertainty (dB)	Maximum permitted uncertainty of measurement (dB)
1. Absolute sensitivity	✓	-	0.2	N/A
2. Self-generated noise	✓	-	0.2	N/A
3. Acoustical signal tests of frequency weightings	✓	-	0.3	0.6
125 Hz	✓	-	0.3	0.6
1000 Hz	✓	-	0.3	0.6
3000 Hz	✓	-	0.3	0.7
4. Electrical signal tests of frequency weightings	✓	-	0.3	0.6
Flat	✓	-	0.3	0.6
Fast	✓	-	0.3	0.6
Slow	✓	-	0.3	0.6
Long	✓	-	0.3	0.6
5. Frequency and time weightings at 1 kHz	✓	-	0.2	0.2
A-weight	✓	-	0.1	0.1
C-weight	✓	-	0.2	0.3
Flat	✓	-	0.2	0.3
6. Level linearity including the level range control	✓	-	0.2	0.3
7. Time burst response	✓	-	0.2	0.3
8. Peak C-weight level	✓	-	0.2	0.3
9. Overload indication	✓	-	0.2	0.3
10. High level stability	✓	-	0.1	0.1

Q1: TS-14-04-0304

T. Petch

Cert. No.: AC122241
Job No.: VC6AC0894
Pages: 4 of 8

Result of calibration:

1. Absolute sensitivity

Reference Acoustic Signal (dB)	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
93.9 (93.9)	93.9	0.0	±0.3

2. Self-generated noise

2.1 Normal test

Measured Value (dB)
15.4

2.2 The microphone of the sound level meter was replaced by electrical signal input device.

Frequency Weighting	Measured value (dB)
A-weight	9.7
C-weight	15.9
Flat	21.8

3. Acoustical signal tests of frequency weightings

Note: Free-field acoustic response at a level of 94 dB

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	0.0	0.0	0.0	±1.5
125	0.0	0.0	0.0	±1.0
1000	0.0	0.0	0.0	±1.0
3000	0.0	0.0	0.0	±1.0

Q1: TS-14-04-0304

T. Petch

Cert. No.: AC122241
Job No.: VC6AC0894
Pages: 5 of 8

4. Electrical signal tests of frequency weightings

Weighting network response with reference to 1 kHz

Frequency (Hz)	Flat	C-weight	A-weight	Acceptance Limits
63	-0.1	-0.1	-0.1	±2.0
125	-0.1	0.0	-0.1	±0.5
250	0.0	0.0	-0.1	±1.5
500	0.0	0.0	0.0	±1.0
1000	0.0	0.0	0.0	±1.0
2000	0.0	0.0	0.0	±2.0
4000	0.0	0.0	0.0	±1.0
8000	0.0	0.1	0.1	±0.5

5. Frequency and time weightings at 1 kHz

Frequency Weighting	Measured Value (dB)	Deviation (dB)	Acceptance Limits (dB)
A-weight	94.0	0.0	±0.2
C-weight	94.0	0.0	±0.2
Flat	94.0	0.0	±0.2

Frequency Weighting	SUM Display at initial (dB)	SUM Display at final (dB)	Deviation (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3
C-weight	94.0	94.0	0.0	±0.3
Flat	94.0	94.0	0.0	±0.3

6. Long-term stability

Frequency Weighting	SUM Display at initial (dB)	SUM Display at final (dB)	Deviation (dB)	Acceptance Limits (dB)
A-weight	94.0	94.0	0.0	±0.3

Q1: TS-14-04-0304

T. Petch

Certi. No. ACT/2234
Job No. VFA5AT/0008
Pages 8 of 8

7. Level linearity on the reference level range

Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
137.0	137.0	0.0	±1.1
136.0	136.0	0.0	±1.1
135.0	135.0	0.0	±1.1
134.0	134.0	0.0	±1.1
133.0	133.0	0.0	±1.1
132.0	132.0	0.0	±1.1
131.0	131.0	0.0	±1.1
129.0	129.0	0.0	±1.1
124.0	124.0	0.0	±1.1
119.0	119.0	0.0	±1.1
114.0	114.0	0.0	±1.1
109.0	109.0	0.0	±1.1
104.0	104.0	0.0	±1.1
99.0	99.0	0.0	±1.1
94.0	94.0	0.0	±1.1
89.0	89.0	0.0	±1.1
84.0	84.0	0.0	±1.1
79.0	79.0	0.0	±1.1
74.0	74.0	0.0	±1.1
69.0	69.0	0.0	±1.1
64.0	64.0	0.0	±1.1
59.0	59.0	0.0	±1.1
54.0	54.0	0.0	±1.1
49.0	49.0	0.0	±1.1
44.0	44.0	0.0	±1.1
39.0	39.0	0.0	±1.1
34.0	34.0	0.0	±1.1
29.0	29.0	0.0	±1.1
24.0	24.0	0.0	±1.1
19.0	19.0	0.0	±1.1
14.0	14.0	0.0	±1.1
9.0	9.0	0.0	±1.1
4.0	4.0	0.0	±1.1

QP-1513-04-04-0004

Certi. No. ACT/2234
Job No. VFA5AT/0008
Pages 7 of 8

8. Level linearity including the level range control

Range	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Auto	94.0	94.0	0.0	±1.1

9. Time burst response

Time	Time burst duration, Th	Cycle	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Weighting	0.25	1	108.0	107.9	-0.1	±1.5, ±5.0
Fast	2	3	117.0	117.0	0.0	±1.0, ±2.5
	200	800	148.0	148.0	0.0	±1.0
Slow	2	8	108.0	108.0	0.0	±1.5, ±5.0
	200	800	127.6	127.6	0.0	±1.0
SEL	2	3	108.0	108.0	0.0	±1.5, ±5.0
	200	800	128.0	128.1	0.1	±1.0

10. Peak C sound level

Number of cycle in test signal	Anticipated Value (dB)	Measured Value, Leq(dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	113.0	113.0	0.0	±1.0
Ons	116.4	116.2	-0.2	±1.0

Number of cycle in test signal	Anticipated Value (dB)	Measured Value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Continuous	113.0	113.0	0.0	±1.0
Positive half cycle	115.4	115.1	-0.3	±2.0
Negative half cycle	115.4	115.1	-0.3	±2.0

QP-1513-04-04-0005

Certi. No. ACT/2234
Job No. VFA5AT/0008
Pages 8 of 8

11. Overload indication

Measured value (dB)	Deviated Value (dB)	Acceptance Limits (dB)
Positive one-half cycle	119.6	±1.5
Negative one-half cycle	119.7	±1.5

12. High level stability

Frequency	SLM Display at initial	SLM Display at final	Deviated Value (dB)	Acceptance Limits (dB)
Weighting	120.1	120.1	0.0	±0.3
A-weight	117.6	117.6	0.0	±0.3

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor $k=2$, or any value following calculation providing a level of confidence of approximately 95 %

End of Calibration Certificate

QP-1513-04-04-0006

CERTIFICATE OF CALIBRATION

ISSUED BY: Cirrus Research plc

DATE OF ISSUE: 23 May 2023

CERTIFICATE NUMBER: 152436

Cirrus Research plc
Acoustic House
Bridlington Road
Hummerby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 1

Test engineer:
Nigel Smith
Electronically signed

doseBadge Reader

Instrument:
Manufacturer: Cirrus Research plc
Model Number: RC113A
Serial Number: 73729
Notes:

Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60642:2023 where applicable.

Date of Calibration: 22 May 2023

Functionality Results

Function	Result
Keypads	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Initial	114.17	999.2	0.56
Adjusted	114.00	998.2	0.56
Uncertainty	± 0.17	± 0.14	± 0.10
Tolerances	± 0.60	± 2.00	± 4.00

Environmental Conditions

Pressure: 1015.1 kPa
Temperature: 22.2 °C
Humidity: 43.5 %

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95 %.

CERTIFICATE OF CALIBRATION

ISSUED BY: Cirrus Research plc

DATE OF ISSUE: 05 January 2023

CERTIFICATE NUMBER: 190480

Cirrus Research plc
Acoustic House
Bridlington Road
Hummerby
North Yorkshire
YO14 0PH
United Kingdom

Page 1 of 1

Test engineer:
Terry Goodson
Electronically signed

doseBadge Reader

Instrument:
Manufacturer: Cirrus Research plc
Model Number: RC113A
Serial Number: 89107
Notes:

Calibration Procedure

The tests were carried out in accordance with the requirements of IEC 60642:2023 where applicable.

Date of Calibration: 05 January 2023

Functionality Results

Function	Result
Keypads	Pass
Battery Power	Pass
Display	Pass
Communication	Pass
2 way IR link	Pass
Clock	Pass

Calibration Results

	Level (dB)	Frequency (Hz)	Distortion (% THD + Noise)
Result	113.97	1002.2	0.13
Uncertainty	± 0.11	± 0.14	± 0.10
Tolerance	± 0.60	± 2.00	± 4.00

No adjustments were made during this calibration.

Environmental Conditions

Pressure: 100.35 kPa
Temperature: 23.6 °C
Humidity: 41.7 %

Notes

This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95 %.

Certificate of Calibration

Equipment: pH Meter

Manufacturer: Mettler Toledo

Model: SevenComp 5320

Serial No.: C150039400

ID No.: PYD_020153

Condition As Received: Used Item

Received Date: 24 February 2023

Calibration Date: 23 February 2023

Reference: 2302080200-2

Submitted by: At S Laboratory Group (Thailand) Co. Ltd.
(Rajabong Branch)
61611 Moo 5, 1 Mainam Kh., A Phrasang
Rajabong 21140 (Thailand)

Ambient Temperature: (25 ± 2.5) °C

Relative Humidity: (55 ± 15) %

Calibration Procedure: pH-Meter by direct measurement with standard working solution and direct measurement with certified reference material (CRM)
pH-Meter by comparison with standard thermometer

Calibrated by: Walee Sithiporn

Approved by: [Signature]
Acceptance Signatory

Page 1 of 3



Condition of this calibration result

- Reference Standard Instrument
 - Documented Process Calibration
 - Ref. Standard Thermometer
- The certificate is traceable to the International System of Units maintained at: NIST/NPL National Institute of Standards and Technology (NIST/NPL)

2. Certified Reference Materials

The measurement results are traceable to SI through CPA CRM, NIST SRM and NIST Reference Materials. Accredited for: NIST SRM.

Buffer Solution	Manufacturer	Lot No.	Exp. date
pH 4.008	CPA chem	820588	05 July 2024
pH 6.867	CPA chem	820588	05 July 2024
pH 10.010	CPA chem	803635	28 Dec 2023

3. This certificate is valid only to the item calibrated on date and place of calibration

Calibration Results

Function: mV Measurement

Performing standard curve by Plots at pH (4.7, 6.8)

Unit Under Calibration	Nominal Value	Standard Voltage Input	Actual Reading	Uncertainty of Measurement (mV)	Coverage Factor
pH Meter	4.000	177.48	177.4	0.058	2.00
S/N: C15043490	1.000	0.00	0.0	0.058	2.00
	10.000	-177.45	-177.5	0.058	2.00



Calibration Results

Function: pH Measurement

Performing three buffers standard curve by using buffer nominal pH (4.7, 6.8)

Unit Under Calibration	Standard pH Buffer Solution	Actual pH Reading	Actual mV Reading (mV)	Uncertainty of pH measurement (pH)	Coverage Factor
pH Electrode	4.008	4.008	-76.1	0.0040	2.00
S/N: 145340	6.867	6.867	4.7	0.0040	2.00
	10.010	10.013	-172.4	0.0060	2.00

2302080200-2 Temperature Measurement

1. Without adjustment

The equipment was connected with Temperature Probe

Model: IN-145340N Pro-SM

Serial No: 145340N

Dimension of probe:

Length: 120 mm

Diameter: 12 mm

Immersion Depth: 100 mm

Calibration Point (°C)	Standard Temperature (°C)	UUC Reading (°C)	Error (°C)	Uncertainty of measurement (°C)	Coverage Factor
25.0	25.001	24.8	-0.201	0.13	2.00

Remark: 1. UUC = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95 %.

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Certificate of Calibration

Equipment: pH Meter

Manufacturer: Mettler Toledo

Model: SevenComp 5320

Serial No.: C150039400

ID No.: PYD_020153

Condition As Received: Used Item

Received Date: 24 February 2023

Calibration Date: 23 February 2023

Reference: 2302080200-2

Ambient Temperature: (25 ± 2.5) °C

Relative Humidity: (55 ± 15) %

Calibration Procedure: pH-Meter by direct measurement with standard working solution and direct measurement with certified reference material (CRM)
pH-Meter by comparison with standard thermometer

Calibrated by: Walee Sithiporn

Approved by: [Signature]
Acceptance Signatory

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Cert. No. 2214163
Page: 2 of 2

Result of calibration: () Without adjustment () After adjustment

Function:	DC Voltage measurement	Range	2000	mV	
	Standard Value	UUC Reading		Error	Uncertainty
	(mV)	(mV)		(mV)	(mV)
	200.0000	200.0		0.2	0.2
	150.0000	150.0		0.2	0.2
	100.0000	100.0		0.2	0.2
	50.0000	50.0		0.2	0.2
	20.0000	20.0		0.2	0.2
	10.0000	10.0		0.2	0.2
	5.0000	5.0		0.2	0.2
	2.0000	2.0		0.2	0.2
	1.0000	1.0		0.2	0.2
	0.5000	0.5		0.2	0.2
	0.2000	0.2		0.2	0.2

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %

UUC = Unit Under Calibration

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U 150477



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3 - EQUIPMENT CALIBRATION AND TESTING SERVICES
110/10 Moo 6 T. Maenam Kru, A. Phukdaeng, Rayong 21140, Thailand
Tel: 037-3897347 Fax: 037-3897348

Cert. No. 2214163
Page: 1 of 2

Certificate of Calibration

Equipment:	DO Meter with Sensor
Manufacturer:	YSI
Model:	5100
Serial No.:	15612139
ID No.:	RYG-ENC-40
Submitted by:	ALB Laboratory Group (Thailand) Co., Ltd. Rayong Branch 616/10 Moo 6 T. Maenam Kru, A. Phukdaeng
Location:	TPA Chemistry Calibration Lab 2
Received Order:	18 November 2022
Calibration Date:	21 November 2022
Ambient Temperature:	(26 ± 0.5) °C
Relative Humidity:	(50 ± 3) %
AC Line Voltage:	(220 ± 22) V
Calibrated by:	Waroon Sangpragdee
Approved by:	Thana Sangpragdee Approved Signature
Issue Date:	22 November 2022

The Uncertainty are for a confidence probability of approximately 95 %

UUC = Unit Under Calibration

A 150477



Equipment: DO Meter with Sensor
Condition As-Received: Unit Not
Reference: 211416305C-2

Cert. No. 2214163
Page: 2 of 2

Procedure Used:

Calibration was conducted using in-house calibration procedure CP-0102 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) in the Temperature Bath.
The temperature scale used was based on ITS-90.
Condition of this result of calibration:
1. Reference standard instrument:
Model: 324076
Serial No.: 22042
2. This certificate is valid only for the item calibration on date and place of calibration.
3. This certificate is traceable to the International System of Units.

Result of Calibration: () Without Adjustment

Function: Temperature measurement

This instrument was connected with temperature sensor S/N: 15C100631

Calibration Point (°C)	Immersion Depth (mm)	Standard Temperature (°C)	UUC Reading (°C)	Error (°C)	Uncertainty (°C)	Coverage Factor k
20.00	50	20.003	19.98	0.015	0.15	2.02

UUC = Unit Under Calibration

The reported uncertainty of measurement was based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %

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U 1136618



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3 - EQUIPMENT CALIBRATION AND TESTING SERVICES
110/10 Moo 6 T. Maenam Kru, A. Phukdaeng, Rayong 21140, Thailand
Tel: 037-3897347 Fax: 037-3897348

Cert. No. 2214162
Page: 1 of 2

Certificate of Testing

Equipment:	DO Meter
Manufacturer:	YSI
Model:	5100
Serial No.:	15612139
ID No.:	RYG-ENC-40
Received Date:	18 November 2022
Test Date:	21 November 2022
Reference:	2211416305C-1
Submitted by:	ALB Laboratory Group (Thailand) Co., Ltd. Rayong Branch 616/10 Moo 6 T. Maenam Kru, A. Phukdaeng Rayong 21140, Thailand
Laboratory Condition:	Temperature: (26 ± 0.5) °C Humidity: (50 ± 3) % AC Line Voltage: (220 ± 22) V
Test Procedure:	By Comparison Test with Auto Modulation Method
Tested by:	Waroon Sangpragdee
Approved by:	Thana Sangpragdee Approved Signature
Issue Date:	22 November 2022

UUC = Unit Under Calibration

U 0306951



Condition of this result of calibration

1. Reference Standard Instrument:
The calibration is traceable to the International System of Units through the reference standards laboratory of Industrial Platinum Resistance Thermometer (IPRT) in the Temperature Bath.

Instrument	Serial No.	ID No.	Certificate No.	Due Date
1. Balance	108010	27001089	2114163	20 Sep 2023
2. Balance	110613764	1406004	2114163	20 Sep 2023

Material	Manufacturer	Lot No.	Assay
Sodium Thiosulfate pentahydrate	Merck	AM1763315	1.00 2%

Result: Dissolved Oxygen Meter Adjustment With Air: 100 %

Dissolved Oxygen Probe No.: 16C100631

Titration Method (Auto Modulation Method)	DO Meter Reading (mg/L)	Standard Deviation (mg/L)
0.12	0.12	0.0045

This report was drafted only for the instrument we tested. It is not intended to be used for legal or regulatory purposes. It is intended to be used for internal quality control and to provide information to the organization. It may be considered invalid if it is not signed by the laboratory.

-00-

U 1136612



TECHNOLOGY PROMOTION ASSOCIATION (THAILAND-JAPAN)
CORPORATE SERVICES 3 - EQUIPMENT CALIBRATION AND TESTING SERVICES
110/10 Moo 6 T. Maenam Kru, A. Phukdaeng, Rayong 21140, Thailand
Tel: 037-3897347 Fax: 037-3897348

Cert. No. 2214162
Page: 1 of 2

Certificate of Calibration

Equipment:	Low Temp. Isolator
Manufacturer:	Marconi
Model:	RYG-50
Serial No.:	RYG-50A
ID No.:	RYG-ENC-40
Submitted by:	ALB Laboratory Group (Thailand) Co., Ltd. Rayong Branch 616/10 Moo 6 T. Maenam Kru, A. Phukdaeng, Rayong 21140, Thailand
Location:	BOD Room
Received Order:	29 May 2022
Calibration Date:	29 May 2022
Ambient Temperature:	(26 ± 0.5) °C
Relative Humidity:	(50 ± 3) %
Calibrated by:	Waroon Sangpragdee
Approved by:	Thana Sangpragdee Approved Signature
Issue Date:	2 June 2022

The Uncertainty are for a confidence probability of approximately 95 %

UUC = Unit Under Calibration

U 0306951



Equipment: Low Temp. Isolator
Condition As-Received: Unit Not
Reference: 2205-0880C-2

Cert. No. 2214162
Page: 2 of 2

Procedure Used:
Calibration was conducted using calibration procedure CP-0102 according to comparison with Industrial Platinum Resistance Thermometer (IPRT) in the Temperature Bath.
The temperature scale used was based on ITS-90.

Condition of this result of calibration:

1. Reference standard instrument:

Instrument: Model: 324076 Serial No.: 22042 Due Date: 07 Jul 2023

2. This certificate is valid only for the item calibration on date and place of calibration.

3. This certificate is traceable to the International System of Units.

Result of Calibration: () Without Adjustment

Function of UUC: Temperature measurement

Fresh air setting: Close

Environment during calibration:

Temperature: (26 ± 0.5) °C

Humidity: (50 ± 3) %

AC Supply: 220 V

Position: Beginning

Position: Finished

Position: 1

Position: 2

Position: 3

Position: 4

Position: 5

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Equipment: Hot Air Oven
Condition As-Received: Used Item
Reference: 2210-03780C-1

Cert. No.: 22TM1402
Page: 2 of 3

Procedure Used: Calibration was conducted using in-house calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).
The temperature scale used was based on ITS-90.

Condition of this result of calibration:

1. Reference standard instrument:
Instrument: Model: Serial No.: Cert. No.: Due Date:
1. Data Acquisition: N4702A: MY4425217: 211M20: 23 Dec 2022

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration: () Without Adjustment

Function of UUC: Temperature Source

Fresh air setting: Close

Environment during calibration:

Temp. (°C): 28, 29
REL Humid. (%): 43, 47
AC Supply (V): 222, 221

Position: Ref. Std. ID No.:
1: 18-10RTD-01
2: 18-10RTD-02
3: 18-10RTD-03
4: 18-10RTD-04
5: 18-10RTD-05
6: 18-10RTD-06
7: 18-10RTD-07
8: 18-10RTD-08
9: 18-10RTD-09

Dimension of Chamber:
3 x 5.0 (in): 3 x 5.0 (in)
W x H x D: 40 x 40 x 40 (in)
Capacity: 0.083 m³

Fixed insulation Depth: 5.0 (in)

Dimension of Chamber: 3 x 5.0 (in)

W x H x D: 40 x 40 x 40 (in)

Capacity: 0.083 m³

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Equipment: Hot Air Oven
Condition As-Received: Used Item
Reference: 2210-03780C-1

Cert. No.: 22TM1402
Page: 3 of 3

Procedure Used: Calibration was conducted using in-house calibration procedure CP-OT02 according to direct measurement method with Data Acquisition which connected with Resistance Temperature Detector (RTD).
The temperature scale used was based on ITS-90.

Condition of this result of calibration:

1. Reference standard instrument:
Instrument: Model: Serial No.: Cert. No.: Due Date:
1. Data Acquisition: N4702A: MY4425217: 211M20: 23 Dec 2022

2. This certificate is valid only to the item calibrated on date and place of calibration.

3. This certification is traceable to the International System of Unit.

Result of Calibration: () Without Adjustment

Function of UUC: Temperature Source

Fresh air setting: Close

Environment during calibration:

Temp. (°C): 28, 29
REL Humid. (%): 43, 47
AC Supply (V): 222, 221

Position: Ref. Std. ID No.:
1: 18-10RTD-01
2: 18-10RTD-02
3: 18-10RTD-03
4: 18-10RTD-04
5: 18-10RTD-05
6: 18-10RTD-06
7: 18-10RTD-07
8: 18-10RTD-08
9: 18-10RTD-09

Dimension of Chamber:
3 x 5.0 (in): 3 x 5.0 (in)
W x H x D: 40 x 40 x 40 (in)
Capacity: 0.083 m³

Fixed insulation Depth: 5.0 (in)

Dimension of Chamber: 3 x 5.0 (in)

W x H x D: 40 x 40 x 40 (in)

Capacity: 0.083 m³

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Purpose
This section describes the as found system configurations.

Details

System ID	GA-7
Manufacturer	Agilent Technologies
Name	7360
Tested Combination	
Injection Technique	Manual injection
Insert	Port
Detector	External
LRI Included?	No
Sample 1	
Manufacturer	Agilent Technologies
Type	Manual injection
Usage	Sample injection
Sample Volume (uL)	10
Sample 2	
Manufacturer	Agilent Technologies
Name	7595
Model Number	C3442B
Serial Number	CN14132181
Firmware Revision	0.02.03
Open Type	Standard

Date: June 21, 2022 3:04:12 PM
System ID: DM-7

Manufacturer	Agilent Technologies
Model	7890
Type	SS/SL
Location	Port
Carrier Gas	Helium
Control Type	Electronic Pressure Control
Purge Gas	Purge
Detector 1	
Manufacturer	Agilent Technologies
Name	Mass Spectrometer
Type	Mass Spectrometer
Location	External
Mass Spectrometer 1	
Manufacturer	Agilent Technologies
Type	GC
Name	8877A
Serial Number	13811470259
Firmware Revision	5877 v02.01
High Vacuum System	Turbo Pump
Scouting Flow Standard	CFM 55
MS GC Source 1	
Manufacturer	Agilent Technologies
Source Type	1. Electron
Number of Beams	2

Date: June 31, 2022 2:04:12 PM
System ID: C66.7

Purpose

This signature page was created and published because the ACE sign-off action was executed, which is valid for the entire document, including attachments. The ACE sign-off is an electronic signature that requires two distinct identifier components: unique username and personal password. The Agent representative who has delivered the services underwritten the meaning and legal aspect of an electronic signature. As a trained official operator, the Agent representative has a unique password and login to access ACE and electronically sign this document. (Other e-signatures can be applied to the document using a Document Content Management or other suitable platform defined in your data access and control procedures.)

Details

Full Name of Signer:	Supasak Nimsongtham
Logged On User Name	supasak.nimsongtham@sgiant.com
Signature Creation Date:	June 21, 2022
Reason for Signature	Executed protocol and published its public version of document

Regulatory Disclaimer

This document provides a process to verify and record instrument configuration and evidence of proper operation. It has been prepared from our interpretation of applicable regulations as well as industry best practices. The document is designed to provide an important component of a complete compliance package. Verification depends upon many factors and use of this process alone does not assure compliance. Applied Technologies makes no promises or representations as to its sufficiency for any specific regulatory program.

Warranty

Warranty
Agilent Technologies makes no warranty of any kind to this material, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Agilent Technologies shall not be held for any claims contained herein or be incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Date: June 21, 2022 2:04:12 PM
System ID: 04-7

User Name: kashish.kushnigov@unimelb.edu.au				Report ID: 10817	
Instruments: M0101010101				Print Date: June 23, 2022 04:02:17 PM	
At 0.0000000 Transposition (mg)					
Time	Transposition Rate	Activity Performed	Type of Transposition	Optimal Information	
June 21, 2022 10:28:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:35:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:40:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:45:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:50:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:55:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:00:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:05:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:10:00 AM Ault	Baseline/Control	Baseline	None	None	
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June 21, 2022 8:40:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 8:45:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 8:50:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 8:55:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:00:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:05:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:10:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:15:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:20:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:25:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:30:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:35:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:40:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:45:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:50:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 9:55:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:00:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:05:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:10:00 PM Ault	Baseline/Control	Baseline	None	None	
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June 21, 2022 10:25:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:30:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:35:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:40:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:45:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:50:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 10:55:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:00:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:05:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:10:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:15:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:20:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:25:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:30:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:35:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:40:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:45:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:50:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 11:55:00 PM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:00:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:05:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:10:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:15:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:20:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:25:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:30:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:35:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:40:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:45:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:50:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 12:55:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:00:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:05:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:10:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:15:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:20:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:25:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:30:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:35:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:40:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:45:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:50:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 1:55:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:00:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:05:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:10:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:15:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:20:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:25:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:30:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:35:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:40:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:45:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:50:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 2:55:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:00:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:05:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:10:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:15:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:20:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:25:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:30:00 AM Ault	Baseline/Control	Baseline	None	None	
June 21, 2022 3:35:00 AM Ault	Baseline/Control	Baseline	None		

Date: June 21, 2022 2:04:12 PM
System ID: CM-7

[illegible]

Date: June 25, 2022 7:54:52 PM

[illegible]

Date: June 21, 2022 2:04:12 PM
System ID: GM 7

[illegible]

Date: Apr 21, 2022 2:01:12 PM
 Revision: 01

[illegible]

Date: Apr 24, 2022 2:04:17 PM
System ID: 0567

[illegible]

Date: June 21, 2022 2:04:12 PM
System ID: GM-7

ภาคผนวก ฉ

หนังสืออนุญาตขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
จากกรมโรงงานอุตสาหกรรม



ที่ อก ๐๓๑๐(๑)/ ๑๐๖๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ เขตราชเทวี
กรุงเทพมหานคร ๑๐๔๐๐

๒๕ มกราคม ๒๕๖๕

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๓๐ กรกฎาคม ๒๕๖๓

- สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๑ แผ่น
๒. รายชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ แผ่น
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๑ แผ่น

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอต่ออายุ
หนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔
ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร
ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย)
จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้
ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย ตามสิ่งที่ส่งมาด้วย ๑
ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย ตามสิ่งที่ส่งมาด้วย ๒
ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๕๙ รายการ น้ำใต้ดิน
จำนวน ๑๒๖ รายการ อากาศเสีย ๑๖ รายการ สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน ๓๕ รายการ และดิน
จำนวน ๑๒๕ รายการ รวมทั้งสิ้นจำนวน ๓๖๑ รายการ ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ กันยายน ๒๕๖๖ หากประสงค์จะต่ออายุหนังสือ
รับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอ
ต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์
เอกชน ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ



(นายศิระ จันทร์เจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๒๐๒ ๔๑๔๖ ๐ ๒๒๐๒ ๔๐๐๒

โทรสาร ๐ ๒๓๕๔ ๓๒๐๘ ๐ ๒๓๕๔ ๓๔๑๕

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑)/

ลงวันที่ ๒๕ มกราคม ๒๕๖๕

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ จำนวน ๖ ราย

- ๑) นางสาวยุพพร จันทร์เปล่ง
๒) นางสาวชัชชัย โกมารกุล ณ นคร
๓) นายศรายุทธ จิตรานนท์
๔) นางสาวกนกกร เอนก
๕) นายสุริยา สอนแก้ว
๖) นายวิชาญ ชุนหรีต

ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๐

ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๑

ทะเบียนเลขที่ ว-๒๐๔-ค-๔๗๐๒

ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๑

ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๒

ทะเบียนเลขที่ ว-๒๐๔-ค-๖๑๑๓



(นายศิระ จันทร์เจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแทน
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติการแทนอธิบดีกรมโรงงานอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับข้ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

เลขทะเบียน ว-๒๐๔

ที่ อก ๐๓๑๐(๑) ๑๐๖๕

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๖๒ ราย

๑) นางสาวจินดา โชกุลธรรม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๐๘
๒) นางสาวสาวตรี น้อยเสียม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๐๙
๓) นางสาวชนัญญาญจน์ อิมขม	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๐
๔) นางสาวนรินทร์ สายเส็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๕
๕) นางสาวนันหวดี สมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๖
๖) นางสาวศรัณยา เฉลิมธารงค์	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๗
๗) นางสาวสรารักษ์ มงคลจิรวดี	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๑๘
๘) นางสาวศิริลักษณ์ พึ่งแพง	ทะเบียนเลขที่ ว-๒๐๔-จ-๔๗๒๐
๙) นายพพงศ์ จันทพันธ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๐๘
๑๐) นายนเรศฐ์ โกมลย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๑
๑๑) นายธันวา จริยา	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๔
๑๒) นางสาวเกศรินทร์ แก้วมัน	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๖
๑๓) นางสาวสุวิมล ชัยเรืองวุฒิ	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๗
๑๔) นางสาวสุชาดา ธรรมถาวร	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๑
๑๕) นางสาวเบ็ญจ ชัยเดชธนกุล	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๓
๑๖) นางสาวศศิธร หนูสวัสดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๔
๑๗) นางสาวเสาวลักษณ์ ภูณาอำพร	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๕
๑๘) นายอภิสิทธิ์ สิงหา	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๖
๑๙) นายศักดิ์สิทธิ์ ไพศาลพิสุทธ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๗
๒๐) ว่าที่ร้อยตรีหญิง พรรณิภา ช้างเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๘
๒๑) นางจิตดา คำภูแก้ว	ทะเบียนเลขที่ ว-๒๐๔-จ-๕๕๑๑
๒๒) นางสาวอรรณพ รักษ์ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๑๕
๒๓) นางสาวนพรัตน์ แยมกรานต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๑๕
๒๔) นายจุลเดช วารินทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๐
๒๕) นางสาวดาญรัตน์ ร้องคำ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๑
๒๖) นายนคร สุขเจริญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๒
๒๗) นายบัญชา นามเขตต์	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๓
๒๘) นายพรมมี ศรีปัดเนตร	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๕
๒๙) นายอุทิศ อุ่นลิ้ม	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๖
๓๐) ว่าที่ร้อยตรี เฉลิมเกียรติ อมรศรีเสริม	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๘
๓๑) นางสาววริยา สร้างนา	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๒๙
๓๒) นายอนุพงศ์ รัตนศรีประเสริฐ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๑๓๐
๓๓) นางสาวจุฑารัตน์ โอนสันเทียะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๖๒๕๒
๓๔) นางสาวจาวรรณ พิมพ์อุกฤติยา	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๗๖

(นายศิระ จันทร์เลิศ)

๓๕) นางสาวปรางค์ทิพย์...

นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการการแพทย์
ผู้อำนวยการกองวิจัยและเชื่อมกับภาคพันธกิจ
ปศุสัตว์และสุขภาพสัตว์ปีกและปศุสัตว์

- ๒ -

๓๕) นางสาวปรางค์ทิพย์ กิจไพศาลศักดิ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๗๘
๓๖) นางสาวเดือนใจ ทางกลาง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๐
๓๗) นางสาวจิราพร ศิริเวช	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๒
๓๘) นายวรกร ผูกรักษ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๓
๓๙) นายทง วิริยะสหกิจ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๔
๔๐) นายธนิต เจนจบ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๕
๔๑) นายคณิศร ข้าเพชร	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๖
๔๒) นายอรรคพล นิยมวิทยาพันธ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๗
๔๓) นายภูวิช พรหมสะอาด	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๘
๔๔) นายธนเดช โภคาพิพัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๘๙
๔๕) นายชวฤทธิ์ วงษ์จันทร์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๐
๔๖) นายอาทิตย์ ศรีเสน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๑
๔๗) นายเจตตินทร์ คงศักดิ์ไทย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๒
๔๘) นายจรัส บุญยั้ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๕
๔๙) นายธนาบดี เอนก	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๖
๕๐) นายอภิวัฒน์ ทุมทุม	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๗
๕๑) นางสาวสุภาขวัญ มาก	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๐๙๘
๕๒) นางสาวทิติพร ขวาลสมบูรณ์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๐
๕๓) นางสาวธิดา บุญเพ็ง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๑
๕๔) นางสาวกนกพร เข้มเพชร	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๒
๕๕) นางสาวพัชรียา หงษ์สมดี	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๓
๕๖) นางสาวภาณิดา สุรวงศ์ตระกูล	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๔
๕๗) นางสาวภาณุมาศ นามวัฒน์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๕
๕๘) นางสาวอุไรรัตน์ ทั้งสร้างแป้น	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๖
๕๙) นายธีรวัฒน์ ปวงสุข	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๗
๖๐) นายอิทธิพล ยะโส	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๘
๖๑) นายประพนธ์ วรรณสุขชัย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๐๙
๖๒) นายชยธร พงทิพย์	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๐
๖๓) นางสาวกนกวรรณ จันทบาล	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๑
๖๔) นางสาวเกษร หลีกบุญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๒
๖๕) นายสิทธิโชค ธงเงิน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๑๑๓
๖๖) นางศิวารวรรณ ใจบุญ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๕
๖๗) นางสาวพรรณธิดา ทุมคง	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๘
๖๘) นางสาวศรณีย์ ยิ่งดี	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๐๙
๖๙) นายวาทิร ศรีวิริยะ	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๐
๗๐) นายสุวิชา ทองอ่อน	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๑
๗๑) นายวิญญู บุญตะนิย	ทะเบียนเลขที่ ว-๒๐๔-จ-๗๕๑๓

(นายศิระ จันทร์เลิศ)

๗๒) นายสมบูรณ์...

นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการการแพทย์
ผู้อำนวยการกองวิจัยและเชื่อมกับภาคพันธกิจ
ปศุสัตว์และสุขภาพสัตว์ปีกและปศุสัตว์

๓๒) นายสมบุญณ์ บุตรจันทร์
๓๓) นายวิรัตน์ ไชยชนะรา
๓๔) นายอนุเบศน์ เพิ่มพูน
๓๕) นายจิรณัฐ ขาวล่ออ
๓๖) นายสมโภช วันสา
๓๗) นายอัสรี นามบุรี
๓๘) นายณัฐนันท์ ปามประเสริฐ
๓๙) นายอัครเวศ จ่อสาว
๔๐) นายประเสริฐ สุระขันธ
๔๑) นายบุญลือ จันทร์เนียม
๔๒) นายพีรพงษ์ ทองคุณปรีดา
๔๓) นายอนุพล ทองนุช
๔๔) นายอนุวัฒน์ ม่วงแพ
๔๕) นายเจตศราวุฒิ ปิตตะมะ
๔๖) นายภุชณะ สายวรรณ
๔๗) นายพิชัย บุญยงค์
๔๘) นายกาญจน์ศักดิ์ โสมวงศ์
๔๙) นายสามารถ คุ่มปลี
๕๐) นายสัญญาชัย โกศรีนาม
๕๑) นายณัฐวุฒิ ศรีประเสริฐ
๕๒) นายวุฒิธัช นาคพรม
๕๓) นายพงศธร ชัยทิพย์
๕๔) ว่าที่ร้อยตรี ภาณุพงศ์ แสนศรี
๕๕) นายสิทธิโชค ทาศิตา
๕๖) นายธนากร อินสุตา
๕๗) นางสาววรมณิษา ขาติวันชัย
๕๘) นางสาวพิมพ์ตะวัน มีนาฏกุล
๕๙) นางสาวเพชรรัตน์ สิงห์สมบุญ
๑๐๐) นางสาวญานิน พรหมจันทร์
๑๐๑) นายกิตติ ทวีราช
๑๐๒) นายจักริน หมั่นวิชา
๑๐๓) นายฉัตรชัย สุขเปี้ย
๑๐๔) นายธนรนต์ ต๊ะทองคำ
๑๐๕) นายศุภพล สมนอก
๑๐๖) นายทักษ์ดนัย อุบลศรี
๑๐๗) นายธนศร นามะกุลณา
๑๐๘) นายอิทธิพงศ์ บัวแดง

[illegible]

(นายศิระ จันทรเจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการฯ รักษาราชการแทน

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน

เปิดโครงการแพทย์ถึงเตียงผู้ป่วยบางเขน

๑๐๙) นายนนทชัย...

๑๐๙) นายธนพชัย อุบัติ่ม
 ๑๑๐) นายนิรุทธ คุณสุทธิ
 ๑๑๑) นายนิพนธ์วัฒน์ สาริน
 ๑๑๒) นายปิยะนัฐ พลมะศรี
 ๑๑๓) นายพงศ์สิริ โสมเขียว
 ๑๑๔) นายพีรพัฒน์ กำคำ
 ๑๑๕) นายภานุพงศ์ มานิตย์
 ๑๑๖) นายมงคล ผลาพิทย์
 ๑๑๗) นายมนินทร พูลศิริ
 ๑๑๘) นายสิรินนท์ ทองชั้น
 ๑๑๙) นายอนชา พันสมัย
 ๑๒๐) นายอดิศักดิ์ ผมไผ
 ๑๒๑) นายอนันตชัย วิสม
 ๑๒๒) นายณัฐดนัย เจือละออง
 ๑๒๓) นายวรวิธ ตีนัก
 ๑๒๔) นายแสงตะวัน นตะสัถ
 ๑๒๕) นายยุทธพงศ์ รัตนะ
 ๑๒๖) นายชัยวุฒิ ไชยชนะ
 ๑๒๗) นายวิศรุต ศรีธรรมมา
 ๑๒๘) นายนทกร เผือกผ่อง
 ๑๒๙) นายกัมชัย สุทธะ
 ๑๓๐) นางสาวณัฐภรณ์ รักทะเล
 ๑๓๑) นางสาวประภาภรณ์ บุตรพรม
 ๑๓๒) นางสาวนิลาวัลย์ นามพรม
 ๑๓๓) นางสาวพัชรินทร์ แสนสร้อย
 ๑๓๔) นายไพรัชย์ เปี่ยมพิมาย
 ๑๓๕) นางสาวศุภมาศ ทองมาก
 ๑๓๖) นางสาวลลิตา จิตรสว่าง
 ๑๓๗) นางสาวไข่มพร เล็กภูเขียว
 ๑๓๘) นางสาวกฤติมาพร คำมีแก่น
 ๑๓๙) นางสาวสกลรัตน์ ภาควงมี
 ๑๔๐) นางสาวกาญจนา ภาควงมี
 ๑๔๑) นางสาวไพโรจน์ ศรีรูป
 ๑๔๒) นางสาวทิเนตร ฟูปัญญา
 ๑๔๓) นางสาวสาธิตา ปานทอง
 ๑๔๔) นางสาวอริสา ทองนวล
 ๑๔๕) นางสาวอรยา คำคล่อง

[illegible]

(นายศิริระ จันทรเจิต)

นักวิทยาศาสตร์ชำนาญการพิเศษ รักษาการแพทย์

ผู้ช่วยกรรมการกองวิจัยและเชื่อมกับมลพิษโรงงาน

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๑๕๖) นางสาวชดาภรณ์...

๑๔๖) นางสาวชุตารณ สุนทรสนาน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๕
๑๔๗) นางสาวสุดารัตน์ นนทประสาธ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๖
๑๔๘) นางสาวรัชนิกร เนียมกลาง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๗
๑๔๙) นางสาวกัญญารัตน์ ศรีปลาทา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๘
๑๕๐) นางสาวอัญชลี คำจันทร์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๙
๑๕๑) นายบุญฤทธิ์ เอี่ยมเทศ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๐
๑๕๒) นายศิริวัฒน์ พานิชย์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๑
๑๕๓) นางสาวศุภรดา ปันมยุรา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๒
๑๕๔) นางสาวพายุติ คุณนนาน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๓
๑๕๕) นางสาวจิราเจต ฟองดา	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๔
๑๕๖) นางสาวกนกภรณ์ ชูระ	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๕
๑๕๗) นางสาวอารยา มีชัย	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๖
๑๕๘) นางสาวจิตสุภา ประเทืองสุข	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๗
๑๕๙) นางสาวอริสา วิริยขันติธรรม	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๘
๑๖๐) นางสาววิษุตา นาคผดุง	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๙
๑๖๑) นางสาวพนิดา ยอดอินทร์	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๕๐
๑๖๒) นางสาวนันทยา จันทะลุน	ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๕๑



(นายศิระ จันทร์เจ็ด)

นักวิทยาศาสตร์ชำนาญการพิเศษ วิชาการการแพทย์
ผู้อำนวยการกองวิจัยและเคอีนกับมลพิษโรงงาน
ปฏิบัติการการปนเปื้อนในสิ่งแวดล้อมจากอุตสาหกรรม

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอลแอลเอส แลบลอราทอรี กรุป (ประเทศไทย) จำกัด

เลขทะเบียน ๖-๒๐๔

ที่อก ๐๓๑๐(๑)/ ๑๐๖๕

ลงวันที่ ๒๘ มกราคม ๒๕๖๕

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๖๑ รายการ

น้ำเสีย จำนวน 59 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldicarb	High-Performance Liquid Chromatographic Method ^[4]
2	Aldicarb Sulfone	High-Performance Liquid Chromatographic Method ^[4]
3	Aldicarb Sulfoxide	High-Performance Liquid Chromatographic Method ^[4]
4	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
5	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
6	Barium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
7	α-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
8	β-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
9	δ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
10	γ-BHC	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
11	Biochemical Oxygen Demand	1) 5-Day BOD Test, Azide Modification Method ^[4] 2) 5-Day BOD Test, Membrane Electrode Method ^[4]
12	Carbaryl	High-Performance Liquid Chromatographic Method ^[4]
13	Carbofuran	High-Performance Liquid Chromatographic Method ^[4]
14	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
15	Chemical Oxygen Demand	1) Closed Reflux, Colorimetric Method ^[4] 2) Closed Reflux, Titrimetric Method ^[4]
16	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
17	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4]
18	Color	ADMI Weighted-Ordinate Spectrophotometric Method



(นางริกาญจน์ จัตรสกุลวิไล)

19 Copper...

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
และทะเบียนห้องปฏิบัติการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
19	Copper	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
20	Cyanide	Distillation, Colorimetric Method ^[4]
21	2,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
22	4,4'-DDD	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
23	2,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
24	4,4'-DDE	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
25	2,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
26	4,4'-DDT	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
27	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
28	Endosulfan Sulfate	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
29	Endosulfan I	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
30	Endosulfan II	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
31	Endrin	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
32	Endrin Aldehyde	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
33	Formaldehyde	Distillation, Colorimetric Method ^[3]
34	Free Chlorine	1) DPD Ferrous Titrimetric Method ^[4] 2) Iodometric Method ^[4]
35	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
36	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
37	Hexavalent Chromium	Filtration, Colorimetric Method ^[4]
38	3-Hydroxycarbofuran	High-Performance Liquid Chromatographic Method ^[4]
39	Lead	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
40	Manganese	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
41	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[4] 2) Digestion, Inductively Coupled Plasma/Mass spectrometric Method ^[4]
42	Methiocarb	High-Performance Liquid Chromatographic Method ^[4]
43	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]

วิมล
(นางริกาญจน์ ฉัตรสกุลวิไล)
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กระทรวงมหาดไทย

44 Methomyl...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
44	Methomyl	High-Performance Liquid Chromatographic Method ^[4]
45	Nickel	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
46	Oil & Grease	1) Liquid-Liquid, Partition-Gravimetric Method ^[4] 2) Soxhlet Extraction Method ^[4]
47	Oxamyl	High-Performance Liquid Chromatographic Method ^[4]
48	Propoxur	High-Performance Liquid Chromatographic Method ^[4]
49	pH	Electrometric Method ^[4]
50	Phenols	1) Distillation, Chloroform Extraction Method ^[4] 2) Distillation, Direct Photometric Method ^[4]
51	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
52	Sulfide	Iodometric Method ^[4]
53	Temperature	Laboratory and Field Methods ^[4]
54	Total Dissolved Solids	Dried at 180 °C ^[4]
55	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method ^[4]
56	Total Suspended Solids	Dried at 103-105 °C ^[4]
57	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic Method ^[4]
58	Trivalent Chromium	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation ^[4]
59	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[4]

น้ำใต้ดิน จำนวน 126 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]

วิมล
(นางริกาญจน์ ฉัตรสกุลวิไล)
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กระทรวงมหาดไทย

3 Aldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
3	Aldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
4	Anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
5	Antimony	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
7	Atrazine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
8	Barium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
9	Benz(a)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
11	Benzo(b)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
12	Benzo(k)fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
13	Benzoic Acid	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
14	Benzo(a)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
15	Benzo[g,h,i]perylene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
17	Bis(2-chloroethyl)ether	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]

วิมล

18 Bis(2-ethylhexyl)phthalate...

(นางริกาญจน์ อัครสกุลวิไล)

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และเคมีสิ่งแวดล้อม

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
18	Bis(2-ethylhexyl)phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
21	Butanol	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
22	Butyl Benzyl Phthalate	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[4]
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
24	Carbazole	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
27	Chlordane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
28	p-Chloroaniline	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
32	2-Chlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
33	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]

วิมล

34 Chromium (III)...

(นางริกาญจน์ อัครสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบพิษ
และเคมีสิ่งแวดล้อม

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Colorimetric Method; Calculation ^[4]
35	Chromium (VI)	Colorimetric Method ^[4]
36	Chrysene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
37	Cyanide	Distillation, Colorimetric Method ^[4]
38	2,4-D	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
39	DDD	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
40	DDE	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
41	DDT	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
42	Dibenz(a,h)anthracene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
43	Di-n-Butyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
47	3,3-Dichlorobenzidine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]

วิมล

51 cis-1,2-Dichloroethylene...

(นางริภาณูจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
กรมควบคุมมลพิษ/ปบช.ปช.

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
53	2,4-Dichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
57	Dieldrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
58	Diethyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
59	2,4-Dimethylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
60	2,4-Dinitrophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
61	2,4-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
62	2,6-Dinitrotoluene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
63	Di-n-Octyl Phthalate	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
64	Endosulfan	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
65	Endrin	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
67	Fluoranthene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]

วิมล

68 Fluorene...

(นางริภาณูจน์ ฉัตรสกุลวิไล)

ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
กรมควบคุมมลพิษ/ปบช.ปช.

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
68	Fluorene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
69	Heptachlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
70	Heptachlor epoxide	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
71	Hexachlorobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
73	n-Hexane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
74	α -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
75	β -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
76	γ -HCH	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
77	Hexachlorocyclopentadiene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
78	Hexachloroethane	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
79	Indeno(1,2,3-cd)pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
80	Isophorone	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
81	Lead	1) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾
82	Manganese	1) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾
83	Mercury	1) Cold Vapor Atomic Absorption Spectrometric Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾

(นางริกาญจน์ ฉัตรสกุลวิไล)
ผู้อำนวยการศูนย์มาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
กรมควบคุมมลพิษ


84 Methanol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	1) Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾ 2) Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
85	Methoxychlor	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
86	Methyl Bromide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
87	Methylene Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
88	2-Methylphenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
89	2-Methylnaphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
91	Naphthalene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
92	Nickel	1) Digestion, Inductively Coupled Plasma Method ⁽⁴⁾ 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ⁽⁴⁾
93	Nitrobenzene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
94	N-Nitrosodiphenylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
95	N-Nitrosodi-n-Propylamine	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾
96	Polychlorinated Biphenyls - PCB 1016 - PCB 1221 - PCB 1232 - PCB 1242 - PCB 1248 - PCB 1254 - PCB 1260	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ⁽⁴⁾

(นางริกาญจน์ ฉัตรสกุลวิไล)
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กรมควบคุมมลพิษ

97 Pentachlorophenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
97	Pentachlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
98	pH	Electrometric Method ^[4]
99	Phenanthrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
100	Phenol	1) Distillation, Direct Photometric Method ^[4] 2) Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
101	Pyrene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
102	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
103	Silver	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
104	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
105	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
106	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
107	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
108	Toxaphene	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
109	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[13,24]
110	TPH (C ₈ -C ₁₆)	Solvent Extraction, Gas Chromatographic Method ^[9,21]
111	TPH (C ₁₆ -C ₃₅)	Solvent Extraction, Gas Chromatographic Method ^[9,21]
112	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
113	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]


 (นางริกาญจน์ จัตรสกุลจิไล)
 ผู้อำนวยการศูนย์มาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
 และทะเบียนห้องปฏิบัติการ

114 1,1,2-Trichloroethane...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
114	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
115	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
116	2,4,5-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
117	2,4,6-Trichlorophenol	Liquid-Liquid Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[4]
118	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
119	Vanadium	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]
120	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
121	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
122	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
123	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
124	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
125	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[4]
126	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[4] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[4]


อากาศเสีย (ปล่อยระบาย) จำนวน 16 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Antimony	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
2	Arsenic	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]


 (นางริกาญจน์ จัตรสกุลจิไล)
 ผู้อำนวยการศูนย์มาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
 และทะเบียนห้องปฏิบัติการ

3 Carbon Monoxide...


ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
3	Carbon Monoxide	1) Sampling Bag Non-Dispersive Infrared Method ^[5] 2) Non-Dispersive Infrared Method ^[5] 3) Instrumental Analyzer Method ^[5]
4	Chlorine	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
5	Copper	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
6	Dioxins	Isokinetic Sampling, Analysis by ISO/IEC 17025 Accredited Laboratory or Analysis by Department of Industrial Works Registered Laboratory (Dioxins/Furans Analysis Approved) ^[5]
7	Hydrogen Chloride	1) Absorption Sampling, Ion Chromatographic Method ^[5] 2) Isokinetic Sampling, Ion Chromatographic Method ^[5]
8	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ^[5]
9	Lead	Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
10	Mercury	1) Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[5] 2) Isokinetic, Digestion, Inductively Coupled Plasma Method ^[5]
11	Opacity	Ringelmann's Method ^[2]
12	Oxides of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method ^[5] 2) Chemiluminescence Method ^[5] 3) Instrumental Analyzer Method ^[5]
13	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method ^[5] 2) UV Fluorescence Method ^[5] 3) Instrumental Analyzer Method ^[5]
14	Sulfuric Acid	Isokinetic Sampling, Barium-Thorin Titrimetric Method ^[5]
15	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method ^[5]
16	Xylene	Adsorption Sampling, Gas Chromatographic Method ^[5]


 (นางรวิภาญจน์ จิตตกุลวิไล)
 ผู้อำนวยการกลุ่มมาตรฐานวิธีการวิเคราะห์ที่คลองบางลำพู

สิ่งปฏิกูล...

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 35 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Aldrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
2	Antimony	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
3	Arsenic	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
4	Barium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
5	Beryllium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]


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 และทะเบียนห้องปฏิบัติการ

6 Cadmium...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
6	Cadmium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
7	Chlordane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,19,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
8	Chromium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
9	Chromium (III)	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,6,15,17] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation Method ^[1,6,16,17] 3) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,15,17] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,16,17]
10	Chromium (VI)	1) Waste Extraction, Colorimetric Method ^[1,6,17] 2) Alkaline Digestion, Colorimetric Method ^[8,17]

วิมล

(นางริภาญจน์ ฉัตรสกุลวิไล)

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กรมควบคุมมลพิษ

11 Cobalt...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
11	Cobalt	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
12	Copper	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
13	2,4-D	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
14	DDD	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
15	DDE	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
16	DDT	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25]

วิมล

(นางริภาญจน์ ฉัตรสกุลวิไล)

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2) Soxhlet...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
17	Dieldrin	2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
18	Endrin	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
19	Heptachlor	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
20	Lead	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
21	Lindane	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
22	Mercury	1) Waste Extraction, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[1,6,18]

วิธีวิเคราะห์

2) Waste Extraction...

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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
23	Methoxychlor	2) Waste Extraction, Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method ^[1,6,19] 3) Waste Extraction, Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[1,6,20] 4) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[18] 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method ^[19] 6) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[20] 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
24	Mirex	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
25	Molybdenum	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
26	Nickel	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]


วิธีวิเคราะห์

27 Polychlorinated...

(นางริภาณูจน์ ฉัตรสกุลวิไล)


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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
27	Polychlorinated biphenyls (PCBs) - Aroclor 1016 - Aroclor 1221 - Aroclor 1232 - Aroclor 1242 - Aroclor 1248 - Aroclor 1254 - Aroclor 1260 - 2-Chlorobiphenyl - 2,3-Dichlorobiphenyl - 2,2',5-Trichlorobiphenyl - 2,4',5-Trichlorobiphenyl - 2,2',3,5'-Tetrachlorobiphenyl - 2,2',5,5'-Tetrachlorobiphenyl - 2,3',4,4'-Tetrachlorobiphenyl - 2,2',3,4,5'-Pentachlorobiphenyl - 2,2',4,5,5'-Pentachlorobiphenyl - 2,3,3',4',6-Pentachlorobiphenyl - 2,2',3,4,4',5'-Hexachlorobiphenyl - 2,2',3,4,5,5'-Hexachlorobiphenyl - 2,2',3,5,5',6-Hexachlorobiphenyl - 2,2',4,4',5,5'-Hexachlorobiphenyl - 2,2',3,3',4,4',5-Heptachlorobiphenyl - 2,2',3,4,4',5,5'-Heptachlorobiphenyl - 2,2',3,4,4',5',6-Heptachlorobiphenyl - 2,2',3,4',5,5',6-Heptachlorobiphenyl - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method ^[1,9,23] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,23] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]


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28 Pentachlorophenol...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
28	Pentachlorophenol	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
29	pH	Electrometric Method ^[29,30]
30	Selenium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
31	Silver	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16]
32	Thallium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
33	Toxaphene	1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method ^[1,9,25] 2) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 3) Automated Soxhlet Extraction, Gas Chromatographic Method ^[22,31]
34	Vanadium	1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15]


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4) Digestion...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
35	Zinc	4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16] 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method ^[1,6,15] 2) Waste Extraction, Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[1,6,16] 3) Digestion, Inductively Coupled Plasma Method ^[7,15] 4) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]

ดิน จำนวน 125 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Acenaphthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
2	Acetone	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
3	Aldrin	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
4	Anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
5	Antimony	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
6	Arsenic	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
7	Atrazine	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
8	Barium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]

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9 Benz(a)anthracene...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
9	Benz(a)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
10	Benzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
11	Benzo(b)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
12	Benzo(k)fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
13	Benzoic acid	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
14	Benzo(a)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
15	Benzo(g,h,i)perylene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
16	Beryllium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
17	Bis(2-chloroethyl)ether	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
18	Bis(2-ethylhexyl)phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
19	Bromodichloromethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
20	Bromoform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
21	Butanol	Equilibrium Headspace, Gas Chromatographic/ Mass Spectrometric Method ^[12,24]
22	Butyl Benzyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
23	Cadmium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
24	Carbazole	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
25	Carbon Disulfide	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]

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26 Carbon tetrachloride...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
26	Carbon tetrachloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
27	Chlordane	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
28	p-Chloroaniline	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
29	Chlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
30	Chlorodibromomethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
31	Chloroform	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
32	2-Chlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
33	Chromium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
34	Chromium (III)	1) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,15,17] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation Method ^[7,8,16,17]
35	Chromium (VI)	Alkaline Digestion, Colorimetric Method ^[8,17]
36	Chrysene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
37	Cyanide	Extraction, Distillation, Colorimetric Method ^[26,27,28]
38	2,4-D	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
39	DDD	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]

วิมล
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40 DDE...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
40	DDE	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
41	DDT	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
42	Dibenz(a,h)anthracene	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
43	Di-n-Butyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
44	1,2-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
45	1,3-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
46	1,4-Dichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
47	3,3-Dichlorobenzidine	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
48	1,1-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
49	1,2-Dichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
50	1,1-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
51	cis-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
52	trans-1,2-Dichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
53	2,4-Dichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
54	1,2-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
55	1,3-Dichloropropane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
56	1,3-Dichloropropene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]

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57 Dieldrin...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
57	Dieldrin	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
58	Diethyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
59	2,4-Dimethylphenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
60	2,4-Dinitrophenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
61	2,4-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
62	2,6-Dinitrotoluene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
63	Di-n-Octyl Phthalate	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
64	Endosulfan	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
65	Endrin	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
66	Ethylbenzene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
67	Fluoranthene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
68	Fluorene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
69	Heptachlor	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
70	Heptachlor Epoxide	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]

71 Hexachlorobenzene...
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ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
71	Hexachlorobenzene	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
72	Hexachloro-1,3-butadiene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
73	n-Hexane	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
74	α -HCH	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
75	β -HCH	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
76	γ -HCH	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
77	Hexachlorocyclopentadiene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
78	Hexachloroethane	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
79	Indeno(1,2,3-cd)pyrene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
80	Isophorone	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
81	Lead	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
82	Manganese	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
83	Mercury	1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method ^[18]

2) Thermal...
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ศูนย์มาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
84	Methanol	2) Thermal Decomposition, Amalgamation, and Atomic Absorption Spectrophotometry ^[19]
85	Methoxychlor	3) Digestion, Cold-Vapor Atomic Fluorescence Spectrometric Method ^[20]
86	Methyl Bromide	Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method ^[12,24]
87	Methylene Chloride	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22]
88	2-methylphenol	2) Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
89	2-Methylnaphthalene	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
90	Methyl tert-Butyl Ether	Purge and Trap, Gas Chromatographic/Mass Spectrometric Method ^[14,24]
91	Naphthalene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
92	Nickel	1) Digestion, Inductively Coupled Plasma Method ^[7,15]
93	Nitrobenzene	2) Digestion, Inductively Coupled Plasma/Mass Spectrometric Method ^[7,16]
94	N-Nitrosodiphenylamine	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
95	N-Nitrosodi-n-propylamine	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
96	Polychlorinated biphenyls (PCBs)	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,23]
	- Aroclor 1016	2) Automated Soxhlet Extraction, Gas Chromatographic Method ^[23,32]
	- Aroclor 1221	
	- Aroclor 1232	

อัทฉะ
(นางริกาญจน์ ฉัตรสกุลวิไล)
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- Aroclor 1242...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
	- Aroclor 1242	
	- Aroclor 1248	
	- Aroclor 1254	
	- Aroclor 1260	
	- 2-Chlorobiphenyl	
	- 2,2',3,5'-Tetrachlorobiphenyl	
	- 2,2',5,5'-Tetrachlorobiphenyl	
	- 2,3',4,4'-Tetrachlorobiphenyl	
	- 2,2',3,4,5'-Pentachlorobiphenyl	
	- 2,2',4,5,5'-Pentachlorobiphenyl	
	- 2,3,3',4,6'-Pentachlorobiphenyl	
	- 2,2',3,4,4',5'-Hexachlorobiphenyl	
	- 2,2',3,4,5,5'-Hexachlorobiphenyl	
	- 2,2',3,5,5',6'-Hexachlorobiphenyl	
	- 2,2',4,4',5,5'-Hexachlorobiphenyl	
	- 2,2',3,3',4,4',5'-Heptachlorobiphenyl	
	- 2,2',3,4,4',5,5'-Heptachlorobiphenyl	
	- 2,2',3,4,4',5',6'-Heptachlorobiphenyl	
	- 2,2',3,4',5,5',6'-Heptachlorobiphenyl	
	- 2,2',3,3',4,4',5,5',6'-Nonachlorobiphenyl	
97	Pentachlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
98	Phenanthrene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
99	Phenol	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]
100	Pyrene	Automated Soxhlet Extraction, Gas Chromatographic/Mass Spectrometric Method ^[25,31]

อัทฉะ
(นางริกาญจน์ ฉัตรสกุลวิไล)
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และทะเบียนห้องปฏิบัติการ

101 Selenium...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
101	Selenium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
102	Silver	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
103	Styrene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
104	1,1,2,2-Tetrachloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
105	Tetrachloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
106	Toluene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
107	Toxaphene	1) Soxhlet Extraction, Gas Chromatographic Method ^[10,22] 2) Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
108	TPH (C ₅ -C ₈)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
109	TPH (C ₈ -C ₁₆)	1) Solvent Extraction, Gas Chromatographic Method ^[11,21] 2) Automated Soxhlet Extraction, Gas Chromatographic Method ^[21,31]
110	TPH (C ₁₆ - C ₃₅)	1) Solvent Extraction, Gas Chromatographic Method ^[11,21] 2) Automated Soxhlet Extraction, Gas Chromatographic Method ^[21,31]
111	1,2,4-Trichlorobenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
112	1,1,1-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
113	1,1,2-Trichloroethane	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
114	Trichloroethylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
115	2,4,5-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]

วิมล

116 2,4,6-Trichlorophenol...

(นางริกาญจน์ ด้ตรสกุลวิไล)

ผู้อำนวยการศูนย์มาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
116	2,4,6-Trichlorophenol	Automated Soxhlet Extraction, Gas Chromatographic/ Mass Spectrometric Method ^[25,31]
117	1,3,5-Trimethylbenzene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
118	Vanadium	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]
119	Vinyl Acetate	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
120	Vinyl Chloride	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
121	m-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
122	o-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
123	p-Xylene	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
124	Xylene (Total)	Purge and Trap, Gas Chromatographic/ Mass Spectrometric Method ^[14,24]
125	Zinc	1) Digestion, Inductively Coupled Plasma Method ^[7,15] 2) Digestion, Inductively Coupled Plasma/ Mass Spectrometric Method ^[7,16]

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
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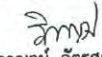
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และทะเบียนห้องปฏิบัติการ

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ กองวิจัยและเตือนภัยมลพิษโรงงาน กรมโรงงานอุตสาหกรรม โทร. ๐ ๒๒๐๒ ๔๐๐๒, ๔๑๔๖

ที่ อก ๐๓๓๐(๑)/ ๕ ๓ ๗ ๕



กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๐ ๙ มีนาคม ๒๕๖๖

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๔ กุมภาพันธ์ ๒๕๖๖

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการ
วิเคราะห์เอกชน เลขทะเบียน ๖-๒๐๔ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ
เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

๑. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๙ ราย

- | | |
|---------------------------------|----------------------------|
| ๑) นายนคร สุขเจริญ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๒ |
| ๒) นายบัญชา นามเขตต์ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๖๑๒๓ |
| ๓) นายอรรถพล นิยมวิทย์พันธ์ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๐๘๗ |
| ๔) นางสาวพัชรียา หงษ์สมดี | ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๓ |
| ๕) นางสาวภาวนิดา สุรวงศ์ตระกูล | ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๑๐๔ |
| ๖) นางสาวศรณีย์ ยิงค์ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๐๔ |
| ๗) นายสมโภช วันสา | ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๕๑๔ |
| ๘) นายณัฐนันท์ บานประเสริฐ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๘๑๔ |
| ๙) ว่าที่ร้อยตรีภาณุพงศ์ แสนศรี | ทะเบียนเลขที่ ๖-๒๐๔-จ-๗๘๓๖ |
| ๑๐) นายมนันท์ พูลศิริ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๘๖๐๒ |
| ๑๑) นายณัฐดนัย เจือละออง | ทะเบียนเลขที่ ๖-๒๐๔-จ-๘๖๐๗ |
| ๑๒) นางสาวกาญจนา คงคุณ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๒๙ |
| ๑๓) นางสาวรัชันกร นิยมกลาง | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๗ |
| ๑๔) นางสาวกัญญารัตน์ ศรีนิลหา | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๓๘ |
| ๑๕) นายศิริวัฒน์ พานิชย์ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๑ |
| ๑๖) นางสาวกนกภรณ์ อูระ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๕ |
| ๑๗) นางสาวจิตสุภา ประเทืองสุข | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๗ |
| ๑๘) นางสาวอริสา วิริยขันตธรรม | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๔๘ |
| ๑๙) นางสาวพนิดา ยอดอินทร์ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๙๒๕๐ |

๒. ให้เพิ่มเจ้าหน้าที่...

-๒-

๒. ให้เพิ่มเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ ราย

- | | |
|-----------------------------|----------------------------|
| ๑) นายภาณุวัฒน์ กิตติคุณชัย | ทะเบียนเลขที่ ๖-๒๐๔-จ-๐๐๐๑ |
| ๒) นายภัทรพล สว่างใจธรรม | ทะเบียนเลขที่ ๖-๒๐๔-จ-๐๐๐๒ |
| ๓) นายราธิป เทือกชัยคำ | ทะเบียนเลขที่ ๖-๒๐๔-จ-๐๐๐๓ |
| ๔) นายศิริโชค พงษ์ประสม | ทะเบียนเลขที่ ๖-๒๐๔-จ-๐๐๐๔ |
| ๕) นายณัฐวุฒิ คิวแพง | ทะเบียนเลขที่ ๖-๒๐๔-จ-๐๐๐๕ |

อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ที่ อก ๐๓๓๐(๑)/๑๐๖๙ ลงวันที่ ๒๘ มกราคม ๒๕๖๙ คือในวันที่ ๒ กันยายน ๒๕๖๖ ทั้งนี้ สามารถยื่นคำขอ
ผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code ท้ายหนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

วิมล

(นางริกาณัฐณี ฉัตรสกุลโต)

นักวิทยาศาสตร์ชำนาญการพิเศษ รัชการราชนครินทร์
ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๔๙

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



อุตสาหกรรมก้าวหน้า ประเทศไทยก้าวหน้า ร่วมกันพัฒนาอุตสาหกรรมสีเขียว





ที่ อก ๐๓๑๐(๑)/ ๖ ๑๒ ๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๓ มีนาคม ๒๕๖๖

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๑๐ มีนาคม ๒๕๖๖

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๒๐๕ สถานที่ตั้งเลขที่ ๑๐๔ ซอยพัฒนาการ ๔๐ ถนนพัฒนาการ แขวงพัฒนาการ เขตสวนหลวง กรุงเทพมหานคร ขอเปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้เปลี่ยนแปลงชื่อเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จากเดิม นางสาวสรารัตน์ มงคลจิรวิทย์ ทะเบียนเลขที่ ว-๒๐๕-จ-๔๗๑๔ เป็น นางสาวธัญญธร มงคลจิรวิทย์ ทะเบียนเลขที่ ว-๒๐๕-จ-๔๗๑๔

ทั้งนี้ หากท่านมีความประสงค์จะยื่นคำขอใดๆ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code ห้ายหน้หนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(นายประสม คำพงษ์)
ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเฝ้าระวังมลพิษโรงงาน

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ

โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕

โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๑๔

ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th



ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์



กรมโรงงานอุตสาหกรรม กระทรวงอุตสาหกรรม กรุงเทพมหานคร



คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน

แบบ ปอ.1

วันที่ 4 เดือน สิงหาคม พ.ศ. 2566

ข้าพเจ้า () ผู้รับใบอนุญาตประกอบกิจการโรงงาน

(✓) บริษัท/ห้างหุ้นส่วนจำกัด เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

ตั้งอยู่ที่เลขที่ 104 หมู่ที่ - ต.รอก/ชอย พัฒนาการ 40

ถนน พัฒนาการ ตำบล/แขวง พัฒนาการ

อำเภอ/เขต สวนหลวง จังหวัด กรุงเทพมหานคร รหัสไปรษณีย์ 10250

โทรศัพท์ 02 760-3040 โทรสาร 0 2 760-3197

ได้รับทราบระเบียบกรมโรงงานอุตสาหกรรมว่าด้วยการขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน พ.ศ. 2560 โดยตลอดแล้วและยินยอม

ปฏิบัติตามระเบียบทุกประการ และได้แนบเอกสารต่างๆ ตามรายการเอกสารประกอบการพิจารณา (แบบ ปอ.1-1) มาพร้อมนี้

รายการขอขึ้นทะเบียน

การดำเนินการ	รายละเอียด (รายการ)				
	น้ำเสีย/น้ำทิ้ง	น้ำใต้ดิน	อากาศเสีย	สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว	ดิน
[] ขอขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน					
[✓] ต่ออายุห้องปฏิบัติการวิเคราะห์เอกชน	59	126	16	35	125
[✓] เปลี่ยนแปลงสารมลพิษที่วิเคราะห์ (✓) เพิ่มสารมลพิษ () ยกเลิกสารมลพิษ	-	-	12	-	-
[✓] เปลี่ยนแปลงบุคลากร (✓) เพิ่มบุคลากร (✓) ยกเลิกบุคลากร	จำนวน	38 ราย (รายละเอียดตาม แบบ ปว.1)			
	จำนวน	2 ราย (รายละเอียดตาม แบบ ปว.1)			
[] ยกเลิกห้องปฏิบัติการวิเคราะห์เอกชน					
[] อื่นๆ โปรดระบุ.....					

กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษ
และทะเบียนห้องปฏิบัติการ
วันที่ 15/8/66
วันที่ 15/8/66
วันที่ 15/8/66

จึงเรียนมาเพื่อโปรดพิจารณา

นาย.....
เพื่อโปรดพิจารณา

ลงชื่อ.....

(นางทัศนีย์ เลขากุลพร)

ผู้มีอำนาจลงนามแทนนิติบุคคล
ประทับตรา (ถ้ามี)

(นายประสม คำพงษ์)
ผู้อำนวยการกองวิจัยและเฝ้าระวังมลพิษโรงงาน

ALS Laboratory Group
(Thailand) Co., Ltd





ที่ อก ๐๓๑๐(๓)/ ๖๕๗๐

๒๘ มิถุนายน ๒๕๖๕

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

เรื่อง ขันทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน
ลงวันที่ ๒๙ เมษายน ๒๕๖๔

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด จำนวน ๒ แผ่น

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ขอขึ้นทะเบียน
ห้องปฏิบัติการวิเคราะห์เอกชน พร้อมรายชื่อผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ เจ้าหน้าที่ประจำ
ห้องปฏิบัติการวิเคราะห์ และรายการสารมลพิษที่จะทำการวิเคราะห์ ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป
(ประเทศไทย) จำกัด ขันทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน มีเลขทะเบียน ๖-๓๒๓ สถานที่ตั้งเลขที่
๖๑๖/๑๐ หมู่ที่ ๕ ตำบลแม่ไม้คู้ อำเภอปลวกแดง จังหวัดระยอง โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์

๑) นายเดช ช้างชน	ทะเบียนเลขที่ ๖-๓๒๓-ก-๙๔๔๒
๒) นางวิลาวัลย์ บริรักษ์	ทะเบียนเลขที่ ๖-๓๒๓-ก-๙๔๔๓
๓) นายสุพจน์ สลามเต๊ะ	ทะเบียนเลขที่ ๖-๓๒๓-ก-๙๔๔๔

ข. เจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์

๑) นางสาวนฤมล บรรจงกิจ	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๔๕
๒) นางพจนา สีดา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๔๖
๓) นางสาวอนิศา กุลสุริวงศ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๔๗
๔) นายพิทยา ทองแดง	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๔๘
๕) นางชลธิชา สิบงกช	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๔๙
๖) ว่าที่ ร.ต.รณชัย ม่วงมา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๐
๗) นายวรวิทย์ พับพา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๑
๘) นายศักดิ์รินทร์ จรัสกาย	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๒
๙) นายสุรศักดิ์ สาชิน	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๓
๑๐) นางสาวเพชรคุณ ภาณุทานนท์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๔
๑๑) นายสถาพร ลาแก้ว	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๕
๑๒) นายสุทธิดำรงค์ โชคปิตินันท์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๖

(๑๓) นายวัลลภ...

-๒-

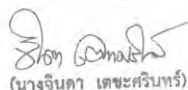
๑๓) นายวัลลภ หันไชยเนา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๗
๑๔) นางสาววนาลี เจริญตระกูล	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๘
๑๕) นางสาววนิดา ผดุงจิตต์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๕๙
๑๖) นายธนะสิทธิ์ วงศ์ไชย	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๐
๑๗) นายชัยนรินทร์ เลิศนันทกุลชัย	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๑
๑๘) นายสัจจา เพ็ชรแสวง	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๒
๑๙) นายกันตภณ มณีสัมพันธ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๓
๒๐) นางสาวจันทิพย์ โกเมษชนะ	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๔
๒๑) นายธารินทร์ อ็อกจินดา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๕
๒๒) นายศุภณัฐ พิสัยพันธ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๖
๒๓) นายศุภชัย วงศ์สุริยธาย	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๗
๒๔) นายปฐมพงศ์ กรสวัสดิ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๘
๒๕) นายไสว ดันโพธิ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๖๙
๒๖) นางสาวกิตติยา สันญาอริยาภรณ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๐
๒๗) นางสาวเจษฎาพร ศรีบุญเรือง	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๑
๒๘) นางสาวมธุรินทร์ สิงห์เงา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๒
๒๙) นางสาวธิดารัตน์ ศิริมงคลโร	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๓
๓๐) นายพิพัฒน์ นิภัทร์เศรษฐ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๔
๓๑) นายศิริวิทย์ เรืองสม	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๕
๓๒) นายปารามศ สัตยาคุณ	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๖
๓๓) นายณนัท ธรรมสโร	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๗
๓๔) นางสาวศุภรัตน์ โสจันทร์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๘
๓๕) นายพชรกร อินทรเสนา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๗๙
๓๖) นายทิวากร เชื้อมาก	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๐
๓๗) นายอนุรักษ์ ทองขจรศักดิ์	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๑
๓๘) นายอมิชาติ วิลาศ	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๒
๓๙) นายจรัสระวี ศรีรักษา	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๓
๔๐) นายประสานมิตร เชื้อนเพชร	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๔
๔๑) นายภาณุวัฒน์ วังบง	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๕
๔๒) นายสันติ ชัยชนะ	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๖
๔๓) นายสิทธิชัย แก้วเกตุ	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๗
๔๔) นายทินกร กุลชาติ	ทะเบียนเลขที่ ๖-๓๒๓-จ-๙๔๘๘

ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย จำนวน ๑๔ รายการ
อากาศเสีย (ปล่องระบายน) จำนวน ๗ รายการ และน้ำใต้ดิน จำนวน ๓ รายการ รวมทั้งสิ้นจำนวน ๒๔ รายการ
ตามสิ่งที่ส่งมาด้วย

หนังสือฉบับนี้มีอายุ ๓ ปี นับจากวันที่กรมโรงงานอุตสาหกรรมออกหนังสือ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรมภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ซึ่งคำขอต่ออายุดังกล่าวขอรับได้ที่กรมโรงงานอุตสาหกรรม

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ


(นางจันทา เตชะธรรมา)

ผู้อำนวยการกองวิจัยและเตือนภัยมลพิษโรงงาน
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

๒๘ มิ.ย. ๒๕๖๕

กองวิจัยและเตือนภัยมลพิษโรงงาน
ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก
โทร. ๐ ๓๘๐๕ ๗๒๖๑-๓
ไปรษณีย์อิเล็กทรอนิกส์ einw@diw.mail.go.th

เอกสารแนบท้ายหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด เลขทะเบียน ๖-๓๒๓๓

ที่ อก ๐๓๑๐(๓)/ ๖๕๗๐

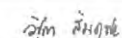
ลงวันที่ ๒๘ มิถุนายน ๒๕๖๕

ขอขยายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๒๔ รายการ
น้ำเสีย จำนวน 14 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Biochemical Oxygen Demand	1) 5-Day BOD Test, Membrane Electrode Method ^[2] 2) 5-Day BOD Test, Azide Modification Method ^[2]
2	Chemical Oxygen Demand	1) Open Reflux, Titrimetric Method ^[2] 2) Closed Reflux, Colorimetric Method ^[2] 3) Closed Reflux, Titrimetric Method ^[2]
3	Color	ADMI Weighted – Ordinate Spectrophotometric Method ^[2]
4	Cyanide	Distillation, Colorimetric Method ^[2]
5	Formaldehyde	Distillation, Colorimetric Method ^[1]
6	Free Chlorine	DPD-Ferrous Titrimetric Method ^[2]
7	Oil and Grease	Liquid-Liquid Partition-Gravimetric Method ^[2]
8	pH	Electrometric Method ^[2]
9	Phenols	1) Distillation, Chloroform Extraction Method ^[2] 2) Distillation, Direct Photometric Method ^[2]
10	Sulfide	ZnS Precipitation, Iodometric Method ^[2]
11	Temperature	Laboratory and Field Method ^[2]
12	Total Dissolved Solids	Dried at 180 °C ^[2]
13	Total Kjeldahl Nitrogen	Semi-Micro Kjeldahl Method ^[2]
14	Total Suspended Solids	Dried at 103-105 °C ^[2]

อากาศเสีย (ปล่องระบาย) จำนวน 7 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Carbon Monoxide	1) Sampling Bag, Non-Dispersive Infrared Method ^[5] 2) Instrumental Analyzer Method ^[8]
2	Hydrogen Sulfide	Absorption Sampling, Iodometric Method ^[5]
3	Opacity	Ringelmann's Method ^[3,4]
4	Oxide of Nitrogen	1) Absorption Sampling, Phenoldisulfonic Acid Method ^[6] 2) Instrumental Analyzer Method ^[9]
5	Sulfur Dioxide	1) Absorption Sampling, Barium-Thorin Titrimetric Method ^[5] 2) Instrumental Analyzer Method ^[10]



(นางสาววิชุดา สัมฤทธิ์ผล)

ผู้อำนวยการ

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

Sulfuric Acid...

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
6	Sulfuric Acid	Isokinetic Sampling, Barium – Thorin Titrimetric Method ⁽⁶⁾
7	Total Suspended Particulate	Isokinetic Sampling, Gravimetric Method ⁽⁷⁾

น้ำได้คืน จำนวน 3 รายการ

ลำดับที่	สารมลพิษ	วิธีวิเคราะห์
1	Cyanide	Distillation, Colorimetric Method ⁽²⁾
2	pH	Electrometric Method ⁽²⁾
3	Phenols	Distillation, Direct Photometric Method ⁽⁷⁾

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วิภา สันกุล
(นางสาววิชุดา สัมฤทธิ์ผล)

ผู้อำนวยการ

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก กองวิจัยและเตือนภัยมลพิษโรงงาน กรมโรงงานอุตสาหกรรม โทร ๐ ๒๘๐๔ ๗๖๖๓-๓

สำเนา

ที่ อก ๐๓๒๐/ ๒๐๔๓

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๒ มิ.ค. ๒๕๖๖

เรื่อง เปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด

อ้างถึง คำขอเปลี่ยนแปลงบุคลากร ของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๑๔ มีนาคม ๒๕๖๖

ตามหนังสือที่อ้างถึง บริษัท เอแอลเอส แลบบอราทอรี กรุ๊ป (ประเทศไทย) จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๓๒๓ สถานที่ตั้งเลขที่ ๖๑๖/๑๐ หมู่ที่ ๕ ตำบลแม่ไม้คู อำเภอบางพลี จังหวัดระยอง ขอเปลี่ยนแปลงบุคลากรของห้องปฏิบัติการวิเคราะห์ ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว มีความเห็นดังนี้

ก. ให้ยกเลิกเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๕ ราย

- | | | |
|------------------------------|---------------|--------------|
| ๑) นางสาวเจษฎาพร ศรีบุญเรือง | ทะเบียนเลขที่ | ว-๓๒๓-จ-๙๔๗๑ |
| ๒) นางสาวมธุรินทร์ สิงห์เงา | ทะเบียนเลขที่ | ว-๓๒๓-จ-๙๔๗๒ |
| ๓) นางสาวนิตา ผดุงจิตต์ | ทะเบียนเลขที่ | ว-๓๒๓-จ-๙๔๕๙ |
| ๔) นายศุภณัฐ พิสัยพันธ์ | ทะเบียนเลขที่ | ว-๓๒๓-จ-๙๔๖๖ |
| ๕) นายสิทธิชัย แก้วเกตุ | ทะเบียนเลขที่ | ว-๓๒๓-จ-๙๔๘๗ |

ข. ให้เพิ่มเจ้าหน้าที่ประจำห้องปฏิบัติการวิเคราะห์ จำนวน ๑๒ ราย

- | | | |
|------------------------------|---------------|--------------|
| ๑) นายณัฐพงษ์ เพ็งขาวนา | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๑ |
| ๒) นางสาวกัลยพรรณ รักษ์ | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๒ |
| ๓) นางสาวจุฑารัตน์ สีทองกลาง | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๓ |
| ๔) นางสาวจิตสุภา ประเทืองสุข | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๔ |
| ๕) นายสรเสรีญ์ คุ้ยยกสุข | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๕ |
| ๖) นายณัฐวุฒิ ออมพรมราช | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๖ |
| ๗) นายจิตรกร สีวะสา | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๗ |
| ๘) นายสิทธิวิทย์ สุวรรณรัตน์ | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๘ |
| ๙) นายสิทธิพันธ์ เสนาชีว | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๐๙ |
| ๑๐) นายอนุวัฒน์ เตมา | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๑๐ |
| ๑๑) นายสุรวิทย์ นราพงษ์ | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๑๑ |
| ๑๒) นายอดิศักดิ์ ตะริตุนย์ | ทะเบียนเลขที่ | ว-๓๒๓-จ-๐๐๑๒ |

อนึ่ง...

อนึ่ง หนังสือฉบับนี้จะหมดอายุพร้อมหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
ที่ อก ๐๓๑๐(๓)/๖๔๗๐ ลงวันที่ ๒๘ มิถุนายน ๒๕๖๔ คือในวันที่ ๒๘ มิถุนายน ๒๕๖๗ ทั้งนี้ สามารถยื่นคำขอผ่าน
ระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรมตาม QR Code ท้ายหนังสือนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ



(นายทวี อำพาพันธ์)

ผู้อำนวยการศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก
ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

ศูนย์วิจัยและเตือนภัยมลพิษโรงงานภาคตะวันออก
โทร. ๐ ๓๓๑๓ ๖๐๕๔ ต่อ ๕๐๐๑-๒
ไปรษณีย์อิเล็กทรอนิกส์ eirw@diw.mail.go.th



ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์



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