

Equipment Qualification Plan To HPLC System

This Qualified has Included

Validation and Calibration Qualifications (VCQ)

To Instrument List on below

Name and Model	Serial Number	Manufacturer
ICS-1000	07090143	Dionex
AS-1	09090418	Dionex
Chromeleon	Version 6.80	Dionex

This report confirms that the above instrument has been installed and performance test the actual record and measurement results are stated on the inside of Equipment Qualification Report.

VALIDATION AND CALIBRATION REPORT RESULT

Present to Customer Name: Health & Envitech Co.,Ltd.

Department: Analytical Lab

Address: 6 Ngamwongwan Soi 5, Tumbon Bangkokhen, Muangnontaburi, Nontaburi 11000

Present By: Meshcotech Company Limited

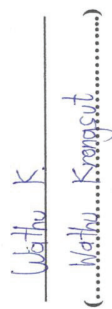
Instrument System ID: LB-HE-108

Qualifier'S Signature/Date



(Mr. Prasittisent Maliphan)

Acceptor's Signature/Date


(.....Watthana Kongsut.....)



Flow Rate Precision Result

Customer Name: Health & Envitech Co., Ltd.
Department: Analytical Lab
System ID: LB-HE-108
Manufacturer: Dionex
Model: ICS-1000
Serial No: 07090143

Present By: Meshcotech Co., Ltd.
Qualifier: Pitsanu Jantason
Procedure: SOP V5-EA v5r0
Flow Meter Model: VKIT-LFM
Flow Meter S/N: L-2330
Traceable To: 2711-LFM

Report Expiry Date: Sep 1, 2023

	Flow Rate 0.5000 ml/min	Flow Rate 1.0000 ml/min	Flow Rate 1.5000 ml/min	Flow Rate 2.0000 ml/min
1	0.5009	0.9998	1.5044	2.0034
2	0.5003	0.9985	1.5055	2.0050
3	0.4999	0.9995	1.5009	2.0081
4	0.4995	0.9992	1.5060	2.0078
5	0.5005	0.9984	1.5077	2.0040
Average	0.5002	0.9991	1.5049	2.0057
%RSD	0.1080	0.0615	0.1683	0.1082

Acceptance criteria of %RSD $\leq 1\%$

Evaluate Result **PASS**

Qualifier's signature: 

Date: 3/9/2022

Authorised's signature: 

Date: 3/9/2022

VCR

82, Moo 18, Buengklamproi, Lamukha, Pathum thani, Thailand 12150
 Tel. (6698)970 7090 , Fax. (662)560 2541



Flow Rate Accuracy Result

Customer Name: Health & Envitech Co., Ltd.
Department: Analytical Lab
System ID: LB-HE-108
Manufacturer: Dionex
Model: ICS-1000
Serial No: 07090143

Present By: Meshcotech Co., Ltd.
Qualifier: Pitsanu Jantason
Procedure: SOP V5-EA v5r0
Flow Meter Model: VKIT-LFM
Flow Meter S/N: L-2330
Traceable To: 2711-LFM

Report Expiry Date: Sep 1, 2023

Theoretical Flow Rate ml/min.	Observed Flow Rate ml/min.	Deviation ml/min. %Error
	0.5009	
	0.5003	
0.5000	0.4999	0.5002
	0.4995	
	0.5005	
	0.9998	
	0.9985	
1.0000	0.9995	0.9991
	0.9992	
	0.9984	
	1.5044	
	1.5055	
1.5000	1.5009	1.5049
	1.5060	
	1.5077	
	2.0034	
	2.0050	
2.0000	2.0081	2.0057
	2.0078	
	2.0040	

Acceptance criteria
of absolute deviation
Evaluate Result **PASS**

Qualifier's signature: 

Date: 3/9/2022

Authorised's signature: 

Date: 3/9/2022

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Autosampler Injection Carry Over Result

Customer Name: Health & Envitech Co., Ltd.
 Department: Analytical Lab
 System ID: LB-HE-108
 Manufacturer: Dionex
 Model: AS-1
 Serial No: 09090418

Present By: Meshcotech Co., Ltd.
 Qualifier: Pitsanu Jantason
 Procedure: SOP V5-EA v5r0
 Lot Number: 201006

Traceable To: 060254

Report Expiry Date: Sep 1, 2023

Blank		Area
Carry Over Blank 1		0
Carry Over Blank 2		0
Standard		Area
Standard 1		3.140
Standard 2		3.139
Standard 3		3.140
Standard 4		3.148
Standard 5		3.176
Standard 6		3.114
Area Average		3.143
% Carry Over :		0.00

Acceptance criteria of % Carry Over $\leq 1\%$

Evaluate Result

PASS

Qualifier's signature:

Date: 3/9/2022

Authorised's signature:

Date: 3/9/2022

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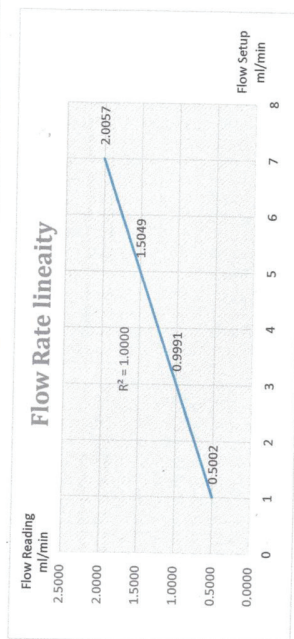

Flow Rate Linearity Result

Customer Name: Health & Envitech Co., Ltd.
 Department: Analytical Lab
 System ID: LB-HE-108
 Manufacturer: Dionex
 Model: ICS-1000
 Serial No: 07090143

Present By: Meshcotech Co., Ltd.
 Qualifier: Pitsanu Jantason
 Procedure: SOP V5-GX v5r0 HPLC
 Flow Meter Model: VKIT-LFM
 Flow Meter S/N: L-2330
 Traceable To: 2711-LFM

Report Expiry Date: Sep 1, 2023

	Flow Rate 0.5 (ml/min)	Flow Rate 1.0000 (ml/min)	Flow Rate 1.5000 (ml/min)	Flow Rate 2.0000 (ml/min)
1	0.5009	0.9998	1.5044	2.0034
2	0.5003	0.9985	1.5055	2.0050
3	0.4999	0.9995	1.5009	2.0081
4	0.4995	0.9992	1.5060	2.0078
5	0.5005	0.9984	1.5077	2.0040
Average	0.5002	0.9991	1.5049	2.0057
R-Square				1.0000

Acceptance criteria of R^2 > 0.9980

Evaluate Result

PASS

Qualifier's signature:

Date: 3/9/2022

Authorised's signature:

Date: 3/9/2022

VCR

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บริษัท เมชโคเทค จำกัด
MESHCOOTECH CO.,LTD.

CD Detector Response Linearity Result

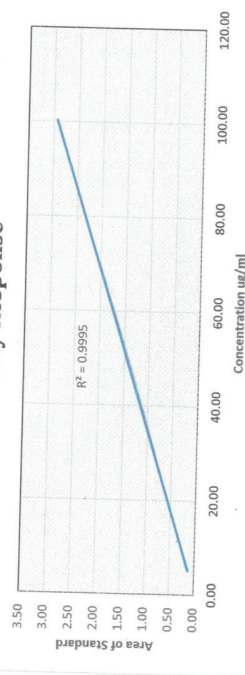
Customer Name: Health & Envitech Co.,Ltd.
Department: Analytical Lab
System ID: LB-HE-108
Manufacturer: Dionex
Model: ICS-1000
Serial No: 07090143
Report Expiry Date: Sep 1,2023
Traceable To: 060254

Present By: Meshcotech Co., Ltd.
Qualifier: Pitsanu Jantason
Procedure: SOP V5-FS v5r0 HPLC
Lot Number: 201006

Report Expiry Date: Sep 1,2023

Concentration (ug/ml)	Area of standard
Standard 1	5.03
Standard 2	10.06
Standard 3	24.96
Standard 4	49.89
Standard 5	100.30
R-Square	0.9995

Linearity Response



Acceptance criteria of R^2 >0.9980

Evaluate Result

PASS

Qualifier's signature:

Date: 3/9/2022

Authorised's signature:

Date: 3/9/2022

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Tel. (6698)970 7090 , Fax.(662)560 2541



บริษัท เมชโคเทค จำกัด
MESHCOOTECH CO.,LTD.

Autosampler Injection Precision Result

Customer Name: Health & Envitech Co.,Ltd.
Department: Analytical Lab
System ID: LB-HE-108
Manufacturer: Dionex
Model: AS-1
Serial No: 09090418
Report Expiry Date: Sep 1,2023
Traceable To: 060254

Present By: Meshcotech Co., Ltd.
Qualifier: Pitsanu Jantason
Procedure: SOP V5-FL v5r0 HPLC
Lot Number: 201006

Report Expiry Date: Sep 1,2023

Injection Repeations	Area Injection Sul	Area Injection 50ul
Injection Repeat 1	3.140	19.068
Injection Repeat 2	3.139	19.148
Injection Repeat 3	3.140	19.201
Injection Repeat 4	3.148	19.243
Injection Repeat 5	3.176	19.027
Injection Repeat 6	3.114	19.245
Average of STD Area	3.143	19.155
% RSD of Injections	0.635	0.478

Acceptance criteria of %RSD \leq 1 %

Evaluate Result

PASS

Qualifier's signature:

Date: 3/9/2022

Authorised's signature:

Date: 3/9/2022

VCR

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ENVIR SERVICE CO., LTD.

42 RAMINTHRA 14 YEAK 9, THA RAENG, BANGKHEN, BANGKOK 10230
TAX ID 0105555170865
TEL 029435814-5 FAX 02 9438201



CALIBRATION CERTIFICATE

Certificate No. : 202211001

Date of issue : 10-Nov.-22

Instrument Description : Air Quality Monitor
Instrument Model : aq-5000 pro
Instrument Serial No. : 1527
Manufacturer : QUEST TECHNOLOGIES
Customer Name : Health & Envitech Co., Ltd.
6 Soi Ngamwongwan 5, Bang Khen, Nonthaburi,
Nonthaburi 11000

Total Page of Certificate : 2 Pages
Receiving Date : 10-Nov.-22
Parameter of Calibration : Gas Calibration (Nitrogen (Zero) (ppm),
Carbon monoxide 45 (ppm)
Carbon dioxide 850 (ppm))

Condition Place : 42 Raminthra 14 Yeak 9, Tha Raeng, Bangkok,
Bangkok 10230
Date of Calibration : 10-Nov.-22

Calibration by

Kittisak Jansangwattana

Technician

Approve by

Pasagorn Samol

Technician Manager

VCR-7



บริษัท เมชคอร์ท จำกัด
MESHCO TECH CO., LTD.

Detector MS Signal to Noise Test

Customer Name: Health & Envitech Co., Ltd.
Department: Analytical Lab
System ID: LB-HE-108
Manufacturer: Dionex
Model: ICS-1000
Serial No: 07090143
Present By: Meshcotech Co., Ltd.
Qualifier: Pitsanu Jantason
Procedure: SOP V5-GS.v5r0 HPLC
Lot Number: 201006
Traceable To: 060254

Report Expiry Date: Sep 1, 2023

Standard Response / Noise Response at 11-15 Minute	Actual Reading	Signal to Noise
18.200 0.112		162.5

Acceptance criteria
Signal to Noise \geq 50
Evaluate Result **Pass**

Qualifier's signature:

Authorised's signature:

Date: 3/9/2022

Date: 3/9/2022

VCR

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