

#### 4.5 เอกสารสอบเทียบเครื่องมือ

(บริษัท บริษัท ปิ่นทองกรุ๊ป แมนเนจเม้นท์ แอนด์ คอนซัลแตนท์ จำกัด  
ทะเบียน [REDACTED])

# Validation Calibration Report

**Customer Name:** PINTHONG GROUP MANAGEMENT AND  
CONSULTANTS CO.,LTD. CO.,LTD.

**Department:** LAB Analytical

**Present By:** Meshcotech Co., Ltd.

**Instrument System ID:** GC 1

## Instrument List in System

Name and Model	Serial Number	Manufacturer
Clarus 580	580S17020103	Perkin Elmer
TotalChrom	Version. 6.3.2.0646	Perkin Elmer

This report confirms that the above instrument has been calibrated.

The actual measurement results are stated on the inside of Validation Calibration Report.

Qualifier's signature / Date

Acceptor's signature / Date



## Performance Qualification Report



PQR-1

## Carrier Pressure Accuracy Result

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **VKIT.GC.FLOW**  
Manufacturer: **PERKIN ELMER** Model: **Clarus 580**  
Serial No: **580S17020103** Detector Type: **FID**  
Standard Batch: **N/A** Traceable To: **4071-DMA**  
Expiry Date: **March 31,2024** System ID: **GC 1**

The result reference to raw data on page: 1

Setpoint Pressure PSI.	Observed Pressure PSI.	Deviation ml/min. % Error
5.00	4.90	2.00
10.00	10.00	0.00
20.00	20.10	0.50
30.00	30.20	0.67
40.00	40.30	0.75

Acceptance criteria  
of absolute deviation  
Evaluate Result

 $\leq 5\%$ 

PASS

Qualifier's signature

Date:

31/3/2023

Authorised by:

Date:

31/3/2023

PQR

82 Moo.18, Buengkamproi, Lamlukka, Pathum thani, Thailand 12150  
Tel. (6698)970-7090, Fax.(662)540-2541 Email: sales.meshcotect@gmail.com

VCR-CARRFLOW



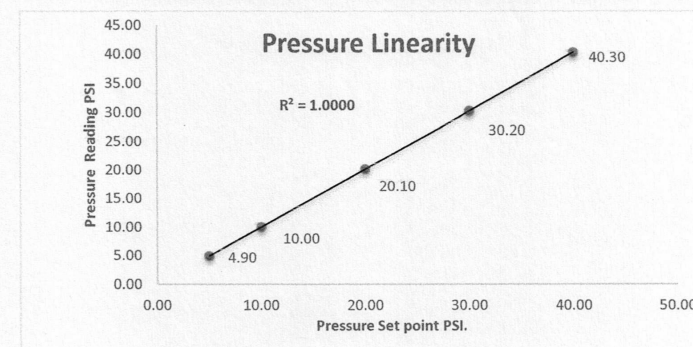
PQR-2

## Carrier Pressure Linearity Result

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **VKIT.GC.FLOW**  
Manufacturer: **PERKIN ELMER** Model: **Clarus 580**  
Serial No: **580S17020103** Detector Type: **FID**  
Standard Batch: **N/A** Traceable To: **4071-DMA**  
Expiry Date: **March 31,2024** System ID: **GC 1**

The result reference to raw data on page: 1

Flow Rate Setpoint (ml/min)	Flow Rate (ml/min) Reading
5.00	4.90
10.00	10.00
20.00	20.10
30.00	30.20
40.00	40.30
R-Square	1.0000

Acceptance criteria of  $R^2$  > 0.9990

Evaluate Result PASS

Qualifier's signature

Date:

31/3/2023

Authorised by:

Date:

31/3/2023

PQR

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VCR-CARRFLOW





PQR-3

## Detector Gas Flow Rate Accuracy Result

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **VKIT.GC.FLOW**  
Manufacturer: **PERKIN ELMER** Model: **Clarus 580**  
Serial No: **580S17020103** Detector Type: **FID**  
Standard Batch: **N/A** Traceable To: **4075-GFM**  
Expiry Date: **March 31,2024** System ID: **GC 1**

The result reference to raw data on page: 2

Setpoint Flow Rate ml/min.	Observed Flow Rate ml/min.	Deviation ml/min. % Error
20.00	19.80	1.00
30.00	29.40	2.00
40.00	39.50	1.25
50.00	49.30	1.40
60.00	59.20	1.33

Acceptance criteria  
of absolute deviation  
Evaluate Result

≤ 5%.  
**PASS**

Qualifier's signature:

Authorised by:

Date:

Date:

PQR

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VCR-CARRFLOW



PQR-4

## Carrier Gas Flow Rate Accuracy Result

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **VKIT.GC.FLOW**  
Manufacturer: **PERKIN ELMER** Model: **Clarus 580**  
Serial No: **580S17020103** Detector Type: **FID**  
Standard Batch: **N/A** Traceable To: **4075-GFM**  
Expiry Date: **March 31,2024** System ID: **GC 1**

The result reference to raw data on page: 3

Setpoint Flow Rate ml/min.	Observed Flow Rate ml/min.	Deviation ml/min. % Error
100.00	98.80	1.20
200.00	197.60	1.20
300.00	295.30	1.57
400.00	394.70	1.33

Acceptance criteria  
of absolute deviation  
Evaluate Result

≤ 5%.  
**PASS**

Qualifier's signature:

Authorised by:

Date:

Date:

PQR

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VCR-CARRFLOW



## GC Column Oven Temperature Performance Result

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO., LTD.** Qualifier: **Mescotech Co., Ltd.**  
 Department: **LAB Analytical** Procedure: **VKIT.GC.TEMPACC**  
 Manufacturer: **PERKIN ELMER** Model: **Clarus 580**  
 Serial No: **580S17020103** Detector Type: **FID**  
 Standard Batch: **N/A** Traceable To: **1513-DTM**  
 Expiry Date: **March 31, 2024** System ID: **GC 1**

The result reference to raw data on page: 4

Setpoint	Collected 1	Collected 2	Collected 3	Collected 4	Collected 5	Average	Deviation of Accuracy
Temperature	Temperature	Temperature	Temperature	Temperature	Temperature	Temperature	Absolute/°C.
(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(Set Temp-Average Temp)
40.0	39.8	39.8	39.7	39.8	39.7	39.8	0.24
100.0	100.5	100.3	100.3	100.3	100.4	100.4	0.36
150.0	150.2	150.3	150.3	150.4	150.5	150.3	0.34
200.0	200.2	200.2	200.4	200.4	200.5	200.3	0.34
280.0	280.0	280.2	280.3	280.3	280.3	280.2	0.22

Acceptance criteria  $\leq 1^{\circ}\text{C}$ .  
 of absolute deviation Accuracy

Evaluate Result **PASS**

Qualifier's signature:

Date: 31/3/2023

Authorised by:

Date: 31/3/2023

PQR

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 VCR-GCOVENACC

## GC Column Oven Temperature Stability Performance Result

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO., LTD.** Qualifier: **Mescotech Co., Ltd.**  
 Department: **LAB Analytical** Procedure: **VKIT.GC.TEMPSTEB**  
 Manufacturer: **PERKIN ELMER** Model: **Clarus 580**  
 Serial No: **580S17020103** Detector Type: **FID**  
 Standard Batch: **N/A** Traceable To: **4078-DTM**  
 Expiry Date: **March 31, 2024** System ID: **GC 1**

The result reference to raw data on page: 5

Setpoint	Collected Point1	Collected Point2	Collected Point3	Collected Point4	Collected Point5	Average	STDEV
Temperature	Temperature	Temperature	Temperature	Temperature	Temperature	Temperature	Temperature
(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)	(°C)
100.0	100.5	100.3	100.3	100.3	100.4	100.36	0.09

Acceptance criteria  $\leq 0.5^{\circ}\text{C}$ .  
 of absolute deviation Stability

Evaluate Result **PASS**

Qualifier's signature:

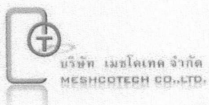
Date: 31/3/2023

Authorised by:

Date: 31/3/2023

PQR

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 Tel. (6698)970-7090, Fax.(662)540-2541 Email: sales.meshcotect@gmail.com  
 VCR-GCOVENSTAB



PQR-7

## GC Injector Temperature Performance Result

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **VKIT.GC.TEMPACC**  
Manufacturer: **PERKIN ELMER** Model: **Clarus 580**  
Serial No: **580S17020103** Detector Type: **FID**  
Standard Batch: **N/A** Traceable To: **4078-DTM**  
Expiry Date: **March 31,2024** System ID: **GC 1**

The result reference to raw data on page: 6

Setpoint Temperature (°C)	Collected Temperature (°C)	Deviation of Accuracy Absolute/°C. (Set Temp-Average Temp)
150.0	146.5	3.5
200.0	196.5	3.5
280.0	276.7	3.3

Acceptance criteria  $\leq 10^{\circ}\text{C}$ .  
of absolute deviation Accuracy  
Evaluate Result **PASS**

Qualifier's signature:

Date:

31/3/2023

Authorised by:

Date:

31/3/2023

PQR

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Tel. (6698)970-7090, Fax.(662)540-2541 Email: sales.meshcotect@gmail.com

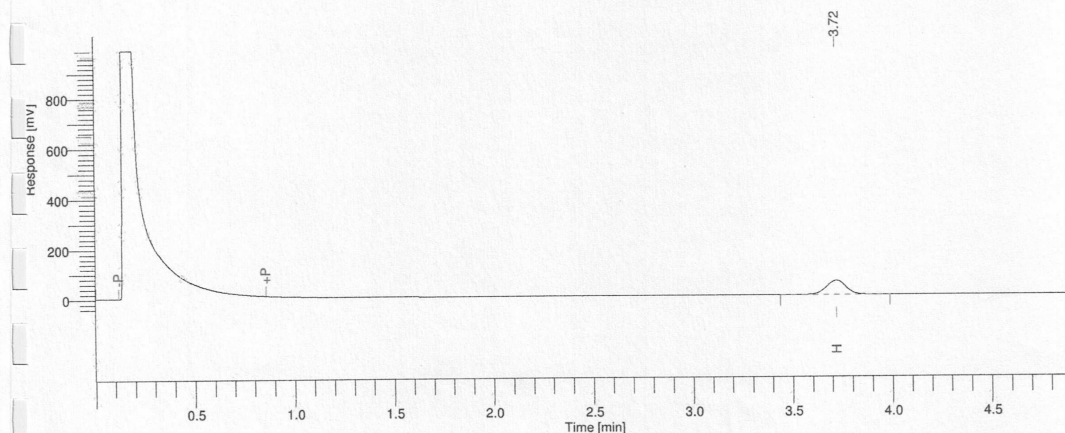
VCR-INTEMPACC

Page 1 of 8  
Raw Data Page 8

Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 006  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 2:43:50 PM

Date : 01-Apr-24 2:59:22 PM  
Sample Name : Carry Over Blank 1  
Study : Calibration  
Rack/Vial : 0/1  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 6

Raw Data File : D:\PMOQ2023\Carry Over Blank 1\_006.raw  
Result File : D:\PMOQ2023\Carry Over Blank 1\_006.rst [Editing in Progress]  
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Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Carry Over Blank 1\_006.rst [Editing in Progress]  
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Report Format File : D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Hexadecane	3.721	378105.11	56147.29	100.00	100.00	0.3781
			378105.11	56147.29	100.00	100.00	0.3781

Missing Component Report  
Component Expected Retention (Calibration File)

Tetradecane 1.450

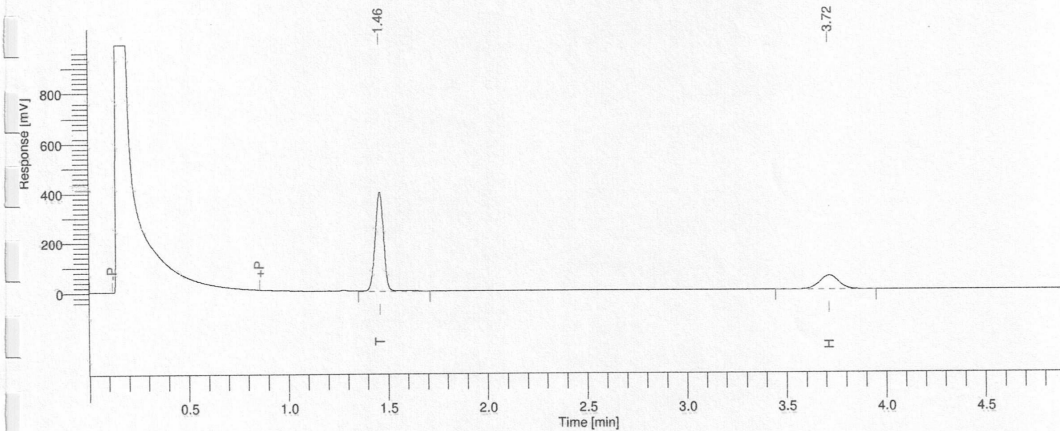


Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 009  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 3:38:06 PM

Date : 01-Apr-24 3:50:32 PM  
Sample Name : Precision 8  
Study : Calibration  
Rack/Vial : 0/5  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min

Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 14

Raw Data File : D:\PMOQ2023\Precision 8\_014.raw  
Result File : D:\PMOQ2023\Precision 8\_014.rst [Editing in Progress]  
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Report Format File: D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.461	1131130.47	397781.56	75.57	75.57	1.1311
2	Hexadecane	3.715	365705.34	54365.48	24.43	24.43	0.3657
		1496835.81	452147.04	100.00	100.00	1.4968	

Missing Component Report  
Component Expected Retention (Calibration File)

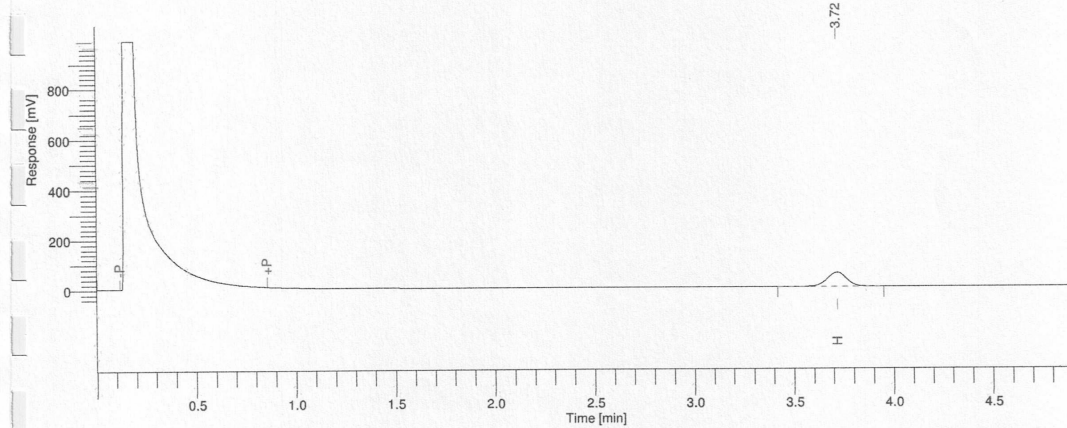
All components were found

Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 010  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 3:44:57 PM

Date : 01-Apr-24 3:51:48 PM  
Sample Name : Carry Over Blank 2  
Study : Calibration  
Rack/Vial : 0/1  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min

Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 15

Raw Data File : D:\PMOQ2023\Carry Over Blank 2\_015.raw  
Result File : D:\PMOQ2023\Carry Over Blank 2\_015.rst [Editing in Progress]  
Inst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Carry Over Blank 2\_015.raw  
Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Carry Over Blank 2\_015.rst [Editing in Progress]  
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Report Format File: D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Hexadecane	3.718	373276.70	55744.69	100.00	100.00	0.3733
			373276.70	55744.69	100.00	100.00	0.3733

Missing Component Report  
Component Expected Retention (Calibration File)

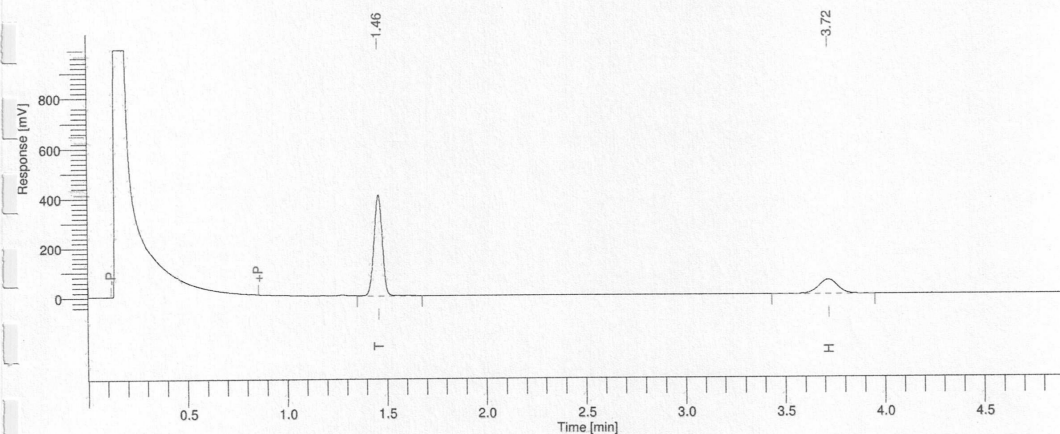
Tetradecane 1.450



Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 007  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 2:50:38 PM

Date : 01-Apr-24 3:04:37 PM  
Sample Name : Precision 1  
Study : Calibration  
Rack/Vial : 0/5  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 7

Raw Data File : D:\PMOQ2023\Precision 1\_007.raw  
Result File : D:\PMOQ2023\Precision 1\_007.rst [Editing in Progress]  
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Report Format File : D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.461	1146805.50	405483.26	75.49	75.49	1.1468
2	Hexadecane	3.719	372264.12	55556.46	24.51	24.51	0.3723
			1519069.62	461039.73	100.00	100.00	1.5191

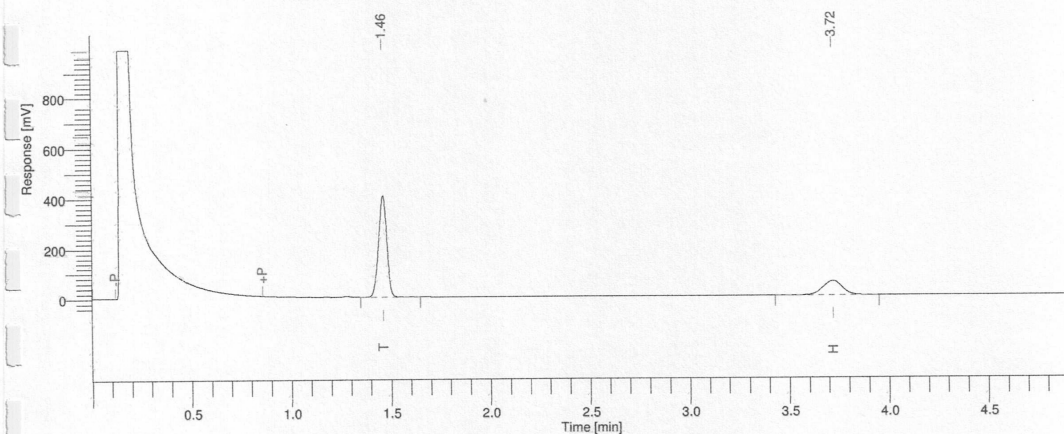
Missing Component Report  
Component Expected Retention (Calibration File)

All components were found

Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 008  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 2:57:22 PM

Date : 01-Apr-24 3:06:20 PM  
Sample Name : Precision 2  
Study : Calibration  
Rack/Vial : 0/5  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 8

Raw Data File : D:\PMOQ2023\Precision 2\_008.raw  
Result File : D:\PMOQ2023\Precision 2\_008.rst [Editing in Progress]  
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Report Format File : D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.462	1142966.78	404053.91	75.57	75.57	1.1430
2	Hexadecane	3.719	369492.88	55077.66	24.43	24.43	0.3695
			1512459.66	459131.57	100.00	100.00	1.5125

Missing Component Report  
Component Expected Retention (Calibration File)

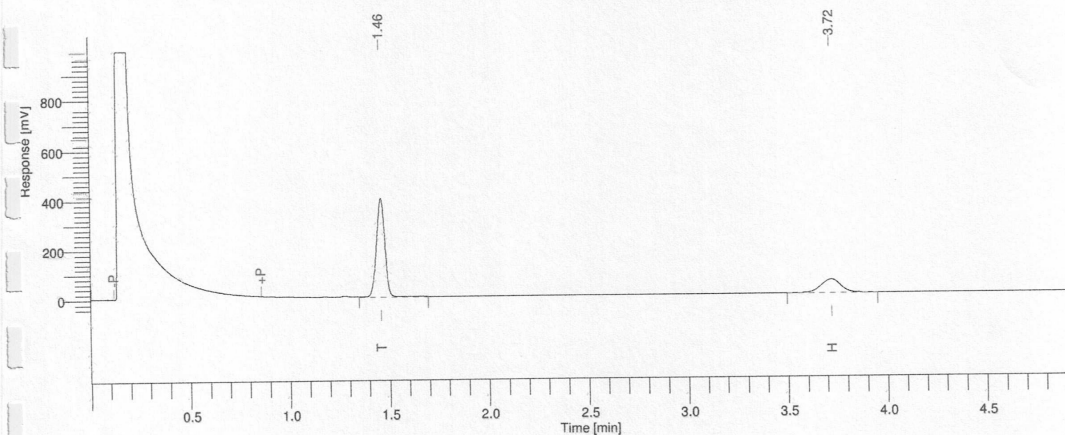
All components were found

Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 008  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 3:04:10 PM

Date : 01-Apr-24 3:12:08 PM  
Sample Name : Precision 3  
Study : Calibration  
Rack/Vial : 0/5  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min

Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 9

Raw Data File : D:\PMOQ2023\Precision 3\_009.raw  
Result File : D:\PMOQ2023\Precision 3\_009.rst [Editing in Progress]  
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Report Format File : D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.460	1131811.87	397094.47	75.51	75.51	1.1318
2	Hexadecane	3.720	367090.85	54445.14	24.49	24.49	0.3671
			1498902.72	451539.61	100.00	100.00	1.4989

Missing Component Report  
Component Expected Retention (Calibration File)

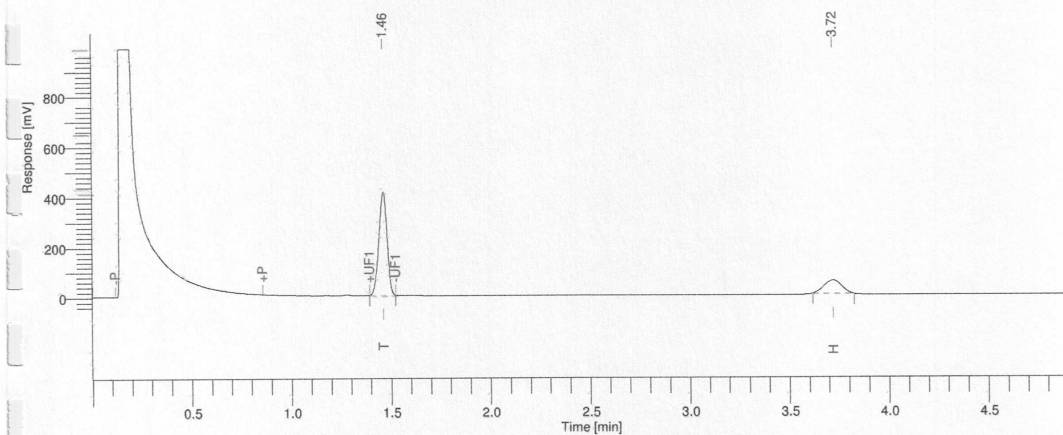
All components were found

Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 008  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 3:10:58 PM

Date : 01-Apr-24 3:22:04 PM  
Sample Name : Precision 4  
Study : Calibration  
Rack/Vial : 0/5  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min

Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 10

Raw Data File : D:\PMOQ2023\Precision 4\_010.raw  
Result File : D:\PMOQ2023\Precision 4\_010.rst [Editing in Progress]  
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Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Precision 4\_010.rst [Editing in Progress]  
Report Format File : D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.463	1159745.44	413355.95	78.19	78.19	1.1597
2	Hexadecane	3.720	323562.84	53364.38	21.81	21.81	0.3236
			1483308.28	466720.33	100.00	100.00	1.4833

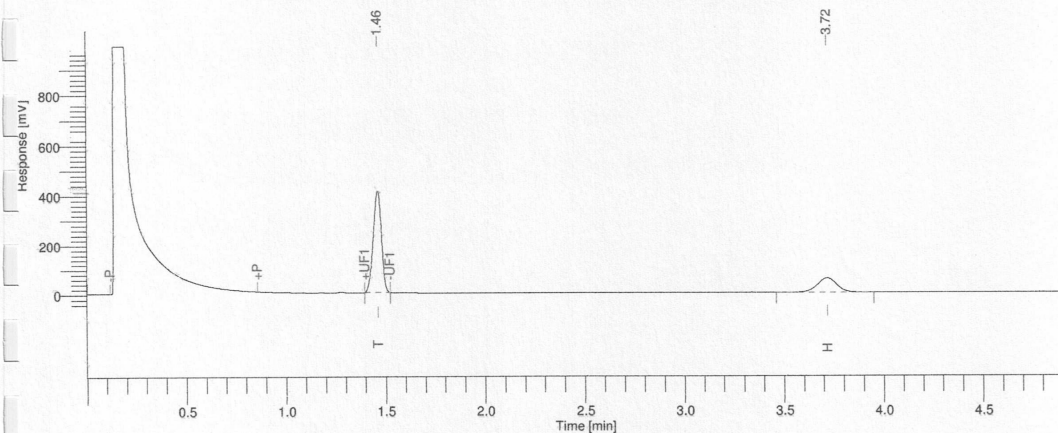
Missing Component Report  
Component Expected Retention (Calibration File)

All components were found



Software Version : 6.3.2.0646 Date : 01-Apr-24 3:27:24 PM  
Operator : manager Sample Name : Precision 5  
Sample Number : 008 Study : Calibration  
AutoSampler : BUILT-IN Rack/Vial : 0/5  
Instrument Name : Clarus580 Channel : A  
Instrument Serial # : None A/D mV Range : 1000  
Delay Time : 0.00 min End Time : 5.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 3:17:45 PM  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 11

Raw Data File : D:\PMOQ2023\Precision 5\_011.raw  
Result File : D:\PMOQ2023\Precision 5\_011.rst [Editing in Progress]  
Inst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Precision 5\_011.raw  
Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Precision 5\_011.rst [Editing in Progress]  
Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Precision 5\_011.rst [Editing in Progress]  
Report Format File : D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.461	1158710.81	412581.94	74.83	74.83	1.1587
2	Hexadecane	3.718	389670.70	58566.34	25.17	25.17	0.3897
			1548381.51	471148.27	100.00	100.00	1.5484

Missing Component Report  
Component Expected Retention (Calibration File)

All components were found



## Data System Number of Detection Check

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **Validator Method**  
Manufacturer: **PERKIN ELMER** Model: **TotalChrom**  
SoftWare Version: **6.3.2.0646** Traceable To: **Validator 1M**  
Standard Batch: **N/A** Traceable To: **Validator 1M**  
Expiry Date: **March 31,2023** System ID: **GC 1**

The result reference to raw data on page: 32

Peak Count#	Peak count Detected
Peak Detected Specify	
≥ 32 Peak Number	36 Peak Number

Acception criteria of absolute deviation ≥ 32 Peak

Evaluate Result **PASS**

Qualifier's signature:

Date: 31/3/2023

Authorised by:

Date: 31/3/2023

PQR

82 Moo.18, Buengkamproi, Lamlukka,Pathum thani, Thailand 12150  
Tel. (6698)970-7090, Fax.(662)540-2541 Email: sales.meshcotect@gmail.com

VCR-DATASYS





PQR-16

## Data System Square Peak High Check

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **Validator Method**  
Manufacturer: **PERKIN ELMER** Model: **TotalChrom**  
SoftWare Version: **6.3.2.0646** Traceable To: **Validator<sup>TM</sup>**  
Standard Batch: **N/A** Traceable To: **Validator<sup>TM</sup>**  
Expiry Date: **March 31, 2023** System ID: **GC 1**

The result reference to raw data on page: 33

Peak Number#	Peak high /1000	%deviation	Evaluate Result
Peak Detection Specify	Collected ( millivolt )		
1 500 millivolt	499.9929	0.00	PASS
2 1000 millivolt	999.998	0.00	PASS
Acception criteria of % deviation			≤1%
Evaluate Result			PASS

Qualifier's signature

Date:

31/3/2023

Authorised by:

Date:

31/3/2023

PQR

82 Moo.18, Buengkamproi, Lamukha, Pathum thani, Thailand 12150  
Tel. (6698)970-7090, Fax.(662)540-2541 Email: sales.meshcotect@gmail.com

VCR-DATASYS



PQR-17

## Data System Retention Time Reproduced Check

Customer: **PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.** Qualifier: **Mescotech Co., Ltd.**  
Department: **LAB Analytical** Procedure: **Validator Method**  
Manufacturer: **PERKIN ELMER** Model: **TotalChrom**  
SoftWare Version: **6.3.2.0646** Traceable To: **Validator<sup>TM</sup>**  
Standard Batch: **N/A** Traceable To: **Validator<sup>TM</sup>**  
Expiry Date: **March 31, 2023** System ID: **GC 1**

The result reference to raw data on page: 34

Peak Number#	Retention Time Apex	Previuos peak-Curent peak Absolute time /min.	Evaluate Result
1	0.476	N/A	
2	1.897	1.421	PASS
3	3.318	1.421	PASS
4	4.738	1.420	PASS
5	6.159	1.421	PASS
6	7.580	1.421	PASS
Acception criteria of absolute deviation			1.41-1.43 Minute
Evaluate Result			PASS

Qualifier's signature:

Date:

31/3/2023

Authorised by:

Date:

31/3/2023

PQR

82 Moo.18, Buengkamproi, Lamukha, Pathum thani, Thailand 12150  
Tel. (6698)970-7090, Fax.(662)540-2541 Email: sales.meshcotect@gmail.com

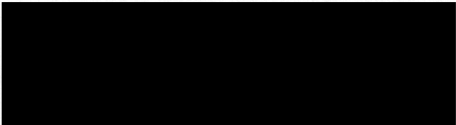
VCR-DATASYS

Qualification Raw Data  
Attached

Customer Name: PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD. Department: Quality Control  
Instrument Model: Clarus 580 GC Serial Name: 580S17020103  
Gas Type: He

Carrier Gas Inlet Pressure	
Inlet Pressure Setpoint (PSI)	Pressure Reading
5.00	4.90
10.00	10.00
20.00	20.10
30.00	30.20
40.00	40.30

Report Reference Number: VCR NO. GC-0427-034

Engineer/Technical 

# Detector Gas Flow Accuracy Raw data Record

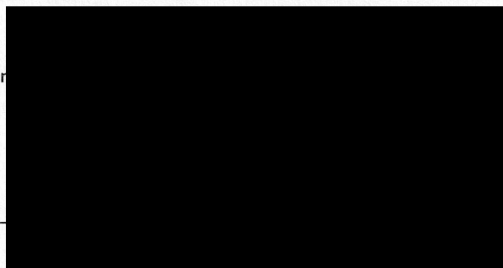
Raw Data Page 2

Customer Name: PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD. Department: **Quality Control**  
 Instrument Model: **Clarus 580 GC** Serial Name: **580S17020103**  
 Gas Type: **H2**

Gas Flow Setpoint	
Flow rate ml/min	Flow rate reading
20.00	19.40
30.00	29.40
40.00	39.50
50.00	49.70
60.00	59.80

Report Reference Num

Engineer/Technical :



440

# Detector Gas Flow Accuracy Raw data Record

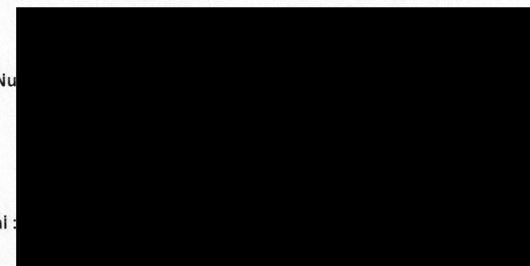
Raw Data Page 3

Customer Name: PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD. Department: **Quality Control**  
 Instrument Model: **Clarus 580 GC** Serial Name: **580S17020103**  
 Gas Type: **Air**

Gas Flow Setpoint	
Flow rate ml/min	Flow rate reading
100.00	98.80
200.00	197.60
300.00	295.70
400.00	394.70

Report Reference Num

Engineer/Technical :





# Column Oven Temperature Raw data Reading

Raw Data Page 4

Customer Name: PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.  
Instrument Model: Clarus 580 GC

Department: Quality Control  
Serial Name: 580S17020103

Oven Temperature °C	Temperature Reading °C				
Temperature Set °C	Temp at 40 °C	Temp at 100 °C	Temp at 150 °C	Temp at 200 °C	Temp at 280 °C
Reading 1	39.8	100.5	150.2	200.2	280.0
Reading 2	39.6	100.3	150.3	200.2	280.2
Reading 3	39.7	100.3	150.3	200.4	280.3
Reading 4	39.8	100.3	150.4	200.4	280.3
Reading 5	39.7	100.4	150.5	200.5	280.3

T1: 39.80 T2: E01 T1-T2: E04 31-03 14:14:00	T1: 100.50 T2: E01 T1-T2: E04 31-03 13:07:34	T1: 150.20 T2: E01 T1-T2: E04 31-03 13:18:08	T1: 200.20 T2: E01 T1-T2: E04 31-03 13:34:47	T1: 280.00 T2: E01 T1-T2: E04 31-03 13:49:48
T1: 39.80 T2: E01 T1-T2: E04 31-03 14:15:59	T1: 100.30 T2: E01 T1-T2: E04 31-03 13:09:00	T1: 150.30 T2: E01 T1-T2: E04 31-03 13:20:35	T1: 200.20 T2: E01 T1-T2: E04 31-03 13:36:53	T1: 280.20 T2: E01 T1-T2: E04 31-03 13:51:45
T1: 39.70 T2: E01 T1-T2: E04 31-03 14:17:52	T1: 100.30 T2: E01 T1-T2: E04 31-03 13:10:07	T1: 150.30 T2: E01 T1-T2: E04 31-03 13:24:50	T1: 200.40 T2: E01 T1-T2: E04 31-03 13:37:56	T1: 280.30 T2: E01 T1-T2: E04 31-03 13:53:22
T1: 39.80 T2: E01 T1-T2: E04 31-03 14:18:10	T1: 100.30 T2: E01 T1-T2: E04 31-03 13:11:26	T1: 150.40 T2: E01 T1-T2: E04 31-03 13:25:55	T1: 200.40 T2: E01 T1-T2: E04 31-03 13:40:59	T1: 280.30 T2: E01 T1-T2: E04 31-03 13:54:41
T1: 39.70 T2: E01 T1-T2: E04 31-03 14:18:52	T1: 100.40 T2: E01 T1-T2: E04 31-03 13:13:08	T1: 150.50 T2: E01 T1-T2: E04 31-03 13:30:37	T1: 200.50 T2: E01 T1-T2: E04 31-03 13:42:31	T1: 280.30 T2: E01 T1-T2: E04 31-03 13:55:57

Report Reference Num

Engineer/Technical

# Column Oven Temperature Stability Raw data Reading

Raw Data Page 5

Customer Name: PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD.  
Instrument Model: Clarus 580 GC

Department: Quality Control  
Serial Name: 580S17020103

## Oven Temperature Stability at 100 °C

Temperature °C put on Position #	Temp stability Reading at Position
Position 1	100.5
Position 2	100.3
Position 3	100.3
Position 4	100.3
Position 5	100.4

Report Reference Num

Engineer/Technical

## Injector port Temperature Raw data Reading

Customer Name: PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD. Department: Quality Control  
Instrument Model: Clarus 580 GC Serial Name: 580S17020103  
Injector Type: Split/Splitless

## Injection Port Temperature °C

Temperature °C	Injector Temp 150 °C	Injector Temp 200 °C	Injector Temp 280 °C
Temperature Reading	146.5	196.5	246.7

T1: 146.60  
T2: E01  
T1-T2: E04  
31-03 14:22:35

T1: 196.50  
T2: E01  
T1-T2: E04  
31-03 14:25:44

T1: 276.70  
T2: E01  
T1-T2: E04  
31-03 14:28:54

Report Reference

Engineer/Technician

## Base Detector Temperature Raw data Reading

Customer Name: PINTHONG GROUP MANAGEMENT AND CONSULTANTS CO.,LTD. Department: Quality Control  
Instrument Model: Clarus 580 GC Serial Name: 580S17020103  
Detector Type: FID

## Base Detector Temperature

Temperature Setpoint°C	Base Detector Temp 200 °C	Base Detector Temp 300 °C
Temperature Reading	197.1	297.0

T1: 197.10  
T2: E01  
T1-T2: E04  
31-03 14:32:51

T1: 297.00  
T2: E01  
T1-T2: E04  
31-03 14:36:51

Report Reference

Engineer/Technician

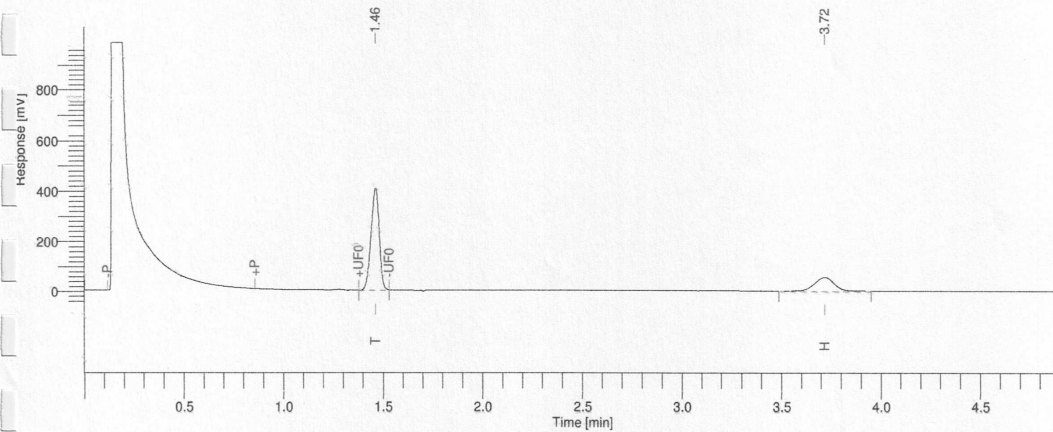


Software Version : 6.3.2.0646  
 Operator : manager  
 Sample Number : 008  
 AutoSampler : BUILT-IN  
 Instrument Name : Clarus580  
 Instrument Serial # : None  
 Delay Time : 0.00 min  
 Sampling Rate : 12.5000 pts/s  
 Sample Volume : 1.000000 ul  
 Sample Amount : 1.0000  
 Data Acquisition Time : 01-Apr-24 3:24:29 PM

Date : 01-Apr-24 3:32:36 PM  
 Sample Name : Precision 6  
 Study : Calibration  
 Rack/Vial : 0/5  
 Channel : A  
 A/D mV Range : 1000  
 End Time : 5.00 min

Area Reject : 0.000000  
 Dilution Factor : 1.00  
 Cycle : 12

Raw Data File : D:\PMOQ2023\Precision 6\_012.raw  
 Result File : D:\PMOQ2023\Precision 6\_012.rst [Editing in Progress]  
 Inst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Precision 6\_012.raw  
 Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Precision 6\_012.rst [Editing in Progress]  
 Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\Precision 6\_012.rst [Editing in Progress]  
 Report Format File : D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
 Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.461	1150475.11	409190.63	75.48	75.48	1.1505
2	Hexadecane	3.718	373769.66	55477.69	24.52	24.52	0.3738
			1524244.77	464668.32	100.00	100.00	1.5242

Missing Component Report  
 Component Expected Retention (Calibration File)

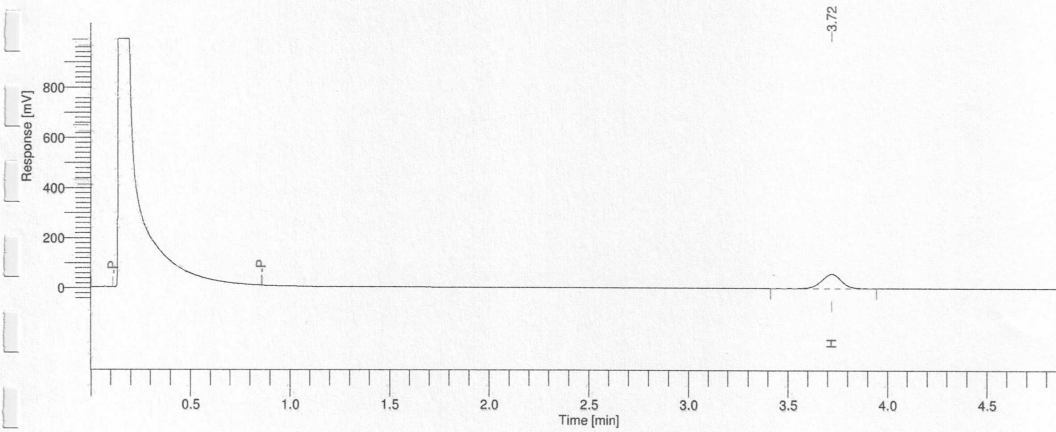
All components were found

Software Version : 6.3.2.0646  
 Operator : manager  
 Sample Number : 001  
 AutoSampler : BUILT-IN  
 Instrument Name : Clarus580  
 Instrument Serial # : None  
 Delay Time : 0.00 min  
 Sampling Rate : 12.5000 pts/s  
 Sample Volume : 1.000000 ul  
 Sample Amount : 1.0000  
 Data Acquisition Time : 01-Apr-24 2:09:54 PM

Date : 01-Apr-24 2:41:13 PM  
 Sample Name : FID Linearity 1  
 Study : Calibration  
 Rack/Vial : 0/1  
 Channel : A  
 A/D mV Range : 1000  
 End Time : 5.00 min

Area Reject : 0.000000  
 Dilution Factor : 1.00  
 Cycle : 1

Raw Data File : D:\PMOQ2023\FID Linearity 1\_001.raw  
 Result File : D:\PMOQ2023\FID Linearity 1\_001.rst [Editing in Progress]  
 Inst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 1\_001.raw  
 Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 1\_001.rst [Editing in Progress]  
 Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 1\_001.rst [Editing in Progress]  
 Report Format File : D:\DATA\REPORT FORMAT\Data Analysis .rpt  
 Sequence File : D:\PMOQ2023\Calibration2023.seq



## \*\*\*\*\*Data analysis\*\*\*\*\*

PMC

Peak #	Component Name	Time [min]	Area [uV*sec]	Area [%]	Raw Amount
1	Hexadecane	3.721	385225.09	100.00	0.3852
			385225.09	100.00	0.3852

Missing Component Report  
 Component Expected Retention (Calibration File)

Tetradecane 1.450

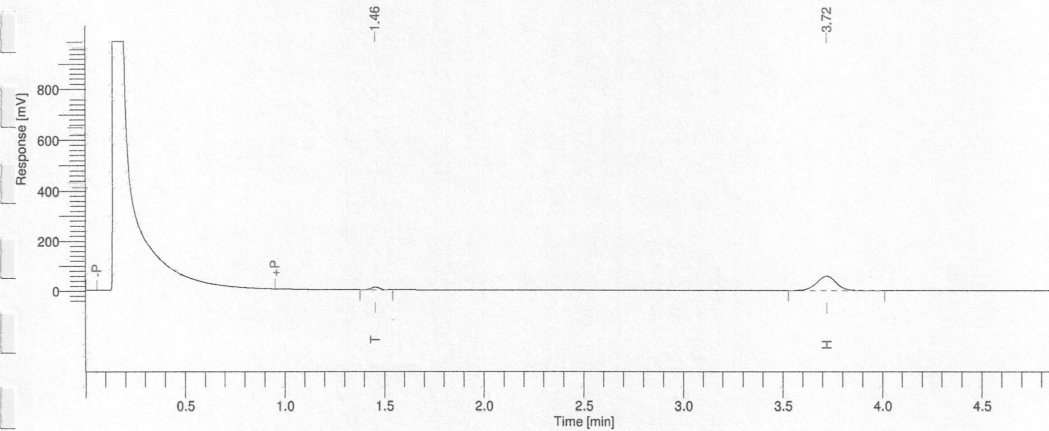


Software Version : 6.3.2.0646  
 Operator : manager  
 Sample Number : 002  
 AutoSampler : BUILT-IN  
 Instrument Name : Clarus580  
 nstrument Serial # : None  
 Delay Time : 0.00 min  
 Sampling Rate : 12.5000 pts/s  
 Sample Volume : 1.000000 ul  
 Sample Amount : 1.0000  
 Data Acquisition Time : 01-Apr-24 2:16:40 PM

Date : 01-Apr-24 2:44:45 PM  
 Sample Name : FID Linearity 2  
 Study : Calibration  
 Rack/Vial : 0/2  
 Channel : A  
 A/D mV Range : 1000  
 End Time : 5.00 min

Area Reject : 0.000000  
 Dilution Factor : 1.00  
 Cycle : 2

Raw Data File : D:\PMOQ2023\FID Linearity 2\_002.raw  
 Result File : D:\PMOQ2023\FID Linearity 2\_002.rst [Editing in Progress]  
 nst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 2\_002.raw  
 Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 2\_002.rst [Editing in Progress]  
 Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 2\_002.rst [Editing in Progress]  
 Report Format File: D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
 Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.455	31325.75	11227.44	7.55	7.55	0.0313
2	Hexadecane	3.723	383781.45	57135.48	92.45	92.45	0.3838
			415107.21	68362.92	100.00	100.00	0.4151

Missing Component Report  
 Component Expected Retention (Calibration File)

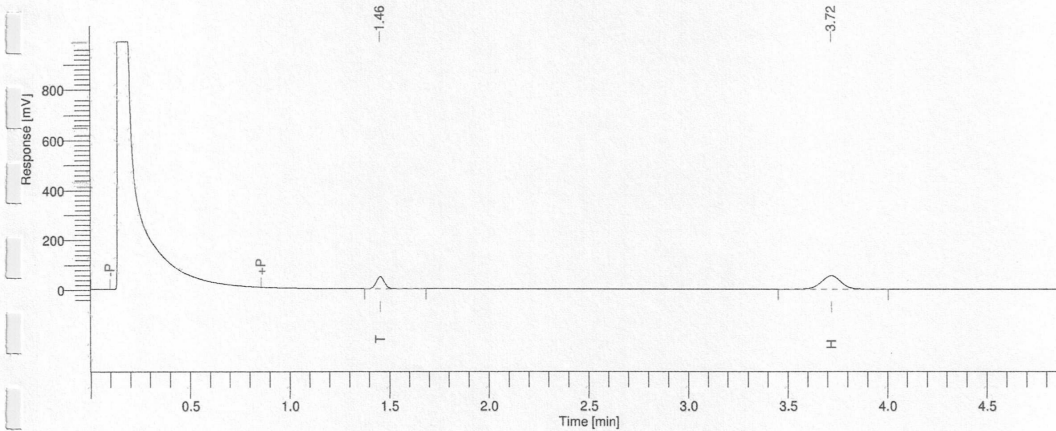
All components were found

Software Version : 6.3.2.0646  
 Operator : manager  
 Sample Number : 003  
 AutoSampler : BUILT-IN  
 Instrument Name : Clarus580  
 nstrument Serial # : None  
 Delay Time : 0.00 min  
 Sampling Rate : 12.5000 pts/s  
 Sample Volume : 1.000000 ul  
 Sample Amount : 1.0000  
 Data Acquisition Time : 01-Apr-24 2:23:28 PM

Date : 01-Apr-24 2:46:39 PM  
 Sample Name : FID Linearity 3  
 Study : Calibration  
 Rack/Vial : 0/3  
 Channel : A  
 A/D mV Range : 1000  
 End Time : 5.00 min

Area Reject : 0.000000  
 Dilution Factor : 1.00  
 Cycle : 3

Raw Data File : D:\PMOQ2023\FID Linearity 3\_003.raw  
 Result File : D:\PMOQ2023\FID Linearity 3\_003.rst [Editing in Progress]  
 nst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 3\_003.raw  
 Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 3\_003.rst [Editing in Progress]  
 Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 3\_003.rst [Editing in Progress]  
 Report Format File: D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
 Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.455	140126.66	49638.09	27.81	27.81	0.1401
2	Hexadecane	3.721	363761.09	54315.90	72.19	72.19	0.3638
			503887.74	103953.99	100.00	100.00	0.5039

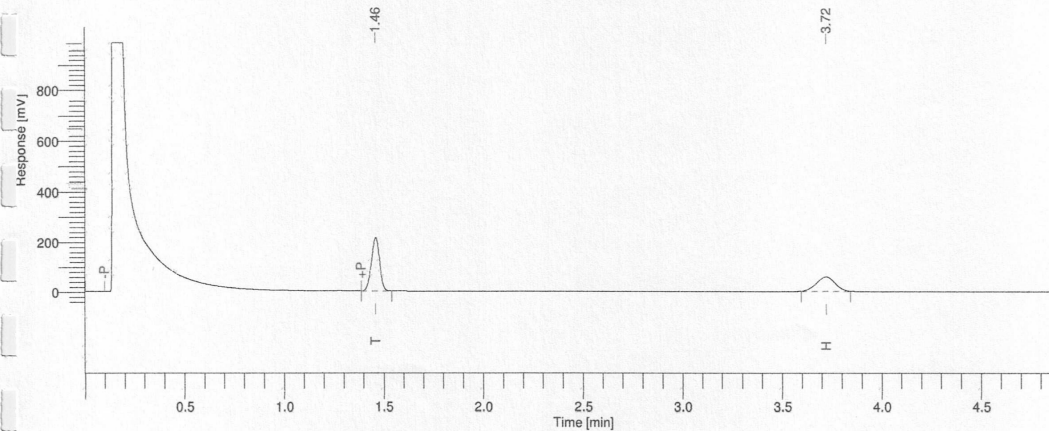
Missing Component Report  
 Component Expected Retention (Calibration File)

All components were found

Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 004  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 2:30:15 PM

Date : 01-Apr-24 2:58:02 PM  
Sample Name : FID Linearity 4  
Study : Calibration  
Rack/Vial : 0/4  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 4

Raw Data File : D:\PMOQ2023\FID Linearity 4\_004.raw  
Result File : D:\PMOQ2023\FID Linearity 4\_004.rst [Editing in Progress]  
Inst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 4\_004.raw  
Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 4\_004.rst [Editing in Progress]  
Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 4\_004.rst [Editing in Progress]  
Report Format File: D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.459	605206.45	214149.83	61.95	61.95	0.6052
2	Hexadecane	3.722	371770.35	57745.61	38.05	38.05	0.3718
			976976.80	271895.44	100.00	100.00	0.9770

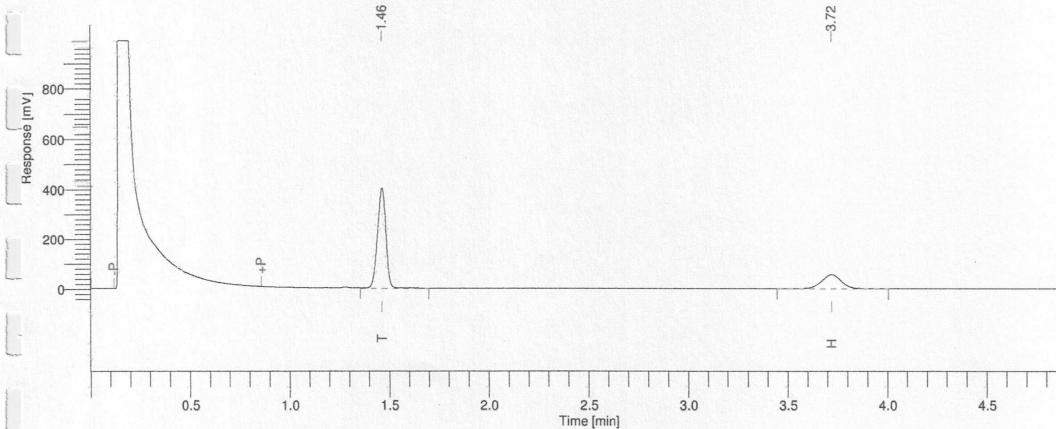
Missing Component Report  
Component Expected Retention (Calibration File)

All components were found

Software Version : 6.3.2.0646  
Operator : manager  
Sample Number : 005  
AutoSampler : BUILT-IN  
Instrument Name : Clarus580  
Instrument Serial # : None  
Delay Time : 0.00 min  
Sampling Rate : 12.5000 pts/s  
Sample Volume : 1.000000 ul  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Apr-24 2:36:59 PM

Date : 01-Apr-24 2:52:16 PM  
Sample Name : FID Linearity 5  
Study : Calibration  
Rack/Vial : 0/5  
Channel : A  
A/D mV Range : 1000  
End Time : 5.00 min  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 5

Raw Data File : D:\PMOQ2023\FID Linearity 5\_005.raw  
Result File : D:\PMOQ2023\FID Linearity 5\_005.rst [Editing in Progress]  
Inst Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 5\_005.raw  
Proc Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 5\_005.rst [Editing in Progress]  
Calib Method : d:\pmoq2023\calibration2023\_1 from D:\PMOQ2023\FID Linearity 5\_005.rst [Editing in Progress]  
Report Format File: D:\DATA\REPORT FORMAT\ANALYSIS REPORT.rpt  
Sequence File : D:\PMOQ2023\Calibration2023.seq



## ANALYSIS REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Adjusted Amount
1	Tetradecane	1.463	1143527.90	401621.70	75.58	75.58	1.1435
2	Hexadecane	3.720	369538.04	55181.59	24.42	24.42	0.3695
			1513065.94	456803.29	100.00	100.00	1.5131

Missing Component Report  
Component Expected Retention (Calibration File)

All components were found



Software Version : 6.3.2.0646  
Operator : service  
Sample Number :  
AutoSampler :  
Instrument Name :  
Interface Serial # :  
Delay Time : 0.00 min  
Sampling Rate : 10.0006 pts/s  
Sample Volume : 1.000000 µL  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Jan-80 12:00:01 AM

Date : 31-Mar-24 3:29:48 PM  
Sample Name :  
Study :  
Rack/Vial : 0/1  
Channel : A  
A/D mV Range : 1000  
End Time : 8.50 min  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 1

Raw Data File : D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-1dat-SS420x.raw  
Result File : D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-1dat-SS420x.rst [Editing in Progress]  
Inst Method : DEFAULT from D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-1dat-SS420x.raw  
Proc Method : E:\Calibra from D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-1dat-SS420x.rst [Editing in Progress]  
Calib Method : E:\Calibration\Calibration QA HPL I 23 2016\Method\Software Cal from D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-1dat-SS420x.rst [Editing in Progress]  
Report Format File: DEFAULT.rpt  
Sequence File :

## DEFAULT REPORT

Peak #	Time [min]	Area [µV·s]	Height [µV]	Area [%]	Norm. Area [%]	BL	Area/Height [s]
1	0.134	25072.50	10006.09	0.02	0.02	BB	2.5057
2	0.197	49996.70	20002.24	0.04	0.04	BB	2.4996
3	0.271	75001.00	30003.39	0.06	0.06	BB	2.4998
4	0.377	100003.10	40002.73	0.08	0.08	BB	2.4999
5	0.441	125004.10	50002.86	0.10	0.10	BB	2.4999
6	0.542	150006.40	60004.06	0.12	0.12	BB	2.4999
7	0.622	175000.25	70001.15	0.14	0.14	BB	2.5000
8	0.705	199998.50	79999.49	0.16	0.16	BB	2.5000
9	0.790	225008.30	90003.14	0.18	0.18	BB	2.5000
10	0.869	250013.50	100004.00	0.20	0.20	BB	2.5000
11	0.944	275008.50	110001.13	0.22	0.22	BB	2.5001
12	1.052	300007.30	131169.88	0.24	0.24	BB	2.2872
13	1.125	325013.30	130003.49	0.26	0.26	BB	2.5000
14	1.202	350011.45	140002.31	0.28	0.28	BB	2.5000
15	1.290	375010.65	150000.44	0.30	0.30	BB	2.5001
16	1.382	400017.10	160003.59	0.32	0.32	BB	2.5001
17	1.450	425014.00	170002.19	0.34	0.34	BB	2.5001
18	1.535	450010.80	179999.19	0.36	0.36	BB	2.5001
19	1.628	475019.00	190002.06	0.38	0.38	BB	2.5001
20	1.714	500016.95	200001.35	0.40	0.40	BB	2.5001
21	1.802	525004.71	209997.53	0.42	0.42	BB	2.5001
22	1.880	550014.10	219999.59	0.44	0.44	BB	2.5001
23	1.964	575018.40	230000.61	0.46	0.46	BB	2.5001
24	2.048	600016.41	239999.66	0.48	0.48	BB	2.5001
25	2.137	625009.61	249998.06	0.50	0.50	BB	2.5001
26	2.209	650010.48	259997.01	0.51	0.51	BB	2.5001
27	2.295	675014.51	269996.84	0.53	0.53	BB	2.5001
28	2.370	700023.41	279999.06	0.55	0.55	BB	2.5001
29	2.464	725013.51	289997.61	0.57	0.57	BB	2.5001
30	2.540	750017.81	299997.84	0.59	0.59	BB	2.5001
31	2.632	775016.21	309996.61	0.61	0.61	BB	2.5001
32	2.701	800024.26	319998.04	0.63	0.63	BB	2.5001
33	2.797	825018.61	329997.98	0.65	0.65	BB	2.5001
34	2.876	850019.81	339996.39	0.67	0.67	BB	2.5001
35	2.956	875021.56	349996.13	0.69	0.69	BB	2.5001
36	3.050	900020.01	359996.06	0.71	0.71	BB	2.5001
37	3.132	925021.41	369997.06	0.73	0.73	BB	2.5001
38	3.217	950020.81	383410.76	0.75	0.75	BB	2.4778
39	3.300	975019.31	393413.66	0.77	0.77	BB	2.4784
40	3.382	1000014.71	403144.35	0.79	0.79	BB	2.4805
41	3.465	1025015.61	409994.59	0.81	0.81	BB	2.5001
42	3.547	1050009.91	419992.57	0.83	0.83	BB	2.5001
43	3.625	1075012.36	429990.20	0.85	0.85	BB	2.5001
44	3.712	1100021.01	439992.61	0.87	0.87	BB	2.5001
45	3.800	1125006.91	449988.57	0.89	0.89	BB	2.5001
46	3.870	1150000.41	459987.79	0.91	0.91	BB	2.5001

31-Mar-24 3:29:48 PM Result: D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-1dat-SS420x.rst

Peak #	Time [min]	Area [µV·s]	Height [µV]	Area [%]	Norm. Area [%]	BL	Area/Height [s]
47	3.958	1175014.36	469989.44	0.93	0.93	BB	2.5001
48	4.050	1200013.11	479988.06	0.95	0.95	BB	2.5001
49	4.132	1224994.21	489984.61	0.97	0.97	BB	2.5001
50	4.217	1249997.21	499986.84	0.99	0.99	BB	2.5001
51	4.292	1275007.46	509987.21	1.01	1.01	BB	2.5001
52	4.382	1300000.71	519983.12	1.03	1.03	BB	2.5001
53	4.468	1325001.86	529985.58	1.05	1.05	BB	2.5001
54	4.550	1349997.51	539985.84	1.07	1.07	BB	2.5001
55	4.631	1375005.61	549985.49	1.09	1.09	BB	2.5001
56	4.705	1400008.71	559983.49	1.11	1.11	BB	2.5001
57	4.798	1424996.31	569982.06	1.13	1.13	BB	2.5001
58	4.881	1449984.62	579980.49	1.15	1.15	BB	2.5001
59	4.959	1474990.87	589979.40	1.17	1.17	BB	2.5001
60	5.048	1499998.12	602769.06	1.19	1.19	BB	2.4885
61	5.123	1524994.22	609980.06	1.21	1.21	BB	2.5001
62	5.213	1549988.62	619981.84	1.23	1.23	BB	2.5001
63	5.300	1574989.82	629978.48	1.25	1.25	BB	2.5001
64	5.383	1600003.62	642851.22	1.27	1.27	BB	2.4889
65	5.463	1625001.72	649982.06	1.29	1.29	BB	2.5001
66	5.545	1649984.82	659980.17	1.31	1.31	BB	2.5001
67	5.632	1674991.22	669978.37	1.33	1.33	BB	2.5001
68	5.703	1700010.92	679983.12	1.35	1.35	BB	2.5001
69	5.786	1724999.57	689980.30	1.37	1.37	BB	2.5001
70	5.877	1749985.52	699978.84	1.39	1.39	BB	2.5001
71	5.963	1774990.02	709977.61	1.41	1.41	BB	2.5001
72	6.050	1800004.27	722495.59	1.43	1.43	BB	2.4914
73	6.122	1825005.22	729980.96	1.45	1.45	BB	2.5001
74	6.213	1849994.37	739981.50	1.47	1.47	BB	2.5001
75	6.295	1875004.72	749982.06	1.49	1.49	BB	2.5001
76	6.378	1900016.27	759982.05	1.50	1.50	BB	2.5001
77	6.452	1925005.27	769978.29	1.52	1.52	BB	2.5001
78	6.537	1949999.42	779981.84	1.54	1.54	BB	2.5001
79	6.634	1975002.92	789983.46	1.56	1.56	BB	2.5001
80	6.715	2000017.42	799982.59	1.58	1.58	BB	2.5001
81	6.798	2025012.32	809982.12	1.60	1.60	BB	2.5001
82	6.875	2049997.92	819981.02	1.62	1.62	BB	2.5001
83	6.965	2075007.77	829982.05	1.64	1.64	BB	2.5001
84	7.045	2100022.32	839983.24	1.66	1.66	BB	2.5001
85	7.125	2125017.92	849980.23	1.68	1.68	BB	2.5001
86	7.213	2150008.62	859983.02	1.70	1.70	BB	2.5001
87	7.286	2175008.72	869982.12	1.72	1.72	BB	2.5001
88	7.385	2200025.62	879905.53	1.74	1.74	BB	2.3457
89	7.452	2225025.12	889981.55	1.76	1.76	BB	2.5001
90	7.536	2250005.12	899980.12	1.78	1.78	BB	2.5001
91	7.623	2275004.87	909980.69	1.80	1.80	BB	2.5001
92	7.715	2300020.37	919981.18	1.82	1.82	BB	2.5001
93	7.796	2325026.12	929982.06	1.84	1.84	BB	2.5001
94	7.875	2350007.12	939980.12	1.86	1.86	BB	2.5001
95	7.963	2375003.17	949979.32	1.88	1.88	BB	2.5001
96	8.040	2400022.22	959980.02	1.90	1.90	BB	2.5001
97	8.130	2425021.92	969977.20	1.92	1.92	BB	2.5001
98	8.213	2450014.52	979979.49	1.94	1.94	BB	2.5001
99	8.293	2475007.43	989978.67	1.96	1.96	BB	2.5001
100	8.371	2500031.52	999979.49	1.98	1.98	BB	2.5001

1.26e+08 5.06e+07 100.00 100.00

Warning -- Signal level out-of-range in peak

Missing Component Report  
Component Expected Retention (Calibration File)

All components were found



Software Version : 6.3.2.0646  
Operator : service  
Sample Number :  
AutoSampler :  
Instrument Name :  
Interface Serial # :  
Delay Time : 0.00 min  
Sampling Rate : 10.0006 pts/s  
Sample Volume : 1.000000 µL  
Sample Amount : 1.0000  
Data Acquisition Time : 01-Jan-80 12:00:01 AM

Date : 31-Mar-24 3:31:11 PM  
Sample Name :  
Study :  
Rack/Vial : 0/1  
Channel : A  
A/D mV Range : 1000  
End Time : 8.50 min  
Area Reject : 0.000000  
Dilution Factor : 1.00  
Cycle : 1

Raw Data File : D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-2dat-SS420x.raw  
Result File : D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-2dat-SS420x.rst [Editing in Progress]  
Inst Method : DEFAULT from D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-2dat-SS420x.raw  
Proc Method : E:\Calibra from D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-2dat-SS420x.raw  
Calib Method : E:\Calibration\Calibration QA HPL I 23 2016\Method\Software Cal from D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-2dat-SS420x.rst [Editing in Progress]  
Report Format File: DEFAULT.rpt  
Sequence File :

## DEFAULT REPORT

Peak #	Time [min]	Area [µV·s]	Height [µV]	Area [%]	Norm. Area [%]	BL	Area/Height [s]
1	0.134	25072.50	10006.09	0.02	0.02	BB	2.5057
2	0.197	49996.70	20002.24	0.04	0.04	BB	2.4996
3	0.271	75001.00	30003.39	0.06	0.06	BB	2.4998
4	0.377	100003.10	40002.73	0.08	0.08	BB	2.4999
5	0.441	125004.10	50002.86	0.10	0.10	BB	2.4999
6	0.542	150006.40	60004.06	0.12	0.12	BB	2.4999
7	0.622	175000.25	70001.15	0.14	0.14	BB	2.5000
8	0.705	199998.50	79999.49	0.16	0.16	BB	2.5000
9	0.790	225008.30	90003.14	0.18	0.18	BB	2.5000
10	0.869	250013.50	100004.00	0.20	0.20	BB	2.5000
11	0.944	275008.50	110001.13	0.22	0.22	BB	2.5001
12	1.052	300007.30	131169.88	0.24	0.24	BB	2.2872
13	1.125	325013.30	130003.49	0.26	0.26	BB	2.5000
14	1.202	350011.45	140002.31	0.28	0.28	BB	2.5000
15	1.290	375010.65	150000.44	0.30	0.30	BB	2.5001
16	1.382	400017.10	160003.59	0.32	0.32	BB	2.5001
17	1.450	425014.00	170002.19	0.34	0.34	BB	2.5001
18	1.535	450010.80	179999.19	0.36	0.36	BB	2.5001
19	1.628	475019.00	190002.06	0.38	0.38	BB	2.5001
20	1.714	500016.95	200001.35	0.40	0.40	BB	2.5001
21	1.802	525004.71	209997.53	0.42	0.42	BB	2.5001
22	1.880	550014.10	219999.59	0.44	0.44	BB	2.5001
23	1.964	575018.40	230000.61	0.46	0.46	BB	2.5001
24	2.048	600016.41	239999.66	0.48	0.48	BB	2.5001
25	2.137	625009.61	249998.06	0.50	0.50	BB	2.5001
26	2.209	650010.48	259997.01	0.51	0.51	BB	2.5001
27	2.295	675014.51	269996.84	0.53	0.53	BB	2.5001
28	2.370	700023.41	279999.06	0.55	0.55	BB	2.5001
29	2.464	725013.51	289997.61	0.57	0.57	BB	2.5001
30	2.540	750017.81	299997.84	0.59	0.59	BB	2.5001
31	2.632	775016.21	309996.61	0.61	0.61	BB	2.5001
32	2.701	800024.26	319998.04	0.63	0.63	BB	2.5001
33	2.797	825018.61	329997.98	0.65	0.65	BB	2.5001
34	2.876	850019.81	339998.39	0.67	0.67	BB	2.5001
35	2.956	875021.56	349996.13	0.69	0.69	BB	2.5001
36	3.050	900020.01	359996.06	0.71	0.71	BB	2.5001
37	3.132	925021.41	369997.06	0.73	0.73	BB	2.5001
38	3.217	950020.81	383410.76	0.75	0.75	BB	2.4778
39	3.300	975019.31	393413.66	0.77	0.77	BB	2.4784
40	3.382	1000014.71	403144.35	0.79	0.79	BB	2.4805
41	3.465	1025015.61	409994.59	0.81	0.81	BB	2.5001
42	3.547	1050009.91	419992.57	0.83	0.83	BB	2.5001
43	3.625	1075012.36	429990.20	0.85	0.85	BB	2.5001
44	3.712	1100021.01	439992.61	0.87	0.87	BB	2.5001
45	3.800	1125006.91	449988.57	0.89	0.89	BB	2.5001
46	3.870	1150000.41	459987.79	0.91	0.91	BB	2.5001

31-Mar-24 3:31:11 PM Result: D:\DATA\DATA\PMOQ2023\Software Calibration\Software Calibration 4-2dat-SS420x.rst

Peak #	Time [min]	Area [µV·s]	Height [µV]	Area [%]	Norm. Area [%]	BL	Area/Height [s]
47	3.958	1175014.36	469989.44	0.93	0.93	BB	2.5001
48	4.050	1200013.11	479988.06	0.95	0.95	BB	2.5001
49	4.132	1224994.21	489984.61	0.97	0.97	BB	2.5001
50	4.217	1249997.21	499986.84	0.99	0.99	BB	2.5001
51	4.292	1275007.46	509987.21	1.01	1.01	BB	2.5001
52	4.382	1300000.71	519983.12	1.03	1.03	BB	2.5001
53	4.468	1325001.86	529985.58	1.05	1.05	BB	2.5001
54	4.550	1349997.51	539985.84	1.07	1.07	BB	2.5001
55	4.631	1375005.61	549985.49	1.09	1.09	BB	2.5001
56	4.705	1400008.71	559983.49	1.11	1.11	BB	2.5001
57	4.798	1424996.31	569982.06	1.13	1.13	BB	2.5001
58	4.881	1449984.62	579980.49	1.15	1.15	BB	2.5001
59	4.959	1474990.87	589979.40	1.17	1.17	BB	2.5001
60	5.048	1499998.12	602769.06	1.19	1.19	BB	2.4885
61	5.123	1524994.22	609980.06	1.21	1.21	BB	2.5001
62	5.213	1549988.62	619981.84	1.23	1.23	BB	2.5001
63	5.300	1574989.82	629978.48	1.25	1.25	BB	2.5001
64	5.383	1600003.62	642851.22	1.27	1.27	BB	2.4889
65	5.463	1625001.72	649982.06	1.29	1.29	BB	2.5001
66	5.545	1649984.82	659980.17	1.31	1.31	BB	2.5001
67	5.632	1674991.22	669978.37	1.33	1.33	BB	2.5001
68	5.703	1700010.92	679983.12	1.35	1.35	BB	2.5001
69	5.786	1724999.57	689980.30	1.37	1.37	BB	2.5001
70	5.877	1749985.52	699978.84	1.39	1.39	BB	2.5001
71	5.963	1774990.02	709977.61	1.41	1.41	BB	2.5001
72	6.050	1800004.27	722495.59	1.43	1.43	BB	2.4914
73	6.122	1825005.22	729980.96	1.45	1.45	BB	2.5001
74	6.213	1849994.37	739981.50	1.47	1.47	BB	2.5001
75	6.295	1875004.72	749982.06	1.49	1.49	BB	2.5001
76	6.378	1900016.27	759982.05	1.50	1.50	BB	2.5001
77	6.452	1925005.27	769978.29	1.52	1.52	BB	2.5001
78	6.537	1949999.42	779981.84	1.54	1.54	BB	2.5001
79	6.634	1975002.92	789983.46	1.56	1.56	BB	2.5001
80	6.715	2000017.42	799982.59	1.58	1.58	BB	2.5001
81	6.798	2025012.32	809982.12	1.60	1.60	BB	2.5001
82	6.875	2049997.92	819981.02	1.62	1.62	BB	2.5001
83	6.965	2075007.77	829982.05	1.64	1.64	BB	2.5001
84	7.045	2100022.32	839983.24	1.66	1.66	BB	2.5001
85	7.125	2125017.92	849980.23	1.68	1.68	BB	2.5001
86	7.213	2150008.62	859983.02	1.70	1.70	BB	2.5001
87	7.286	2175008.72	869982.12	1.72	1.72	BB	2.5001
88	7.385	2200025.62	937905.53	1.74	1.74	BB	2.3457
89	7.452	2225025.12	889981.55	1.76	1.76	BB	2.5001
90	7.536	2250005.12	899980.12	1.78	1.78	BB	2.5001
91	7.623	2275004.87	909980.69	1.80	1.80	BB	2.5001
92	7.715	2300020.37	919981.18	1.82	1.82	BB	2.5001
93	7.796	2325026.12	929982.06	1.84	1.84	BB	2.5001
94	7.875	2350007.12	939980.12	1.86	1.86	BB	2.5001
95	7.963	2375003.17	949979.32	1.88	1.88	BB	2.5001
96	8.040	2400022.22	959980.02	1.90	1.90	BB	2.5001
97	8.130	2425021.92	969977.20	1.92	1.92	BB	2.5001
98	8.213	2450014.52	979979.49	1.94	1.94	BB	2.5001
99	8.293	2475007.43	989978.67	1.96	1.96	BB	2.5001
100	8.371	2500031.52	999979.49	1.98	1.98	BB	2.5001

1.26e+08 5.06e+07 100.00 100.00

Warning -- Signal level out-of-range in peak

Missing Component Report  
Component Expected Retention (Calibration File)

All components were found