# เอกสารแนบ 18

## เอกสารอนุญาตห้องปฏิบัติการ

MM-NE15

เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด เลขทะเบียน ว-๓๐๑
ที่ อก ๐๓๑๐(๑)/ ๒๖๔๓ ลงวันที่ ๓๑ มกราคม ๒๕๖๖

ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๔ รายการ

น้ำเสีย จำนวน 4 รายการ

| ลำดับที่ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 1 | Biochemical Oxygen Demand | 5-Day BOD Test, Membrane Electrode Method |
| 2 | pH | Electrometric Method |
| 3 | Total Dissolved Solids | Dried at 180 °C |
| 4 | Total Suspended Solids | Dried at 103-105 °C |

เอกสารอ้างอิง

APHA, AWWA, WEF. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington, DC: APHA, 2017.



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ที่ อก ๐๓๑๐(๑)/ ๒๖๔๓

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๓๑ มกราคม ๒๕๖๖

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๘ ธันวาคม ๒๕๖๕

สิ่งที่ส่งมาด้วย เอกสารแนบท้ายหนังสือรับต่ออายุขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด จำนวน ๑ แผ่น

ตามหนังสือที่อ้างถึง บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๓๐๑ สถานที่ตั้งเลขที่ ๕/๔๕ หมู่บ้าน บ้านกลางกรุง บิซทาวน์ ซอยศรีนครินทร์ ๔๖/๑ (ปราโมทย์) แขวงหนองบอน เขตประเวศ กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท ตรวจวัดสิ่งแวดล้อม จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมดูแลห้องปฏิบัติการวิเคราะห์ ทะเบียนเลขที่ ว-๓๐๑-ค-๐๐๐๑

ข. [redacted] ทะเบียนเลขที่ ว-๓๐๑-จ-๐๐๐๑
ทะเบียนเลขที่ ว-๓๐๑-จ-๐๐๐๒
ทะเบียนเลขที่ ว-๓๐๑-จ-๐๐๐๓
ทะเบียนเลขที่ ว-๓๐๑-จ-๐๐๐๔

ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำเสีย ตามสิ่งที่ส่งมาด้วย

หนังสือฉบับนี้จะหมดอายุในวันที่ ๓ มกราคม ๒๕๖๙ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรม ภายใน ๓๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ทั้งนี้ สามารถยื่นคำขอผ่านระบบอิเล็กทรอนิกส์ได้ที่หน้าเว็บไซต์กรมโรงงานอุตสาหกรรม ตาม QR Code ท้ายหนังสือฉบับนี้

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

[redacted]
ผู้อำนวยการสำนักงานเลขานุการกรม ปฏิบัติราชการแทนอธิบดีกรมโรงงานอุตสาหกรรม

ยื่นคำขอผ่านระบบอิเล็กทรอนิกส์

กองวิจัยและเตือนภัยมลพิษโรงงาน
กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ
โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕
โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๙
ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th

Green Industry
"อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"

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CALIBRATION LABORATORY CO., LTD.
2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

NSC-TISI-TIS 17025
CALIBRATION 0059
CLC

# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | pH METER |
| MANUFACTURER | : | APERA |
| MODEL / TYPE | : | PH700/201T-F |
| SERIAL NO. | : | PH700X1019061009/N/A [LA-008/PH-02] |
| DATE OF CALIBRATION | : | 11 April 2025 |

**ENVIRONMENT CONDITIONS :**

Temperature : (25 ± 2.5) °C Relative Humidity : (50 ± 15) % RH

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **WI-305-128, 238.** The calibration was performed by direct measurement with Certified Reference Material (CRM) and comparison with Calibration Bath, Precision Thermometer and IPRT which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

1. pH Standard Solution, NIMT TRM CODE TRM-S-2003, TRM CODE TRM-S-2007.
2. pH Standard Solution, Control Company Catalog Number 06664260,11754256, Lot Number CC787362.
3. Calibration Bath, Kambic Model OB-22/2 ULT S/N. 17115653.
4. Precision Thermometer, ASL Model F250 S/N. 1334023800.
5. IPRT, Wika Model CTP5000-250-D S/N. PO00043543-1-10-1.



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NSC-TISI-TIS 17025
CALIBRATION 0059
CLC

# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | pH METER |
| MANUFACTURER | : | APERA |
| MODEL / TYPE | : | PH700/201T-F |
| SERIAL NO. | : | PH700X1019061009/N/A [LA-008/PH-02] |
| CLID. NO. | : | 272401000 |
| JOB CONTROL NO. | : | 250410042961 |
| CALIBRATION SERVICE | : | ☑ IN-LABORATORY ☐ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

18 April 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )



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CALIBRATION LABORATORY CO., LTD.
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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of pH meter.

## CALIBRATION DATA

### 1. pH METER RESULT @ 25 °C

| Standard pH Buffer Solution ( pH ) | pH Meter Reading ( pH ) | pH Meter Reading ( mV ) | Correction ( pH ) | Uncertainty of Measurement (± pH) | *k* Factor |
|---|---|---|---|---|---|
| 4.003 | 4.01 | 134 | -0.007 | 0.014 | 2,00 |
| 7.005 | 7.00 | -43 | +0.005 | 0.014 | 2,00 |
| 10.015 | 10.01 | -208 | +0.005 | 0.100 | 2,05 |

Technical Note. Setting function CAL 3 point ( 4,7,10 ).

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 91 of 138

### *2. TEMPERATURE RESULT

| Immersion depth (mm) | Actual Temperature ( °C ) | DUC Reading ( °C ) | Correction ( °C ) | Uncertainty ± ( °C ) |
|---|---|---|---|---|
| 100 | 25.01 | 24.9 | +0.11 | 0.07 |

Technical Note. Type of sensor : pH Probe

Probe ∅ 12 mm

The reported uncertainty is based on a standard uncertainty multiplied by coverage factor of $k = 2,00$.

Note. * means Calibrations marked " Not TISI Accredited " in this Certificate have been included for completeness.

**This report is valid for the above stated instrument/s only.**

**### End of Certificate ###**



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### TRACEABILITY :

1. The measurements are traceable to International System of Units (SI) , through National Institute of Metrology (Thailand). Lot Number. 080124 , 120124. Due Date 23 January 2026.

2. The measurements are traceable to International System of Units (SI) , through Control Company. Certificate No. 4281-14495731 , Due Date 27 September 2025.

3. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q24120999, Due Date 26 November 2025.

4. The measurements are traceable to International System of Units (SI) , through Thailand Institute of Scientific and Technological Research (TISTR). Certificate No. PSL-T 1042/67, Due Date 16 October 2025.

5. The measurements are traceable to International System of Units (SI) , through National Institute of Metrology (Thailand). Certificate No. TT-0146-24, Due Date 28 October 2025.

### UNCERTAINTY :

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

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ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | DO METER |
| MANUFACTURER | : | YSI |
| MODEL / TYPE | : | 5000-230V/5010 |
| SERIAL NO. | : | 16D101626/19D100367[DOM-01] |
| DATE OF CALIBRATION | : | 11 April 2025 |

**ENVIRONMENT CONDITIONS :**

Temperature : (25 ± 2.5) °C Relative Humidity : (50 ± 15) %RH

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **CLC-CPCH-06.** The calibration was performed by direct measurement with Certified Reference Material (CRM).

**REFERENCE STANDARD USED :**

Dissolved Oxygen, Sigma-Alorich Product ID QC3077-500ML.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI) , through Merck Co., Ltd.

Lot LRAD8571, Due Date April 2026.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2{,}00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"



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# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | DO METER |
| MANUFACTURER | : | YSI |
| MODEL / TYPE | : | 5000-230V/5010 |
| SERIAL NO. | : | 16D10162 |
| CLID. NO. | : | 272100329 |
| JOB CONTROL NO. | : | 250410042960 |
| CALIBRATION SERVICE | : | ☑ IN-LABORATORY ☐ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 10 April 2025 DATE OF ISSUED : 18 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

18 April 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )



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# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | DIGITAL THERMOMETER WITH PROBE |
| MANUFACTURER | : | LUTRON |
| MODEL / TYPE | : | MTM-380SD |
| SERIAL NO. | : | I.570147/N/A[LA-0013/LA-0013/A] |
| CLID. NO. | : | 232204019 |
| JOB CONTROL NO. | : | 250408041416 |
| CALIBRATION SERVICE | : | ☑ IN-LABORATORY ☐ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 08 April 2025 DATE OF ISSUED : 11 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

11 April 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )

Certificate No. Q25041416

F3-011-05/12-23



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**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of Do Meter.

**CALIBRATION DATA**

**DO METER RESULT @ 20 °C**

| Nominal Value ( mg/L ) | DUC Reading ( mg/L ) | Correction ( mg/L ) | Uncertainty ( mg/L ) |
|---|---|---|---|
| 8.18 | 8.2 | -0.02 | ± 0.38 |

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 5 of 68

This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25042960

F3-011-05/12-23



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ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The DUC Reading were recorded and the means value were reported of five times measurement in the table below.

**CALIBRATION DATA**

**CORRECTION OF TEMPERATURE : T1**

| Immersion depth (mm) | Actual Temperature ( °C ) | DUC Reading ( °C ) | Correction ( °C ) | Uncertainty ± ( °C ) |
|---|---|---|---|---|
| 200 | 4.00 | 4.0 | 0.00 | 0.52 |
| | 20.02 | 20.1 | -0.08 | |
| | 95.02 | 96.1 | -1.08 | |
| | 104.02 | 105.1 | -1.08 | |
| | 180.00 | 181.6 | -1.60 | |

Technical Note. Type of sensor : Thermocouple Type K

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 57 of 68

**This report is valid for the above stated instrument/s only.**

**### End of Certificate ###**



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# REPORT OF CALIBRATION

# FOR

| | | |
|---|---|---|
| **NOMENCLATURE** | : | **DIGITAL THERMOMETER WITH PROBE** |
| **MANUFACTURER** | : | **LUTRON** |
| **MODEL / TYPE** | : | **MTM-380SD** |
| **SERIAL NO.** | : | **I.570147/N/A[LA-0013/LA-0013/A]** |
| **DATE OF CALIBRATION** | : | **10 April 2025** |

**ENVIRONMENT CONDITIONS :**

**Temperature :** (23 ± 2) °C **Relative Humidity :** (55 ± 10) % RH

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **CLC-CPTH-06** based on **ASTM E 220-86** as calibration guidelines. The calibration was performed by using Calibration Bath, Precision Thermometer and IPRT which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

1. Calibration Bath, Kambic Model OB-22/2 ULT, OB-22/2 S/N. 17115653, 17115654.
2. Precision Thermometer, ASL Model F250 S/N. 1334023800.
3. IPRT, Wika, ASL Model CTP5000-450-D, T100-250-1D S/N. PO00036374-1-10-12, PO106346-1-18.

**TRACEABILITY :**

1. The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd. Certificate No. Q24120999, Q24112862. Due Date 26 November 2025, 12 November 2025.
2. The measurements are traceable to International System of Units (SI) , through Thailand Institute of Scientific and Technological Research (TISTR). Certificate No. PSL-T 1042/67, Due Date 16 October 2025.
3. The measurements are traceable to International System of Units (SI) , through National Institute of Metrology (Thailand). Certificate No. TT-0147-24, TT-0110-24. Due Date 28 October 2025, 06 August 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2{,}00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

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CLC Accredited ISO/IEC 17025

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ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

MM-NE15

# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | DIGITAL THERMOHYGRO METER |
| MANUFACTURER | : | DIGICON |
| MODEL / TYPE | : | TH-02A |
| SERIAL NO. | : | 1919E0284991[DTH-01] |
| DATE OF CALIBRATION | : | 10 April 2025 |

**ENVIRONMENT CONDITIONS :**

Temperature : (23 ± 2) °C Relative Humidity : (55 ± 10) %RH

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **CLC-CPTH-11.** The calibration was performed by using Chilled Mirror Hygrometer which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Chilled Mirror Hygrometer, Edgetech Model Dew Master S/N. 44602.

Temperature & Humidity Chamber, PGC Model 9141-5116 S/N. 1304261.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI) , through Thunder Scientific Corporation.

Certificate No. 22724, Due Date 03 October 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2{,}00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

**Certificate No. Q25041414**

**F3-011-05/12-23**



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9.18/7

CALIBRATION LABORATORY CO., LTD.
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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

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ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | DIGITAL THERMOHYGRO METER |
| MANUFACTURER | : | DIGICON |
| MODEL / TYPE | : | TH-02A |
| SERIAL NO. | : | 1919E0284991[DTH-01] |
| CLID. NO. | : | 232100200 |
| JOB CONTROL NO. | : | 250408041414 |
| CALIBRATION SERVICE | : | ☑ IN-LABORATORY ☐ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 08 April 2025 DATE OF ISSUED : 11 April 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

11 April 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )

Certificate No. Q25041414

F3-011-05/12-23



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MM-NE15

CALIBRATION LABORATORY CO., LTD.
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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

CLC Accredited ISO/IEC 17025

NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | WATER BATH |
| MANUFACTURER | : | M-LAB |
| MODEL / TYPE | : | WBN 15 |
| SERIAL NO. | : | 0335[LA-007] |
| CLID. NO. | : | 332300657 |
| JOB CONTROL NO. | : | 250215018258 |
| CALIBRATION SERVICE | : | ☐ IN-LABORATORY ☑ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.

5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),

NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )



@clccalibration

CALIBRATION LABORATORY CO., LTD.
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CLC Accredited ISO/IEC 17025

ANAB ACCREDITED CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of the measuring digital thermohygro meter.

## CALIBRATION DATA

### 1. CORRECTION OF TEMPERATURE

| Test point (°C) | Actual Temperature (°C) | DUC Reading (°C) | Correction (°C) | Uncertainty ±(°C) |
|---|---|---|---|---|
| 20.0 | 20.00 | 19.6 | +0.40 | 0.27 |
| 25.0 | 25.00 | 24.5 | +0.50 | |
| 30.0 | 30.00 | 29.5 | +0.50 | |

### 2. CORRECTION OF HUMIDITY

| STD Temperature (°C) | STD Reading (%RH) | DUC Reading (%RH) | Correction (%RH) | Uncertainty ± (%RH) |
|---|---|---|---|---|
| 25 | 40.0 | 30 | +10.0 | 0.8 |
| 25 | 60.0 | 50 | +10.0 | 0.8 |

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 60 of 68

This report is valid for the above stated instrument/s only.

### End of Certificate ###



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9.18/8

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of the measuring water bath.

**CALIBRATION DATA**

**1. WATER BATH PERFORMANCE**

| Test Point ( °C ) | DUC Reading ( °C ) | Uniformity ( °C ) | Stability ( °C ) |
|---|---|---|---|
| 85.0 | 85.0 | 0.40 | 0.28 |



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# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| **NOMENCLATURE** | : | **WATER BATH** |
| **MANUFACTURER** | : | **M-LAB** |
| **MODEL / TYPE** | : | **WBN 15** |
| **SERIAL NO.** | : | **0335[LA-007]** |
| **LOCATION SITE** | : | **LABORATORY - HOT ZONE** |
| **DATE OF CALIBRATION** | : | **27 February 2025** |

**ENVIRONMENT CONDITIONS :**

**Temperature : 24 °C to 25 °C** **Relative Humidity : 49% to 51%**

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **WI-305-135** based on **ASTM E 715-80:2016** as calibration guidelines.

The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Hydra Data Logger, Fluke Model 2620 S/N. 5592550.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd.

Certificate No. Q24120965, Due Date 13 May 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2{,}00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

MM-NE15

CALIBRATION LABORATORY CO., LTD.
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# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | WATER BATH |
| MANUFACTURER | : | MEMMERT |
| MODEL / TYPE | : | WNB14 |
| SERIAL NO. | : | L418.0758[LA-004] |
| CLID. NO. | : | 332100157 |
| JOB CONTROL NO. | : | 250215018257 |
| CALIBRATION SERVICE | : | ☐ IN-LABORATORY ☑ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )

Certificate No. Q25018257
F3-011-05/12-23



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9.18/10

CALIBRATION LABORATORY CO., LTD.
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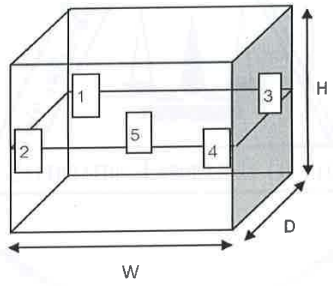
## CALIBRATION DATA

### 2. TEMPERATURE DISTRIBUTION

| Test Point (°C) | DUC Reading (°C) | STD Reading (°C) | | | | | Uncertainty ±(°C) |
|---|---|---|---|---|---|---|---|
| | | Probe No. 1 | Probe No. 2 | Probe No. 3 | Probe No. 4 | Probe No. 5 | |
| 85.0 | 85.0 | 85.15 | 84.79 | 84.96 | 84.89 | 85.06 | 0.58 |

Technical Note : W = 35 cm, D = 30 cm, H = 15 cm.

The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 128 of 138




This report is valid for the above stated instrument/s only.

### End of Certificate ###

Certificate No. Q25018258
F3-011-05/12-23



@clccalibration

MM-NE15

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of the measuring water bath.

**CALIBRATION DATA**

**1. WATER BATH PERFORMANCE**

| Test Point ( °C ) | DUC Reading ( °C ) | Uniformity ( °C ) | Stability ( °C ) |
|---|---|---|---|
| 95.0 | 95.0 | 0.39 | 0.17 |



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# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| **NOMENCLATURE** | : | **WATER BATH** |
| **MANUFACTURER** | : | **MEMMERT** |
| **MODEL / TYPE** | : | **WNB14** |
| **SERIAL NO.** | : | **L418.0758[LA-004]** |
| **LOCATION SITE** | : | **LABORATORY - HOT ZONE** |
| **DATE OF CALIBRATION** | : | **27 February 2025** |

**ENVIRONMENT CONDITIONS :**

**Temperature : 24 °C to 25 °C** **Relative Humidity : 49% to 51%**

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **WI-305-135** based on **ASTM E 715-80:2016** as calibration guidelines.

The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Hydra Data Logger, Fluke Model 2620 S/N. 5592550.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd.

Certificate No. Q24120965, Due Date 13 May 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2{,}00$ which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"



ม.18/11

# METROLOGY SYSTEM ( THAILAND ) CO.,LTD.

Mirescal company

ID LINE : IEC17025

## Certificate of Calibration

Certificate Number : SPR25050011-3



Customer : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 Baan Klang Krung Biz Town, Soi Srinagarindra 46/1 (Pramote),
Nongbon Sub-district, Prawet District, Bangkok 10250

| | | | | | |
|---|---|---|---|---|---|
| Equipment Name | : | Refrigerator | | | |
| Manufacturer | : | Medicool | | | |
| Model | : | BB-117 | | | |
| Serial Number | : | BB117-190725001 | | | |
| ID. Number | : | LA-003 | | | |
| Environmental Conditions | | | | | |
| Ambient Temperature | : | 25 °C ± 10 °C | Received Date | : | 02 May 2025 |
| Relative Humidity | : | 60 % ± 20 % | Calibration Date | : | 06 May 2025 |
| Location of Calibration | : | On-Site | Recommend Due Date | : | N/A |
| Calibration Procedure | : | SP-CPT-04-01 | Date of Issue | : | 07 May 2025 |

Method of Calibration

This certifies that the above instrument was calibrated in compliance with the calibration system requirement of ISO/IEC 17025:2017 in accordance with reference procedure. Standards used to perform this calibration are certified by to NIST or equivalent, National metrology institute, Natural physical constants, consensus standards. The result reported herein apply only to the calibration of the item described above as received.Our decision rule is to contact the customer if the item pass and fail calibration when the results include the uncertainties and the customer must determine if the results meets their needs.

The calibration certificate shall not be reproduced except in full,without written approval of SP Metrology System (Thailand).

Calibrated by : Mr.Keerati Bunyawat

Calibration Officer

App [redacted]



69/29 Moo 1 Klongsi Klongluang Pathumthani 12120 Tel: (662) 193-2217-20 www.spmetrology.co.th www.สปมาตรวิทยา.com

8.18/12

# CALIBRATION LABORATORY CO., LTD.

CLC Accredited ISO/IEC 17025

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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com

NSC-TISI-TIS 17025
CALIBRATION 0059
CLC

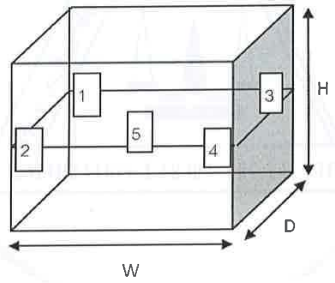
## CALIBRATION DATA

### 2. TEMPERATURE DISTRIBUTION

| Test Point (°C) | DUC Reading (°C) | STD Reading (°C) | | | | | Uncertainty ±(°C) |
|---|---|---|---|---|---|---|---|
| | | Probe No. 1 | Probe No. 2 | Probe No. 3 | Probe No. 4 | Probe No. 5 | |
| 95.0 | 95.0 | 96.45 | 96.30 | 96.22 | 96.04 | 96.26 | 0.51 |

Technical Note : W = 35 cm, D = 29 cm, H = 14 cm.

The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 128 of 138




**This report is valid for the above stated instrument/s only.**

**### End of Certificate ###**

**Certificate No. Q25018257**

**F3-011-05/12-23**

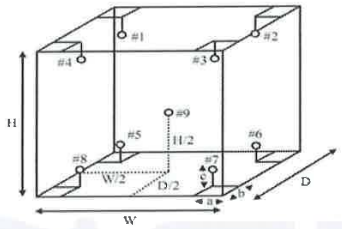


@clccalibration

# Result of Calibration

Certificate Number : SPR25050011-3






Temperature Accuracy in the Measurement Zone.

Unit : °C

| UUC Setting | Measured Temperature (°C) @ Probe No. (Probe No. 9 is REF.) | | | | | | | | | Uncertainty ( ± ) |
|---|---|---|---|---|---|---|---|---|---|---|
| | # 1 | # 2 | # 3 | # 4 | # 5 | # 6 | # 7 | # 8 | # 9 | |
| 4.0 | 3.37 | 4.12 | 4.25 | 4.13 | 3.93 | 3.98 | 3.95 | 4.23 | 4.16 | 0.60 |

Temperature Uniformity, Stability,Overall Variation

Unit : °C

| UUC Setting | UUC Reading | Temperature Stability | Temperature Uniformity | Overall Variation |
|---|---|---|---|---|
| 4.0 | 4.0 | 0.09 | 0.94 | 1.07 |

Note :

The result of calibration was found accurate as show on date and place of calibration only.
This Certificate is not certified for any commercial transaction.

Measurement Uncertainty

The reported uncertainty of measurement is the expanded uncertainty obtained by multiplying the standard uncertainty with the coverage factor k = 2, providing a level of confidence approximately 95 %

- End of Certificate -



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METROLOGY SYSTEM ( THAILAND ) CO.,LTD.
A Trescal company
ID LINE : IEC17025

# Calibration Report

Certificate Number : SPR25050011-3



## Reference Standards

| Equipment Name | Model | Serial No. | Certificate No. | Due. Date |
|---|---|---|---|---|
| Data Acquisition/Switch Unit | 34970A | MY44074688 | SPR24080102-24 | 07 Sep 2025 |

Traceability

This certification is traceable to the International System of Unit maintained at :
SP Metrology - SP Metrology system (Thailand) Co.Ltd.



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MM-NE15

CALIBRATION LABORATORY CO., LTD.
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CLC Accredited ISO/IEC 17025
NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | INCUBATOR |
| MANUFACTURER | : | ACCUPLUS |
| MODEL / TYPE | : | SMART i250 |
| SERIAL NO. | : | 2059-0718-0010[LA-002] |
| LOCATION SITE | : | LABORATORY |
| DATE OF CALIBRATION | : | 27 February 2025 |

**ENVIRONMENT CONDITIONS :**

Temperature : 24 °C to 25 °C Relative Humidity : 49 % to 51 %

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **WI-305-165** based on **TLAS G-20-1/02-08** as calibration guidelines.

The calibration was performed by using Hydra Series II which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Hydra Series II, Fluke Model 2635A S/N. 8209003.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd.

Certificate No. Q24052151, Due Date 27 May 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"



ม.18/14

CALIBRATION LABORATORY CO., LTD.
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# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | INCUBATOR |
| MANUFACTURER | : | ACCUPLUS |
| MODEL / TYPE | : | SMART i250 |
| SERIAL NO. | : | 2059-0718-0010[LA-002] |
| CLID. NO. | : | 332100155 |
| JOB CONTROL NO. | : | 250215018255 |
| CALIBRATION SERVICE | : | ☐ IN-LABORATORY ☑ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )

CALIBRATION LABORATORY CO., LTD.
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CLC Accredited ISO/IEC 17025
NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

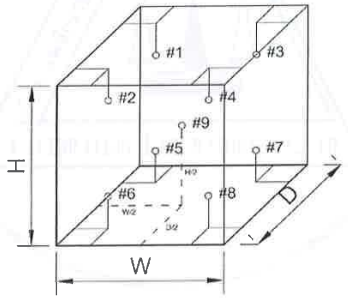
## CALIBRATION DATA

### 2. TEMPERATURE DISTRIBUTION

| DUC | | Measured Temperature ( °C )@Probe No.9 is Ref. | | | | | | | | | Uncertainty ±( °C ) | Coverage factor *k* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Setting ( °C ) | Indicating ( °C ) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| 20.0 | 20.0 | 20.55 | 20.53 | 20.57 | 20.51 | 20.59 | 20.52 | 20.40 | 20.47 | 20.27 | 0.58 | 2,00 |

Technical Note : W = 50 cm, D = 48 cm, H = 110 cm.

The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 129 of 138




**This report is valid for the above stated instrument/s only.**

**### End of Certificate ###**



CALIBRATION LABORATORY CO., LTD.
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CLC Accredited ISO/IEC 17025
NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of the measuring incubator.

## CALIBRATION DATA

### 1. INCUBATOR PERFORMANCE

| DUC | | Measured Uniformity ( °C ) | Measured Stability ( °C ) | Measured Overall Variation ( °C ) |
|---|---|---|---|---|
| Setting ( °C ) | Indicating ( °C ) | | | |
| 20.0 | 20.0 | 0.43 | 0.34 | 0.98 |

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2/10-11,14,55 Soi Prasert Manukit 29 Yaek 4, Prasert Manukit Rd., Ladphrao, Bangkok 10230
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ANAB ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | HOT AIR OVEN |
| MANUFACTURER | : | MEMMERT |
| MODEL / TYPE | : | UF110 |
| SERIAL NO. | : | B422.0026[LA-0012] |
| LOCATION SITE | : | LABORATORY-HOT ZONE |
| DATE OF CALIBRATION | : | 19 March 2025 |

**ENVIRONMENT CONDITIONS :**

Temperature : 24 °C to 25 °C Relative Humidity : 49% to 51 %

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **CLC-CPTH-07** based on **TLAS G-20** as calibration guidelines.

The calibration was performed by using Hydra Data Logger which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Hydra Data Logger, Fluke Model 2620 S/N. 5592550.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI) , through Calibration Laboratory Co., Ltd.

Certificate No. Q24052150, Due Date 27 May 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95 %.

It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"



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ANAB ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | HOT AIR OVEN |
| MANUFACTURER | : | MEMMERT |
| MODEL / TYPE | : | UF110 |
| SERIAL NO. | : | B422.0026[LA-0012] |
| CLID. NO. | : | 332202464 |
| JOB CONTROL NO. | : | 250306027140 |
| CALIBRATION SERVICE | : | ☐ IN-LABORATORY ☑ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 06 March 2025 DATE OF ISSUED : 25 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

25 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )

CALIBRATION LABORATORY CO., LTD.
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ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

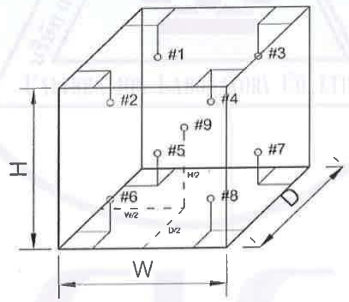
## CALIBRATION DATA

### 2. TEMPERATURE DISTRIBUTION

| DUC | | Measured Temperature ( °C )@Probe No.9 is Ref. | | | | | | | | | Uncertainty ±( °C ) | Coverage factor *k* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Setting ( ° C ) | Indicating ( ° C ) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| 104.0 | 104.0 | 103.64 | 103.91 | 103.49 | 103.54 | 103.67 | 103.61 | 103.47 | 103.96 | 103.72 | 0.43 | 2,00 |
| 180.0 | 180.0 | 179.19 | 179.91 | 178.87 | 179.17 | 179.38 | 179.38 | 178.90 | 179.22 | 179.63 | 0.51 | 2,00 |

Technical Note : W = 56 cm, D = 40 cm, H = 48 cm.

Note. The Scope of Accredited ANAB Certificate No. ACDM-2814 Version 015 Page 59 of 68




**This report is valid for the above stated instrument/s only.**

**### End of Certificate ###**



CALIBRATION LABORATORY CO., LTD.
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ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT ACDM-2814

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

The table in the following gives the calibration results and associated measurement uncertainties of the measuring hot air oven.

## CALIBRATION DATA

### 1. HOT AIR OVEN PERFORMANCE

| DUC | | Measured Uniformity ( °C ) | Measured Stability ( °C ) | Measured Overall Variation ( °C ) |
|---|---|---|---|---|
| Setting ( °C ) | Indicating ( °C ) | | | |
| 104.0 | 104.0 | 0.29 | 0.11 | 0.68 |
| 180.0 | 180.0 | 0.83 | 0.22 | 1.40 |

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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | BALANCE |
| MANUFACTURER | : | SHIMADZU |
| MODEL / TYPE | : | AP225WD |
| SERIAL NO. | : | D316300692[LA-001] |
| LOCATION SITE | : | LABORATORY-BALANCE ROOM |
| DATE OF CALIBRATION | : | 27 February 2025 |

**ENVIRONMENT CONDITIONS :**

Temperature : 23 °C to 24 °C Relative Humidity : 49 % to 51 %

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **WI-305-46** based on **EURAMET/cg-18/Version 4.0 (11/2015).**

The calibration was performed by Comparison with Weight Set which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Weight Set, Mettler Toledo Class E2 S/N. 158850.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).

Certificate No. MM-0165-23, Due Date 21 December 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95%. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

**Certificate No. Q25018253**

**F3-011-05/12-23**



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CALIBRATION LABORATORY CO., LTD.
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CLC Accredited ISO/IEC 17025
NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | BALANCE |
| MANUFACTURER | : | SHIMADZU |
| MODEL / TYPE | : | AP225WD |
| SERIAL NO. | : | D316300692[LA-001] |
| CLID. NO. | : | 362100172 |
| JOB CONTROL NO. | : | 250215018253 |
| CALIBRATION SERVICE | : | ☐ IN-LABORATORY ☑ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )

**Certificate No. Q25018253**

**F3-011-05/12-23**



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# CERTIFICATE OF CALIBRATION

## FOR

| | | |
|---|---|---|
| NOMENCLATURE | : | BALANCE |
| MANUFACTURER | : | METTLER TOLEDO |
| MODEL / TYPE | : | MS204TS/00 |
| SERIAL NO. | : | B935191252[LA-002] |
| CLID. NO. | : | 362200356 |
| JOB CONTROL NO. | : | 250215018254 |
| CALIBRATION SERVICE | : | ☐ IN-LABORATORY ☑ ON-SITE |

CUSTOMER : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 BAAN KLANG KRUNG BIZ TOWN, SOI SRINAGARINDRA 46/1 (PRAMOTE),
NONG BON SUB-DISTRICT, PRAWET DISTRICT, BANGKOK 10250

DATE OF RECEIVED : 15 February 2025 DATE OF ISSUED : 04 March 2025

The report of calibration shall not be reproduced except in full without approval of the Calibration Laboratory Co., Ltd.

Calibrated By : [redacted]

Approved By : [redacted]

04 March 2025

This Calibration Certificate documents the traceability to national standards, which realize the units of measurement according to the International System of Units ( SI )

Certificate No. Q25018254
F3-011-05/12-23



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NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

## CALIBRATION DATA

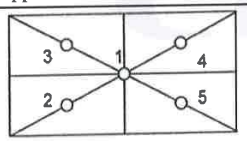
**1. Error of indications**

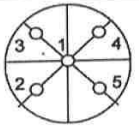
| Nominal Test Value ( g ) | Conventional mass ( g ) | Display Value ( g ) | Error of Balance ( g ) | Uncertainty ± ( mg ) | Coverage factor *k* |
|---|---|---|---|---|---|
| Unload | 0.0000 | 0.0000 | 0.0000 | 0.07 | 2,00 |
| 5.0000 | 5.0000 | 5.0001 | +0.0001 | 0.11 | 2,00 |
| 10.0000 | 10.0000 | 10.0000 | 0.0000 | 0.11 | 2,00 |
| 20.0000 | 20.0000 | 20.0000 | 0.0000 | 0.12 | 2,00 |
| 40.0000 | 40.0000 | 39.9999 | -0.0001 | 0.14 | 2,00 |
| 60.0000 | 59.9999 | 59.9999 | 0.0000 | 0.15 | 2,00 |
| 80.0000 | 79.9999 | 80.0000 | +0.0001 | 0.19 | 2,00 |
| 100.0000 | 99.9999 | 100.0000 | +0.0001 | 0.17 | 2,00 |
| 120.0000 | 119.9999 | 120.0000 | +0.0001 | 0.21 | 2,00 |
| 140.0000 | 139.9999 | 139.9999 | 0.0000 | 0.25 | 2,00 |
| 160.0000 | 159.9998 | 159.9998 | 0.0000 | 0.26 | 2,00 |
| 180.0000 | 179.9998 | 179.9998 | 0.0000 | 0.30 | 2,00 |
| 200.0000 | 199.9997 | 199.9996 | -0.0001 | 0.26 | 2,00 |

**2. Repeatability of indications**

| Nominal Test Value ( g ) | Standard Deviation of Reading ( g ) |
|---|---|
| 200.0000 | 0.00006 |

**3. Effect of eccentric application of a load on the indication**

☐ 


☑ 


| Nominal Test Value ( g ) | Display Value ( g ) | | | | | Maximum Difference of Center Value ( g ) |
|---|---|---|---|---|---|---|
| | Position 1 | Position 2 | Position 3 | Position 4 | Position 5 | |
| 100.0000 | 100.0000 | 99.9999 | 100.0000 | 100.0001 | 100.0000 | 0.0001 |

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 116,117 of 138

**This report is valid for the above stated instrument/s only.**

**### End of Certificate ###**

Certificate No. Q25018253
F3-011-05/12-23



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CLC Accredited ISO/IEC 17025
NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

**CONDITION OF CALIBRATION ITEM : RECEIVED IN GOOD OPERATIONAL CONDITION**

**MEASUREMENT RESULTS : ( X ) without adjustment ( ) adjustment**

**CALIBRATION DATA**

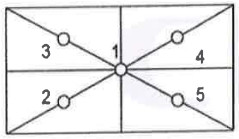
**1. Error of indications**

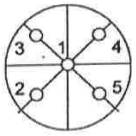
| Nominal Test Value ( g ) | Conventional mass ( g ) | Display Value ( g ) | Error of Balance ( g ) | Uncertainty ± ( mg ) | Coverage factor *k* |
|---|---|---|---|---|---|
| Unload | 0.0000 | 0.0000 | 0.0000 | 0.06 | 2,00 |
| 0.1000 | 0.1000 | 0.1000 | 0.0000 | 0.14 | 2,00 |
| 0.5000 | 0.5000 | 0.5000 | 0.0000 | 0.15 | 2,00 |
| 1.0000 | 1.0000 | 1.0001 | +0.0001 | 0.15 | 2,00 |
| 2.0000 | 2.0000 | 2.0001 | +0.0001 | 0.15 | 2,00 |
| 5.0000 | 5.0000 | 5.0000 | 0.0000 | 0.15 | 2,00 |
| 10.0000 | 10.0000 | 10.0001 | +0.0001 | 0.15 | 2,00 |

**2. Repeatability of indications**

| Nominal Test Value ( g ) | Standard Deviation of Reading ( g ) |
|---|---|
| 200.0000 | 0.00004 |

**3. Effect of eccentric application of a load on the indication**

☐ 


☑ 


| Nominal Test Value ( g ) | Display Value ( g ) | | | | | Maximum Difference of Center Value ( g ) |
|---|---|---|---|---|---|---|
| | Position 1 | Position 2 | Position 3 | Position 4 | Position 5 | |
| 100.0000 | 99.9999 | 100.0001 | 99.9999 | 99.9998 | 99.9998 | 0.0002 |

Note. The Scope of Accredited TISI Certificate No. 23-LB0092 Issue 02 Page 116 of 138

**This report is valid for the above stated instrument/s only.**

**### End of Certificate ###**

**Certificate No. Q25018254**

**F3-011-05/12-23**



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Tel. 02-578-0353-4 Fax: 02-578-2672 www.cal-laboratory.com E-mail:sale@cal-laboratory.com
CLC Accredited ISO/IEC 17025
NSC-TISI-TIS 17025 CALIBRATION 0059 CLC

# REPORT OF CALIBRATION

## FOR

| | | |
|---|---|---|
| **NOMENCLATURE** | : | **BALANCE** |
| **MANUFACTURER** | : | **METTLER TOLEDO** |
| **MODEL / TYPE** | : | **MS204TS/00** |
| **SERIAL NO.** | : | **B935191252[LA-002]** |
| **LOCATION SITE** | : | **LABORATORY - BALANCE ROOM** |
| **DATE OF CALIBRATION** | : | **27 February 2025** |

**ENVIRONMENT CONDITIONS :**

**Temperature : 23 °C to 24 °C** **Relative Humidity : 49 % to 51 %**

**PROCEDURE USED :**

This instrument was calibrated under procedure No. **WI-305-46** based on **EURAMET cg-18 Version 4.0 (11/2015).**

The calibration was performed by Comparison with Weight Set which maintained by the Calibration Laboratory Co., Ltd.

**REFERENCE STANDARD USED :**

Weight Set, Mettler Toledo Class E2 S/N. 158850.

**TRACEABILITY :**

The measurements are traceable to International System of Units (SI), through National Institute of Metrology (Thailand).

Certificate No. MM-0165-23, Due Date 21 December 2025.

**UNCERTAINTY :**

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor complies with the table which for a normal distribution corresponds to a coverage probability of approximately 95%. It has been evaluated according to the "Evaluation of the Uncertainty of Measurement in Calibration (EA-4/02 M:2022)"

**Certificate No. Q25018254**

**F3-011-05/12-23**



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METROLOGY SYSTEM ( THAILAND ) CO.,LTD.
69/29 Moo 1 Klongsi Klongluang Pathumthani 12120 ( Thailand ) Tel: (662) 193-2220 5 คู่สาย www.สอบเทียบเครื่องมือวัด.com

# Calibration Report

Certificate Number : SPR25050011-1



## Reference Standards

| Equipment Name | Model | Serial No. | Certificate No. | Due. Date |
|---|---|---|---|---|
| Digimatic Micrometer | 293-821-30 | 45121126 | SPR25020035-6 | 22 Feb 2026 |
| Electronic Balance | N/A | 14246789 | SPR24090254-10 | 02 Oct 2025 |
| Barometer | MHB-382SD | AJ.52188 | SPR25020035-8 | 26 Feb 2026 |
| Standard Weight Ring | N/A | N/A | SPR24110445-33 | 26 Dec 2025 |
| Digital Thermometer With PRT | GT11/3850-40-392 | 08000098/100288 | SPR24060233-5 | 27 Jun 2025 |

Traceability

This certification is traceable to the International System of Unit maintained at :
SP Metrology - SP Metrology system (Thailand) Co.Ltd.



METROLOGY SYSTEM ( THAILAND ) CO.,LTD.
69/29 Moo 1 Klongsi Klongluang Pathumthani 12120 ( Thailand ) Tel: (662) 193-2220 5 คู่สาย www.สอบเทียบเครื่องมือวัด.com

# Certificate of Calibration

Certificate Number : SPR25050011-1



Customer : ENVIRONMENTAL MEASUREMENTS CO., LTD.
5/45 Baan Klang Krung Biz Town, Soi Srinagarindra 46/1 (Pramote),
Nongbon Sub-district, Prawet District, Bangkok 10250

| | | | |
|---|---|---|---|
| Equipment Name | : Soil Hydrometer | | |
| Manufacturer | : Precision | | |
| Model | : ASTM 152H | | |
| Serial Number | : 061 | | |
| ID. Number | : N/A | | |
| Environmental Conditions | | | |
| Ambient Temperature | : 23 °C ± 2 °C | Received Date | : 02 May 2025 |
| Relative Humidity | : 50 % ± 15 % | Calibration Date | : 10 May 2025 |
| Location of Calibration | : In-Lab | Recommend Due Date | : N/A |
| Calibration Procedure | : SP-CPM-04-14 | Date of Issue | : 11 May 2025 |

Method of Calibration

This certifies that the above instrument was calibrated in compliance with the calibration system requirement of ISO/IEC 17025:2017 in accordance with reference procedure. Standards used to perform this calibration are certified by to NIST or equivalent, National metrology institute, Natural physical constants, consensus standards. The result reported herein apply only to the calibration of the item described above as received.Our decision rule is to contact the customer if the item pass and fail calibration when the results include the uncertainties and the customer must determine if the results meets their needs.

The calibration certificate shall not be reproduced except in full,without written approval of SP Metrology System (Thailand).

Calibrated by : [redacted]

[redacted]

MM-NE15

ที่ อก ๐๓๑๐(๑)/ ๑๔๙๑

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๒๔ กุมภาพันธ์ ๒๕๖๘

เรื่อง ยกเลิกบุคลากรของห้องปฏิบัติการวิเคราะห์

เรียน กรรมการผู้จัดการ บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๑๘ กุมภาพันธ์ ๒๕๖๘

ตามคำขอที่อ้างถึง บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด ห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๑๔๕ สถานที่ตั้งเลขที่ ๓ ซอยอุดมสุข ๔๑ ถนนสุขุมวิท แขวงบางจาก เขตพระโขนง กรุงเทพมหานคร ขอยกเลิกบุคลากร ความละเอียดแจ้งแล้ว นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้ยกเลิกเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๓ ราย ได้แก่

[redacted] ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๕๘
ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๗๐
ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๘

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

[redacted]

อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน
กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ
โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕
โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙
ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th

UAE UNITED ANALYST AND ENGINEERING CONSULTANT COMPANY LIMITED

[redacted]

สำเนาถูกต้อง



69/29 Moo 1 Klongsi Klongluang Pathumthani 12120 ( Thailand ) Tel: (662) 193-2220 5 คู่สาย www.สอบเทียบเครื่องมือวัด.com

# METROLOGY SYSTEM ( THAILAND ) CO.,LTD.

## Result of Calibration

Certificate Number : SPR25050011-1 Page : 3 of 3

Range : -5 to 60 g/ml Resolution : 1 g/ml Accuracy (±) : 1 g/ml

Hydrometer Measurement @ 20 °C Unit : g/ml

| Standard Value | UUC Reading | Error | Uncertainty ( ± ) |
|---|---|---|---|
| 0.3380 | 0 | -0.3380 | 0.23 |
| 30.1943 | 30 | -0.1943 | 0.23 |
| 60.1249 | 60 | -0.1249 | 0.23 |

Note:

The result of calibration was found accurate as show on date and place of calibration only. This Certificate is not certified for any commercial transaction.

Measurement Uncertainty

The reported uncertainty of measurement is the expanded uncertainty obtained by multiplying the standard uncertainty with the coverage factor k = 2, providing a level of confidence approximately 95%.

- End of Certificate -

MM-NE15

สิ่งที่ส่งมาด้วย ๑

**เอกสารแนบท้ายหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน**
**บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด เลขทะเบียน ว-๑๔๕**
**ที่ อก ๐๓๑๐(๑)/ ๑ ๐ ๘ ๙ ลงวันที่ ๐๗ กุมภาพันธ์ ๒๕๖๘**

**ก. ผู้ควบคุมห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๔๐ ราย**

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| ๑ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๑ |
| ๒ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๒ |
| ๓ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๓ |
| ๔ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๔ |
| ๕ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๖ |
| ๖ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๗ |
| ๗ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๘ |
| ๘ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๐๙ |
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| ๑ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๑๔ |
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| ๓ | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๓๙ |

๓๖) นายนาเคนทร์...

ที่ อก ๐๓๑๐(๑)/ ๑ ๐ ๘ ๙

กรมโรงงานอุตสาหกรรม
ถนนพระรามที่ ๖ แขวงทุ่งพญาไท
เขตราชเทวี กรุงเทพฯ ๑๐๔๐๐

๐๗ กุมภาพันธ์ ๒๕๖๘

เรื่อง ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

เรียน กรรมการผู้จัดการ บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด

อ้างถึง คำขอขึ้นทะเบียน/ต่ออายุ/เปลี่ยนแปลงบุคลากร และชนิดสารมลพิษของห้องปฏิบัติการวิเคราะห์เอกชน ลงวันที่ ๓ ธันวาคม ๒๕๖๗

สิ่งที่ส่งมาด้วย ๑. รายชื่อผู้ควบคุมห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๔๐ ราย
๒. รายชื่อเจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๑๔๑ ราย
๓. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม

ตามคำขอที่อ้างถึง บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด ขอต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน เลขทะเบียน ว-๑๔๕ สถานที่ตั้งเลขที่ ๓ ซอยอุดมสุข ๔๑ ถนนสุขุมวิท แขวงบางจาก เขตพระโขนง กรุงเทพมหานคร ต่อกรมโรงงานอุตสาหกรรม นั้น

กรมโรงงานอุตสาหกรรมพิจารณาแล้ว ให้บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด ต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน โดยมีองค์ประกอบดังนี้

ก. ผู้ควบคุมห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๔๐ ราย ตามสิ่งที่ส่งมาด้วย ๑
ข. เจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๑๔๑ ราย ตามสิ่งที่ส่งมาด้วย ๒
ค. ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนให้วิเคราะห์ในน้ำ/น้ำเสีย น้ำใต้ดิน อากาศเสีย สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว และดิน ตามสิ่งที่ส่งมาด้วย ๓

หนังสือฉบับนี้จะหมดอายุในวันที่ ๒ กุมภาพันธ์ ๒๕๗๒ หากประสงค์จะต่ออายุหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน ให้ยื่นคำขอต่ออายุพร้อมเอกสารประกอบคำขอต่อกรมโรงงานอุตสาหกรรมภายใน ๖๐ วัน ก่อนวันสิ้นอายุของหนังสือรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

อธิบดีกรมโรงงานอุตสาหกรรม

กองวิจัยและเตือนภัยมลพิษโรงงาน
กลุ่มมาตรฐานวิธีการวิเคราะห์ทดสอบมลพิษและทะเบียนห้องปฏิบัติการ
โทร. ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๐๓-๕
โทรสาร ๐ ๒๔๓๐ ๖๓๑๒ ต่อ ๒๑๙๙
ไปรษณีย์อิเล็กทรอนิกส์ saraban@diw.mail.go.th

Green Industry
"อุตสาหกรรมก้าวไกล ประเทศไทยก้าวหน้า ร่วมกันพัฒนา อุตสาหกรรมสีเขียว"

น.18/23

เอกสารแนบท้ายหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด เลขทะเบียน ว-๑๔๕
ที่ อก ๐๓๑๐(๑)/ ๑๐๘๙ ลงวันที่ ๐๗ กุมภาพันธ์ ๒๕๖๘

ข. เจ้าหน้าที่ห้องปฏิบัติการวิเคราะห์เอกชน จำนวน ๑๔๑ ราย

| | |
|---|---|
| [redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๐๑ |
| | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๐๓ |
| | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๐๔ |
| | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๐๕ |
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| | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๐๗ |
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| | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๒๘ |
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UNITED ANALYST AND ENGINEERING CONSULTANT COMPANY LIMITED สำเนาถูกต้อง





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| [redacted] | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๔๐ |
| | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๔๑ |
| | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๔๒ |
| | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๔๓ |
| | ทะเบียนเลขที่ ว-๑๔๕-ค-๐๐๔๔ |

UNITED ANALYST AND ENGINEERING CONSULTANT COMPANY LIMITED สำเนาถูกต้อง

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| ๓๖) [redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๔๗ |
| ๓๗) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๔๙ |
| ๓๘) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๕๑ |
| ๓๙) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๕๒ |
| ๔๐) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๕๓ |
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| ๔๖) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๖๑ |
| ๔๗) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๖๒ |
| ๔๘) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๖๕ |
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| ๕๔) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๗๑ |
| ๕๕) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๗๒ |
| ๕๖) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๗๓ |
| ๕๗) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๗๔ |
| ๕๘) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๗๙ |
| ๕๙) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๘๕ |
| ๖๐) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๘๖ |
| ๖๑) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๘๙ |
| ๖๒) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๙๐ |
| ๖๓) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๙๑ |
| ๖๔) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๙๖ |
| ๖๕) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๙๗ |
| ๖๖) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๐๙๘ |
| ๖๗) | ทะเบียนเลขที่ [illegible] |
| ๖๘) | ทะเบียนเลขที่ [illegible] [redacted] |
| ๖๙) | ทะเบียนเลขที่ [illegible] |
| ๗๐) | ทะเบียนเลขที่ [illegible] |
| ๗๑) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๐๖ |
| ๗๒) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๐๙ |
| ๗๓) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๐ |

SAE ANALYST AND ENGINEERING CONSULTANT COMPANY LIMITED สำเนาถูกต้อง

๗๔) นายนันทวัฒน์...



| | |
|---|---|
| ๗๔) [redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๑ |
| ๗๕) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๒ |
| ๗๖) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๓ |
| ๗๗) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๔ |
| ๗๘) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๕ |
| ๗๙) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๖ |
| ๘๐) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๗ |
| ๘๑) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๘ |
| ๘๒) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๑๙ |
| ๘๓) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๒๓ |
| ๘๔) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๒๔ |
| ๘๕) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๒๕ |
| ๘๖) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๒๖ |
| ๘๗) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๒๗ |
| ๘๘) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๒๘ |
| ๘๙) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๐ |
| ๙๐) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๑ |
| ๙๑) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๒ |
| ๙๒) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๓ |
| ๙๓) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๔ |
| ๙๔) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๕ |
| ๙๕) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๖ |
| ๙๖) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๘ |
| ๙๗) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๓๙ |
| ๙๘) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๐ |
| ๙๙) | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๑ |
| ๑๐๐ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๒ |
| ๑๐๑ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๕ |
| ๑๐๒ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๖ |
| ๑๐๓ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๗ |
| ๑๐๔ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๘ |
| ๑๐๕ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๔๙ |
| ๑๐๖ | ทะเบียนเลขที่ ว [redacted] |
| ๑๐๗ | ทะเบียนเลขที่ ว |
| ๑๐๘ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๕๒ |
| ๑๐๙ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๕๓ |
| ๑๑๐ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๕๔ |
| ๑๑๑ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๕๖ |
| ๑๑๒ | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๕๘ |

SAE ANALYST AND ENGINEERING CONSULTANT COMPANY LIMITED สำเนาถูกต้อง

๑๑๓) นางสาวปิติยา...

เอกสารแนบท้ายหนังสือต่ออายุรับขึ้นทะเบียนห้องปฏิบัติการวิเคราะห์เอกชน
บริษัท ยูไนเต็ด แอนนาลิสต์ แอนด์ เอ็นจิเนียริ่ง คอนซัลแตนท์ จำกัด เลขทะเบียน ว-๑๔๕
ที่ อก ๐๓๑๐(๑)/ ๑๐๘๙ ลงวันที่ ๐๗ กุมภาพันธ์ ๒๕๖๘

ขอบข่ายสารมลพิษที่ได้รับขึ้นทะเบียนจากกรมโรงงานอุตสาหกรรม จำนวน ๓๕๗ รายการ

น้ำ/น้ำเสีย จำนวน 46 รายการ

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 1 | Aldrin | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 2 | Arsenic | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[4]<br>2) Digestion, Inductively Coupled Plasma Method[4] |
| 3 | Barium | Digestion, Inductively Coupled Plasma Method[4] |
| 4 | α-BHC | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 5 | β-BHC | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 6 | δ-BHC | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 7 | γ-BHC | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 8 | Biochemical Oxygen Demand | 1) 5-Day BOD Test, Azide Modification Method[4]<br>2) 5-Day BOD Test, Membrane Electrode Method[4] |
| 9 | Cadmium | 1) Digestion, Direct Air-Acetylene Flame Method[4]<br>2) Digestion, Inductively Coupled Plasma Method[4] |
| 10 | Chemical Oxygen Demand | 1) Closed Reflux, Titrimetric Method[4]<br>2) Closed Reflux, Colorimetric Method[4]<br>3) Open Reflux, Titrimetric Method[4] |
| 11 | Chlordane | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 12 | Chromium | 1) Digestion, Direct Air-Acetylene Flame Method[4]<br>2) Digestion, Inductively Coupled Plasma Method[4] |
| 13 | Color | ADMI Weighted-Ordinate Spectrophotometric Method[4] |
| 14 | Copper | 1) Digestion, Direct Air-Acetylene Flame Method[4]<br>2) Digestion, Inductively Coupled Plasma Method[4] |
| 15 | Cyanide | 1) Distillation, Colorimetric Method[4]<br>2) Total Cyanide after Distillation, by Flow Injection Analysis Method[4] |
| 16 | o,p'-DDT | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 17 | 4,4'-DDD | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 18 | 4,4'-DDE | Liquid-Liquid Extraction, Gas Chromato[redacted] |
| 19 | 4,4'-DDT | Liquid-Liquid Extraction, Gas Chromato[redacted] |
| 20 | Dieldrin | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 21 | Endosulfan I | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 22 | Endosulfan II | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 23 | Endosulfan sulfate | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 24 | Endrin | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |

25 Endrin aldehyde...



| | |
|---|---|
| ๑๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๖๐ |
| ๑๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๖๑ |
| ๑๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๖๒ |
| ๑๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๖๓ |
| ๑๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๖๔ |
| ๑๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๖๕ |
| ๑๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๖๙ |
| ๑๒๐[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๗๐ |
| ๑๒๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๗๒ |
| ๑๒๒[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๗๔ |
| ๑๒๓[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๗๖ |
| ๑๒๔[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๗๘ |
| ๑๒๕[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๘๔ |
| ๑๒๖[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๘๕ |
| ๑๒๗[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๘๖ |
| ๑๒๘[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๘๗ |
| ๑๒๙[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๘๘ |
| ๑๓๐[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๘๙ |
| ๑๓๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๐ |
| ๑๓๒[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๑ |
| ๑๓๓[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๒ |
| ๑๓๔[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๓ |
| ๑๓๕[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๔ |
| ๑๓๖[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๕ |
| ๑๓๗[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๖ |
| ๑๓๘[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๗ |
| ๑๓๙[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๘ |
| ๑๔๐[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๑๙๙ |
| ๑๔๑[redacted] | ทะเบียนเลขที่ ว-๑๔๕-จ-๐๒๐๐ |

UNITED ANALYST AND ENGINEERING CONSULTANT COMPANY LIMITED

[redacted]

น้ำใต้ดิน จำนวน 126 รายการ

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 1 | Acenaphthene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 2 | Acetone | Purge and Trap Gas Chromatographic/Mass Spectrometric Method[4] |
| 3 | Aldrin | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 4 | Anthracene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 5 | Antimony | Digestion, Inductively Coupled Plasma Method[4] |
| 6 | Arsenic | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method[4] |
| 7 | Atrazine | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 8 | Barium | Digestion, Inductively Coupled Plasma Method[4] |
| 9 | Benz(a)anthracene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 10 | Benzene | Purge and Trap Gas Chromatographic/Mass Spectrometric Method[4] |
| 11 | Benzo(b)fluoranthene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 12 | Benzo(k)fluoranthene | 1) Liquid-Liquid Extraction, Gas Chron[redacted] Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 13 | Benzoic acid | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |

UAE UNITED ANALYST AND ENGINEERING สำเนาถูกต้อง





| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 25 | Endrin aldehyde | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 26 | Formaldehyde | Distillation, Colorimetric Method[2] |
| 27 | Free Chlorine | 1) Iodometric Method[4] |
| | | 2) DPD Ferrous Titrimetric Method[4] |
| 28 | Heptachlor | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 29 | Heptachlor Epoxide | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 30 | Hexavalent Chromium | Colorimetric Method[4] |
| 31 | Lead | 1) Digestion, Direct Air-Acetylene Flame Method[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method[4] |
| 32 | Manganese | 1) Digestion, Direct Air-Acetylene Flame Method[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method[4] |
| 33 | Mercury | Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[4] |
| 34 | Methoxychlor | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 35 | Nickel | 1) Digestion, Direct Air-Acetylene Flame Method[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method[4] |
| 36 | Oil & Grease | 1) Liquid-Liquid, Partition-Gravimetric Method[4] |
| | | 2) Soxhlet Extraction Method[4] |
| 37 | pH | Electrometric Method[4] |
| 38 | Phenols | 1) Distillation, Chloroform Extraction Method[4] |
| | | 2) Distillation, Direct Photometric Method[4] |
| 39 | Selenium | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method[4] |
| 40 | Sulfide | 1) Iodometric Method[4] |
| | | 2) Methylene Blue Method[4] |
| 41 | Temperature | Laboratory and Field Methods[4] |
| 42 | Total Dissolved Solids | Dried at 180 °C[4] |
| 43 | Total Kjeldahl Nitrogen | Semi-Micro-Kjeldahl Method[4] |
| 44 | Total Suspended Solids | Dried from 103 to 105 °C[4] |
| 45 | Trivalent Chromium | 1) Digestion, Direct Air-Acetylene [redacted] Colorimetric Method; Calculation |
| | | 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation[4] |
| 46 | Zinc | 1) Digestion, Direct Air-Acetylene Flame Method[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method[4] |

UAE UNITED ANALYST AND ENGINEERING CONSULTANT COMPANY LIMITED

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 14 | Benzo(a)pyrene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 15 | Benzo(g,h,i)perylene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 16 | Beryllium | Digestion, Inductively Coupled Plasma Method[4] |
| 17 | Bis(2-chloroethyl)ether | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 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 | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 23 | Cadmium | 1) Digestion, Direct Air-Acetylene Flame Method[4] |
| | | 2) Digestion, Electrothermal Atomic Absorption Spectrometric Method[4] |
| | | 3) Digestion, Inductively Coupled Plasma 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 | 1) Liquid-Liquid Extraction, Gas Chroma[redacted] Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 28 | p-Chloroaniline | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |

29 Chlorobenzene...



| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 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, Direct Air-Acetylene Flame Method[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method[4] |
| 34 | Chromium (III) | 1) Digestion, Direct Air-Acetylene Flame Method; Colorimetric Method; Calculation[4] |
| | | 2) Digestion, Inductively Coupled Plasma Method; Colorimetric Method; Calculation[4] |
| 35 | Chromium (VI) | Colorimetric Method[4] |
| 36 | Chrysene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 37 | Cyanide | Distillation, Colorimetric Method[4] |
| 38 | 2,4-D | Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| 39 | DDD | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 40 | DDE | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 41 | DDT | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chrom[redacted] Spectrometric Method[4] |
| 42 | Dibenz(a,h)anthracene | 1) Liquid-Liquid Extraction, Gas Chrom[redacted] Method[4] |
| | | 2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |

43 Di-n-butyl phthalate...

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| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 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] |
| 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 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 58 | Diethyl phthalate | Liquid-Liquid Extraction, Gas Chro[redacted] 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] |





| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 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 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 65 | Endrin | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 66 | Ethylbenzene | Purge and Trap Gas Chromatographic/Mass Spectrometric Method[4] |
| 67 | Fluoranthene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 68 | Fluorene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 69 | Heptachlor | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 70 | Heptachlor epoxide | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 71 | Hexachlorobenzene | Liquid-Liquid Extraction, Gas Chromato[redacted] 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] |



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| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 74 | α-HCH | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 75 | β-HCH | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 76 | γ-HCH | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) 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 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 80 | Isophorone | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 81 | Lead | 1) Digestion, Direct Air-Acetylene Flame Method[4]<br>2) Digestion, Electrothermal Atomic Absorption Spectrometric Method[4]<br>3) Digestion, Inductively Coupled Plasma Method[4] |
| 82 | Manganese | 1) Digestion, Direct Air-Acetylene Flame Method[4]<br>2) Digestion, Inductively Coupled Plasma Method[4] |
| 83 | Mercury | Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[4] |
| 84 | Methanol | Purge and Trap Gas Chromatographic/Mass Spectrometric Method[4] |
| 85 | Methoxychlor | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 86 | Methyl bromide | Purge and Trap Gas Chromatographic/Mass Spectrometric Method[4] |





| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 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 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) 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 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 92 | Nickel | 1) Digestion, Direct Air-Acetylene Flame Method[4]<br>2) Digestion, Inductively Coupled Plasma 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<br>- PCB 1016<br>- PCB 1221<br>- PCB 1232<br>- PCB-1242<br>- PCB-1248<br>- PCB-1254<br>- PCB-1260 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 97 | Pentachlorophenol | Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 98 | pH | Electrometric Method[4] |
| 99 | Phenanthrene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |



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| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 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 | Digestion, Inductively Coupled Plasma 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, Direct Air-Acetylene Flame Method[4]<br>2) Digestion, Inductively Coupled Plasma Method[4] |

<u>อากาศเสีย (ปล่องระบาย) จำนวน 25 รายการ</u>

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 1 | Antimony | Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 2 | Arsenic | 1) Isokinetic Sampling, Digestion, Hydride Generation/ Atomic Absorption Spectrometric Method[5]<br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 3 | Cadmium | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method[5]<br>2) Isokinetic Sampling, Digestion, In[redacted] Plasma Method[5] |
| 4 | Carbon Monoxide | Instrumental Analyzer Method[5] |
| 5 | Chlorine | Isokinetic Sampling, Ion Chromatographic Method[5] |
| 6 | Chromium | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method[5] |

Chromium (ต่อ)...



| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 100 | Phenol | 1) Distillation, Chloroform Extraction Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 101 | Pyrene | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 102 | Selenium | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[4]<br>2) Digestion, Inductively Coupled Plasma Method[4] |
| 103 | Silver | Digestion, Inductively Coupled Plasma 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 | 1) Liquid-Liquid Extraction, Gas Chromatographic Method[4]<br>2) Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[4] |
| 109 | TPH ($C_5$ - $C_8$) | 1) Purge and Trap, Gas Chromatographic Method[12,22]<br>2) Purge and Trap, Gas Chromatographic/Mass spectrometric Method[12,27] |
| 110 | TPH ($C_{>8}$ – $C_{16}$) | Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[9,22] |
| 111 | TPH ($C_{>16}$ – $C_{35}$) | Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[9,22] |
| 112 | 1,2,4-Trichlorobenzene | Purge and Trap Gas Chromatographic/Mass Spectrometric Method[4] |
| 113 | 1,1,1-Trichloroethane | Purge and Trap Gas Chromatogra[redacted] Spectrometric Method[4] |
| 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...

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 6 | Chromium (ต่อ) | 2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 7 | Cobalt | Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 8 | Copper | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method[5]<br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 9 | Cresol | Absorption Sampling, Gas Chromatographic Method[5] |
| 10 | Dioxins/Furans | Isokinetic Sampling[5] |
| 11 | Hydrogen Chloride | Isokinetic Sampling, Ion Chromatographic Method[5] |
| 12 | Hydrogen Fluoride | Isokinetic Sampling, Ion Chromatographic Method[5] |
| 13 | Hydrogen Sulfide | Absorption Sampling, Iodometric Method[5] |
| 14 | Lead | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method[5]<br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 15 | Manganese | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method[5]<br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 16 | Mercury | Isokinetic Sampling, Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[5] |
| 17 | Nickel | 1) Isokinetic Sampling, Digestion, Direct Air-Acetylene Flame Method[5]<br>2) Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 18 | Opacity | Ringelmann's Method[1] |
| 19 | Oxides of Nitrogen | 1) Absorption Sampling, Phenoldisulfonic acid Method[5]<br>2) Instrumental Analyzer Method[5] |
| 20 | Selenium | 1) Isokinetic Sampling, Digestion, Hydride Generation/ Atomic Absorption Spectrometric [redacted]<br>2) Isokinetic Sampling, Digestion, [redacted] Plasma Method[5] |
| 21 | Sulfur Dioxide | 1) Absorption Sampling, Barium-Thorin Titrimetric Method[5]<br>2) Instrumental Analyzer Method[5] |
| 22 | Sulfuric Acid | Isokinetic Sampling, Barium-Thorin Titrimetric Method[5] |

23 Total Suspended Particulate...



| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 23 | Total Suspended Particulate | Isokinetic Sampling, Gravimetric Method[5] |
| 24 | Vanadium | Isokinetic Sampling, Digestion, Inductively Coupled Plasma Method[5] |
| 25 | Xylene | 1) Bag Sampling, Gas Chromatographic Method[5]<br>2) Adsorption Sampling, Gas Chromatographic Method[5] |

สิ่งปฏิกูลหรือวัสดุที่ไม่ใช้แล้ว จำนวน 35 รายการ

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 1 | Aldrin | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 2 | Antimony | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 3 | Arsenic | 1) Waste Extraction, Digestion, Hydride Generation/ Atomic Absorption Spectrometric Method[3,6,16]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[7,16]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |
| 4 | Barium | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 5 | Beryllium | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 6 | Cadmium | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method[3,6,15]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Flame Atomic Absorption Spe[redacted] Method[7,15]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |
| 7 | Chlordane | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |

8 Chromium...

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| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 8 | Chromium | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method[3,6,15]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |
| 9 | Chromium (III) | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method; Waste Extraction, Colorimetric Method; Calculation[3,6,15,17]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method; Waste Extraction, Colorimetric Method; Calculation[3,6,14,17]<br>3) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation[7,8,15,17]<br>4) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation[7,8,14,17] |
| 10 | Chromium (VI) | 1) Waste Extraction, Colorimetric Method[3,17]<br>2) Alkaline Digestion, Colorimetric Method[8,17] |
| 11 | Cobalt | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 12 | Copper | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method[3,6,15]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |
| 13 | 2,4-D | 1) Waste Extraction, Gas Chromato[redacted]<br>2) Ultrasonic Extraction, Gas Chro[redacted]<br>Method[26] |
| 14 | DDD | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |

15 DDE...



| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 15 | DDE | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 16 | DDT | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 17 | Dieldrin | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 18 | Endrin | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 19 | Heptachlor | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 20 | Lead | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method[3,6,15]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |
| 21 | Lindane | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 22 | Mercury | 1) Waste Extraction, Digestion, Cold-Va[redacted]<br>Absorption Spectrometric Method[3,19]<br>2) Waste Extraction, Digestion, Inducti[redacted]<br>Plasma Method[3,6,14]<br>3) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[19]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |

Mercury (ต่อ)...

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| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 22 | Mercury (ต่อ) | 5) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method[20] |
| 23 | Methoxychlor | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 24 | Molybdenum | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 25 | Nickel | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method[3,6,15]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |
| 26 | Polychlorinated Biphenyls<br>- Aroclor 1016<br>- Aroclor 1221<br>- Aroclor 1232<br>- Aroclor 1242<br>- Aroclor 1248<br>- Aroclor 1254<br>- Aroclor 1260<br>- 2-Chlorobiphenyl<br>- 2,3-Dichlorobiphenyl<br>- 2,2',5-Trichlorobiphenyl<br>- 2,4',5-Trichlorobiphenyl<br>- 2,2',3,5'-Tetrachlorobiphenyl<br>- 2,2',5,5'-Tetrachlorobiphenyl<br>- 2,3',4,4'-Tetrachlorobiphenyl<br>- 2,2',3,4,5'-Pentachlorobiphenyl<br>- 2,2',4,5,5'-Pentachlorobiphenyl<br>- 2,3,3',4',6-Pentachlorobiphenyl | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,24]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,24] |

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| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| | Polychlorinated Biphenyls(ต่อ)<br>- 2,2',3,4,4',5'-Hexachlorobiphenyl<br>- 2,2',3,4,5,5'-Hexachlorobiphenyl<br>- 2,2',3,5,5',6-Hexachlorobiphenyl<br>- 2,2',4,4',5,5'-Hexachlorobiphenyl<br>- 2,2',3,3',4,4',5-Heptachlorobiphenyl<br>- 2,2',3,4,4',5,5'-Heptachlorobiphenyl<br>- 2,2',3,4,4',5',6-Heptachlorobiphenyl<br>- 2,2',3,4',5,5',6-Heptachlorobiphenyl<br>- 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl | |
| 27 | Pentachlorophenol | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic/Mass Spectrometric Method[3,9,28]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 28 | pH | Electrometric Method[31,32] |
| 29 | Selenium | 1) Waste Extraction, Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[3,6,21]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[7,21]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |
| 30 | Silver | 1) Waste Extraction, Digestion, Inductive<br>Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 31 | Thallium | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |

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| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 32 | Toxaphene | 1) Waste Extraction, Separatory Funnel Liquid-Liquid Extraction, Gas Chromatographic Method[3,9,23]<br>2) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 33 | Trichloroethylene | 1) Waste Extraction, Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[3,12,27]<br>2) Waste Extraction, Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[3,11,27]<br>3) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>4) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 34 | Vanadium | 1) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 35 | Zinc | 1) Waste Extraction, Digestion, Flame Atomic Absorption Spectrometric Method[3,6,15]<br>2) Waste Extraction, Digestion, Inductively Coupled Plasma Method[3,6,14]<br>3) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>4) Digestion, Inductively Coupled Plasma Method[7,14] |

<u>ดิน จำนวน 125 รายการ</u>

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
|---|---|---|
| 1 | Acenaphthene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 2 | Acetone | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 3 | Aldrin | 1) Ultrasonic Extraction, Gas Chromato[redacted] Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 4 | Anthracene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25] |





| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
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| 4 | Anthracene (ต่อ) | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 5 | Antimony | Digestion, Inductively Coupled Plasma Method[7,14] |
| 6 | Arsenic | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[7,16]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 7 | Atrazine | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 8 | Barium | Digestion, Inductively Coupled Plasma Method[7,14] |
| 9 | Benz(a)anthracene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 10 | Benzene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 11 | Benzo(b)fluoranthene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 12 | Benzo(k)fluoranthene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 13 | Benzoic acid | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 14 | Benzo(a)pyrene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 15 | Benzo(g,h,i)perylene | 1) Ultrasonic Extraction, Gas Chromatog[redacted] Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 16 | Beryllium | Digestion, Inductively Coupled Plasma Method[7,14] |



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| 17 | Bis(2-chloroethyl)ether | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 18 | Bis(2-ethylhexyl)phthalate | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 19 | Bromodichloromethane | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 20 | Bromoform | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 21 | Butanol | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 22 | Butyl benzyl phthalate | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 23 | Cadmium | 1) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 24 | Carbazole | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 25 | Carbon disulfide | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 26 | Carbon tetrachloride | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 27 | Chlordane | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 28 | p-Chloroaniline | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 29 | Chlorobenzene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 30 | Chlorodibromomethane | Purge and Trap, Gas Chromatographic/ Spectrometric Method[13,27] |
| 31 | Chloroform | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 32 | 2-Chlorophenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |





| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
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| 33 | Chromium | 1) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 34 | Chromium (III) | 1) Digestion, Flame Atomic Absorption Spectrometric Method; Alkaline Digestion, Colorimetric Method; Calculation[7,8,15,17]<br>2) Digestion, Inductively Coupled Plasma Method; Alkaline Digestion, Colorimetric Method; Calculation[7,8,14,17] |
| 35 | Chromium (VI) | Alkaline Digestion, Colorimetric Method[8,17] |
| 36 | Chrysene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 37 | Cyanide | Extraction, Distillation, Colorimetric Method[29,30] |
| 38 | 2,4-D | Ultrasonic Extraction, Gas Chromatographic Method[26] |
| 39 | DDD | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 40 | DDE | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 41 | DDT | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 42 | Dibenz(a,h)anthracene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 43 | Di-n-butyl phthalate | Ultrasonic Extraction, Gas Chromatographi Spectrometric Method[10,28] |
| 44 | 1,2-Dichlorobenzene | Purge and Trap, Gas Chromatographic/Mas Spectrometric Method[13,27] |

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| 45 | 1,3-Dichlorobenzene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 46 | 1,4-Dichlorobenzene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 47 | 3,3′-Dichlorobenzidine | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 48 | 1,1-Dichloroethane | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 49 | 1,2-Dichloroethane | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 50 | 1,1-Dichloroethylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 51 | cis-1,2-Dichloroethylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 52 | trans-1,2-Dichloroethylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 53 | 2,4-Dichlorophenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 54 | 1,2-Dichloropropane | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 55 | 1,3-Dichloropropane | Purge and Trap, Gas Chromatographi<br>Spectrometric Method[13,27] |
| 56 | 1,3-Dichloropropene | Purge and Trap, Gas Chromatographi<br>Spectrometric Method[13,27] |
| 57 | Dieldrin | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |

58 Diethyl phthalate...



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| 58 | Diethyl phthalate | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 59 | 2,4-Dimethylphenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 60 | 2,4-Dinitrophenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 61 | 2,4-Dinitrotoluene | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 62 | 2,6-Dinitrotoluene | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 63 | Di-n-Octyl phthalate | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 64 | Endosulfan | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 65 | Endrin | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 66 | Ethylbenzene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 67 | Fluoranthene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 68 | Fluorene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromato<br>Spectrometric Method[10,28] |
| 69 | Heptachlor | 1) Ultrasonic Extraction, Gas Chromato<br>Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 70 | Heptachlor epoxide | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23] |

Heptachlor epoxide (ต่อ)...

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| 70 | Heptachlor epoxide (ต่อ) | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 71 | Hexachlorobenzene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 72 | Hexachloro-1,3-butadiene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 73 | n-Hexane | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 74 | α-HCH | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 75 | β-HCH | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 76 | γ-HCH | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 77 | Hexachlorocyclopentadiene | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 78 | Hexachloroethane | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 79 | Indeno(1,2,3-cd)pyrene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 80 | Isophorone | Ultrasonic Extraction, Gas Chroma[redacted] Spectrometric Method[10,28] |
| 81 | Lead | 1) Digestion, Flame Atomic Absorp[redacted] Method[7,15]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 82 | Manganese | 1) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |





| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
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| 83 | Mercury | 1) Digestion, Cold-Vapor Atomic Absorption Spectrometric Method[19]<br>2) Thermal Decomposition Amalgamation and Atomic Absorption Spectrometric Method[20] |
| 84 | Methanol | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 85 | Methoxychlor | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,23]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 86 | Methyl bromide | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 87 | Methylene chloride | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method [11,27] |
| 88 | 2-Methylphenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 89 | 2-Methylnaphthalene | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 90 | Methyl tert-butyl ether | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 91 | Naphthalene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 92 | Nickel | 1) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 93 | Nitrobenzene | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 94 | N-Nitrosodiphenylamine | Ultrasonic Extraction, Gas Chromat[redacted] Spectrometric Method[10,28] |
| 95 | N-Nitrosodi-n-propylamine | Ultrasonic Extraction, Gas Chromat[redacted] Spectrometric Method[10,28] |
| 96 | Polychlorinated Biphenyls - Aroclor 1016 | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,24] |



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| 96 | Polychlorinated Biphenyls(ต่อ)<br>- Aroclor 1221<br>- Aroclor 1232<br>- Aroclor 1242<br>- Aroclor 1248<br>- Aroclor 1254<br>- Aroclor 1260<br>Polychlorinated Biphenyls<br>- 2-Chlorobiphenyl<br>- 2,3-Dichlorobiphenyl<br>- 2,2',5-Trichlorobiphenyl<br>- 2,4',5-Trichlorobiphenyl<br>- 2,2',3,5'-Tetrachlorobiphenyl<br>- 2,2',5,5'-Tetrachlorobiphenyl<br>- 2,3',4,4'-Tetrachlorobiphenyl<br>- 2,2',3,4,5'-Pentachlorobiphenyl<br>- 2,2',4,5,5'-Pentachlorobiphenyl<br>- 2,3,3',4',6-Pentachlorobiphenyl<br>- 2,2',3,4,4',5'-Hexachlorobiphenyl<br>- 2,2',3,4,5,5'-Hexachlorobiphenyl<br>- 2,2',3,5,5',6-Hexachlorobiphenyl<br>- 2,2',4,4',5,5'-Hexachlorobiphenyl<br>- 2,2',3,3',4,4',5-Heptachlorobiphenyl<br>- 2,2',3,4,4',5,5'-Heptachlorobiphenyl<br>- 2,2',3,4,4',5,6-Heptachlorobiphenyl<br>- 2,2',3,4',5,5',6-Heptachlorobiphenyl<br>- 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl | 2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28]<br><br><br><br><br><br>Ultrasonic Extraction, Gas Chromatographic Method[10,24] |





| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
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| 97 | Pentachlorophenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 98 | Phenanthrene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 99 | Phenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 100 | Pyrene | 1) Ultrasonic Extraction, Gas Chromatographic Method[10,25]<br>2) Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 101 | Selenium | 1) Digestion, Hydride Generation/Atomic Absorption Spectrometric Method[7,21]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |
| 102 | Silver | Digestion, Inductively Coupled Plasma Method[7,14] |
| 103 | Styrene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 104 | 1,1,2,2-Tetrachloroethane | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 105 | Tetrachloroethylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 106 | Toluene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 107 | Toxaphene | Ultrasonic Extraction, Gas Chromatographic Method[10,23] |
| 108 | TPH ($C_5$-$C_8$) | 1) Purge and Trap, Gas Chromatographic<br>2) Purge and Trap, Gas Chromatographic Spectrometric Method[13,27] |
| 109 | TPH ($C_{>8}$-$C_{16}$) | Ultrasonic Extraction, Gas Chromatographic Method[10,22] |
| 110 | TPH ($C_{>16}$-$C_{35}$) | Ultrasonic Extraction, Gas Chromatographic Method[10,22] |

| ลำดับ | สารมลพิษ | วิธีวิเคราะห์ |
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| 111 | 1,2,4-Trichlorobenzene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 112 | 1,1,1-Trichloroethane | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 113 | 1,1,2-Trichloroethane | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 114 | Trichloroethylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 115 | 2,4,5-Trichlorophenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 116 | 2,4,6-Trichlorophenol | Ultrasonic Extraction, Gas Chromatographic/Mass Spectrometric Method[10,28] |
| 117 | 1,3,5-Trimethylbenzene | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 118 | Vanadium | Digestion, Inductively Coupled Plasma Method[7,14] |
| 119 | Vinyl acetate | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 120 | Vinyl chloride | Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27] |
| 121 | m-Xylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 122 | o-Xylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |
| 123 | p-Xylene | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chrom[redacted] Spectrometric Method[11,27] |
| 124 | Xylene (Total) | 1) Purge and Trap, Gas Chromatographic/Mass Spectrometric Method[13,27]<br>2) Equilibrium Headspace, Gas Chromatographic/Mass Spectrometric Method[11,27] |





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| 125 | Zinc | 1) Digestion, Flame Atomic Absorption Spectrometric Method[7,15]<br>2) Digestion, Inductively Coupled Plasma Method[7,14] |


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