

# 國立東華大學

## 作業環境監測報告書

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報告編號：G151100715

監測日期：110年07月15日

監測機構：工安興業股份有限公司

認可編號：TOSHA-MA13



工安業路份市學合

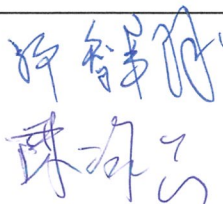
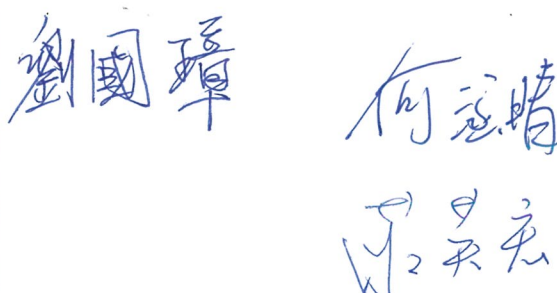
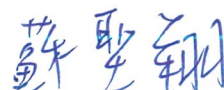
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# 勞工作業環境監測基本資料表

|                                                                                     |                     |    |                                                                                      |     |            |
|-------------------------------------------------------------------------------------|---------------------|----|--------------------------------------------------------------------------------------|-----|------------|
| 事業單位名稱                                                                              | 國立東華大學              |    |                                                                                      | 行業別 |            |
| 事業單位地址                                                                              | 974花蓮縣壽豐鄉志學村大學路二段1號 |    |                                                                                      |     |            |
| 監測日期                                                                                | 110年07月15日          |    |                                                                                      |     |            |
| 承辦人                                                                                 | 許智翔                 | 部門 |                                                                                      | 電話  | 03-8906399 |
| 會同監測之職業安全衛生人員及勞工代表姓名                                                                |                     |    |                                                                                      |     |            |
| 會同監測人員                                                                              |                     |    | 安衛人員、勞工代表                                                                            |     |            |
|   |                     |    |   |     |            |
| 監測機構名稱                                                                              |                     |    | 監測人員簽名                                                                               |     |            |
| 工安興業股份有限公司                                                                          |                     |    |  |     |            |
| 監測機構用印                                                                              |                     |    | 監測人員姓名及資格文號                                                                          |     |            |
|  |                     |    |  |     |            |



同公明高信興業興安工  
 謝謝謝謝謝謝謝謝謝謝  
 81AM-R120T  
 章州專書群



工安興業股份有限公司

勞動部認可作業環境監測機構

認可編號：TOSHA-MA13

地址：111台北市士林區中山北路七段56號1F

電話：(02)2876-2374

傳真：(02)2873-0492

網址：www.iosh.com.tw

# 作業環境監測分析報告摘要

一、委託單位：工安興業股份有限公司 TOSHA-MA13

二、監測日期：110年07月15日

三、監測方法：

1. 化學性因子：

1.1 採樣監測：

1.1.1 依行政院勞動部、NIOSH或OSHA公佈之參考分析方法，選取適當的吸附介質及採樣設備，詳如監測計劃書所載。

1.1.2 個人或定點採樣：個人採樣時，採樣設備直接由勞工配戴，採樣管置於勞工衣領上，使其盡量接近勞工的呼吸帶。而定點採樣則將採樣設備置於污染源附近或勞工活動頻繁之地點，測定高度盡量接近勞工的呼吸帶。

1.1.3 採樣流速：依檢測物質選取不同之採樣設備，主要之採樣設備有定流速之高、低流速空氣採樣器，採樣設備之流速範圍如監測計劃書所述。

1.1.4 採樣時間：採取全程單一樣品採樣，採樣時間至少六小時。

1.2 二氧化碳監測：以紅外線或電化學之二氧化碳偵測器於作業區處放置1分鐘，直到儀器讀值穩定後判讀之。

2. 物理性因子：

2.1 噪音監測：以TES-1150噪音計及SV-104噪音劑量計直接監測，以噪音計或個人噪音劑量計直接監測作業現場之噪音值(dBA)，監測時間視噪音特性而定(穩定性噪音、變動性噪音或衝擊性噪音)，若平均噪音值超過90(dBA)以上，除需進行環境改善外，還需進一步評估個人噪音暴露劑量，即以個人噪音劑量計配戴於受測勞工身上，監測時間至少六小時。

2.2 照度監測：以Testo 540照度計直接監測。

2.3 高溫監測：以QUESTEMP-32乾溼黑球溫度計直接監測。

3. 監測人員：由行政院勞動部核可之專業監測人員執行之；經向行政院勞動部核備之工礦衛生技師或甲級化學性或物理性因子作業環境監測人員。

四、建議事項：詳如附件。

五、結語：勞工應定期接受健康檢查，並由事業單位定期實施勞工安全衛生教育，促使勞工能正確使用及操作各項作業器具，促使勞工能有合乎安全衛生的工作習慣。其次依勞工作業環境監測實施辦法規定下次應實施作業環境監測日期為六個月內。

※依據勞工作業環境監測實施辦法第十二條規定，監測結果雇主應於作業勞工顯而易見之處公告或以其他公開方式揭示之，必要時應向勞工代表說明。

※各監測項目之詳細內容請參閱各項監測結果說明。

※此報告除獲得本監測機構之書面同意，否則不得摘錄複製，但全部複製除外。







工安興業股份有限公司

勞動部認可作業環境監測機構

認可編號：TOSHA-MA13

地址：111 台北市士林區中山北路七段56號1F

電話：(02)2876-2374

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# 化學性 監測結果





# 工安興業股份有限公司 作業環境監測紀錄

事業單位名稱:國立東華大學  
 報告編號: G151100715  
 申報號碼: B1100600326  
 件別: -

監測人員: 蘇聖翔  
 監測日期: 110年07月15日  
 現場溫度: 33.0 °C  
 現場壓力: 748 mmHg

| 監 測<br>編 號 | 監 測 處 所    | 監 測 項 目    | 採樣介<br>質種類            | 採樣流速(mL/min) |       |        | 監 測 起 訖 時 間 |    |    |    | 總計<br>時間<br>(分) | 校正後<br>採樣<br>體積<br>(m3) | 監 測 結 果 | 容 許<br>濃 度               | 風 險<br>等 級 |
|------------|------------|------------|-----------------------|--------------|-------|--------|-------------|----|----|----|-----------------|-------------------------|---------|--------------------------|------------|
|            |            |            |                       | 前            | 後     | 平均     | 起           |    | 訖  |    |                 |                         |         |                          |            |
|            |            |            |                       |              |       |        | 時           | 分  | 時  | 分  |                 |                         |         |                          |            |
| P034       | 林宛蓉實驗室C412 | 鹽酸         | 矽膠管<br>(400/200)      | 301          | 299.2 | 300.1  | 08          | 40 | 14 | 40 | 360             | 0.1035                  | <0.0149 | 7.5<br>mg/m <sup>3</sup> | 一          |
| P034       | 林宛蓉實驗室C412 | 硫酸         | 矽膠管<br>(400/200)      | 292          | 290.8 | 291.4  | 08          | 40 | 14 | 40 | 360             | 0.1005                  | <0.0152 | 1 mg/m <sup>3</sup>      | 一          |
| P053       | 余英松實驗室B221 | 氫氟酸        | 矽膠管<br>(400/200)      | 318.8        | 316.6 | 317.7  | 08          | 50 | 14 | 50 | 360             | 0.1097                  | <0.0144 | 2.6<br>mg/m <sup>3</sup> | 一          |
| P053       | 余英松實驗室B221 | 鹽酸         | 矽膠管<br>(400/200)      | 320.6        | 316.8 | 318.7  | 08          | 50 | 14 | 50 | 360             | 0.1099                  | <0.0140 | 7.5<br>mg/m <sup>3</sup> | 一          |
| P057       | 林宛蓉實驗室C412 | 二氯甲烷       | 活性碳<br>(100/50)<br>串聯 | 53           | 52.8  | 52.9   | 08          | 40 | 14 | 40 | 360             | 0.0182                  | <0.476  | 50 ppm                   | 一          |
| P076-1     | 蔡志宏實驗室D403 | 三氯甲烷       | 活性碳<br>(100/50)       | 53.3         | 53    | 53.15  | 09          | 00 | 15 | 00 | 360             | 0.0183                  | <0.449  | 10 ppm                   | 一          |
| P076-2     | 蔡志宏實驗室D403 | 二甲基甲<br>醯胺 | 矽膠管<br>(150/75)       | 53.4         | 53.1  | 53.25  | 09          | 00 | 15 | 00 | 360             | 0.0184                  | <0.364  | 10 ppm                   | 一          |
| P076-3     | 蔡志宏實驗室D403 | 鹽酸         | 矽膠管<br>(400/200)      | 325.4        | 324.1 | 324.75 | 09          | 00 | 15 | 00 | 360             | 0.112                   | <0.0138 | 7.5<br>mg/m <sup>3</sup> | 一          |
| P076-3     | 蔡志宏實驗室D403 | 硫酸         | 矽膠管<br>(400/200)      | 290.4        | 287.5 | 288.95 | 09          | 00 | 15 | 00 | 360             | 0.0997                  | <0.0154 | 1 mg/m <sup>3</sup>      | 一          |
| P100-1     | 魏茂國實驗室B229 | 丙酮         | 活性碳<br>(100/50)       | 54.3         | 53.8  | 54.05  | 08          | 50 | 14 | 50 | 360             | 0.0187                  | <0.225  | 200<br>ppm               | 一          |
| P100-2     | 魏茂國實驗室B229 | 硫酸         | 矽膠管<br>(400/200)      | 287.6        | 285   | 286.3  | 08          | 50 | 14 | 50 | 360             | 0.0988                  | <0.0155 | 1 mg/m <sup>3</sup>      | 一          |
| P101       | 蔡志宏實驗室D403 | 乙          | 活性碳<br>(400/200)      | 56.8         | 55.1  | 55.95  | 09          | 00 | 15 | 00 | 360             | 0.0183                  | <0.617  | 40 ppm                   | 一          |



工安興業股份有限公司  
總經理 許雅祥  
TOSHIBA-MA13  
聯泰昌用章



# 工安興業股份有限公司 作業環境監測紀錄

事業單位名稱:國立東華大學  
報告編號: G151100715  
申報號碼: B1100600326  
件別: -

監測人員: 蘇聖翔  
監測日期: 110年07月15日  
現場溫度: 33.0 °C  
現場壓力: 748 mmHg

| 監 測<br>編 號 | 監 測 處 所 | 監 測 項<br>目 | 採 樣 介<br>質 種 類        | 採樣流速(mL/min) |   |    | 監 測 起 訖 時 間 |   |   |   | 總 計<br>時 間<br>(分) | 校正後<br>採樣<br>體積<br>(m3) | 監 測 結 果                  | 容 許<br>濃 度 | 風 險<br>等 級 |
|------------|---------|------------|-----------------------|--------------|---|----|-------------|---|---|---|-------------------|-------------------------|--------------------------|------------|------------|
|            |         |            |                       | 前            | 後 | 平均 | 起           |   | 訖 |   |                   |                         |                          |            |            |
|            |         |            |                       |              |   |    | 時           | 分 | 時 | 分 |                   |                         |                          |            |            |
| BK01       | 現場空白    | 二氯甲烷       | 活性碳<br>(100/50)<br>串聯 | -            | - | -  | -           | - | - | - | -                 | -                       | 50 ppm                   |            |            |
| BK02       | 現場空白    | 二氯甲烷       | 活性碳<br>(100/50)<br>串聯 | -            | - | -  | -           | - | - | - | -                 | -                       | 50 ppm                   |            |            |
| BK03       | 現場空白    | 乙          | 活性碳<br>(400/200)      | -            | - | -  | -           | - | - | - | -                 | -                       | 40 ppm                   |            |            |
| BK04       | 現場空白    | 乙          | 活性碳<br>(400/200)      | -            | - | -  | -           | - | - | - | -                 | -                       | 40 ppm                   |            |            |
| BK05       | 現場空白    | 三氯甲烷       | 活性碳<br>(100/50)       | -            | - | -  | -           | - | - | - | -                 | -                       | 10 ppm                   |            |            |
| BK06       | 現場空白    | 三氯甲烷       | 活性碳<br>(100/50)       | -            | - | -  | -           | - | - | - | -                 | -                       | 10 ppm                   |            |            |
| BK07       | 現場空白    | 二甲基甲<br>醯胺 | 矽膠管<br>(150/75)       | -            | - | -  | -           | - | - | - | -                 | -                       | 10 ppm                   |            |            |
| BK08       | 現場空白    | 二甲基甲<br>醯胺 | 矽膠管<br>(150/75)       | -            | - | -  | -           | - | - | - | -                 | -                       | 10 ppm                   |            |            |
| BK09       | 現場空白    | 氫氟酸        | 矽膠管<br>(400/200)      | -            | - | -  | -           | - | - | - | -                 | -                       | 2.6<br>mg/m <sup>3</sup> |            |            |
| BK09       | 現場空白    | 鹽酸         | 矽膠管<br>(400/200)      | -            | - | -  | -           | - | - | - | -                 | -                       | 7.5<br>mg/m <sup>3</sup> |            |            |
| BK09       | 現場空白    | 硫酸         | 矽膠管<br>(400/200)      | -            | - | -  | -           | - | - | - | -                 | -                       | 1 mg/m <sup>3</sup>      |            |            |
| BK10       | 現場空白    | 氫氟酸        | 矽膠管<br>(400/200)      | -            | - | -  | -           | - | - | - | -                 | -                       | 2.6<br>mg/m <sup>3</sup> |            |            |

工安興業股份有限公司

勞動部作業環境監測機構

TOSHA-MA13

報告專用章





# 工安興業股份有限公司 作業環境監測紀錄

事業單位名稱:國立東華大學  
報告編號: G151100715  
申報號碼: B1100600326  
件別: -

監測人員: 蘇聖翔  
監測日期: 110年07月15日  
現場溫度: 33.0 °C  
現場壓力: 748 mmHg

| 監 測<br>編 號 | 監測處所   | 監測項<br>目 | 採樣介<br>質種類            | 採樣流速(mL/min) |   |    | 監測起訖時間 |   |   |   | 總計<br>時間<br>(分) | 校正後<br>採樣<br>體積<br>(m3) | 監測結果 | 容許<br>濃度                 | 風<br>險<br>等<br>級 |
|------------|--------|----------|-----------------------|--------------|---|----|--------|---|---|---|-----------------|-------------------------|------|--------------------------|------------------|
|            |        |          |                       | 前            | 後 | 平均 | 起      |   | 訖 |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    | 時      | 分 | 時 | 分 |                 |                         |      |                          |                  |
| BK10       | 現場空白   | 鹽酸       | 矽膠管<br>(400/200)      | -            | - | -  | -      | - | - | - | -               | -                       | -    | 7.5<br>mg/m <sup>3</sup> |                  |
| BK10       | 現場空白   | 硫酸       | 矽膠管<br>(400/200)      | -            | - | -  | -      | - | - | - | -               | -                       | -    | 1 mg/m <sup>3</sup>      |                  |
| BK11       | 現場空白   | 二氯甲烷     | 活性碳<br>(100/50)<br>串聯 | -            | - | -  | -      | - | - | - | -               | -                       | -    | 50 ppm                   |                  |
| BK12       | 現場空白   | 二氯甲烷     | 活性碳<br>(100/50)<br>串聯 | -            | - | -  | -      | - | - | - | -               | -                       | -    | 50 ppm                   |                  |
|            | ~以下空白~ |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |
|            |        |          |                       |              |   |    |        |   |   |   |                 |                         |      |                          |                  |

工安興業股份有限公司

勞動部作業環境監測機構

TOSHA-MA13

報告專用章

工安興業股份有限公司  
勞動部作業環境監測機構  
**TOSHA-MA13**  
報告專用章

工務局建築工程處  
建築師事務所  
E1A-2-1-01  
章氏平記



# 作業環境監測建議事項

- 一、監測項目之容許暴露濃度法規值，請參見環測結果報告表。
- 二、“分析結果”欄表各區域所採得有害物質經實驗分析所得重量，其單位為毫克(mg)。
- 三、“校正後採樣體積”欄表由泵流率與採樣時間計算得總採氣量，再從採樣現場溫度、壓力校正成標準狀態下(1atm、25°C)之體積，其單位為立方公尺( $m^3$ )或公升(L)。
- 四、“空氣中濃度”欄表係由實驗室分析結果之總重量與校正後採樣體積計算所得。
- 五、檢量下限：實驗室分析樣品前，須先配製五種以上不同濃度之標準溶液以繪製檢量線圖，而所配製標準溶液之最低點濃度值即為檢量下限。
- 六、事業單位應依監測結果之風險等級，採取對應之控制或管理措施：
  - 第一級：暴露濃度低於容許暴露標準二分之一者，至少每三年評估一次，除應持續維持原有之控制或管理措施外，製程或作業內容變更時，並採行適當之變更管理措施。
  - 第二級：暴露濃度低於容許暴露標準但高於或等於其二分之一者，至少每年評估一次，應就製程設備、作業程序或作業方法實施檢點，採取必要之改善措施。
  - 第三級：暴露濃度高於或等於容許暴露標準者，至少每三個月評估一次，應即採取有效控制措施，並於完成改善後重新評估，確保暴露濃度低於容許暴露標準。化學品之種類、操作程序或製程條件變更，有增加暴露風險之虞者，應於變更前或變更後三個月內，重新實施暴露評估。
- 七、依職業安全衛生法第十二條、施行細則第十七條第四款與勞工作業環境監測實施辦法第八條第三款第四款之規定，粉塵危害預防標準所稱之特定粉塵作業場所，製造、處置或使用附表一所列有機溶劑之作業場所，製造、處置或使用附表二所列特定化學物質之作業場所接近煉焦爐或於其上方從事煉焦作業之場所，應每六個月監測一次以上。  
鉛中毒預防規則所稱鉛作業之作業場所，四烷基鉛中毒預防規則所稱四烷基鉛作業之作業場所，應每年監測一次以上。
- 八、本次測定結果符合法令規定。  
請持續維持原有之控制或管理措施，另於製程或作業內容變更時，應採行適當之變更管理措施。

工安興業有限公司  
總行設於上海  
LAH-AH20T  
永興興業





工安興業股份有限公司

勞動部認可作業環境監測機構

認可編號：TOSHA-MA13

地址：111台北市士林區中山北路七段56號1F

電話：(02)2876-2374

傳真：(02)2873-0492

網址：[www.iosh.com.tw](http://www.iosh.com.tw)

---

# 直 讀 式 儀 器 監 測 結 果





工安興業股份有限公司

勞動部認可作業環境監測機構

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## 作業環境監測 二氧化碳總表

事業單位：國立東華大學

監測條件：33 °C，748 mmHg

監測日期：110年07月15日

監測方法：儀器直讀

監測儀器：二氧化碳檢測 TSI-7515

容許標準：5000 ppm

| 監測編號 | 監測地點    | 監測時間        | 監測結果(ppm) | 備註 |
|------|---------|-------------|-----------|----|
| 01   | 平面圖-A1  | 14:00~14:30 | 467       |    |
| 02   | 平面圖-A2  |             | 429       |    |
| 03   | 平面圖-A3  |             | 411       |    |
| 04   | 平面圖-A4  |             | 468       |    |
| 05   | 平面圖-A5  |             | 455       |    |
| 06   | 平面圖-A6  |             | 455       |    |
| 07   | 平面圖-A7  |             | 464       |    |
| 08   | 平面圖-A8  |             | 456       |    |
| 09   | 平面圖-A9  |             | 462       |    |
| 10   | 平面圖-A10 |             | 511       |    |
| 11   | 平面圖-A11 |             | 431       |    |
| 12   | 平面圖-A12 |             | 433       |    |
| 13   | 平面圖-A13 |             | 435       |    |
| 14   | 平面圖-A14 |             | 488       |    |
| 15   | 平面圖-A15 |             | 474       |    |

工安興業股份有限公司

勞動部作業環境監測機構

TOSHA-MA13

報告專用章

工 業 興 隆 縣 志  
卷 之 一  
地 理 志  
一 一 一  
一 一 一

## 作業環境監測 二氧化碳總表

事業單位：國立東華大學

監測條件：33 °C，748 mmHg

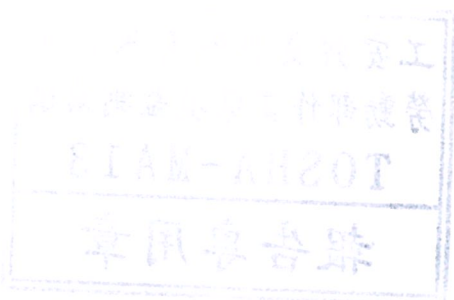
監測日期：110年07月15日

監測方法：儀器直讀

監測儀器：二氧化碳檢測 TSI-7515

容許標準：5000 ppm

[illegible]







工安興業股份有限公司

勞動部認可作業環境監測機構

認可編號：TOSHA-MA13

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# 儀器校正報告





## 二氧化碳作業環境監測建議事項

一、依職業安全衛生法第十二條、施行細則第十七條第二項第一款與勞工作業環境監測實施辦法第七條第一項第一款之規定，設置中央管理方式之空氣調節設備之建築物室內作業場所，應每六個月監測二氧化碳濃度一次以上。

二、依勞工作業場所容許暴露標準第二條之規定，二氧化碳其容許濃度為5000ppm。

三、藉由良好的通風調整工作場所之空氣，以保持勞工之健康及提高工作效率，尤其在發生有害氣體、蒸氣、粉塵等之作業場所或高溫作業場所，通風之良否實可左右其衛生條件。

1. 一般場所對於空氣之良否均以二氧化碳為指標，其原因在於二氧化碳之濃度大致與通風不良引起之溫度、濕度、氣流、惡臭等空氣之綜合條件具有密切之關係，且其測定亦較容易。二氧化碳其濃度在4%時可引起皮膚刺激感、頭痛、耳鳴、心悸、精神興奮等，至8%時則有顯著之呼吸困難，達到10%時則喪失意識而有生命之危險。
2. 依勞工作業場所容許暴露標準規定二氧化碳其容許濃度為5000ppm。但對於一般密閉式空調辦公大樓之二氧化碳濃度仍建議應維持在1000ppm以下較適當(環保署-室內空氣品質標準)。
3. 本次二氧化碳濃度測定值皆低於5000ppm，故測定結果符合法令要求。
4. 平常作業場所須使用機械換氣補充新鮮空氣時應注意之事項：
  - (1)新鮮空氣入口須遠離排氣口及有害物發散場所。
  - (2)補充空氣應送至勞工之活動範圍，約2.4-3.0公尺高度範圍，且供氣應均勻分散。
  - (3)補充空氣應調溫使接近作業場所之溫度範圍18~26℃。

四、本紀錄應保存三年。



## ISO 17025 Calibration Certificate

Certificate Number: 20081010010-L 12-04-2020

### Customer Information

Sensidyne LP  
1000 112th Circle North, Suite 100  
St. Petersburg, FL 33716

Calibrated ☒

### Calibration Date

December 04, 2020

### Description of Device Being Calibrated

Gilibrator 3 Low Flow Dry Cell

Reference Flow Device

Standard Wet Cell (Master)

Reference Gilibrator Base

Gilibrator 3 Base

Reference Base Temperature °C  
24.9

Reference Environmental Meter

EXTECH Environmental Meter

Reference Temperature °C  
24.9

Serial Number

20081010010

Reference Serial Number

MCS-102B

Reference Serial Number

18501002014

Reference Base Pressure hPa  
1020.1

Reference Serial Number

A.024402

Reference Pressure hPa

1018.2

Firmware

V2.4 R1951

Reference Due Date

April 01, 2021

Reference Certification Due Date

November 05, 2021

Reference Base Firmware Version  
V2.5.0 R1959

Reference Certification Due Date

June 12, 2021

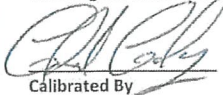
Reference Relative Humidity %RH  
50.6

| Reference Standard cc/Min<br>(Mean Value of 5 samples) | Unit Under Test cc/Min<br>(Mean Value of 5 samples) | Relative Difference cc/Min<br>(Mean Value of 5 samples) | Percent Difference (%)<br>(Mean Value of 5 samples) |
|--------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------|
| 6.58                                                   | 6.57                                                | -0.01                                                   | -0.15                                               |
| 118.38                                                 | 117.79                                              | -0.59                                                   | -0.5                                                |
| 226.42                                                 | 225.52                                              | -0.9                                                    | -0.4                                                |
| 339.76                                                 | 337.75                                              | -2.01                                                   | -0.6                                                |
| 456                                                    | 452.31                                              | -3.69                                                   | -0.82                                               |

This Report may not be reproduced except in full, and shall not be used to claim endorsement of the American Association for Laboratory Accreditation (A2LA). Sensidyne certifies that the instrument specified above

Meets ☒ Does Not Meet ☐

The manufacturer's specification +/- 1% and was calibrated using standards and instruments listed above that are traceable to the International System of Units (SI) through the National Institute of Standards and Testing (NIST). Our calibration systems and records are in compliance to ISO/IEC 17025:2005. Data presented in the report follows W10031. The reported uncertainty of measurement is stated as the combined standard uncertainty multiplied by a coverage factor K=2. The measured value and the associated expanded uncertainty is expressed at approximately the 95% confidence level. The measurement values range, including the estimated uncertainty of measurement, shall fall within the specification limit. Measurement uncertainty **0.57%**

  
Calibrated By

12/04/20  
Date

  
Approved By

12/4/20  
Date

1000 112th Circle North, Suite 100; St. Petersburg, Florida 33716; USA  
Email: service@sensidyne.com : www.sensidyne.com : T: 800-451-9444

Page 1 of 1





## ISO 17025 Calibration Certificate

Certificate Number: 18481011027-S 12-04-2020

### Customer Information

Sensidyne LP  
1000 112th Circle North, Suite 100  
St. Petersburg, FL 33716

Calibrated ☒

### Calibration Date

December 04, 2020

### Description of Device Being Calibrated

Gilibrator 3 Standard Flow Dry Cell

Reference Flow Device

Standard Wet Cell (Master)

Reference Gilibrator Base

Gilibrator 3 Base

Reference Base Temperature °C

24.5

Reference Environmental Meter

EXTECH Environmental Meter

Reference Temperature °C

24.6

### Serial Number

18481011027

### Reference Serial Number

MCS-102B

### Reference Serial Number

18501002014

### Reference Base Pressure hPa

1019.6

### Reference Serial Number

A.024402

### Reference Pressure hPa

1017.8

### Firmware

V2.4 R1951

### Reference Due Date

April 01, 2021

### Reference Certification Due Date

November 05, 2021

### Reference Base Firmware Version

V2.5.0 R1959

### Reference Certification Due Date

June 12, 2021

### Reference Relative Humidity %RH

50.6

| Reference Standard cc/Min<br>(Mean Value of 5 samples) | Unit Under Test cc/Min<br>(Mean Value of 5 samples) | Relative Difference cc/Min<br>(Mean Value of 5 samples) | Percent Difference (%)<br>(Mean Value of 5 samples) |
|--------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------|
| 58.61                                                  | 58.36                                               | -0.25                                                   | -0.43                                               |
| 1261                                                   | 1265.7                                              | 4.7                                                     | 0.37                                                |
| 2503.6                                                 | 2512.96                                             | 9.36                                                    | 0.37                                                |
| 3778                                                   | 3801.51                                             | 23.51                                                   | 0.62                                                |
| 4927.6                                                 | 4961.81                                             | 34.21                                                   | 0.69                                                |

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Meets ☒ Does Not Meet ☐

The manufacturer's specification +/- 1% and was calibrated using standards and instruments listed above that are traceable to the International System of Units (SI) through the National Institute of Standards and Testing (NIST). Our calibration systems and records are in compliance to ISO/IEC 17025:2005. Data presented in the report follows W10031. The reported uncertainty of measurement is stated as the combined standard uncertainty multiplied by a coverage factor K=2. The measured value and the associated expanded uncertainty is expressed at approximately the 95% confidence level. The measurement values range, including the estimated uncertainty of measurement, shall fall within the specification limit. Measurement uncertainty **0.37%**

Calibrated By 

Date 12/04/20

Approved By 

Date 12/14/20

1000 112th Circle North, Suite 100; St. Petersburg, Florida 33716; USA  
Email: service@sensidyne.com : www.sensidyne.com : T: 800-451-9444

Page 1 of 1







# CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA  
Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 <http://www.tsi.com>

|                        |               |            |               |              |
|------------------------|---------------|------------|---------------|--------------|
| ENVIRONMENT CONDITIONS |               |            | MODEL         | 7515         |
| TEMPERATURE            | 73.3 (22.9)   | °F (°C)    | SERIAL NUMBER | T75152109009 |
| RELATIVE HUMIDITY      | 25            | %RH        |               |              |
| BAROMETRIC PRESSURE    | 29.33 (993.2) | inHg (hPa) |               |              |

☒ AS LEFT  
☐ AS FOUND

☒ IN TOLERANCE  
☐ OUT OF TOLERANCE

## - CALIBRATION VERIFICATION RESULTS -

| CO2 GAS VERIFICATION |          |          |                 | SYSTEM G-100 |          |          |                 | Unit: ppm |
|----------------------|----------|----------|-----------------|--------------|----------|----------|-----------------|-----------|
| #                    | STANDARD | MEASURED | ALLOWABLE RANGE | #            | STANDARD | MEASURED | ALLOWABLE RANGE |           |
| 1                    | 0        | 0        | 0-50            | 4            | 3000     | 3043     | 2910-3090       |           |
| 2                    | 500      | 514      | 450-550         | 5            | 5006     | 5007     | 4856-5156       |           |
| 3                    | 1000     | 1044     | 950-1050        |              |          |          |                 |           |

TSI does hereby certify that the above described instrument conforms to the original manufacturer's specification (not applicable to As Found data) and has been calibrated using standards whose accuracies are traceable to the United States National Institute of Standards and Technology (NIST) or has been verified with respect to instrumentation whose accuracy is traceable to NIST, or is derived from accepted values of physical constants. TSI's calibration system is registered to ISO-9001:2015.

| Measurement Variable | System ID | Last Cal. | Cal. Due |
|----------------------|-----------|-----------|----------|
| Flow                 | E005600   | 08-27-20  | 08-31-21 |
| 5000 CO2             | 159121    | 11-23-20  | 11-23-28 |
| N2                   | T-0753    | 12-15-20  | 12-15-28 |
| Flow                 | E003502   | 04-01-20  | 04-30-21 |
| 20 C4H8              | EB0082263 | 09-06-19  | 09-06-22 |

| Measurement Variable | System ID | Last Cal. | Cal. Due |
|----------------------|-----------|-----------|----------|
| Flow                 | E003981   | 06-04-20  | 06-30-21 |
| 200 CO               | CC742229  | 12-08-20  | 12-08-28 |
| Air                  | 99A8524   | 07-22-20  | 07-22-28 |
| Flow                 | E005595   | 08-27-20  | 08-31-21 |

CALIBRATED

February 25, 2021

DATE

Doc ID: CERT\_GEN\_WCC





## Kalibrier-Protokoll

Certificate of conformity • Protocole d'étalonnage  
Certificado di taratura • Informe de calibración

Be sure.



Gerät / Module type /  
Modèle / Modelo:

**testo 511**

Messbereich / Measuring range /  
Etendue de mesure / Rango de medición:

**300...1200 hPa**

Serien-Nr. / Serial no. /  
No. de série / Número de serie:

**39118406**

Segmenttest / Display test /  
Testes d'affichage / Test del visualizador

☒ **ok**

| Messwerte / Measured values /<br>Valeurs mesurées / Valores medidos: |                                                                                             |                                                                  |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Sollwert/<br>Reference /<br>Référence /<br>Referencia /              | Zässige Toleranz /<br>Permissible Tolerance /<br>Tolérance admise/<br>Tolerancia permitida: | Istwert /<br>Actual Value /<br>Valeur réelle /<br>Valor medido / |
| Absolute pressure:                                                   |                                                                                             |                                                                  |
| <b>1008.0 hPa</b>                                                    | <b>±3.0 hPa</b>                                                                             | <b>1008.0 hPa</b>                                                |

18.Feb.2021

Datum / Date / Date / Fecha

(J. Yeung)

Prüfer / Inspector /  
Vérificateur / Verificador





## Kalibrier-Protokoll

Certificate of conformity • Protocole d'étalonnage  
Certificado di taratura • Informe de calibración

Be sure. **testo**

Gerät / Module type /

Modèle / Modelo:

**testo 610**

Messbereich / Measuring range /

Etendue de mesure / Rango de medición:

**Temperature: -10...50°C**

**Humidity: 0...100%rH**

Serien-Nr. / Serial no. /

No. de série / Número de serie:

**39282819**

Segmenttest / Display test /

Testes d'affichage / Test del visualizador

☒ ok

| Messwerte / Measured values /<br>Valeurs mesurées / Valores medidos: |                                                                                             |                                                                  |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Sollwert/<br>Reference /<br>Référence /<br>Referencia /              | Zässige Toleranz /<br>Permissible Tolerance /<br>Tolérance admise/<br>Tolerancia permitida: | Istwert /<br>Actual Value /<br>Valeur réelle /<br>Valor medido / |
| Temperature :                                                        |                                                                                             |                                                                  |
| <b>24.0 °C</b>                                                       | <b>±0.5 °C</b>                                                                              | <b>24.0 °C</b>                                                   |
| Humidity :                                                           |                                                                                             |                                                                  |
| <b>44.6 %rH</b>                                                      | <b>±2.5 %rH</b>                                                                             | <b>44.5 %rH</b>                                                  |

18.Feb.2021

Datum / Date / Date / Fecha

(104)

Prüfer / Inspector /

Vérificateur / Verificador





工安興業股份有限公司

勞動部認可作業環境監測機構

認可編號：TOSHA-MA13

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網址：[www.iosh.com.tw](http://www.iosh.com.tw)

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# 監測機構及人員證書



認可實驗室證書

總 覽

署 函



地址：24219新北市新莊區中平路439號南  
陽大樓

111038  
臺北市士林區中山北路七段56號1樓

承辦人：侯昱辰  
電話：02-89956666#8212  
傳真：02-89956665  
電子信箱：alvinhou@tasha.gov.tw

受文者：工安興業股份有限公司

發文日期：中華民國110年6月28日  
發文字號：勞職衛字第1100012796號

密等及解密条件或保密期限：

附件：如左頁

主旨：關於所送作業環境監測人員異動一案，同意備查，隨函檢附貴公司變更後之作業環境監測機構基本資料表1份，請查照。

說明：獲貴公司110年6月25日工安環字第11006250001號函。

正本：正安興業股份有限公司

正本：  
副本：

署長 鄒子廉

本案係分層負責規定授權主管材料執行

第 1 頁 共 1 頁

認可實驗室證書



圖書編號: I.3295-191231

財團法人全國認證基金會  
Taiwan Accreditation Foundation

Taiwan Accreditation Foundation

認 證 證 書

茲證明

上穩科技有限公司

台中市沙鹿區台灣大道六段 1018 號 J605 室

為本會認證之實驗室

編 譯 依 據：ISO/IEC 17025：2017；CNS 17025：2018

錫 條 總 號 : 3295

初次鑑定日期：一百零六年一月十九日

民國九年一月十九日至一百一十二年一月十八日

路瑞有双船洞，止

認 證 範 圍：測試領域，如網頁

特定服務計畫：職業衛生實施法、職業安全衛生法、勞工保險條例、勞工退休金條例、勞工職業災害保險及保護法、勞工健康維護法、職業安全衛生管理辦法、職業安全衛生教育訓練規則、職業安全衛生檢查規則、職業安全衛生設備設置標準、職業安全衛生設施標準、職業安全衛生標章使用辦法、職業安全衛生標章申請簡章、職業安全衛生標章申請簡章施行細則、職業安全衛生標章申請簡章施行細則施行細則、職業安全衛生標章申請簡章施行細則施行細則施行細則。

董事會主席

王聰麟

中華民國一百零八年十二月三十一日

本館館藏書與網頁分類使用原則

第 1 頁，共 18 頁

監測人員證書

更新日期：2021/6/28

## 勞働部認可之作業環境監測機構基本資料表

| 勞動部認可之作業環境監測機構基本資料表 |                    |                        |           |                                                                                         |                                                                                                        |                                                                      |
|---------------------|--------------------|------------------------|-----------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 認可編號                | 作業環境<br>監測機構<br>名稱 | 事業實驗<br>室名稱(編號)        | 實驗室<br>主任 | 作業環<br>境監測<br>人員                                                                        | 認可類別/認可有<br>效期限                                                                                        | 地址/電話                                                                |
| TOSHA-<br>MA13      | 工安經費<br>股份有限公司     | 上種科技<br>有限公司<br>(3285) | 林錦修       | 李善宏<br>林漢偉<br>陳宜成<br>陳錦仁<br>張冠偉<br>蘇仁鴻<br>陳聖熙<br>陳建男<br>洪錦紅<br>劉晏居<br>劉文瑞<br>林進芳<br>羅敏淑 | 物理性因子作業環<br>境監測、化學性因<br>子作業環境監測<br>(有機化合物、無機<br>化合物、腐蝕性物<br>質、重金屬、乳<br>化)/110年6月28<br>日至112年1月18<br>日止 | 台北市士林區中<br>山路7段56號<br>1樓<br>電話:<br>02-28762374<br>傳真:<br>02-28730492 |









工安興業股份有限公司

勞動部認可作業環境監測機構

認可編號：TOSHA-MA13

地址：111 台北市士林區中山北路七段56號1F

電話：(02)2876-2374

傳真：(02)2873-0492

網址：[www.iosh.com.tw](http://www.iosh.com.tw)

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# 實驗室報告



# 上穩科技有限公司

## 分析報告



報告編號： S11007191525  
監測日期： 110年07月15日  
接收日期： 110年07月19日  
報告日期： 110年08月10日  
委託編號： G151100715  
委託單位： 工安興業股份有限公司  
委託地址： 臺北市士林區中山北路7段56號  
受測單位： 國立東華大學

執行單位： 上穩科技有限公司  
單位地址： 台中市沙鹿區台灣大道六段1018號J605室  
電 話： 04-26317218

認證編號： 3295  
認證類別： 有機化合物分析  
無機化合物分析  
粉塵重量分析

認可期限： 109年01月19日至112年01月18日

保存期限： 30 年  
報告頁數： 10 頁





# 上穩科技有限公司

## 分析報告



### 說明：

- 一、本報告為符合勞工作業環境監測實施辦法所出具之分析報告。
- 二、本報告所用樣品及名稱均由委方提供，本實驗室僅負責分析。
- 三、本報告未經本實驗室同意不得摘錄複製，但全部複製除外。
- 四、採樣日期及現場樣本相關資料係由送樣單位提供。
- 五、空氣中濃度值係由實驗室分析結果，並根據採樣單位提供之採樣體積換算而得。
- 六、如有現場空白樣本，介質空白樣本，溶劑空白樣本及原料樣本等應於報告中註明。
- 七、採樣後經校正之體積係指換算成25°C，一大氣壓後之採樣體積。
- 八、如有樣本圖譜之資料，則提供圖譜影印資料。
- 九、如有分析金屬(ICP)項目  
測試場地在:台中市沙鹿區台灣大道六段1018號J506室。
- 十、備註中 “註1” 意指採樣體積未在採樣分析建議方法範圍內、  
“註2” 意指採樣流率未在採樣分析建議方法範圍內、  
“註3” 意指樣品有破出現象、  
“註4” 意指樣品有超過負載量。

林 煥 修 110/08/10

報告簽署人，實驗室主任









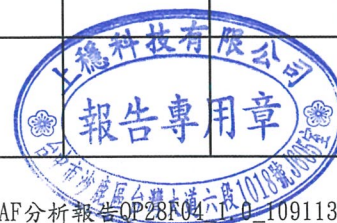
**TAF**  
Testing Laboratory  
3295





**TAF**  
Testing Laboratory  
3295

Testing Laboratory  
3295

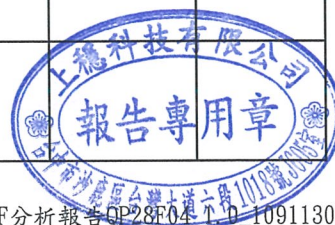






**TAF**  
Testing Laboratory  
3295

Testing Laboratory  
3295







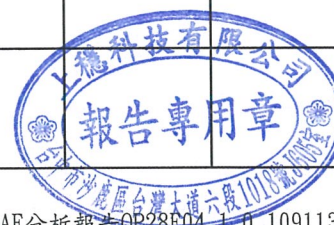


TAF  
Testing Laboratory  
3295





**TAF**  
Testing Laboratory  
3295

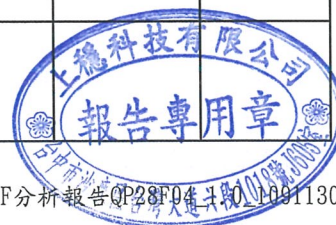






**TAF**  
Testing Laboratory  
3295

檢量下限：0.001580 mg/sample      容許濃度：2.6mg/m<sup>3</sup>      STEL：5.2mg/m<sup>3</sup>









**TAF**  
Testing Laboratory  
3295



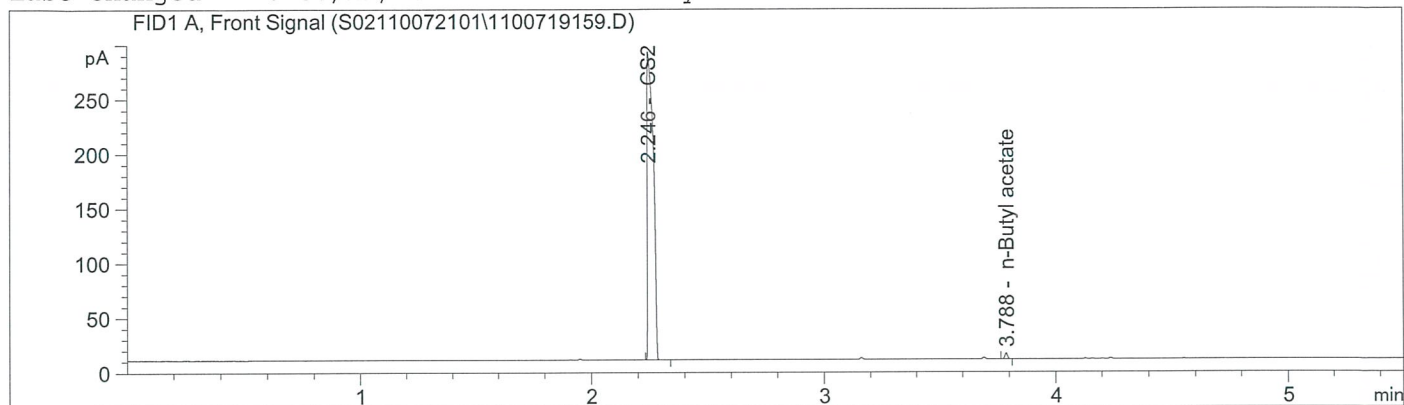


檢量下限：0.001532 mg/sample      容許濃度：1mg/m<sup>3</sup>      STEL：2mg/m<sup>3</sup>

[illegible]



```
=====
Acq. Operator   : SYSTEM                      Seq. Line : 530
Acq. Instrument : GC                        Location  : 80 (F)
Injection Date  : 07/25/2021 7:53:26 AM      Inj       : 1
                                           Inj Volume: 1 µl
Method         : C:\Chem32\1\Data\S02110072101\M02110072101.M (Sequence Method)
Last changed    : 07/21/2021 5:15:49 PM by SYSTEM
=====
```



```
=====
External Standard Report
=====
```

Sorted By : Signal  
Calib. Data Modified : Wednesday, July 21, 2021 5:15:27 PM  
Multiplier : 1.0000  
Dilution : 1.0000  
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal  
Uncalibrated Peaks : compound name not specified

| RetTime<br>[min] | Type | Area<br>[pA*s] | Amt/Area   | Amount<br>[ug/mL] | Grp | Name                   |
|------------------|------|----------------|------------|-------------------|-----|------------------------|
| 1.949            |      | -              | -          | -                 |     | n-Hexane               |
| 2.246            | BB   | 521.42474      | 2392.64175 | 1.24758e6         |     | CS2                    |
| 2.544            |      | -              | -          | -                 |     | Acetone                |
| 2.836            |      | -              | -          | -                 |     | Ethyl acetate          |
| 2.925            |      | -              | -          | -                 |     | Methyl ethyl ketone    |
| 3.161            |      | -              | -          | -                 |     | Benzene                |
| 3.467            |      | -              | -          | -                 |     | Methyl isobutyl ketone |
| 3.691            |      | -              | -          | -                 |     | Toluene                |
| 3.788            | BB   | 4.08078        | 2.44382    | 9.97269           |     | n-Butyl acetate        |
| 4.159            |      | -              | -          | -                 |     | Ethylbenzene           |
| 4.202            |      | -              | -          | -                 | 1   | p-Xylene               |
| 4.237            |      | -              | -          | -                 | 1   | m-Xylene               |
| 4.484            |      | -              | -          | -                 | 1   | o-Xylene               |
| 4.866            |      | -              | -          | -                 |     | Styrene                |
| 4.922            |      | -              | -          | -                 |     | 2-Ethoxyethyl acetate  |
| 5.172            |      | -              | -          | -                 |     | Cyclohexanone          |

Totals : 1.24759e6

Group summary

| Group ID | Use | Area<br>[pA*s] | Amount<br>[ug/mL] | Group Name |
|----------|-----|----------------|-------------------|------------|
| 1        |     | 0.00000        | 0.00000           | Xylene     |



Sample Name: 1100719159

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)

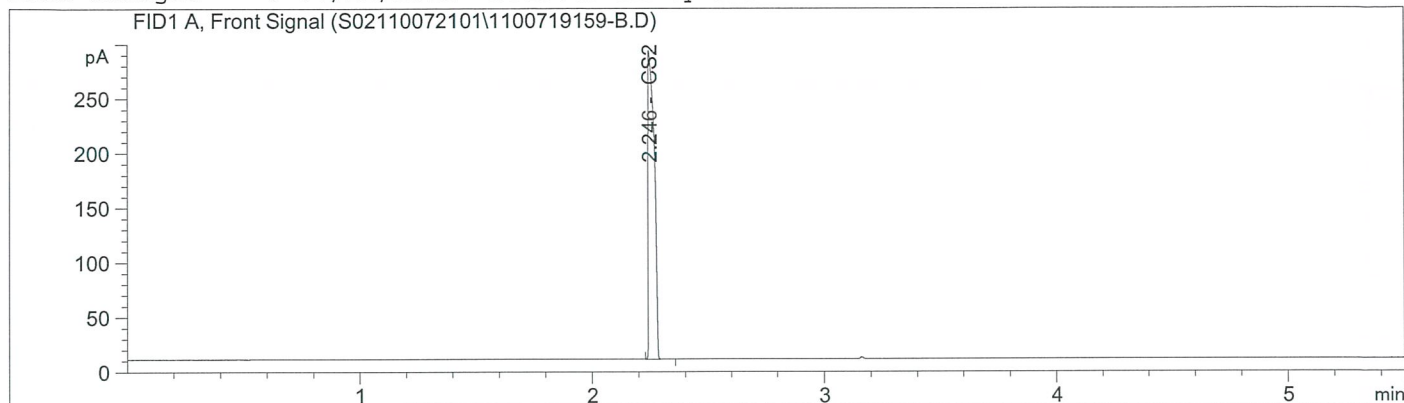
Warning : Calibrated compound(s) not found

=====

\*\*\* End of Report \*\*\*

Sample Name: 1100719159-B

```
=====
Acq. Operator   : SYSTEM                      Seq. Line : 531
Acq. Instrument : GC                        Location  : 81 (F)
Injection Date  : 07/25/2021 8:03:09 AM      Inj       : 1
                                           Inj Volume: 1 µl
Method         : C:\Chem32\1\Data\S02110072101\M02110072101.M (Sequence Method)
Last changed    : 07/21/2021 5:15:49 PM by SYSTEM
=====
```



External Standard Report

```
=====
Sorted By      : Signal
Calib. Data Modified : Wednesday, July 21, 2021 5:15:27 PM
Multiplier     : 1.0000
Dilution       : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
=====
```

Signal 1: FID1 A, Front Signal  
 Uncalibrated Peaks : compound name not specified

| RetTime<br>[min] | Type | Area<br>[pA*s] | Amt/Area   | Amount<br>[ug/mL] | Grp | Name                   |
|------------------|------|----------------|------------|-------------------|-----|------------------------|
| 1.949            |      | -              | -          | -                 |     | n-Hexane               |
| 2.246            | BB   | 520.81488      | 2392.64175 | 1.24612e6         |     | CS2                    |
| 2.544            |      | -              | -          | -                 |     | Acetone -              |
| 2.836            |      | -              | -          | -                 |     | Ethyl acetate          |
| 2.925            |      | -              | -          | -                 |     | Methyl ethyl ketone    |
| 3.161            |      | -              | -          | -                 |     | Benzene                |
| 3.467            |      | -              | -          | -                 |     | Methyl isobutyl ketone |
| 3.691            |      | -              | -          | -                 |     | Toluene                |
| 3.788            |      | -              | -          | -                 |     | n-Butyl acetate        |
| 4.159            |      | -              | -          | -                 |     | Ethylbenzene           |
| 4.202            |      | -              | -          | -                 | 1   | p-Xylene               |
| 4.237            |      | -              | -          | -                 | 1   | m-Xylene               |
| 4.484            |      | -              | -          | -                 | 1   | o-Xylene               |
| 4.866            |      | -              | -          | -                 |     | Styrene                |
| 4.922            |      | -              | -          | -                 |     | 2-Ethoxyethyl acetate  |
| 5.172            |      | -              | -          | -                 |     | Cyclohexanone          |

Totals : 1.24612e6

Group summary

| Group ID | Use | Area<br>[pA*s] | Amount<br>[ug/mL] | Group Name |
|----------|-----|----------------|-------------------|------------|
| 1        |     | 0.00000        | 0.00000           | Xylene     |

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)

Warning : Calibrated compound(s) not found

=====

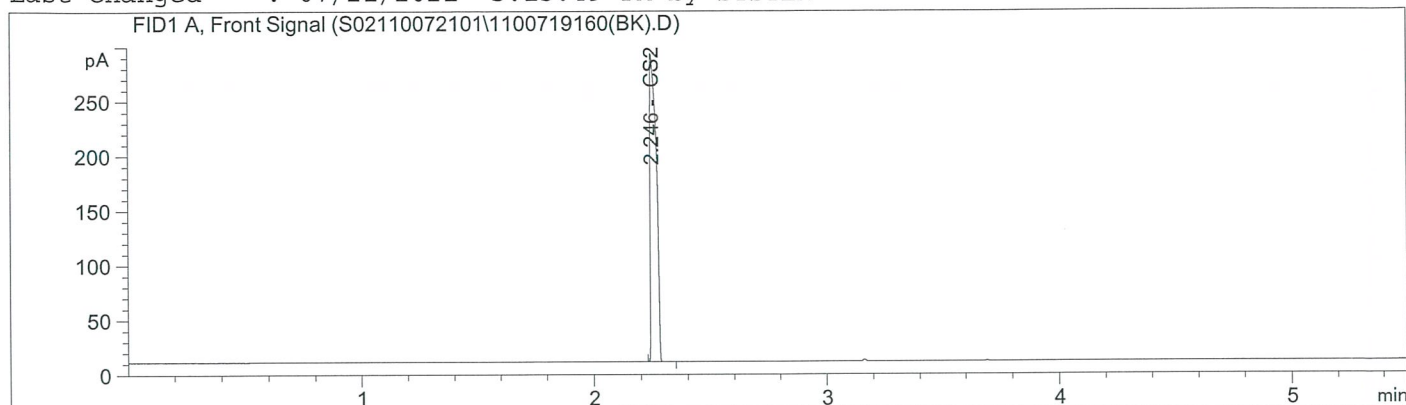
\*\*\* End of Report \*\*\*

Sample Name: 1100719160 (BK)

```

=====
Acq. Operator   : SYSTEM                      Seq. Line : 532
Acq. Instrument : GC                        Location  : 82 (F)
Injection Date  : 07/25/2021 8:12:57 AM      Inj       : 1
                                           Inj Volume: 1 µl
Method         : C:\Chem32\1\Data\S02110072101\M02110072101.M (Sequence Method)
Last changed    : 07/21/2021 5:15:49 PM by SYSTEM

```



```

=====
                        External Standard Report
=====

```

```

Sorted By           : Signal
Calib. Data Modified : Wednesday, July 21, 2021 5:15:27 PM
Multiplier          : 1.0000
Dilution            : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

```

Signal 1: FID1 A, Front Signal

Uncalibrated Peaks : compound name not specified

| RetTime<br>[min] | Type | Area<br>[pA*s] | Amt/Area   | Amount<br>[ug/mL] | Grp | Name                   |
|------------------|------|----------------|------------|-------------------|-----|------------------------|
| 1.949            |      | -              | -          | -                 |     | n-Hexane               |
| 2.246            | BB   | 522.08160      | 2392.64175 | 1.24915e6         |     | CS2                    |
| 2.544            |      | -              | -          | -                 |     | Acetone                |
| 2.836            |      | -              | -          | -                 |     | Ethyl acetate          |
| 2.925            |      | -              | -          | -                 |     | Methyl ethyl ketone    |
| 3.161            |      | -              | -          | -                 |     | Benzene                |
| 3.467            |      | -              | -          | -                 |     | Methyl isobutyl ketone |
| 3.691            |      | -              | -          | -                 |     | Toluene                |
| 3.788            |      | -              | -          | -                 |     | n-Butyl acetate        |
| 4.159            |      | -              | -          | -                 |     | Ethylbenzene           |
| 4.202            |      | -              | -          | -                 | 1   | p-Xylene               |
| 4.237            |      | -              | -          | -                 | 1   | m-Xylene               |
| 4.484            |      | -              | -          | -                 | 1   | o-Xylene               |
| 4.866            |      | -              | -          | -                 |     | Styrene                |
| 4.922            |      | -              | -          | -                 |     | 2-Ethoxyethyl acetate  |
| 5.172            |      | -              | -          | -                 |     | Cyclohexanone          |

Totals : 1.24915e6

## Group summary

| Group ID | Use | Area<br>[pA*s] | Amount<br>[ug/mL] | Group Name |
|----------|-----|----------------|-------------------|------------|
| 1        |     | 0.00000        | 0.00000           | Xylene     |

2 Warnings or Errors :

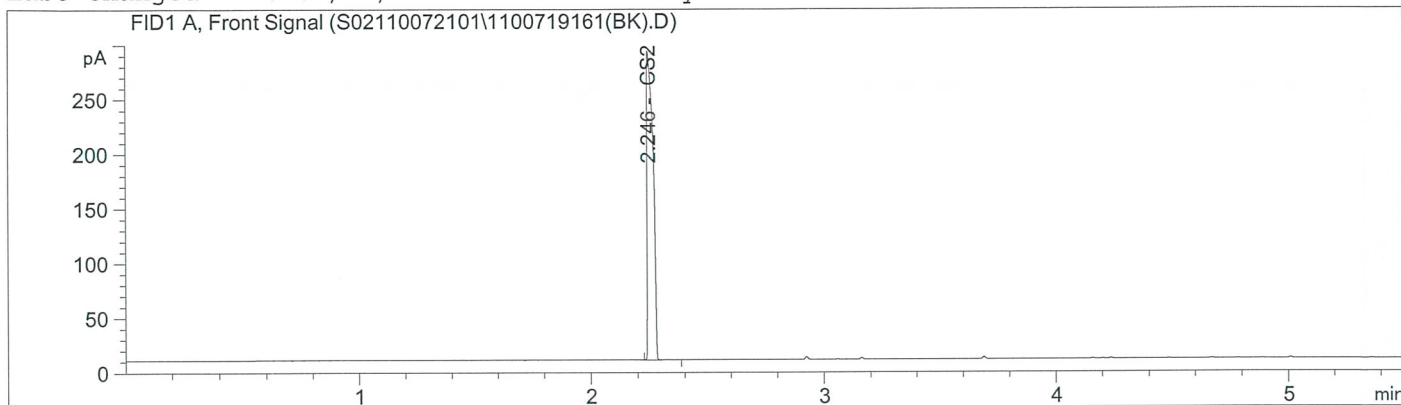
Warning : Calibration warnings (see calibration table listing)

Warning : Calibrated compound(s) not found

=====

\*\*\* End of Report \*\*\*

```
=====
Acq. Operator   : SYSTEM                      Seq. Line : 533
Acq. Instrument : GC                        Location  : 83 (F)
Injection Date  : 07/25/2021 8:22:39 AM      Inj       : 1
                                           Inj Volume: 1 µl
Method          : C:\Chem32\1\Data\S02110072101\M02110072101.M (Sequence Method)
Last changed    : 07/21/2021 5:15:49 PM by SYSTEM
=====
```



```
=====
                        External Standard Report
=====
```

Sorted By : Signal  
Calib. Data Modified : Wednesday, July 21, 2021 5:15:27 PM  
Multiplier : 1.0000  
Dilution : 1.0000  
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal

Uncalibrated Peaks : compound name not specified

| RetTime<br>[min] | Type | Area<br>[pA*s] | Amt/Area   | Amount<br>[ug/mL] | Grp | Name                   |
|------------------|------|----------------|------------|-------------------|-----|------------------------|
| 1.949            |      | -              | -          | -                 |     | n-Hexane               |
| 2.246            | BB   | 520.38849      | 2392.64175 | 1.24510e6         |     | CS2                    |
| 2.544            |      | -              | -          | -                 |     | Acetone                |
| 2.836            |      | -              | -          | -                 |     | Ethyl acetate          |
| 2.925            |      | -              | -          | -                 |     | Methyl ethyl ketone    |
| 3.161            |      | -              | -          | -                 |     | Benzene                |
| 3.467            |      | -              | -          | -                 |     | Methyl isobutyl ketone |
| 3.691            |      | -              | -          | -                 |     | Toluene                |
| 3.788            |      | -              | -          | -                 |     | n-Butyl acetate        |
| 4.159            |      | -              | -          | -                 |     | Ethylbenzene           |
| 4.202            |      | -              | -          | -                 | 1   | p-Xylene               |
| 4.237            |      | -              | -          | -                 | 1   | m-Xylene               |
| 4.484            |      | -              | -          | -                 | 1   | o-Xylene               |
| 4.866            |      | -              | -          | -                 |     | Styrene                |
| 4.922            |      | -              | -          | -                 |     | 2-Ethoxyethyl acetate  |
| 5.172            |      | -              | -          | -                 |     | Cyclohexanone          |

Totals : 1.24510e6

Group summary

| Group ID | Use | Area<br>[pA*s] | Amount<br>[ug/mL] | Group Name |
|----------|-----|----------------|-------------------|------------|
| 1        |     | 0.00000        | 0.00000           | Xylene     |



2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)

Warning : Calibrated compound(s) not found

=====

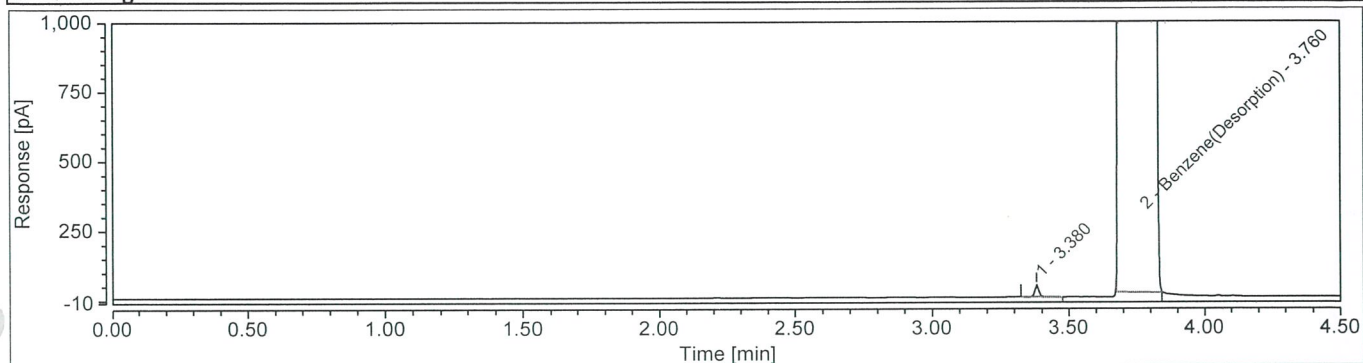
\*\*\* End of Report \*\*\*

## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719162       | Run Time (min):   | 4.50          |
| Vial Number:         | 11               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M09110050701     | Bandwidth:        | n.a.          |
| Processing Method:   | M09110050701     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/19 15:39 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.           | Peak Name           | Retention Time<br>min | Area<br>pA*min   | Height<br>pA      | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|---------------|---------------------|-----------------------|------------------|-------------------|--------------------|----------------------|-----------------|
| 1             |                     | 3.380                 | 0.7139           | 42.6089           | 0.00               | 0.01                 | n.a.            |
| 2             | Benzene(Desorption) | 3.760                 | 39599.7473       | 489551.6511       | 100.00             | 99.99                | n.a.            |
| n.a.          | Acetonitrile        | n.a.                  | n.a.             | n.a.              | n.a.               | n.a.                 | n.a.            |
| <b>Total:</b> |                     |                       | <b>39600.461</b> | <b>489594.260</b> | <b>100.00</b>      | <b>100.00</b>        |                 |

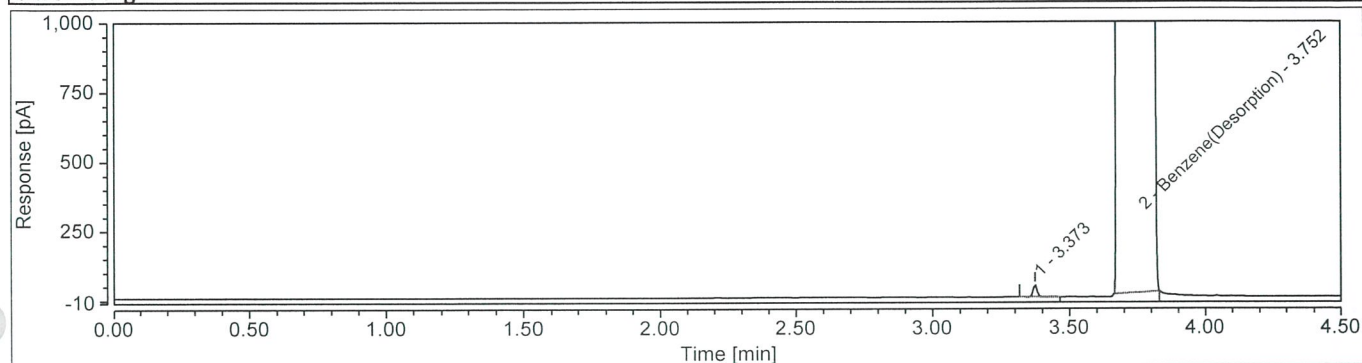


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719162-B     | Run Time (min):   | 4.50          |
| Vial Number:         | 12               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M09110050701     | Bandwidth:        | n.a.          |
| Processing Method:   | M09110050701     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/19 15:48 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name           | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|---------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      |                     | 3.373                 | 0.7420         | 44.6440      | 0.00               | 0.01                 | n.a.            |
| 2      | Benzene(Desorption) | 3.752                 | 38641.9325     | 485652.3073  | 100.00             | 99.99                | n.a.            |
| n.a.   | Acetonitrile        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                     |                       | 38642.675      | 485696.951   | 100.00             | 100.00               |                 |

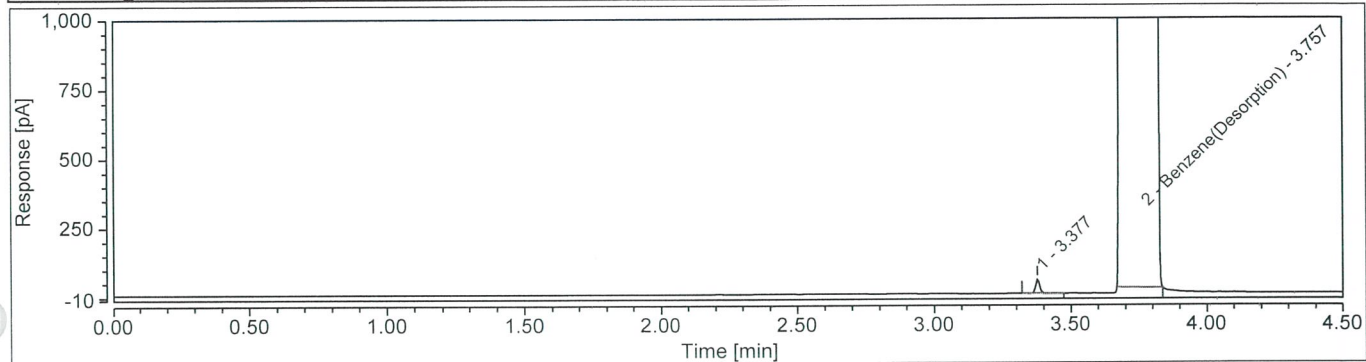


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719163(BK)   | Run Time (min):   | 4.50          |
| Vial Number:         | 13               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M09110050701     | Bandwidth:        | n.a.          |
| Processing Method:   | M09110050701     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/19 15:57 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name           | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|---------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      |                     | 3.377                 | 0.8832         | 53.4649      | 0.00               | 0.01                 | n.a.            |
| 2      | Benzene(Desorption) | 3.757                 | 39235.0359     | 488637.3994  | 100.00             | 99.99                | n.a.            |
| n.a.   | Acetonitrile        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                     |                       | 39235.919      | 488690.864   | 100.00             | 100.00               |                 |



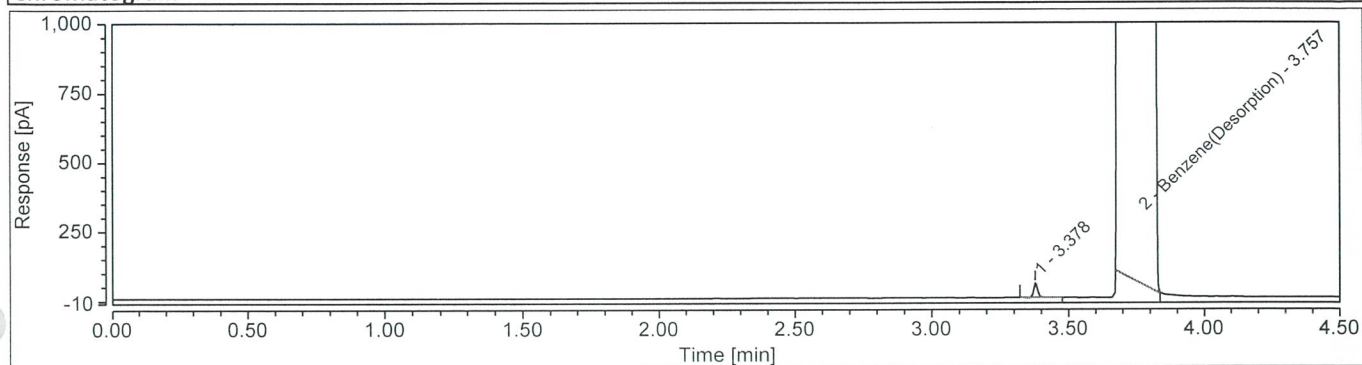


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719164(BK)   | Run Time (min):   | 4.50          |
| Vial Number:         | 14               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M09110050701     | Bandwidth:        | n.a.          |
| Processing Method:   | M09110050701     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/19 16:06 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name           | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|---------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      |                     | 3.378                 | 0.8624         | 51.4229      | 0.00               | 0.01                 | n.a.            |
| 2      | Benzene(Desorption) | 3.757                 | 38284.5256     | 484831.0816  | 100.00             | 99.99                | n.a.            |
| n.a.   | Acetonitrile        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                     |                       | 38285.388      | 484882.504   | 100.00             | 100.00               |                 |

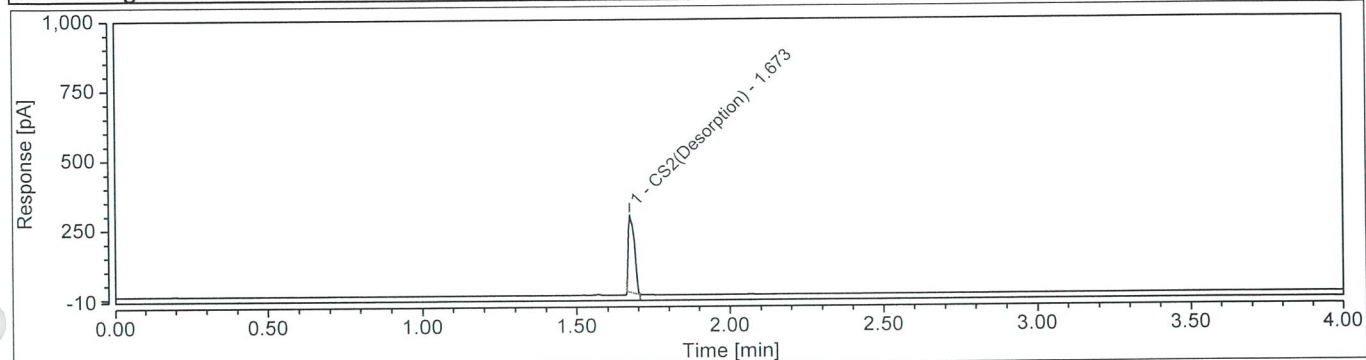


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719165       | Run Time (min):   | 4.00          |
| Vial Number:         | 5                | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M14110052401     | Bandwidth:        | n.a.          |
| Processing Method:   | M14110052401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/28 14:20 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name       | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | CS2(Desorption) | 1.673                 | 6.3968         | 277.8190     | 100.00             | 100.00               | n.a.            |
| n.a.   | DCM             | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                 |                       | 6.397          | 277.819      | 100.00             | 100.00               |                 |

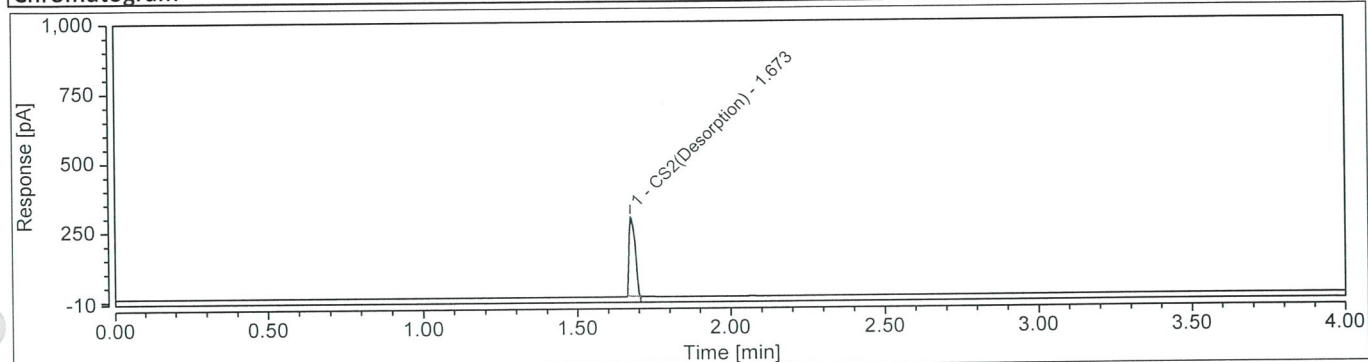


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719165-B     | Run Time (min):   | 4.00          |
| Vial Number:         | 6                | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M14110052401     | Bandwidth:        | n.a.          |
| Processing Method:   | M14110052401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/28 14:28 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.           | Peak Name       | Retention Time<br>min | Area<br>pA*min | Height<br>pA   | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|---------------|-----------------|-----------------------|----------------|----------------|--------------------|----------------------|-----------------|
| 1             | CS2(Desorption) | 1.673                 | 6.4255         | 285.6039       | 100.00             | 100.00               | n.a.            |
| n.a.          | DCM             | n.a.                  | n.a.           | n.a.           | n.a.               | n.a.                 | n.a.            |
| <b>Total:</b> |                 |                       | <b>6.425</b>   | <b>285.604</b> | <b>100.00</b>      | <b>100.00</b>        |                 |



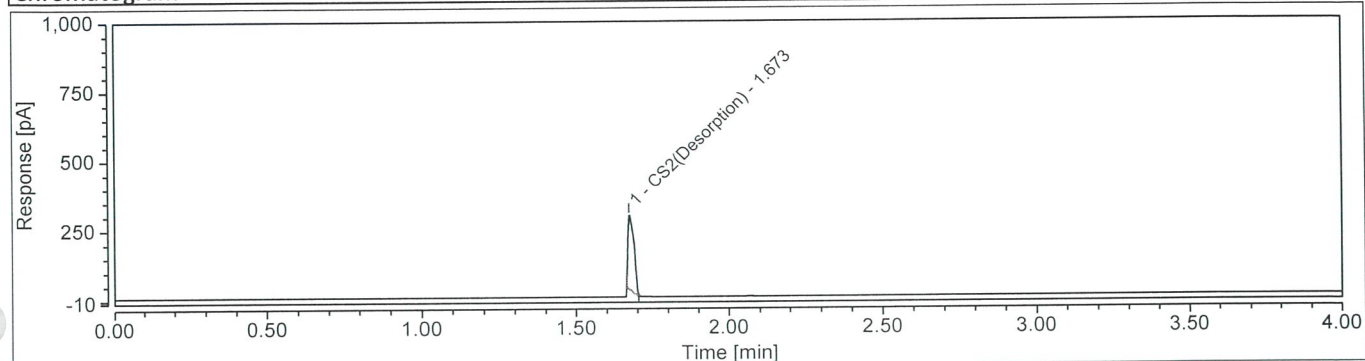


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719166(BK)   | Run Time (min):   | 4.00          |
| Vial Number:         | 7                | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M14110052401     | Bandwidth:        | n.a.          |
| Processing Method:   | M14110052401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/28 14:35 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name       | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | CS2(Desorption) | 1.673                 | 5.9542         | 263.6815     | 100.00             | 100.00               | n.a.            |
| n.a.   | DCM             | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                 |                       | 5.954          | 263.682      | 100.00             | 100.00               |                 |

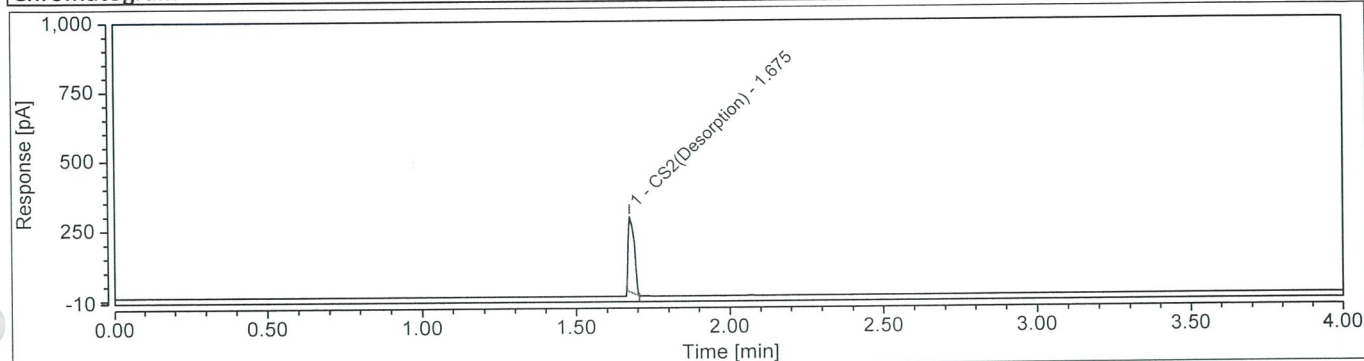


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719167(BK)   | Run Time (min):   | 4.00          |
| Vial Number:         | 8                | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M14110052401     | Bandwidth:        | n.a.          |
| Processing Method:   | M14110052401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/28 14:43 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name       | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | CS2(Desorption) | 1.675                 | 6.0723         | 268.4994     | 100.00             | 100.00               | n.a.            |
| n.a.   | DCM             | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                 |                       | 6.072          | 268.499      | 100.00             | 100.00               |                 |

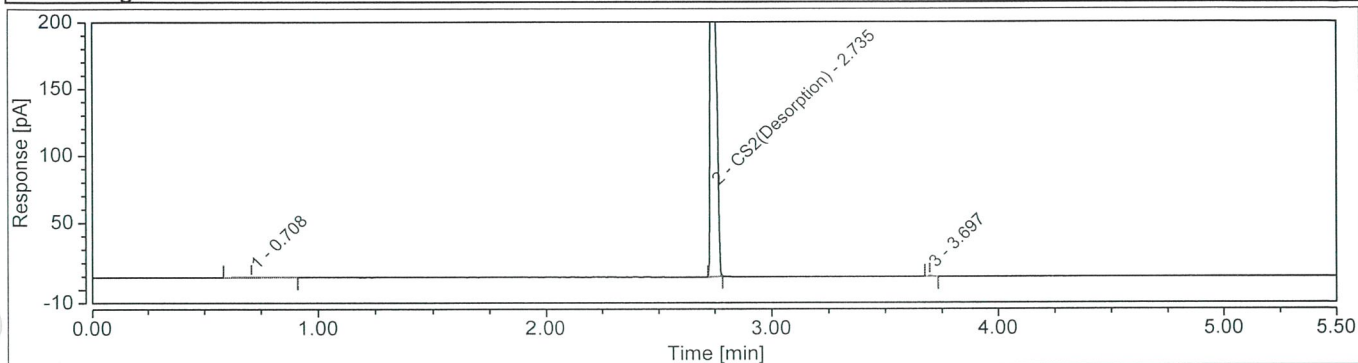


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719168       | Run Time (min):   | 5.50          |
| Vial Number:         | 29               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M15110051401     | Bandwidth:        | n.a.          |
| Processing Method:   | M15110051401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/19 22:03 | Sample Weight:    | 1.0000        |

### Chromatogram



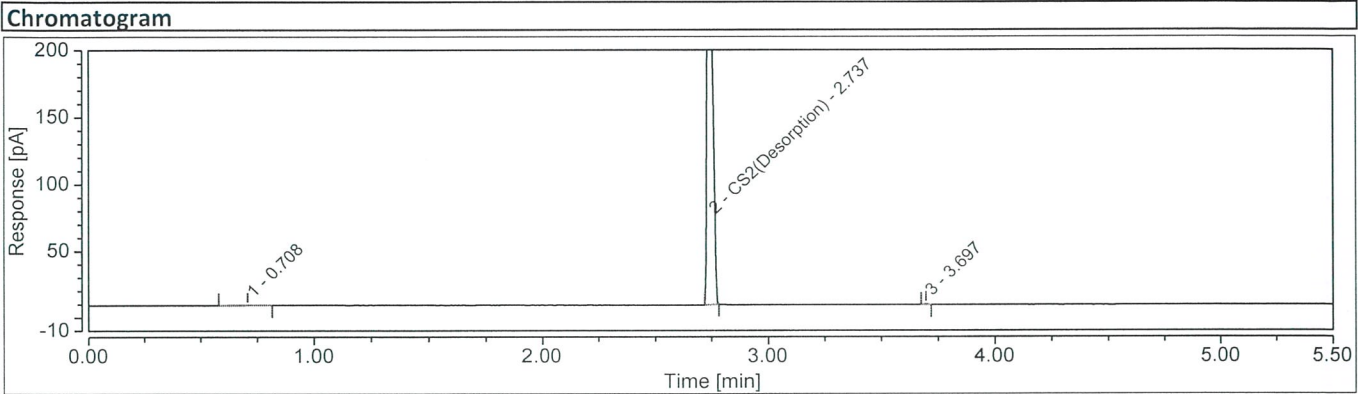
### Integration Results

| No.    | Peak Name           | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|---------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      |                     | 0.708                 | 0.0170         | 0.1081       | 0.21               | 0.04                 | n.a.            |
| 2      | CS2(Desorption)     | 2.735                 | 8.2127         | 269.4457     | 99.64              | 99.67                | n.a.            |
| 3      |                     | 3.697                 | 0.0123         | 0.7785       | 0.15               | 0.29                 | n.a.            |
| n.a.   | Trichloroethylene   | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Chloroform          | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Tetrachloroethylene | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                     |                       | 8.242          | 270.332      | 100.00             | 100.00               |                 |





| Chromatogram and Results |                  |                   |               |
|--------------------------|------------------|-------------------|---------------|
| Injection Details        |                  |                   |               |
| Injection Name:          | 1100719168-B     | Run Time (min):   | 5.50          |
| Vial Number:             | 30               | Injection Volume: | 1.00          |
| Injection Type:          | Unknown          | Channel:          | FrontDetector |
| Calibration Level:       |                  | Wavelength:       | n.a.          |
| Instrument Method:       | M15110051401     | Bandwidth:        | n.a.          |
| Processing Method:       | M15110051401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time:     | 2021/07/19 22:13 | Sample Weight:    | 1.0000        |



| Integration Results |                     |                       |                |              |                    |                      |                 |
|---------------------|---------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| No.                 | Peak Name           | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
| 1                   | CS2(Desorption)     | 0.708                 | 0.0117         | 0.0957       | 0.14               | 0.03                 | n.a.            |
| 2                   |                     | 2.737                 | 8.1988         | 272.8813     | 99.71              | 99.68                | n.a.            |
| 3                   |                     | 3.697                 | 0.0121         | 0.7684       | 0.15               | 0.28                 | n.a.            |
| n.a.                | Trichloroethylene   | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.                | Chloroform          | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.                | Tetrachloroethylene | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total:              |                     |                       | 8.223          | 273.745      | 100.00             | 100.00               |                 |

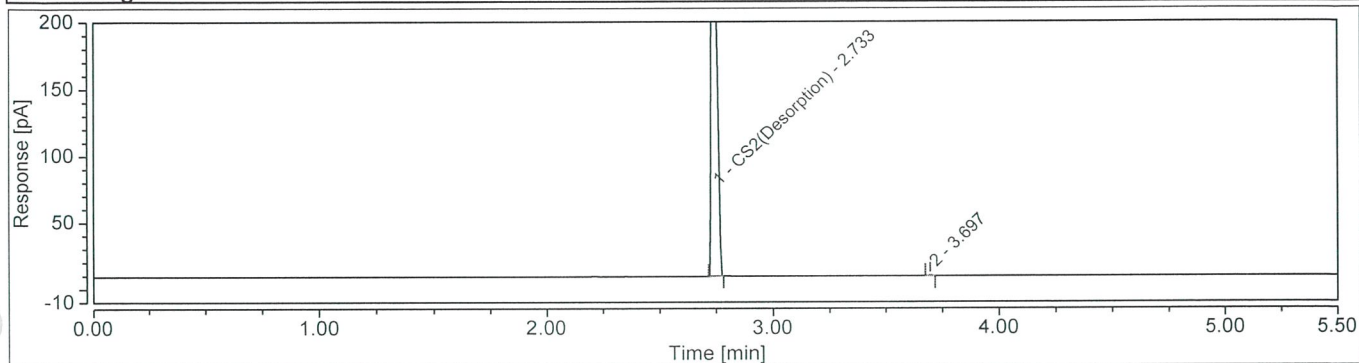


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719169(BK)   | Run Time (min):   | 5.50          |
| Vial Number:         | 31               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M15110051401     | Bandwidth:        | n.a.          |
| Processing Method:   | M15110051401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/19 22:23 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name           | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|---------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | CS2(Desorption)     | 2.733                 | 8.1647         | 269.4657     | 99.86              | 99.72                | n.a.            |
| 2      |                     | 3.697                 | 0.0118         | 0.7634       | 0.14               | 0.28                 | n.a.            |
| n.a.   | Trichloroethylene   | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Chloroform          | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Tetrachloroethylene | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                     |                       | 8.177          | 270.229      | 100.00             | 100.00               |                 |

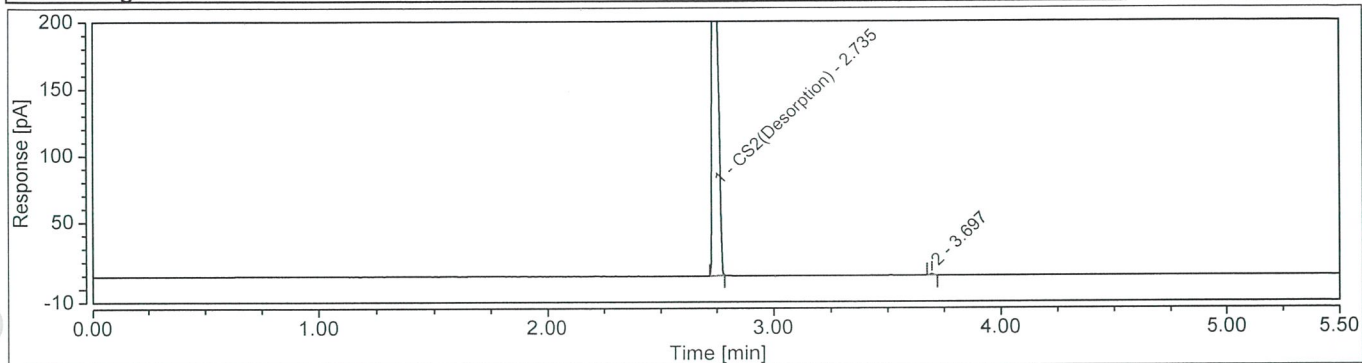


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719170(BK)   | Run Time (min):   | 5.50          |
| Vial Number:         | 32               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M15110051401     | Bandwidth:        | n.a.          |
| Processing Method:   | M15110051401     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/19 22:33 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name           | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|---------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | CS2(Desorption)     | 2.735                 | 8.1565         | 268.7786     | 99.78              | 99.58                | n.a.            |
| 2      |                     | 3.697                 | 0.0179         | 1.1398       | 0.22               | 0.42                 | n.a.            |
| n.a.   | Trichloroethylene   | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Chloroform          | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Tetrachloroethylene | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                     |                       | 8.174          | 269.918      | 100.00             | 100.00               |                 |

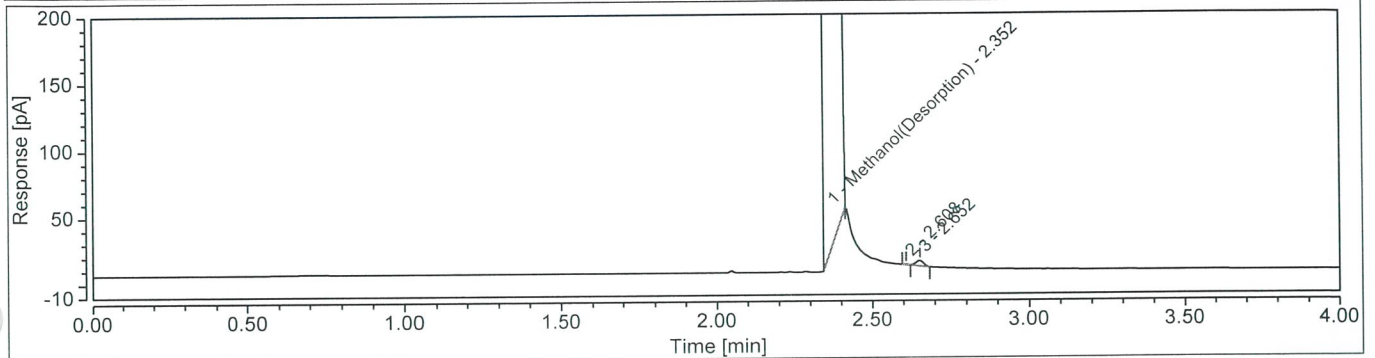


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719171       | Run Time (min):   | 4.00          |
| Vial Number:         | 25               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M35110071301     | Bandwidth:        | n.a.          |
| Processing Method:   | M35110071301     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/26 16:18 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name            | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|----------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | Methanol(Desorption) | 2.352                 | 2003.2402      | 64965.5875   | 99.99              | 99.99                | n.a.            |
| 2      |                      | 2.608                 | 0.0043         | 0.3365       | 0.00               | 0.00                 | n.a.            |
| 3      |                      | 2.652                 | 0.1218         | 4.2190       | 0.01               | 0.01                 | n.a.            |
| n.a.   | DMF                  | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                      |                       | 2003.366       | 64970.143    | 100.00             | 100.00               |                 |



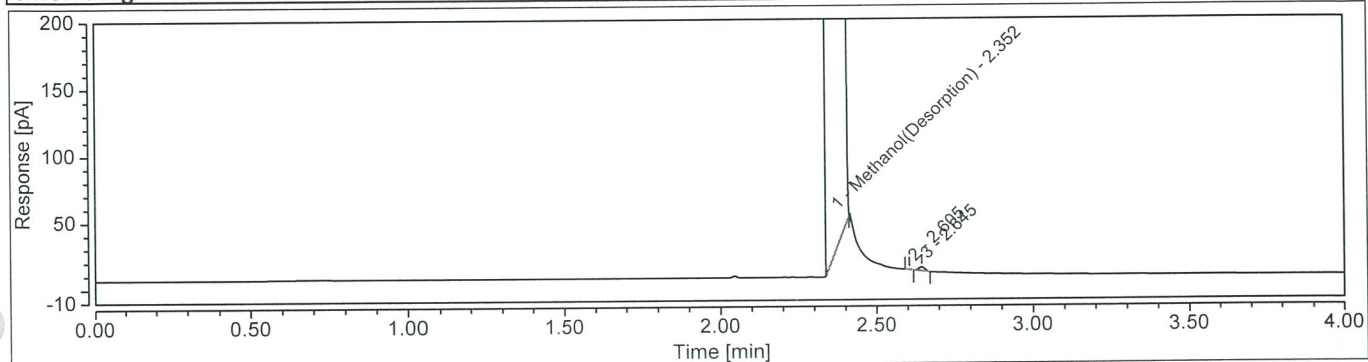


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719171-B     | Run Time (min):   | 4.00          |
| Vial Number:         | 26               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M35110071301     | Bandwidth:        | n.a.          |
| Processing Method:   | M35110071301     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/26 16:25 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name            | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|----------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | Methanol(Desorption) | 2.352                 | 2056.5985      | 66832.2905   | 100.00             | 99.99                | n.a.            |
| 2      |                      | 2.605                 | 0.0047         | 0.3780       | 0.00               | 0.00                 | n.a.            |
| 3      |                      | 2.645                 | 0.0730         | 3.1194       | 0.00               | 0.00                 | n.a.            |
| n.a.   | DMF                  | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                      |                       | 2056.676       | 66835.788    | 100.00             | 100.00               |                 |

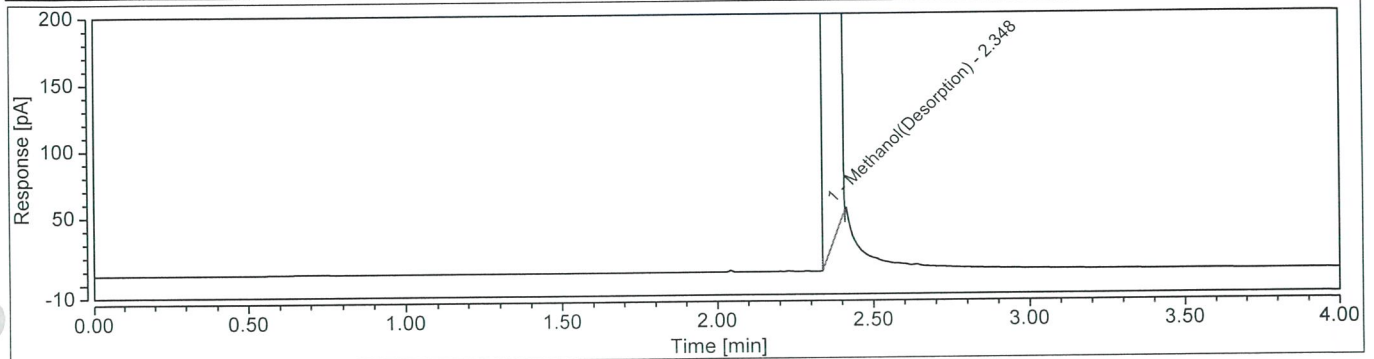


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719172(BK)   | Run Time (min):   | 4.00          |
| Vial Number:         | 27               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M35110071301     | Bandwidth:        | n.a.          |
| Processing Method:   | M35110071301     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/26 16:33 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name            | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|----------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | Methanol(Desorption) | 2.348                 | 2082.3374      | 65139.8732   | 100.00             | 100.00               | n.a.            |
| n.a.   | DMF                  | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                      |                       | 2082.337       | 65139.873    | 100.00             | 100.00               |                 |

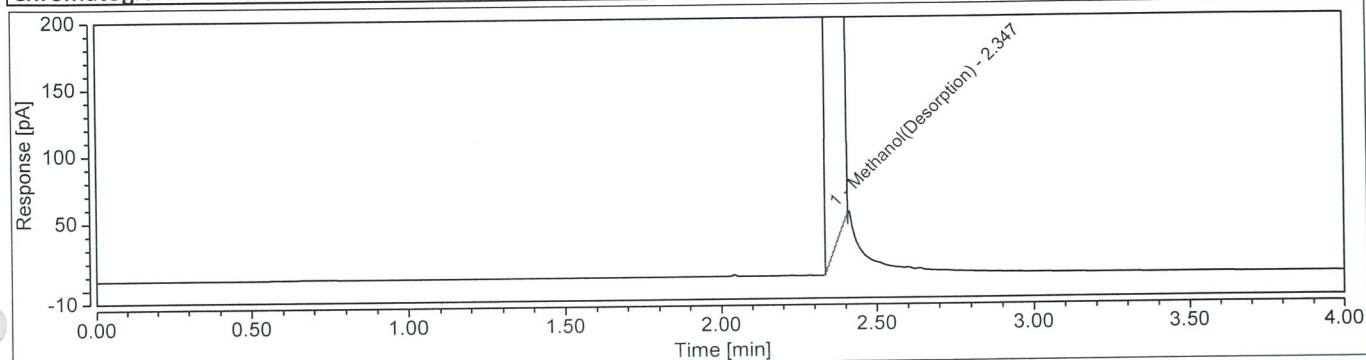


## Chromatogram and Results

### Injection Details

|                      |                  |                   |               |
|----------------------|------------------|-------------------|---------------|
| Injection Name:      | 1100719173(BK)   | Run Time (min):   | 4.00          |
| Vial Number:         | 28               | Injection Volume: | 1.00          |
| Injection Type:      | Unknown          | Channel:          | FrontDetector |
| Calibration Level:   |                  | Wavelength:       | n.a.          |
| Instrument Method:   | M35110071301     | Bandwidth:        | n.a.          |
| Processing Method:   | M35110071301     | Dilution Factor:  | 1.0000        |
| Injection Date/Time: | 2021/07/26 16:41 | Sample Weight:    | 1.0000        |

### Chromatogram



### Integration Results

| No.    | Peak Name            | Retention Time<br>min | Area<br>pA*min | Height<br>pA | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|----------------------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| 1      | Methanol(Desorption) | 2.347                 | 2072.6025      | 67632.5940   | 100.00             | 100.00               | n.a.            |
| n.a.   | DMF                  | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |                      |                       | 2072.603       | 67632.594    | 100.00             | 100.00               |                 |



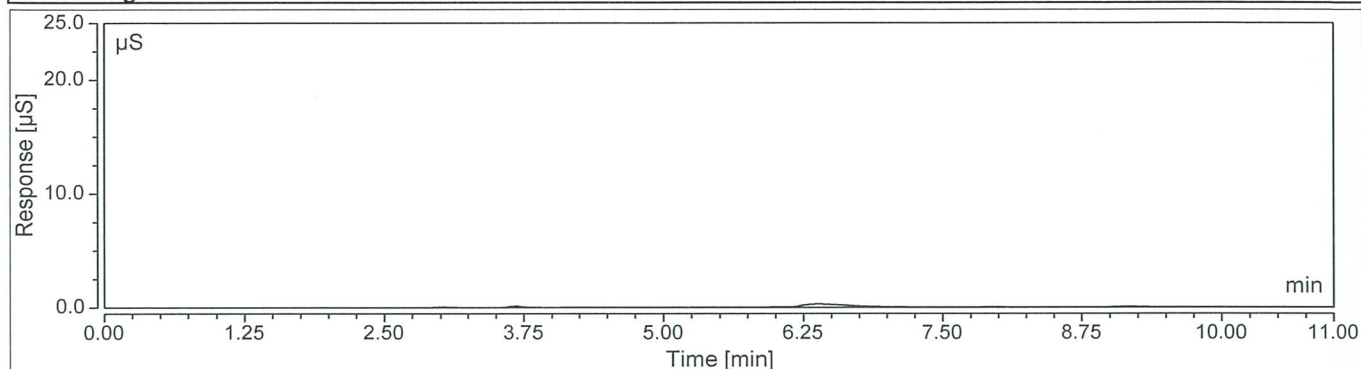


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719174       | Run Time (min):   | 11.00  |
| Vial Number:         | RC3              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 18:54 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.    | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.   | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |           |                       | 0.000          | 0.000        | 0.00               | 0.00                 |                 |

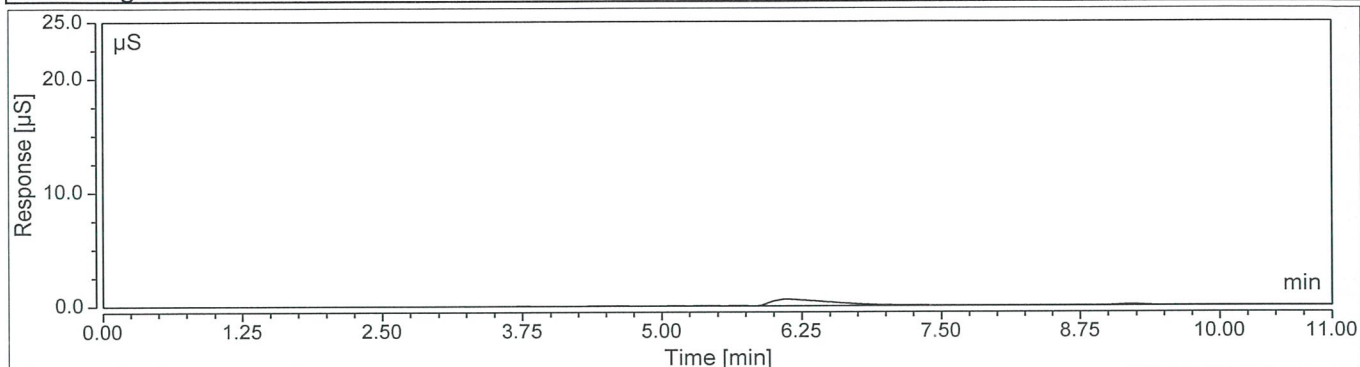


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719174-B     | Run Time (min):   | 11.00  |
| Vial Number:         | RC4              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 19:06 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.    | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.   | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |           |                       | 0.000          | 0.000        | 0.00               | 0.00                 |                 |

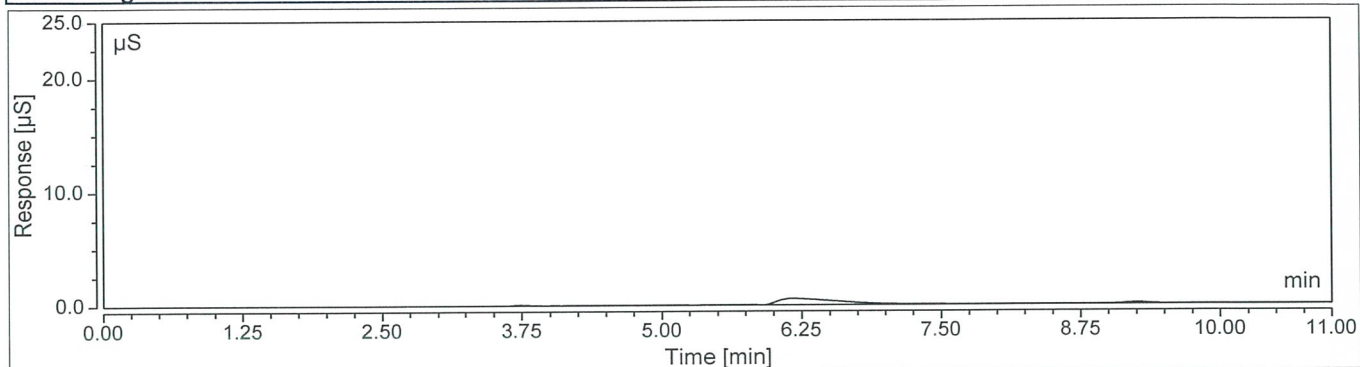


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719175       | Run Time (min):   | 11.00  |
| Vial Number:         | RC5              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 19:19 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.    | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.   | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |           |                       | 0.000          | 0.000        | 0.00               | 0.00                 |                 |

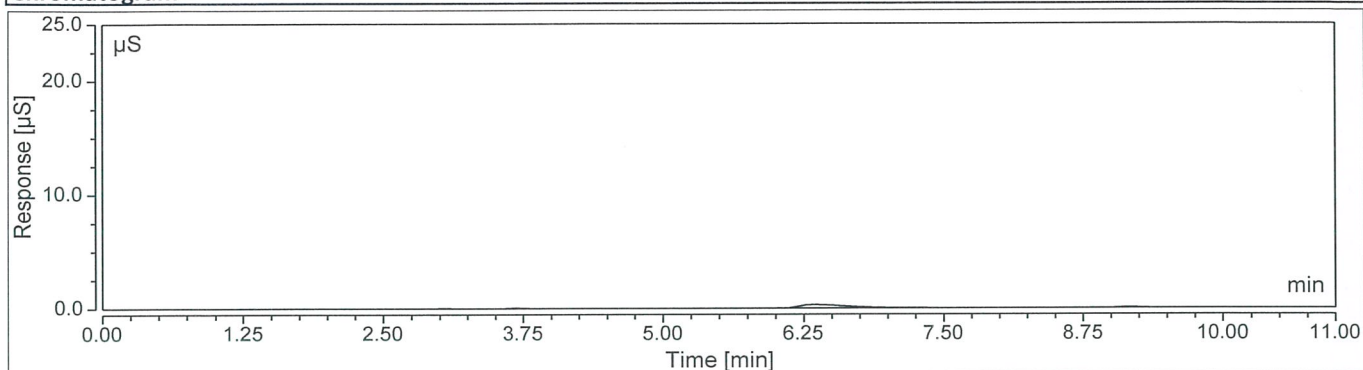


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719175-B     | Run Time (min):   | 11.00  |
| Vial Number:         | RC6              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 19:31 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.           | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|---------------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.          | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| <b>Total:</b> |           |                       | <b>0.000</b>   | <b>0.000</b> | <b>0.00</b>        | <b>0.00</b>          |                 |



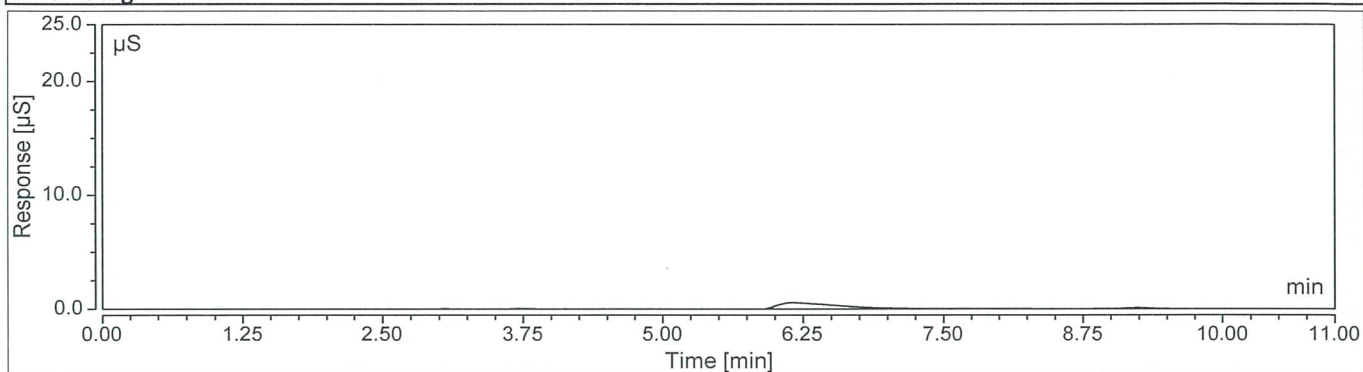


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719176       | Run Time (min):   | 11.00  |
| Vial Number:         | RC7              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 19:43 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.           | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|---------------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.          | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| <b>Total:</b> |           |                       | <b>0.000</b>   | <b>0.000</b> | <b>0.00</b>        | <b>0.00</b>          |                 |

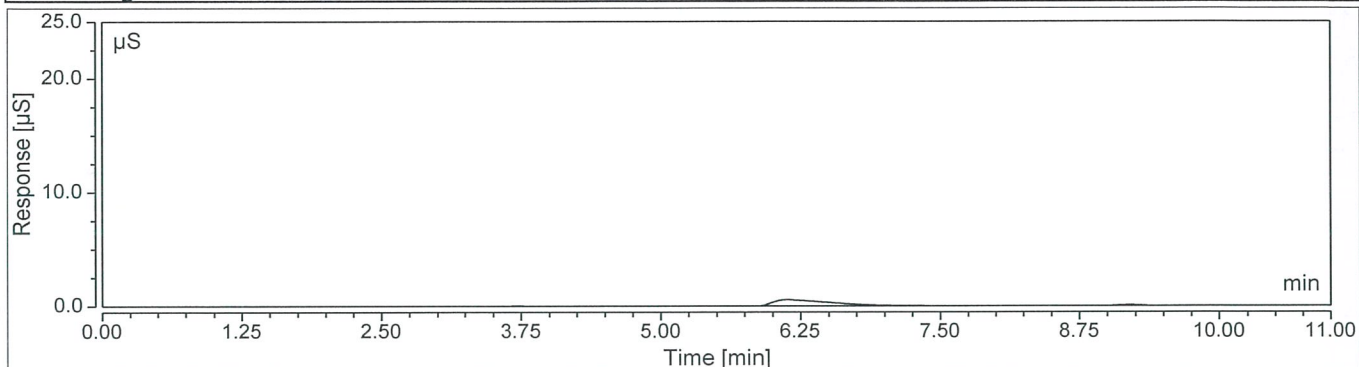


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719176-B     | Run Time (min):   | 11.00  |
| Vial Number:         | RC8              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 19:56 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.    | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.   | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |           |                       | 0.000          | 0.000        | 0.00               | 0.00                 |                 |

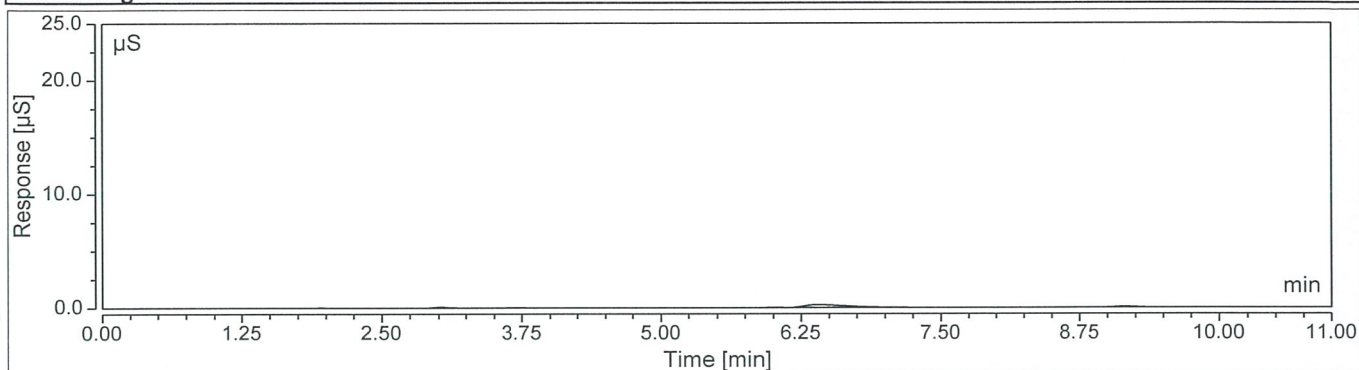


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719177       | Run Time (min):   | 11.00  |
| Vial Number:         | RD1              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 20:08 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.           | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|---------------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.          | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.          | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| <b>Total:</b> |           |                       | <b>0.000</b>   | <b>0.000</b> | <b>0.00</b>        | <b>0.00</b>          |                 |



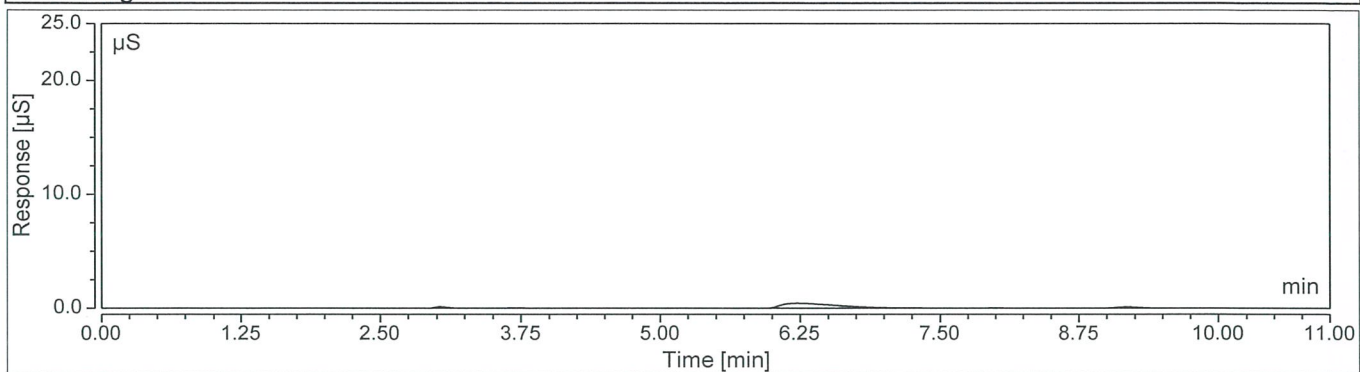


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719177-B     | Run Time (min):   | 11.00  |
| Vial Number:         | RD2              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 20:20 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

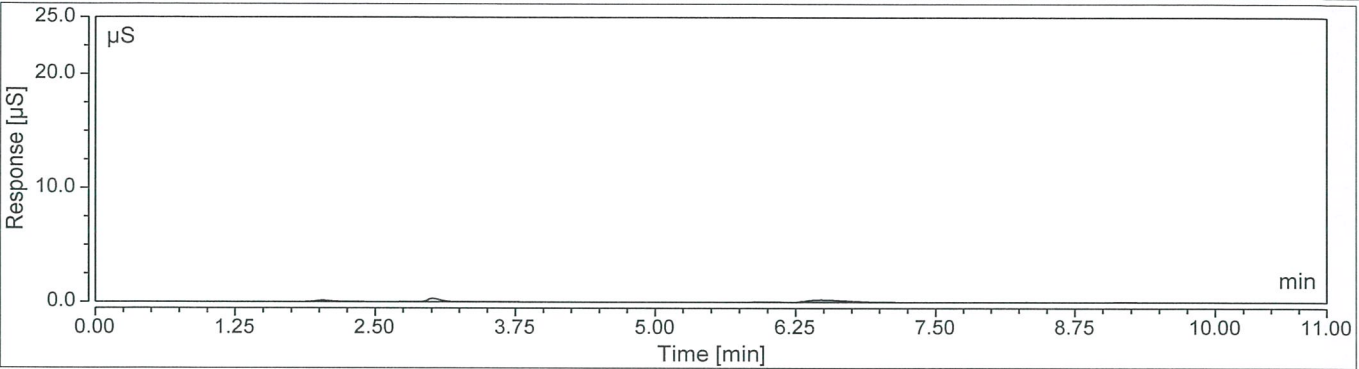
| No.    | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.   | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |           |                       | 0.000          | 0.000        | 0.00               | 0.00                 |                 |



Chromatogram and Results

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Details    |                  |                   |        |
| Injection Name:      | 1100719178(BK)   | Run Time (min):   | 11.00  |
| Vial Number:         | RD3              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 20:33 | Sample Weight:    | 1.0000 |

Chromatogram



| Integration Results |           |                       |                |              |                    |                      |                 |
|---------------------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| No.                 | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
| n.a.                | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.                | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.                | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.                | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.                | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.                | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total:              |           |                       | 0.000          | 0.000        | 0.00               | 0.00                 |                 |

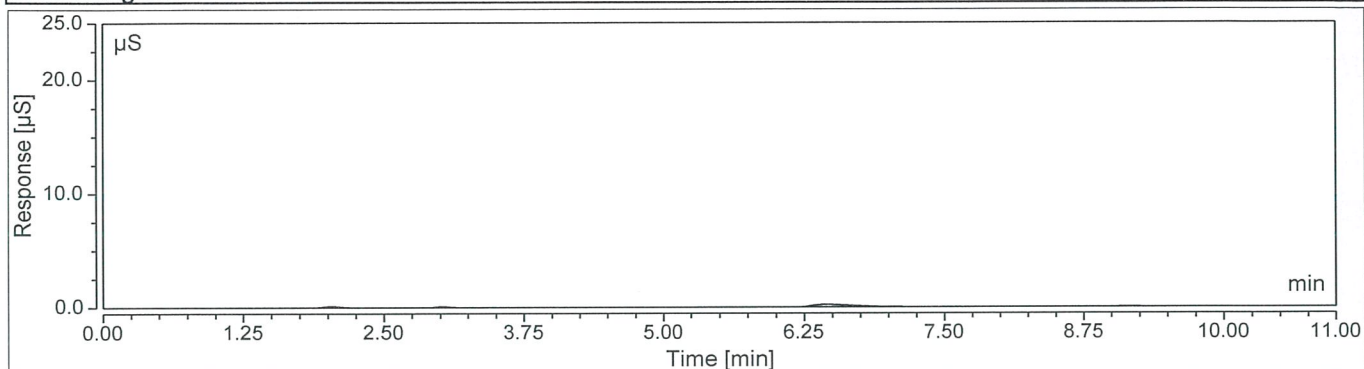


## Chromatogram and Results

### Injection Details

|                      |                  |                   |        |
|----------------------|------------------|-------------------|--------|
| Injection Name:      | 1100719179(BK)   | Run Time (min):   | 11.00  |
| Vial Number:         | RD6              | Injection Volume: | 100.00 |
| Injection Type:      | Unknown          | Channel:          | ECD_1  |
| Calibration Level:   |                  | Wavelength:       | n.a.   |
| Instrument Method:   | SW-QS-IC-002     | Bandwidth:        | n.a.   |
| Processing Method:   | SW-QS-IC-002     | Dilution Factor:  | 1.0000 |
| Injection Date/Time: | 2021/07/28 21:10 | Sample Weight:    | 1.0000 |

### Chromatogram



### Integration Results

| No.    | Peak Name | Retention Time<br>min | Area<br>µS*min | Height<br>µS | Relative Area<br>% | Relative Height<br>% | Amount<br>ug/mL |
|--------|-----------|-----------------------|----------------|--------------|--------------------|----------------------|-----------------|
| n.a.   | F-        | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Cl-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | Br-       | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | NO3-      | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | PO43-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| n.a.   | SO42-     | n.a.                  | n.a.           | n.a.         | n.a.               | n.a.                 | n.a.            |
| Total: |           |                       | 0.000          | 0.000        | 0.00               | 0.00                 |                 |





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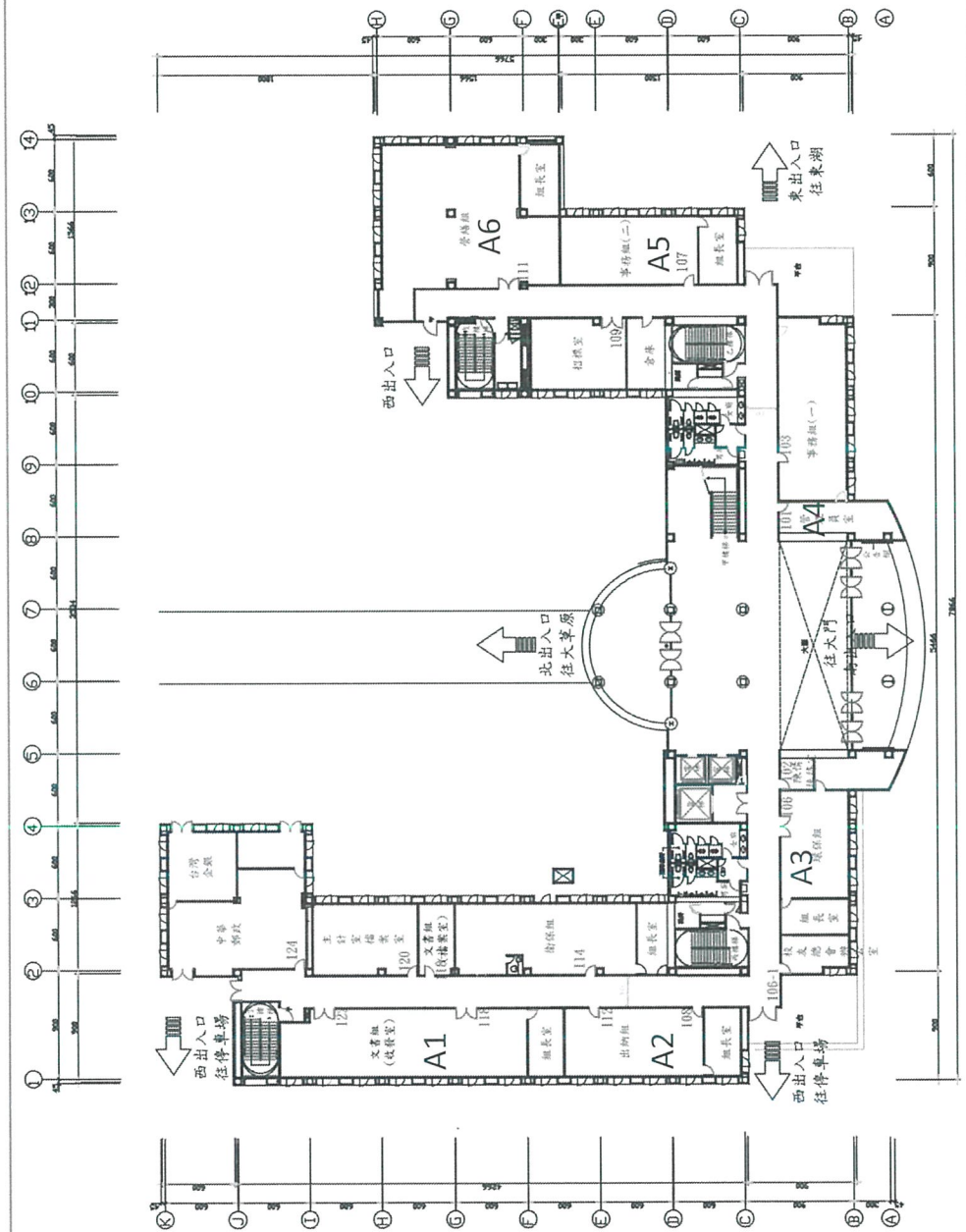
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# 平面圖





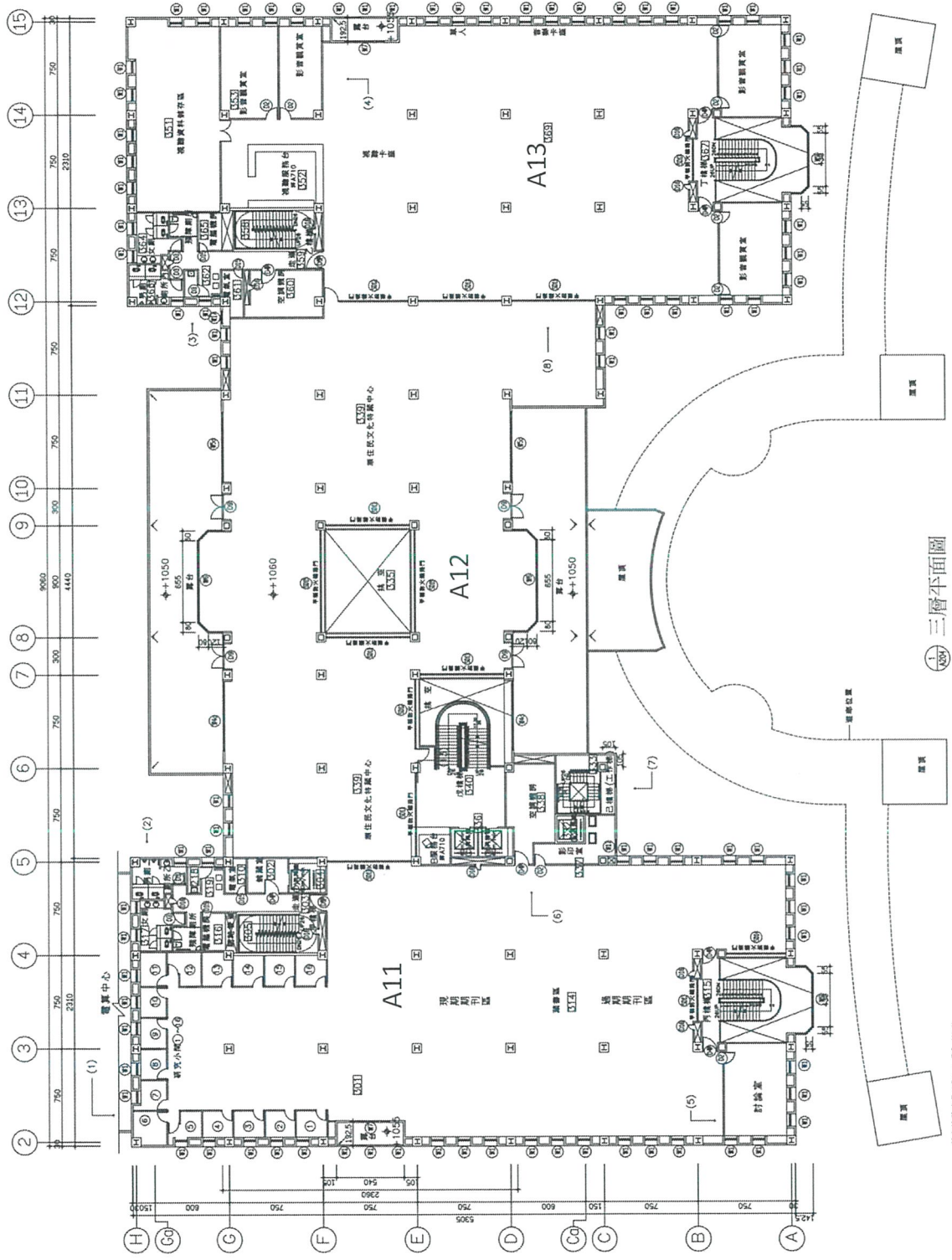
### 行政大樓1樓平面圖







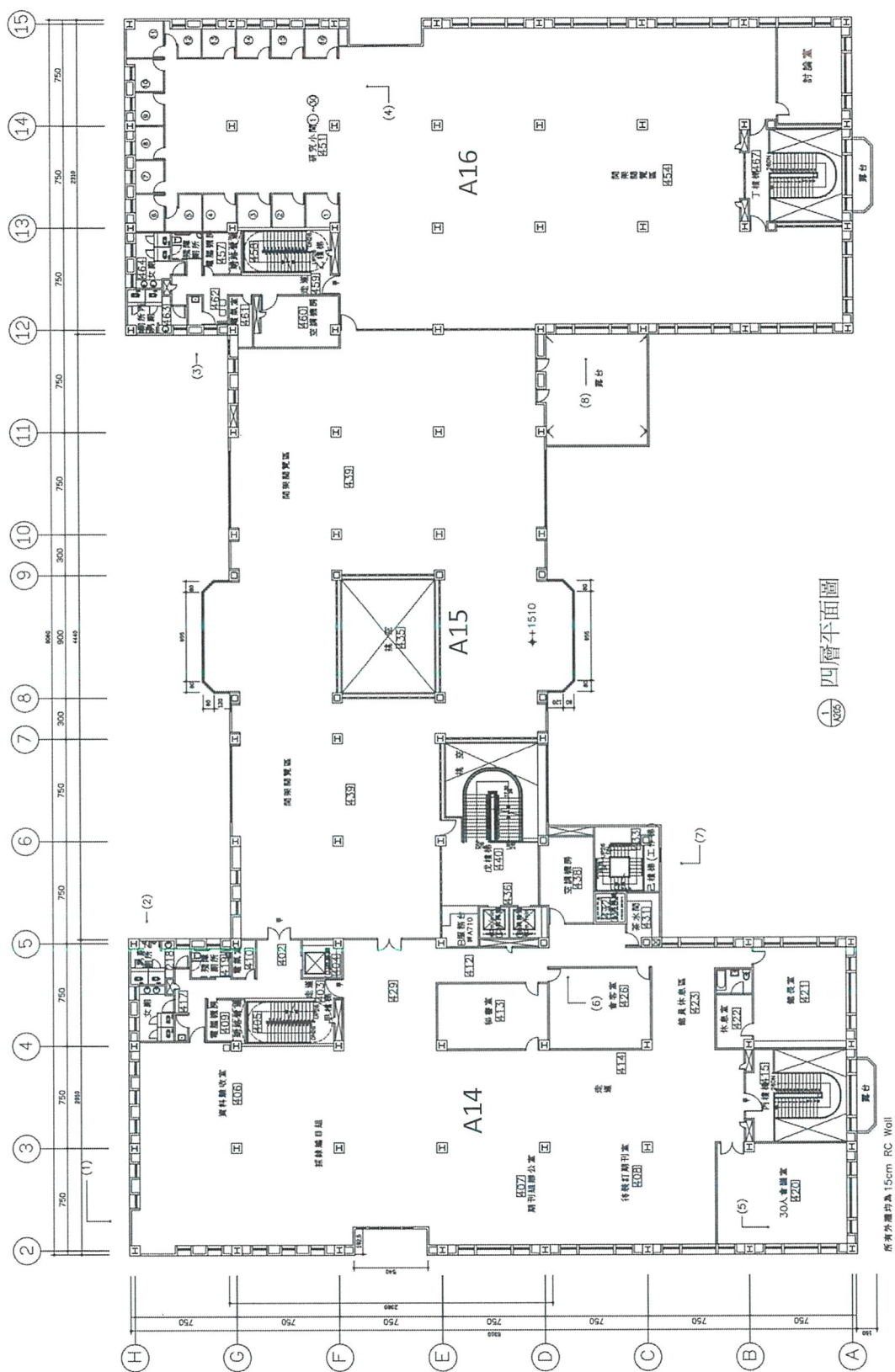




1/100 三層平面圖

所有外牆均為15cm RC Wall





四層平面圖

所有外牆均為15cm RC Wall

