Form No:

# Specification for Approval

Date: 2021/08/16

**Customer :** 天诚科技

**TAI-TECH P/N:** SWF1608RF-100K

**CUSTOMER P/N:**

**DESCRIPTION:**

**QUANTITY:**

**REMARK:**

Customer Approval Feedback

西 北 臺 慶 科 技 股 份 有 限 公 司
TAI-TECH Advanced Electronics Co., Ltd

Sales Dep.

| APPROVED | CHECKED |
|---|---|
| 夏晓曼 | 夏晓曼 |

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TAI-TECH Advanced Electronics Co., Ltd
Headquarter:
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TAI-TECH ADVANCED ELECTRONICS(KUNSHAN) CO., LTD
**SHINWHA ROAD, KUNJIA HI-TECH INDUSTRIAL PARK, KUN-SHAN, JIANG-SU, CHINA**
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R&D Center

| APPROVED | CHECKED | DRAWN |
|---|---|---|
| 羅宜春 | 梁周虎 | 卜文娟 |

# Winding Type Chip Inductor SWF1608RF-100K

## 1. Features

1. Ferrite core wire wound construction.
2. High Reliability due to wire wound type construction.
3. Small footprint as well as low profile.
4. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
5. Operating temperature-40~+125℃ (Including self - temperature rise)
6. These products provide low DC resistance and high current.
7. Precision inductance tolerance is available.
8. Application for DC power line.

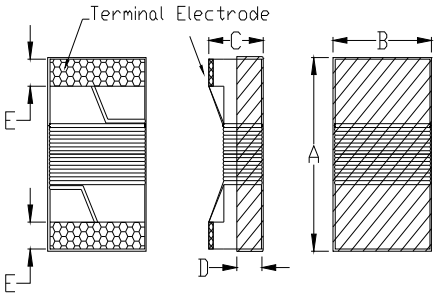
   Digital camera and other electronic equipment

   Personal computers,Hard disk drives

   Mobile Device / Handheld Device / LowProfile Device / Panel

   xDSL modem and Cable modem

## 2. Dimensions




| Size | A | B | C | D | E |
|---|---|---|---|---|---|
| SWF1608 | 1.60±0.2 | 1.00±0.2 | 1.00±0.1 | 0.60 ref. | 0.35±0.1 |

Unit:mm

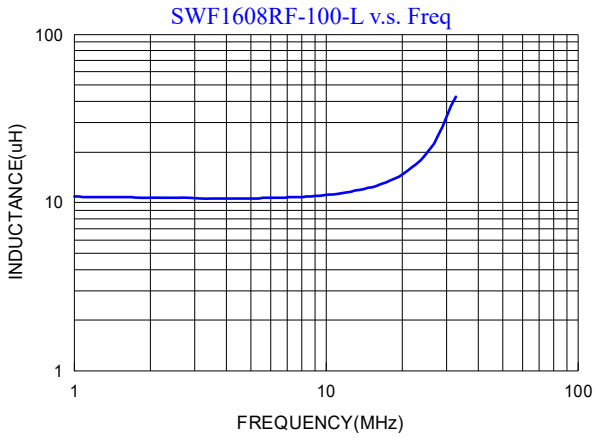
## 3. Part Numbering

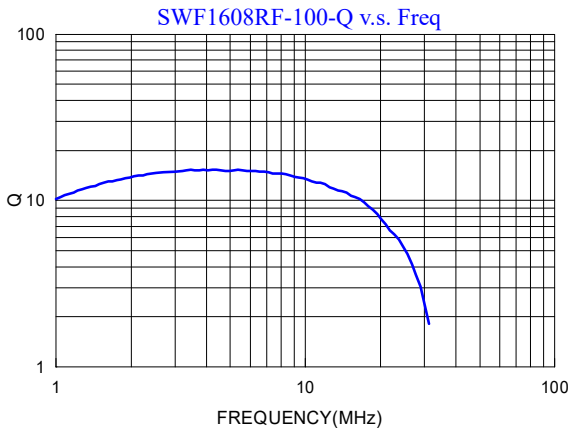
| SWF | 1608 | R | F | - | 100 | K |
|---|---|---|---|---|---|---|
| A | B | C | D | | E | F |

A: Series
B: Dimension L x W
C: Control S/N
D: Lead free type
E: Inductance 100=10 uH
F: Inductance Tolerance K=±10%

## 4. Specification

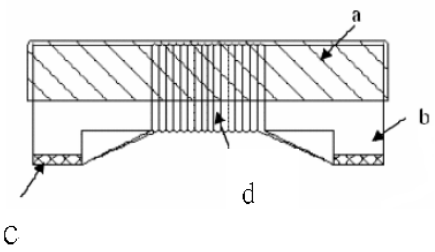
| TAI-TECH Part Number | Inductance (uH) | Tolerance | Test Frequency (Hz) | Q/MHz Typ. | SRF (MHz) Typ. | DCR (Ω) ±30% | IDC (mA) Typ. | Irms (mA) Typ. |
|---|---|---|---|---|---|---|---|---|
| SWF1608RF-100K | 10.0 | K | 0.5V/2.5M | 14/2.5 | 36 | 1.85 | 280 | 280 |



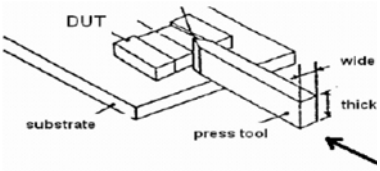

## 5. Materials

| No. | Description | Specification |
|---|---|---|
| a. | Upper Plate | UV Glue |
| b. | Core | Ferrite Core |
| c | Termination | Ag/Ni/Sn |
| d | Wire | Enameled Copper Wire |



# 6. Reliability and Test Condition

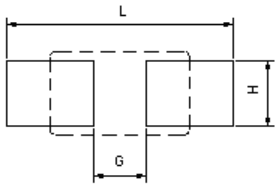
| Item | Performance | Test Condition |
|---|---|---|
| Operating temperature | -40~+125℃ (Including self - temperature rise) | |
| Storage temperature | -40~+125℃ (on board) | |
| **Electrical Performance Test** | | |
| **Inductance L** | Refer to standard electrical characteristic list | Agilent-4291, Agilent-4287 , Agilent-E4991A |
| **Q** | | Agilent-4192, Agilent-4285 |
| **SRF** | | Agilent-4291 , Agilent-E4991A<br>Agilent-4192 |
| **DC Resistance** | | Agilent-34420A |
| **IDC** | △L≦20% | Applied the current to coils, the inductance change shall be less than 20% to initial value. |
| **Irms** | △T≦40℃ | Heat Rated Current (Irms) will cause the coil temperature rise △T(℃) without core loss.<br>1.Applied the allowed DC current.<br>2.Temperature measured by digital surface thermometer |
| **Reliability Test** | | |
| Life Test | Appearance：No damage.<br>Inductance：within±10% of initial value<br>Q：Shall not exceed the specification value.<br>RDC：within ±15% of initial value and shall not exceed the specification value | Preconditioning: Run through IR reflow for 2 times.( IPC/JEDEC J-STD-020DClassification Reflow Profiles)<br>Temperature： 125±2℃<br>Applied current：rated current<br>Duration：1000±12hrs<br>Measured at room temperature after placing for 24±2 hrs |
| Load Humidity | | Preconditioning: Run through IR reflow for 2 times.( IPC/JEDEC J-STD-020DClassification Reflow Profiles<br>Humidity：85±2% R.H,<br>Temperature：85℃±2℃<br>Duration：1000hrs Min. with 100% rated current<br>Measured at room temperature after placing for 24±2 hrs |
| Moisture Resistance | | Preconditioning: Run through IR reflow for 2 times.( IPC/JEDEC J-STD-020DClassification Reflow Profiles<br>1. Baked at50℃ for 25hrs, measured at room temperature after placing for 4 hrs.<br>2. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs.<br>3. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs,keep at 25℃ for 2 hrs then keep at -10℃ for 3 hrs<br>4. Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs. |
| Thermal shock | | Preconditioning: Run through IR reflow for 2 times.( IPC/JEDEC J-STD-020DClassification Reflow Profiles<br>Condition for 1 cycle<br>Step1：-40±2℃ 30±5min<br>Step2：25±2℃ ≦0.5min<br>Step3：125±2℃ 30±5min<br>Number of cycles： 500<br>Measured at room temperature after placing for 24±2 hrs |
| Vibration | | Oscillation Frequency: 10Hz～2KHz～10Hz for 20 minute<br>Equipment： Vibration checker<br>Total Amplitude:10g<br>Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)。 |

<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Bending</td><td rowspan="2">Appearance：No damage.<br>Inductance：within±10% of initial value<br>Q：Shall not exceed the specification value.<br>RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm<br><0805 inch(2012mm):40x100x0.8mm<br>Bending depth: >=0805 inch(2012mm):1.2mm<br><0805 inch(2012mm):0.8mm<br>duration of 10 sec.</td></tr>
<tr><td>Shock</td><td><table><tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr><tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr><tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr></table></td></tr>
<tr><td>Solder ability</td><td>More than 95% of the terminal electrode should be covered with solder。</td><td>Preheat: 150℃,60sec.。<br>Solder: Sn96.5% Ag3% Cu0.5%<br>Temperature: 245±5℃。<br>Flux for lead free: Rosin. 9.5%。<br>Dip time: 4±1sec。<br>Depth: completely cover the termination</td></tr>
<tr><td>Resistance to Soldering Heat</td><td rowspan="2">Appearance：No damage.<br>Inductance：within±10% of initial value<br>Q：Shall not exceed the specification value.<br>RDC：within ±15% of initial value and shall not exceed the specification value</td><td>Depth: completely cover the termination<br><table><tr><th>Temperature(°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr><tr><td>260 ±5 (solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td><td>1</td></tr></table></td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning: Run through IR reflow for 2 times.( IPC/JEDEC J-STD-020DClassification Reflow Profiles<br>With the component mounted on a PCB with the device to be tested, apply a force(>0805:1kg , <=0805:0.5kg)to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.<br>  <br></td></tr>
</table>

# 7. Soldering and Mounting

### 7-1. Recommended PC Board Pattern

| Chip size | | | | | | | Land Patterns For Reflow Soldering | | |
|---|---|---|---|---|---|---|---|---|---|
| Series | Type | A(mm) | B(mm) | C(mm) | D(mm) | E(mm) | L(mm) | G(mm) | H(mm) |
| SWF | 1608 | 1.60±0.2. | 1.0±0.1. | 1.0±0.1 | 0.60 ref | 0.35±0.1 | 1.92 | 0.92 | 1.02 |




### 7-2. Soldering

Mildly activated rosin fluxes are preferred. TAI-TECH terminations are suitable for all wave and re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

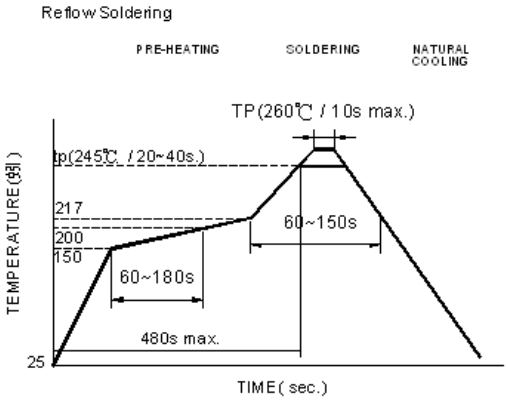
### 7-2.1 Lead Free Solder re-flow:

Recommended temperature profiles for lead free re-flow soldering in Figure 1.

### 7-2.2 Soldering Iron(Figure 2):

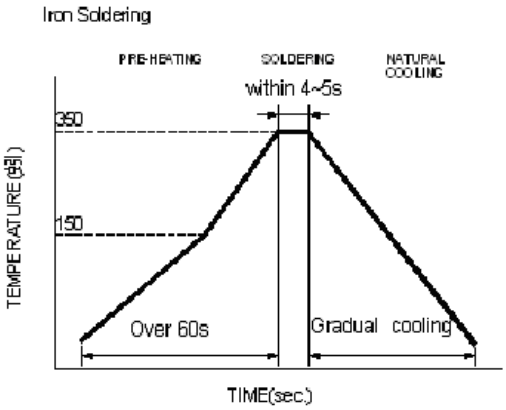
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

- Preheat circuit and products to 150℃
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- 350℃ tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 4~5 sec.




Reflow times: 3 times max.

Fig.1

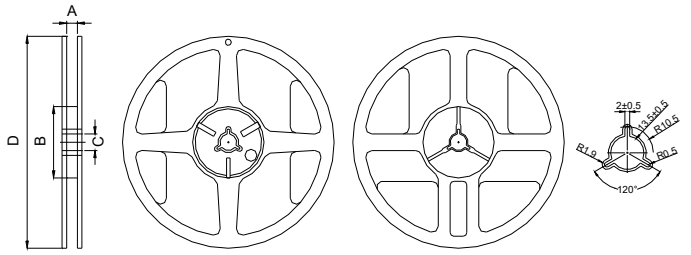



Iron Soldering times: 1 times max.

Fig.2

# 8. Packaging Information

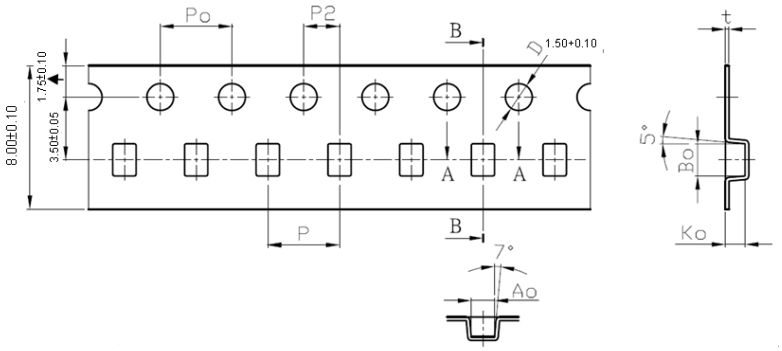
## 8-1. Reel Dimension




7"x8mm 7"x12mm

| Type | A(mm) | B(mm) | C(mm) | D(mm) |
|---|---|---|---|---|
| 7"x8mm | 9.0±0.5 | 60±2 | 13.5±0.5 | 178±2 |

## 8-2. Tape Dimension / 8mm(black anti-static electricity carrier tape)

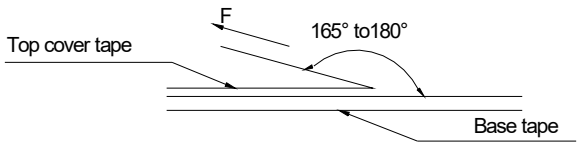



| Series | P(mm) | Po(mm) | P2(mm) | Bo(mm) | Ao(mm) | Ko(mm) | t(mm) |
|---|---|---|---|---|---|---|---|
| SWF1608 | 4.00±0.10 | 4.00±0.10 | 2.00±0.05 | 1.88±0.05 | 1.30±0.05 | 1.10±0.05 | 0.20±0.02 |

## 8-3. Packaging Quantity

| SWF | 1608 |
|---|---|
| Chip / Reel | 4000 |
| Reel Size | 7"x8mm |

## 8-4. Tearing Off Force




The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

| Room Temp. (℃) | Room Humidity (%) | Room atm (hPa) | Tearing Speed mm/min |
|---|---|---|---|
| 5~35 | 45~85 | 860~1060 | 300 |

**Application Notice**

- Storage Conditions(component level)
  To maintain the solderability of terminal electrodes:
  1.TAI-TECH products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
  2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.

- Transportation
  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

SGS

# 測試報告
# Test Report

號碼(No.) : CE/2019/84901　　日期(Date) : 2019/09/05　　頁數(Page): 1 of 14

西北臺慶科技股份有限公司 / TAI-TECH ADVANCED ELECTRONICS CO., LTD.
(臺慶精密電子(昆山)有限公司 / TAI-TECH ADVANCED ELECTRONICS (KUN-SHAN) CO. LTD.)
(慶邦電子元器件（泗洪）有限公司 / TAIPAQ ELECTRONICS (SI-HONG) CO., LTD.)
桃園市楊梅區幼獅工業區幼四路1號 / NO. 1, YOU 4TH ROAD, YOUTH INDUSTRIAL DISTRICT, YANG-MEI, TAO-YUAN CITY, TAIWAN, R. O. C.
(江蘇省昆山市蓬朗昆嘉高科技工業區郭澤路 / GUO-ZE ROAD, KUNJIA HI-TECH INDUSTRIAL PARK, KUN-SHAN, JIANG-SU, CHINA)
(中國，江蘇省，宿遷市，泗洪縣，經濟開發區杭州路南側，建設北路東側 / THE SOUTH HANGZHOU ROAD AND THE EAST JIANSHE ROAD，ECONOMIC DEVELOPMENT ZONE，SIHONG COUNTY，SUQIANCITY，JIANGSU PROVINCE，P,R，CHINA)

**以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):**

| | | |
|---|---|---|
| 樣品名稱(Sample Description) | : | WIREWOUND SERIES(FILM BACKING) |
| 樣品型號(Style/Item No.) | : | SWF、SWC_F、PAS、WCM-L2NF、SWF-LF、SWFA、SWF(SWC) SERIES |
| 收件日期(Sample Receiving Date) | : | 2019/08/30 |
| 測試期間(Testing Period) | : | 2019/08/30 to 2019/09/05 |

==========

**測試結果(Test Results)** :　請參閱下一頁 (Please refer to following pages).

Troy Chang / Manager - Tec
Signed for and behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

# 測試報告
# Test Report



西北臺慶科技股份有限公司 / TAI-TECH ADVANCED ELECTRONICS CO., LTD.
(臺慶精密電子(昆山)有限公司 / TAI-TECH ADVANCED ELECTRONICS (KUN-SHAN) CO. LTD.)
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桃園市楊梅區幼獅工業區幼四路1號 / NO. 1, YOU 4TH ROAD, YOUTH INDUSTRIAL DISTRICT, YANG-MEI, TAO-YUAN CITY, TAIWAN, R. O. C.
(江蘇省昆山市蓬朗昆嘉高科技工業區郭澤路 / GUO-ZE ROAD, KUNJIA HI-TECH INDUSTRIAL PARK, KUN-SHAN, JIANG-SU, CHINA)
(中國，江蘇省，宿遷市，泗洪縣，經濟開發區杭州路南側，建設北路東側 / THE SOUTH HANGZHOU ROAD AND THE EAST JIANSHE ROAD，ECONOMIC DEVELOPMENT ZONE，SIHONG COUNTY，SUQIANCITY，JIANGSU PROVINCE，P.R，CHINA)

**測試結果(Test Results)**

測試部位(PART NAME)No.1 : 整體混測 (MIXED ALL PARTS)

| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) |
|---|---|---|---|---|
| | | | | No.1 |
| 鎘 / Cadmium (Cd) | mg/kg | 參考IEC 62321-5 (2013)，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-AES. | 2 | n.d. |
| 鉛 / Lead (Pb) | mg/kg | | 2 | n.d. |
| 汞 / Mercury (Hg) | mg/kg | 參考IEC 62321-4:2013+ AMD1:2017，以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4:2013+ AMD1:2017 and performed by ICP-AES. | 2 | n.d. |
| 六價鉻 / Hexavalent Chromium Cr(VI) | mg/kg | 參考IEC 62321-7-2 (2017)，以UV-VIS檢測. / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS. | 8 | n.d. |
| **多溴聯苯總和 / Sum of PBBs** | mg/kg | 參考IEC 62321-6 (2015)，以氣相層析/質譜儀檢測. / With reference to IEC 62321-6 (2015) and performed by GC/MS. | - | n.d. |
| 一溴聯苯 / Monobromobiphenyl | mg/kg | | 5 | n.d. |
| 二溴聯苯 / Dibromobiphenyl | mg/kg | | 5 | n.d. |
| 三溴聯苯 / Tribromobiphenyl | mg/kg | | 5 | n.d. |
| 四溴聯苯 / Tetrabromobiphenyl | mg/kg | | 5 | n.d. |
| 五溴聯苯 / Pentabromobiphenyl | mg/kg | | 5 | n.d. |
| 六溴聯苯 / Hexabromobiphenyl | mg/kg | | 5 | n.d. |
| 七溴聯苯 / Heptabromobiphenyl | mg/kg | | 5 | n.d. |
| 八溴聯苯 / Octabromobiphenyl | mg/kg | | 5 | n.d. |
| 九溴聯苯 / Nonabromobiphenyl | mg/kg | | 5 | n.d. |
| 十溴聯苯 / Decabromobiphenyl | mg/kg | | 5 | n.d. |

# 測試報告
# Test Report



西北臺慶科技股份有限公司 / TAI-TECH ADVANCED ELECTRONICS CO., LTD.
(臺慶精密電子(昆山)有限公司 / TAI-TECH ADVANCED ELECTRONICS (KUN-SHAN) CO. LTD.)
(慶邦電子元器件（泗洪）有限公司 / TAIPAQ ELECTRONICS (SI-HONG) CO., LTD.)
桃園市楊梅區幼獅工業區幼四路1號 / NO. 1, YOU 4TH ROAD, YOUTH INDUSTRIAL DISTRICT, YANG-MEI, TAO-YUAN CITY, TAIWAN, R. O. C.
(江蘇省昆山市蓬朗昆嘉高科技工業區郭澤路 / GUO-ZE ROAD, KUNJIA HI-TECH INDUSTRIAL PARK, KUN-SHAN, JIANG-SU, CHINA)
(中國，江蘇省，宿遷市，泗洪縣，經濟開發區杭州路南側，建設北路東側 / THE SOUTH HANGZHOU ROAD AND THE EAST JIANSHE ROAD，ECONOMIC DEVELOPMENT ZONE，SIHONG COUNTY，SUQIANCITY，JIANGSU PROVINCE，P.R，CHINA)

| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) |
|---|---|---|---|---|
| | | | | No. 1 |
| **多溴聯苯醚總和 / Sum of PBDEs** | mg/kg | 參考IEC 62321-6 (2015)，以氣相層析/質譜儀檢測. / With reference to IEC 62321-6 (2015) and performed by GC/MS. | - | n.d. |
| 一溴聯苯醚 / Monobromodiphenyl ether | mg/kg | | 5 | n.d. |
| 二溴聯苯醚 / Dibromodiphenyl ether | mg/kg | | 5 | n.d. |
| 三溴聯苯醚 / Tribromodiphenyl ether | mg/kg | | 5 | n.d. |
| 四溴聯苯醚 / Tetrabromodiphenyl ether | mg/kg | | 5 | n.d. |
| 五溴聯苯醚 / Pentabromodiphenyl ether | mg/kg | | 5 | n.d. |
| 六溴聯苯醚 / Hexabromodiphenyl ether | mg/kg | | 5 | n.d. |
| 七溴聯苯醚 / Heptabromodiphenyl ether | mg/kg | | 5 | n.d. |
| 八溴聯苯醚 / Octabromodiphenyl ether | mg/kg | | 5 | n.d. |
| 九溴聯苯醚 / Nonabromodiphenyl ether | mg/kg | | 5 | n.d. |
| 十溴聯苯醚 / Decabromodiphenyl ether | mg/kg | | 5 | n.d. |
| **鹵素 / Halogen** | | | | |
| 鹵素（氟）/ Halogen-Fluorine (F) (CAS No.: 14762-94-8) | mg/kg | 參考BS EN 14582 (2016)，以離子層析儀分析. / With reference to BS EN 14582 (2016). Analysis was performed by IC. | 50 | 81.8 |
| 鹵素（氯）/ Halogen-Chlorine (Cl) (CAS No.: 22537-15-1) | mg/kg | | 50 | n.d. |
| 鹵素（溴）/ Halogen-Bromine (Br) (CAS No.: 10097-32-2) | mg/kg | | 50 | n.d. |
| 鹵素（碘）/ Halogen-Iodine (I) (CAS No.: 14362-44-8) | mg/kg | | 50 | n.d. |
| 全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide) | mg/kg | 參考US EPA 3550C (2007)，以液相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by LC/MS. | 10 | n.d. |
| 全氟辛酸 / PFOA (CAS No.: 335-67-1) | mg/kg | | 10 | n.d. |
| 聚氯乙烯 / PVC | ** | 以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test. | - | Negative |

# 測試報告
# Test Report



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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) |
|---|---|---|---|---|
| | | | | No. 1 |
| 鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7) | mg/kg | 參考IEC 62321-8 (2017)，以氣相層析/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS. | 50 | n.d. |
| 鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2) | mg/kg | | 50 | n.d. |
| 鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7) | mg/kg | | 50 | n.d. |
| 鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5) | mg/kg | | 50 | n.d. |
| 鄰苯二甲酸二異癸酯 / DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1) | mg/kg | | 50 | n.d. |
| 鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0) | mg/kg | | 50 | n.d. |
| 鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0) | mg/kg | | 50 | n.d. |
| 鄰苯二甲酸二正己酯 / DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3) | mg/kg | | 50 | n.d. |
| 鄰苯二甲酸二戊酯 / DNPP (Di-n-pentyl phthalate) (CAS No.: 131-18-0) | mg/kg | | 50 | n.d. |
| 六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ($\alpha$- HBCDD, $\beta$- HBCDD, $\gamma$- HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)) | mg/kg | 參考IEC 62321 (2008)，以氣相層析/質譜儀檢測. / With reference to IEC 62321 (2008). Analysis was performed by GC/MS. | 5 | n.d. |

# 測試報告
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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | MDL | 結果 (Result) |
|---|---|---|---|---|
| | | | | No. 1 |
| 銻 / Antimony (Sb) | mg/kg | 參考US EPA 3052 (1996)，以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES. | 2 | n.d. |
| 鈹 / Beryllium (Be) | mg/kg | 參考US EPA 3052 (1996)，以感應耦合電漿原子發射光譜儀檢測. / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES. | 2 | n.d. |

**備註(Note)：**

1. mg/kg = ppm；0.1wt% = 1000ppm
2. MDL = Method Detection Limit (方法偵測極限值)
3. n.d. = Not Detected (未檢出)
4. "-" = Not Regulated (無規格值)
5. **= Qualitative analysis (No Unit) 定性分析(無單位)
6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
7. 樣品的測試是基於申請人要求混合測試，報告中的混合測試結果不代表其中個別單一材質的含量. (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

**PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 2019/1021**

PFOS濃度在物質或製備中不得超過0.001%(10ppm)，在半成品、成品或零部件中不得超過0.1%(1000ppm)，在紡織品或塗層材料中不得超過1μg/m²。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1μg/m².)

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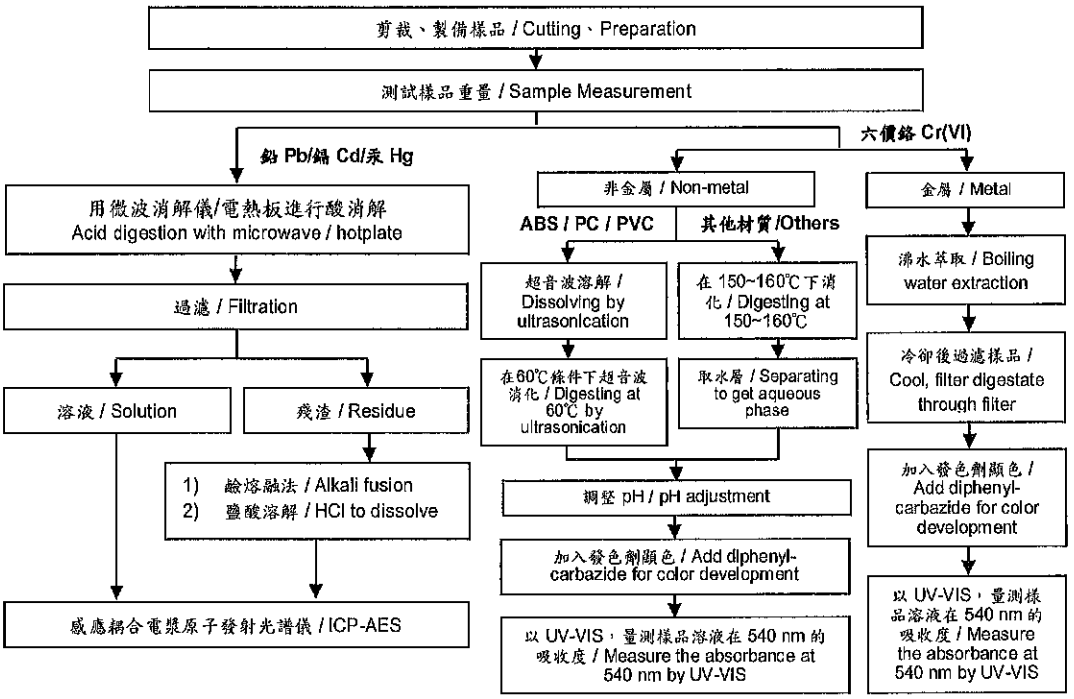
## 重金屬流程圖 / Analytical flow chart of Heavy Metal

根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外)
These samples were dissolved totally by pre-conditioning method according to below flow chart. ($Cr^{6+}$ test method excluded)

- 測試人員：陳恩臻 / Technician : Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang



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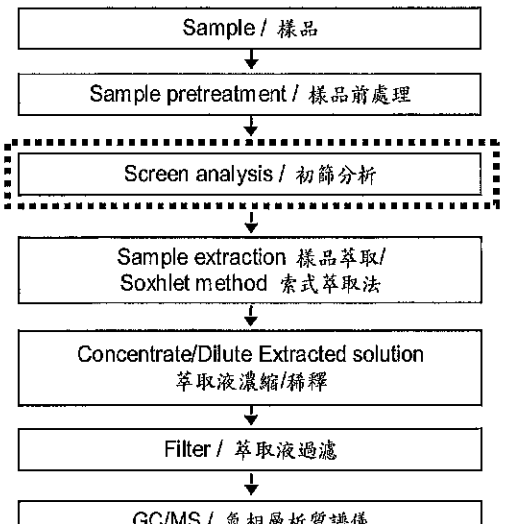
**多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang

初次測試程序 / First testing process ——→
選擇性篩檢程序 / Optional screen process ▪▪▪▪▪▪▪▪→
確認程序 / Confirmation process — · — ·→



# 測試報告
# Test Report



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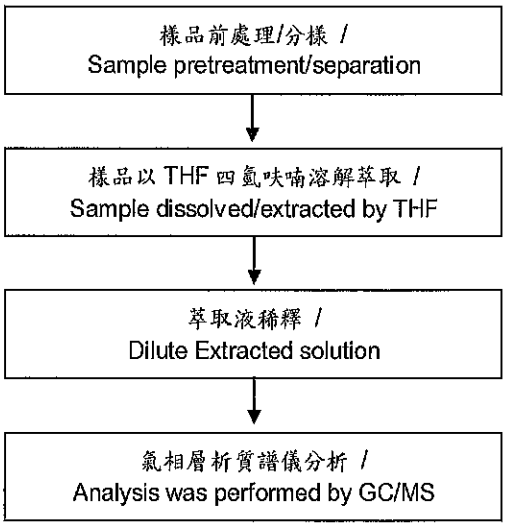
**可塑劑分析流程圖 / Analytical flow chart - Phthalate**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor : Troy Chang

**【測試方法/Test method: IEC 62321-8】**



# 測試報告
# Test Report



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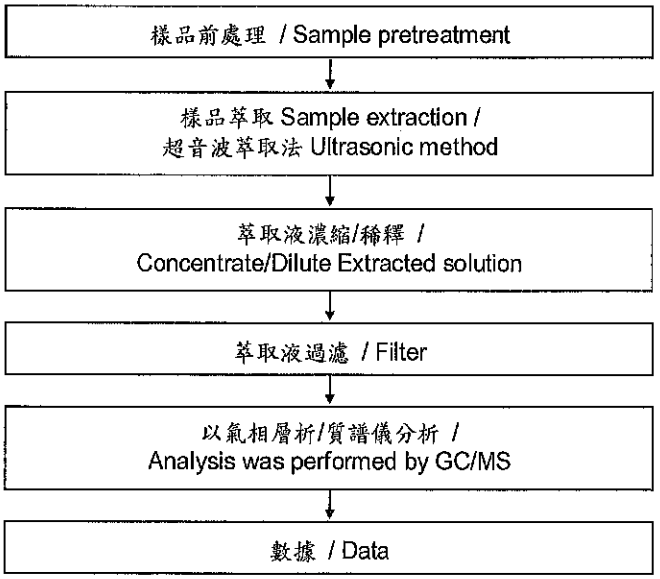
**六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang



# 測試報告
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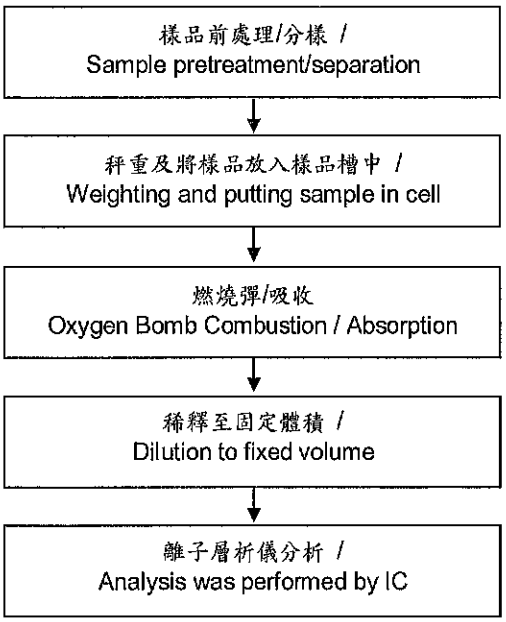
**鹵素分析流程圖 / Analytical flow chart - Halogen**

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang



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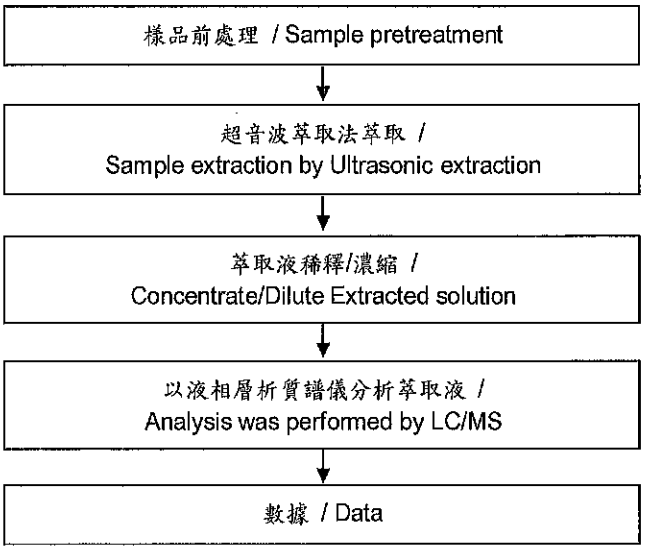
**全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang



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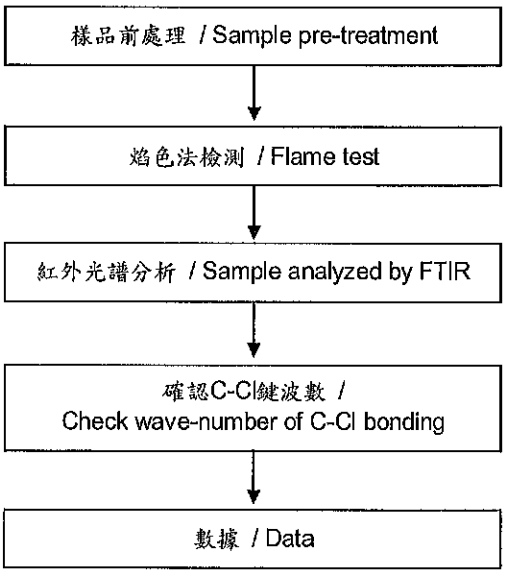
**聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC**

- 測試人員：涂雅苓 / Technician: Yaling Tu
- 測試負責人：張啟興 / Supervisor: Troy Chang



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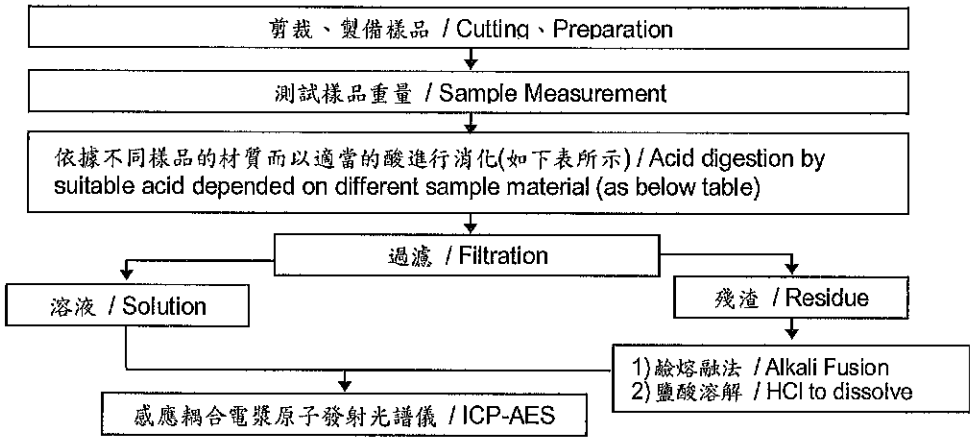
根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

- 測試人員：陳恩臻 / Technician: Rita Chen
- 測試負責人：張啟興 / Supervisor: Troy Chang

**元素以 ICP-AES 分析的消化流程圖**
**(Flow Chart of digestion for the elements analysis performed by ICP-AES)**




| | |
|---|---|
| 鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder | 王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, $HNO_3$, HCl, HF, $H_2O_2$ |
| 玻璃 / Glass | 硝酸,氫氟酸 / $HNO_3$/HF |
| 金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic | 王水 / Aqua regia |
| 銀 / Silver | 硝酸 / $HNO_3$ |
| 塑膠 / Plastic | 硫酸,雙氧水,硝酸,鹽酸 / $H_2SO_4$, $H_2O_2$, $HNO_3$, HCl |
| 其他 / Others | 加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion |

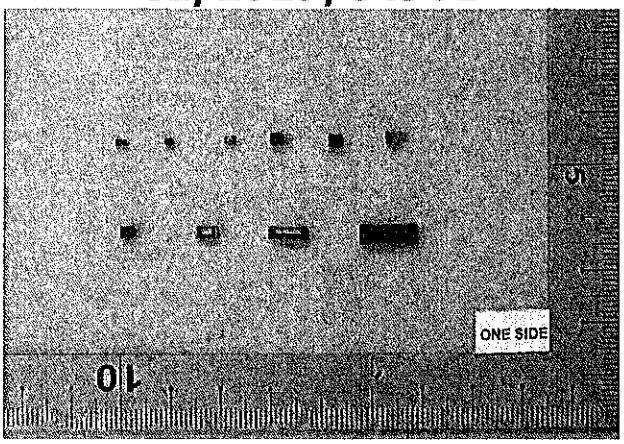
# 測試報告
# Test Report



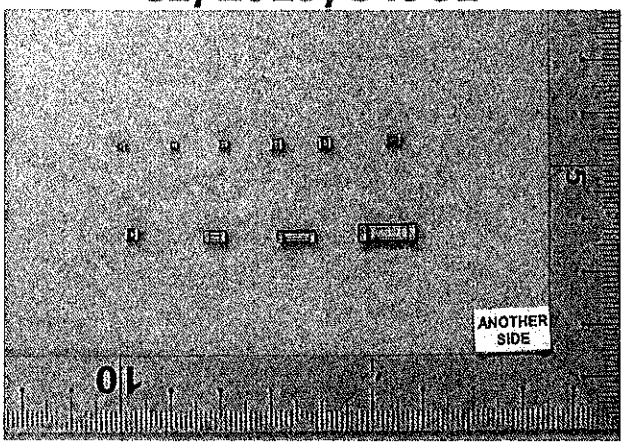
西北臺慶科技股份有限公司 / TAI-TECH ADVANCED ELECTRONICS CO., LTD.
(臺慶精密電子(昆山)有限公司 / TAI-TECH ADVANCED ELECTRONICS (KUN-SHAN) CO. LTD.)
(慶邦電子元器件 (泗洪) 有限公司 / TAIPAQ ELECTRONICS (SI-HONG) CO., LTD.)
桃園市楊梅區幼獅工業區幼四路1號 / NO. 1, YOU 4TH ROAD, YOUTH INDUSTRIAL DISTRICT, YANG-MEI, TAO-YUAN CITY, TAIWAN, R. O. C.
(江蘇省昆山市篷朗昆嘉高科技工業區郭澤路 / GUO-ZE ROAD, KUNJIA HI-TECH INDUSTRIAL PARK, KUN-SHAN, JIANG-SU, CHINA)
(中國，江蘇省，宿遷市，泗洪縣，經濟開發區杭州路南側，建設北路東側 / THE SOUTH HANGZHOU ROAD AND THE EAST JIANSHE ROAD，ECONOMIC DEVELOPMENT ZONE，SIHONG COUNTY，SUQIANCITY，JIANGSU PROVINCE，P,R，CHINA)

*** 照片中如有箭頭標示，則表示為實際檢測之樣品/部位. ***
**(The tested sample / part is marked by an arrow if it's shown on the photo.)**

**CE/2019/84901**




**CE/2019/84901**




** 報告結尾 (End of Report) **