



# Mag Layers Scientific-Technics., Co., Ltd

## Material Description

.....

Mag. Layers certify below statement for material description.

Component type:

### Wire Wound SMD Type SMB SERIES

Description:

- Comply with Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).
- Comply with the request for Halogen Free limit.

The limit as below :

Cl : 900 ppm

Br : 900 ppm

Total halogens contained : 1500 ppm

Material:

| Name of material | Pb  | Cd  | Hg  | Cr+6     | PBBs | PBDEs | Br  | Cl  | Report NO             |
|------------------|-----|-----|-----|----------|------|-------|-----|-----|-----------------------|
| <b>CORE</b>      | N.D | N.D | N.D | Negative | --   | --    | N.D | N.D | <b>CE/2015/23017A</b> |
| <b>WIRE</b>      | N.D | N.D | N.D | Negative | N.D  | N.D   | --  | --  | <b>CE/2014/B3711</b>  |

## Test Report

No. : CE/2015/23017A

Date : 2015/03/04

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CORE-TECH CORPORATION

NO. 135, YEONG 1ST. RD., YEONG AN VIL, HSIN WU, 32748 TAO TUA, TAIWAN





**The following sample(s) was/were submitted and identified by/on behalf of the applicant as :**

Sample Submitted By : CORE-TECH CORPORATION  
Sample Description : FERRITE CORES  
Style/Item No. : K5A, P3, C8, K5P, SK, K6, K5, SC, L9D, L9, L9E  
Sample Receiving Date : 2015/02/12  
Testing Period : 2015/02/12 TO 2015/02/25

**Test Requested** : (1) As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.  
(2) As specified by client, to test PFOA, PFOS, Halogen-Fluorine, Chlorine, Bromine, Iodine contents in the submitted sample.

**Test Method** : Please refer to next page(s).

**Test Result(s)** : Please refer to next page(s).

  
  
**Troy Chang, Manager - Tech**  
**Signed for and on behalf of**  
**SGS TAIWAN LTD.**  
**Chemical Laboratory - Taipei**

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## Test Result(s)

PART NAME No.1 : IRON-GRAY METAL

| Test Item(s)  | Unit  | Method   | MDL | Result   |
|---|-------|--|-----|----------|
|   |       |  |     | No.1     |
| Cadmium (Cd)  | mg/kg | With reference to IEC 62321-5: 2013 and performed by ICP-AES.                        | 2   | n.d.     |
| Lead (Pb)   | mg/kg | With reference to IEC 62321-5: 2013 and performed by ICP-AES.                        | 2   | n.d.     |
| Mercury (Hg)  | mg/kg | With reference to IEC 62321-4: 2013 and performed by ICP-AES.                        | 2   | n.d.     |
| Hexavalent Chromium Cr(VI)                                | **    | With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.# | #   | Negative |
| Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide) | mg/kg | With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.               | 10  | n.d.     |
| PFOA (CAS No.: 335-67-1)                                  | mg/kg | With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.               | 10  | n.d.     |
| <b>Halogen</b>  |       |  |     |          |
| Halogen-Fluorine (F)<br>(CAS No.: 14762-94-8)             | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC.                    | 50  | n.d.     |
| Halogen-Chlorine (Cl)<br>(CAS No.: 22537-15-1)            |       |  | 50  | n.d.     |
| Halogen-Bromine (Br)<br>(CAS No.: 10097-32-2)             |       |  | 50  | n.d.     |
| Halogen-Iodine (I)<br>(CAS No.: 14362-44-8)               |       |  | 50  | n.d.     |

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CORE-TECH CORPORATION

NO. 135, YEONG 1ST. RD., YEONG AN VIL, HSIN WU, 32748 TAO TUA, TAIWAN



| Test Item(s)             | Unit  | Method  | MDL | Result |
|--------------------------|-------|---|-----|--------|
|                          |       |   |     | No.1   |
| <b>Sum of PBBs</b>       | mg/kg | With reference to IEC 62321: 2008 and performed by GC/MS. | -   | n.d.   |
| Monobromobiphenyl        |       |   | 5   | n.d.   |
| Dibromobiphenyl          |       |   | 5   | n.d.   |
| Tribromobiphenyl         |       |   | 5   | n.d.   |
| Tetrabromobiphenyl       |       |   | 5   | n.d.   |
| Pentabromobiphenyl       |       |   | 5   | n.d.   |
| Hexabromobiphenyl        |       |   | 5   | n.d.   |
| Heptabromobiphenyl       |       |   | 5   | n.d.   |
| Octabromobiphenyl        |       |   | 5   | n.d.   |
| Nonabromobiphenyl        |       |   | 5   | n.d.   |
| Decabromobiphenyl        |       |   | 5   | n.d.   |
| <b>Sum of PBDEs</b>      |       |   | -   | n.d.   |
| Monobromodiphenyl ether  |       |   | 5   | n.d.   |
| Dibromodiphenyl ether    |       |   | 5   | n.d.   |
| Tribromodiphenyl ether   |       |   | 5   | n.d.   |
| Tetrabromodiphenyl ether |       |   | 5   | n.d.   |
| Pentabromodiphenyl ether |       |   | 5   | n.d.   |
| Hexabromodiphenyl ether  |       |   | 5   | n.d.   |
| Heptabromodiphenyl ether |       |   | 5   | n.d.   |
| Octabromodiphenyl ether  |       |   | 5   | n.d.   |
| Nonabromodiphenyl ether  |       |   | 5   | n.d.   |
| Decabromodiphenyl ether  |       |   | 5   | n.d.   |

**Note :**

1. mg/kg = ppm; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. # = a. Positive means the presence of CrVI on the tested areas  
 b. Negative means the absence of CrVI on the tested areas  
 The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas.
6. \*\* = Qualitative analysis (No Unit)

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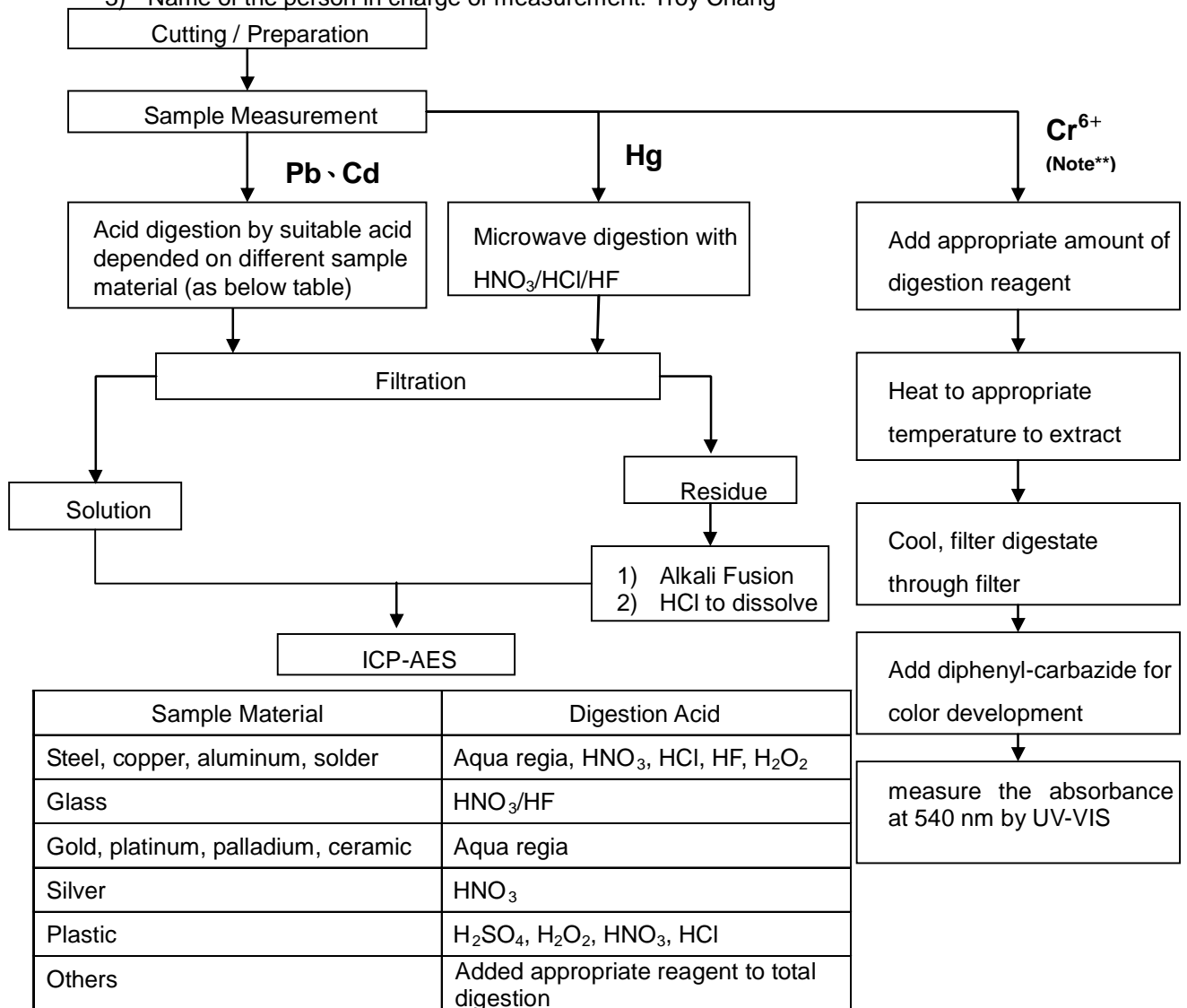
## PFOS Reference Information : POPs - (EU) 757/2010

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/m<sup>2</sup>.

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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



**Note\*\* :** (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95 °C.  
 (2) For metallic material, add pure water and heat to boiling.

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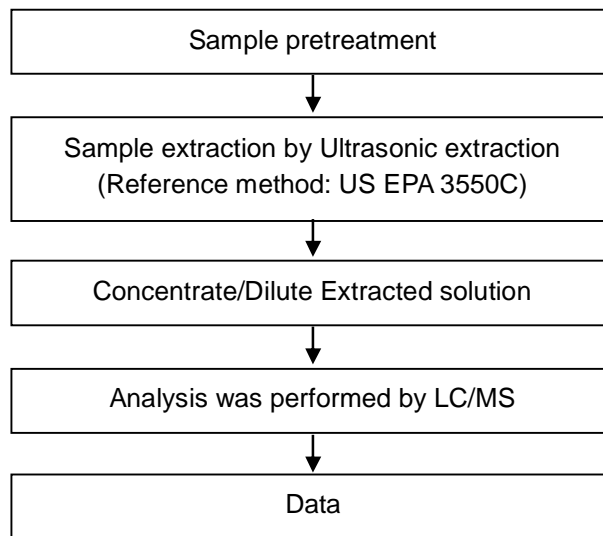
CORE-TECH CORPORATION

NO. 135, YEONG 1ST. RD., YEONG AN VIL, HSIN WU, 32748 TAO TUA, TAIWAN



### PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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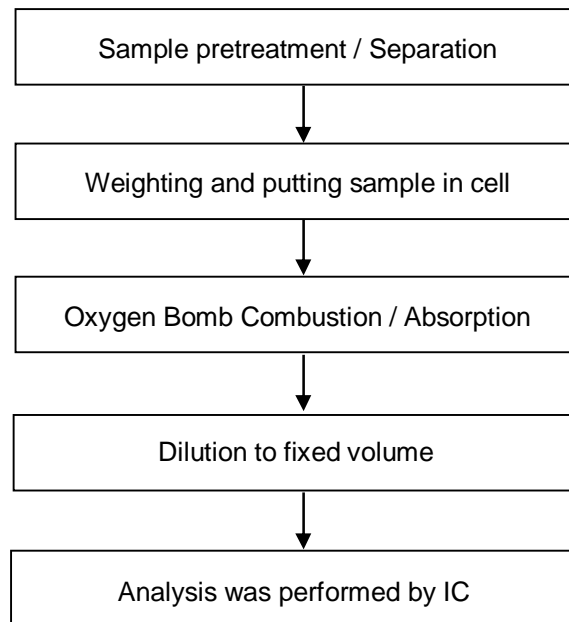
CORE-TECH CORPORATION

NO. 135, YEONG 1ST. RD., YEONG AN VIL, HSIN WU, 32748 TAO TUA, TAIWAN



### Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



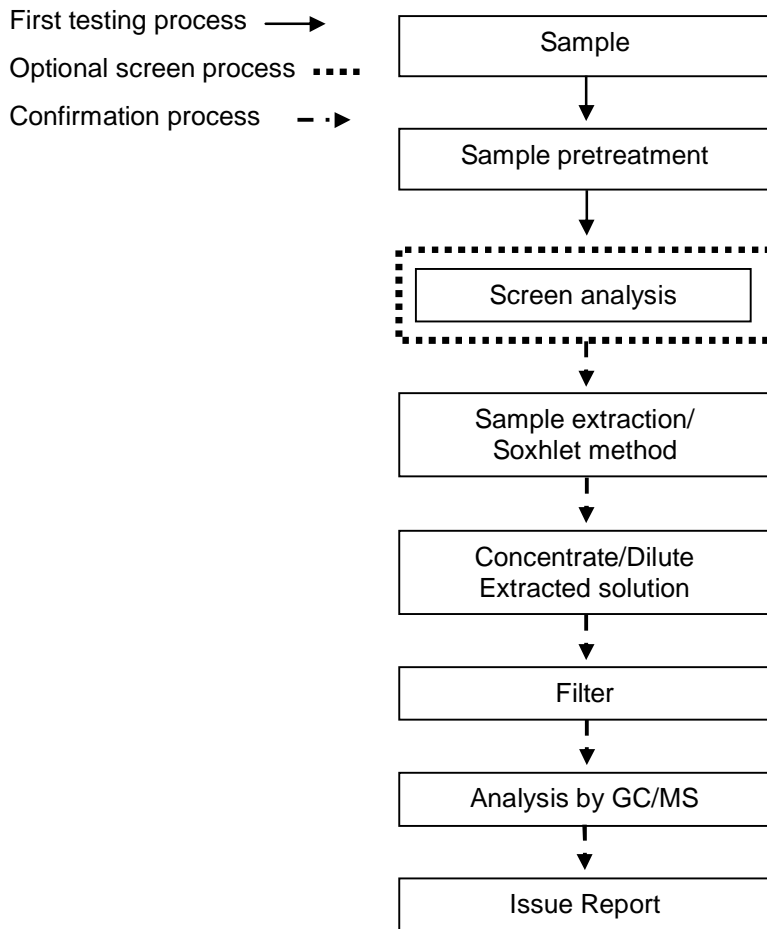
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### PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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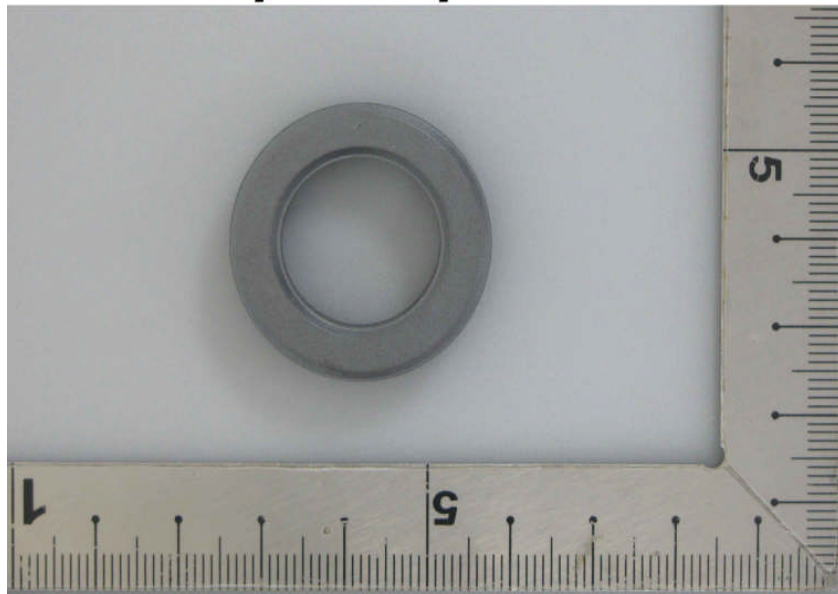
CORE-TECH CORPORATION

NO. 135, YEONG 1ST. RD., YEONG AN VIL, HSIN WU, 32748 TAO TUA, TAIWAN



\* The tested sample / part is marked by an arrow if it's shown on the photo. \*

### CE/2015/23017



\*\* End of Report \*\*

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## 測試報告

## Test Report

號碼(No.) : CE/2014/B3711

日期(Date) : 2014/12/01

頁數(Page): 1 of 12

溫誠工業股份有限公司

WEN CHENG LEAD WIRE CO., LTD.

桃園縣新屋鄉頭洲村9鄰11之2號


NO. 11-2 9LIN TOU CHOU CHUN HSIN-WU HSIANG TAOYUAN TAIWAN R. O. C.



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) : TIN PLATED COPPER WIRE (E) (鍍錫銅線 (E))  
樣品型號(Style/Item No.) : TIN PLATED COPPER WIRE (E)  
收件日期(Sample Receiving Date) : 2014/11/24  
測試期間(Testing Period) : 2014/11/24 TO 2014/12/01

=====  
測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

  
Troy Chang, Manager - Tech  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory - Taipei

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# 測試報告

# Test Report

號碼(No.) : CE/2014/B3711

日期(Date) : 2014/12/01

頁數(Page): 2 of 12

溫誠工業股份有限公司  
WEN CHENG LEAD WIRE CO., LTD.  
桃園縣新屋鄉頭洲村9鄰11之2號  
NO. 11-2 9LIN TOU CHOU CHUN HSIN-WU HSIANG TAOYUAN TAIWAN R. O. C.



## 測試結果(Test Results)

測試部位(PART NAME)No.1 : 銀色金屬線 (含鍍層) (SILVER COLORED METAL WIRE (INCLUDING THE PLATING LAYER))

| 測試項目<br>(Test Items)   | 單位<br>(Unit) | 測試方法<br>(Method)  | 方法偵測<br>極限值<br>(MDL) | 結果 (Result) |
|--|--------------|---|----------------------|-------------|
|  |              |   |                      | No.1        |
| 鎘 / Cadmium (Cd)   | mg/kg        | 參考IEC 62321-5: 2013方法, 以感應<br>耦合電漿原子發射光譜儀檢測. / With<br>reference to IEC 62321-5: 2013 and<br>performed by ICP-AES.              | 2                    | n.d.        |
| 鉛 / Lead (Pb)  | mg/kg        | 參考IEC 62321-5: 2013方法, 以感應<br>耦合電漿原子發射光譜儀檢測. / With<br>reference to IEC 62321-5: 2013 and<br>performed by ICP-AES.              | 2                    | n.d.        |
| 汞 / Mercury (Hg)   | mg/kg        | 參考IEC 62321-4: 2013方法, 以感應<br>耦合電漿原子發射光譜儀檢測. / With<br>reference to IEC 62321-4: 2013 and<br>performed by ICP-AES.              | 2                    | n.d.        |
| 六價鉻 / Hexavalent Chromium Cr(VI)   | **           | 參考IEC 62321: 2008方法, 以沸水萃<br>取法檢測. / With reference to IEC<br>62321: 2008 and performed by<br>Boiling water extraction Method.# | #                    | Negative    |
| 鄰苯二甲酸丁苯甲酯 / BBP (Butyl<br>Benzyl phthalate) (CAS No.: 85-68-7)                     | %            | 參考EN 14372, 以氣相層析/質譜儀檢<br>測. / With reference to EN 14372.<br>Analysis was performed by GC/MS.                                  | 0.003                | n.d.        |
| 鄰苯二甲酸二(2-乙基己基)酯 / DEHP<br>(Di- (2-ethylhexyl) phthalate) (CAS<br>No.: 117-81-7)    | %            | 參考EN 14372, 以氣相層析/質譜儀檢<br>測. / With reference to EN 14372.<br>Analysis was performed by GC/MS.                                  | 0.003                | n.d.        |
| 鄰苯二甲酸二異癸酯 / DIDP (Di-<br>isodecyl phthalate) (CAS No.: 26761-<br>40-0; 68515-49-1) | %            | 參考EN 14372, 以氣相層析/質譜儀檢<br>測. / With reference to EN 14372.<br>Analysis was performed by GC/MS.                                  | 0.01                 | n.d.        |

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# 測試報告

## Test Report

號碼(No.) : CE/2014/B3711

日期(Date) : 2014/12/01

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溫誠工業股份有限公司  
 WEN CHENG LEAD WIRE CO., LTD.  
 桃園縣新屋鄉頭洲村9鄰11之2號  
 NO. 11-2 9LIN TOU CHOU CHUN HSIN-WU HSIANG TAOYUAN TAIWAN R. O. C.



| 測試項目<br>(Test Items)   | 單位<br>(Unit) | 測試方法<br>(Method)   | 方法偵測<br>極限值<br>(MDL) | 結果 (Result) |
|--|--------------|--|----------------------|-------------|
|  |              |  |                      | No. 1       |
| 鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)   | %            | 參考EN 14372, 以氣相層析/質譜儀檢測. / With reference to EN 14372. Analysis was performed by GC/MS.                        | 0.01                 | n.d.        |
| 鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)  | %            | 參考EN 14372, 以氣相層析/質譜儀檢測. / With reference to EN 14372. Analysis was performed by GC/MS.                        | 0.003                | n.d.        |
| 鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)  | %            | 參考EN 14372, 以氣相層析/質譜儀檢測. / With reference to EN 14372. Analysis was performed by GC/MS.                        | 0.003                | 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方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS. | 5                    | n.d.        |
| 全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)   | mg/kg        | 參考US EPA 3550C: 2007方法, 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        | 參考US EPA 3550C: 2007方法, 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.        |
| <b>鹵素 / Halogen</b>  |              |  |                      |             |
| 鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)  | mg/kg        | 參考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.              | 50                   | n.d.        |
| 鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)   |              |  | 50                   | n.d.        |
| 鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)  |              |  | 50                   | n.d.        |
| 鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)  |              |  | 50                   | n.d.        |

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# 測試報告

## Test Report

號碼(No.) : CE/2014/B3711

日期(Date) : 2014/12/01

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溫誠工業股份有限公司  
WEN CHENG LEAD WIRE CO., LTD.  
桃園縣新屋鄉頭洲村9鄰11之2號  
NO. 11-2 9LIN TOU CHOU CHUN HSIN-WU HSIANG TAOYUAN TAIWAN R. O. C.



| 測試項目<br>(Test Items)             | 單位<br>(Unit) | 測試方法<br>(Method)  | 方法偵測<br>極限值<br>(MDL) | 結果 (Result) |
|----------------------------------|--------------|---|----------------------|-------------|
|                                  |              |   |                      | No.1        |
| <b>多溴聯苯總和 / Sum of PBBs</b>      | mg/kg        | 參考IEC 62321: 2008方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS. | -                    | n.d.        |
| 一溴聯苯 / Monobromobiphenyl         |              |   | 5                    | n.d.        |
| 二溴聯苯 / Dibromobiphenyl           |              |   | 5                    | n.d.        |
| 三溴聯苯 / Tribromobiphenyl          |              |   | 5                    | n.d.        |
| 四溴聯苯 / Tetrabromobiphenyl        |              |   | 5                    | n.d.        |
| 五溴聯苯 / Pentabromobiphenyl        |              |   | 5                    | n.d.        |
| 六溴聯苯 / Hexabromobiphenyl         |              |   | 5                    | n.d.        |
| 七溴聯苯 / Heptabromobiphenyl        |              |   | 5                    | n.d.        |
| 八溴聯苯 / Octabromobiphenyl         |              |   | 5                    | n.d.        |
| 九溴聯苯 / Nonabromobiphenyl         |              |   | 5                    | n.d.        |
| 十溴聯苯 / Decabromobiphenyl         |              |   | 5                    | n.d.        |
| <b>多溴聯苯醚總和 / Sum of PBDEs</b>    |              |   | -                    | n.d.        |
| 一溴聯苯醚 / Monobromodiphenyl ether  |              |   | 5                    | n.d.        |
| 二溴聯苯醚 / Dibromodiphenyl ether    |              |   | 5                    | n.d.        |
| 三溴聯苯醚 / Tribromodiphenyl ether   |              |   | 5                    | n.d.        |
| 四溴聯苯醚 / Tetrabromodiphenyl ether |              |   | 5                    | n.d.        |
| 五溴聯苯醚 / Pentabromodiphenyl ether |              |   | 5                    | n.d.        |
| 六溴聯苯醚 / Hexabromodiphenyl ether  |              |   | 5                    | n.d.        |
| 七溴聯苯醚 / Heptabromodiphenyl ether |              |   | 5                    | n.d.        |
| 八溴聯苯醚 / Octabromodiphenyl ether  |              |   | 5                    | n.d.        |
| 九溴聯苯醚 / Nonabromodiphenyl ether  |              |   | 5                    | n.d.        |
| 十溴聯苯醚 / Decabromodiphenyl ether  |              |   | 5                    | n.d.        |

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## 測試報告

## Test Report

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溫誠工業股份有限公司

WEN CHENG LEAD WIRE CO., LTD.

桃園縣新屋鄉頭洲村9鄰11之2號

NO. 11-2 9LIN TOU CHOU CHUN HSIN-WU HSIANG TAOYUAN TAIWAN R. O. C.



### 備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)
5. \*\* = Qualitative analysis (No Unit) 定性分析(無單位)
6. # =
  - a. Positive means the presence of CrVI on the tested areas  
(Positive表示測試區域偵測到六價鉻)
  - b. Negative means the absence of CrVI on the tested areas  
(Negative表示測試區域未偵測到六價鉻)

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas . / 該溶液濃度 $\geq$ 0.02 mg/kg with 50 cm<sup>2</sup> (tested areas)

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) 757/2010

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1 $\mu$ g/m<sup>2</sup>。

(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 1 $\mu$ g/m<sup>2</sup>.)

## 測試報告 Test Report

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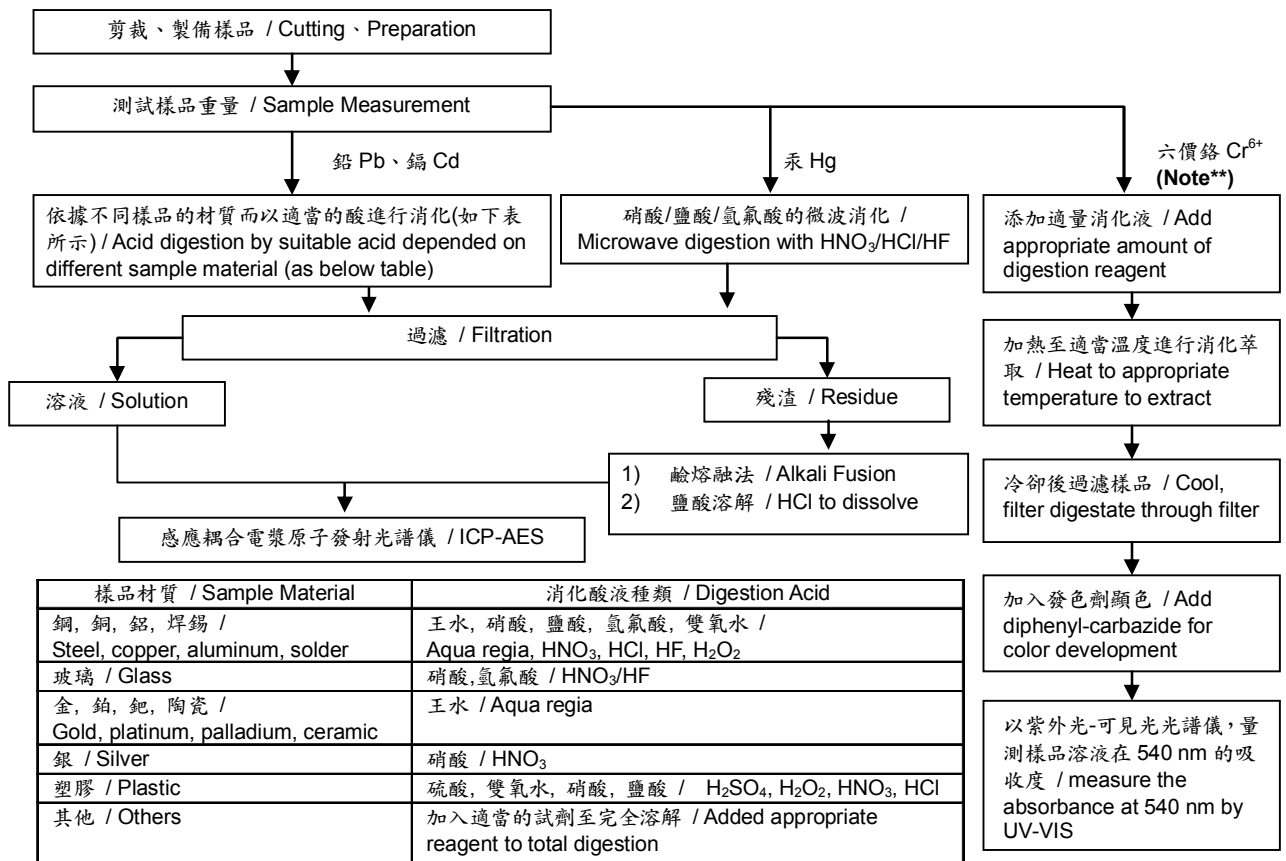
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溫誠工業股份有限公司  
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



### Note\*\* (For IEC 62321)

- (1) 針對非金屬材料加入鹼性消化液，加熱至 90~95°C 萃取。 / For non-metallic material, add alkaline digestion reagent and heat to 90~95°C.
- (2) 針對金屬材料加入純水，加熱至沸騰萃取。 / For metallic material, add pure water and heat to boiling.



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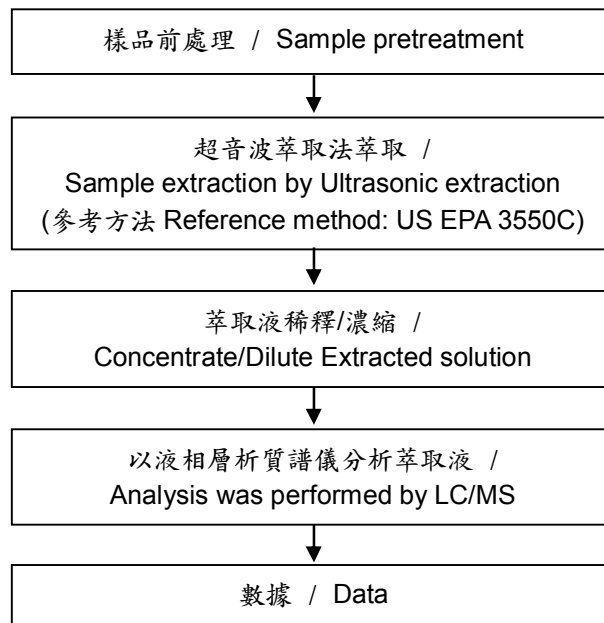
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## 全氟辛酸/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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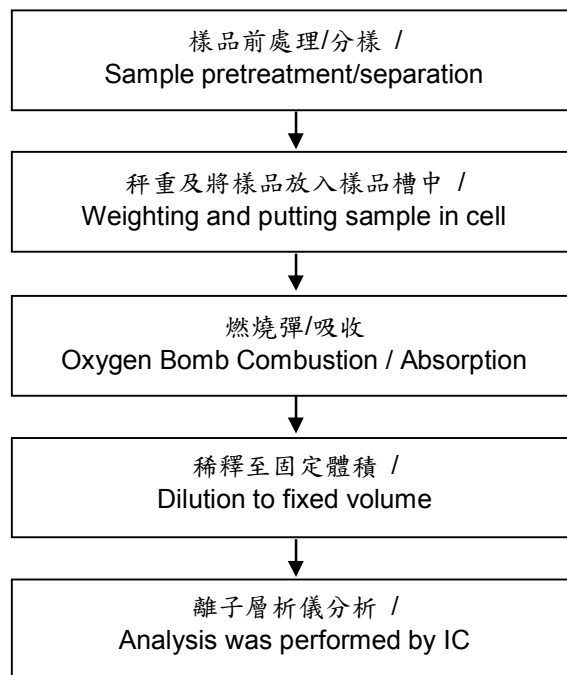
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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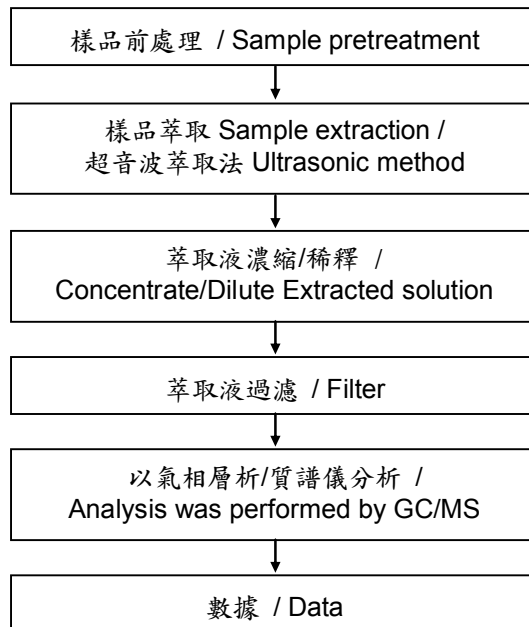
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### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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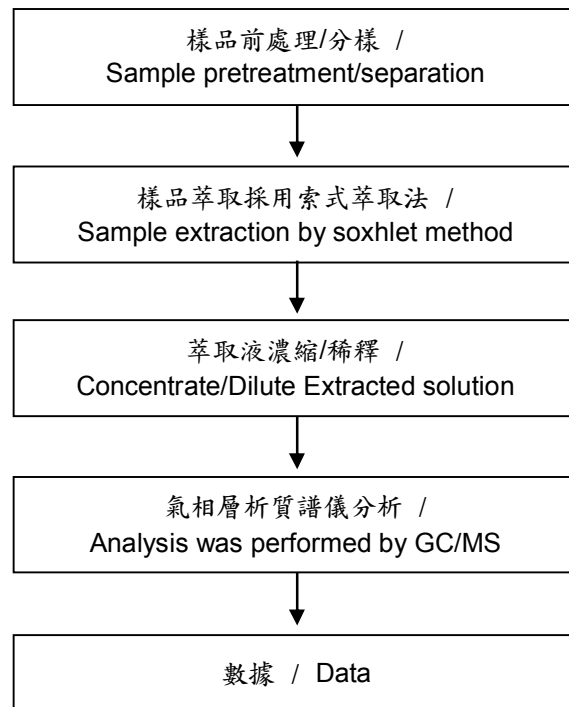
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### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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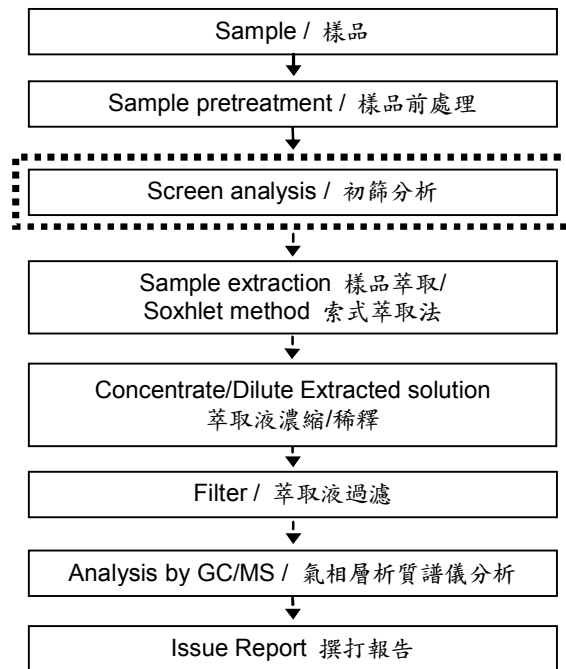
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### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: 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 - - - ▶



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溫誠工業股份有限公司

WEN CHENG LEAD WIRE CO., LTD.

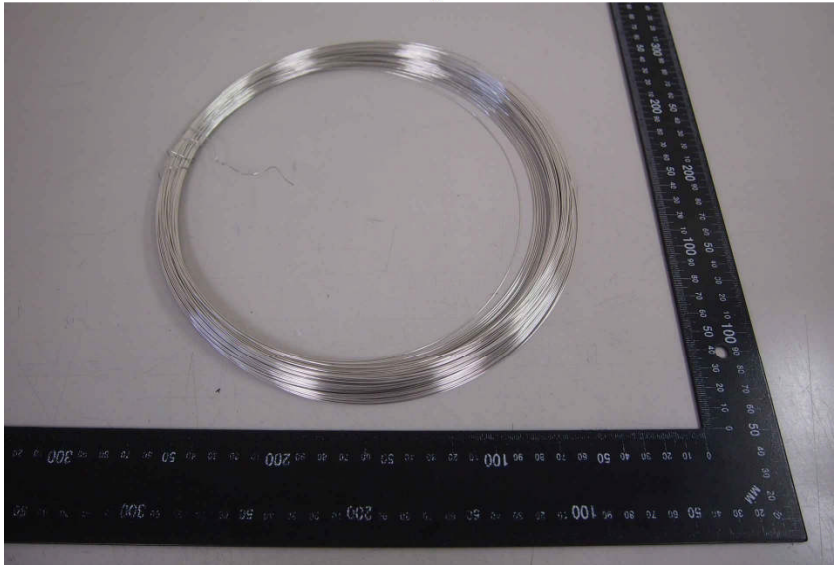
桃園縣新屋鄉頭洲村9鄰11之2號

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\* 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/2014/B3711



\*\* 報告結尾 (End of Report) \*\*

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