

Test Report ^{號碼()}

號碼(No.) : CE/2016/14187

日期(Date): 2016/01/25

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華新科技股份有限公司 WALSIN TECHNOLOGY CORPORATION 桃園市楊梅區高獅路566-1號 566-1, KAO-SHI ROAD, YANG-MEI, TAO YUAN 32668, TAIWAN, R. O. C.

| 以下測試樣品係由申請廠商所提供及码 behalf of the applicant as): | 雀認 | (The following sample(s) was/were submitted and identified by/on |
|---|----|--|
| 送樣廠商(Sample Submitted By) | : | 華新科技股份有限公司(WALSIN TECHNOLOGY CORPORATION) |
| 樣品名稱(Sample Description) | : | MLCC PRODUCTS |
| 樣品型號(Style/Item No.) | : | NPO BME |
| 收件日期(Sample Receiving Date) | : | 2016/01/20 |
| 測試期間(Testing Period) | : | 2016/01/20 TO 2016/01/25 |
| | | |
| | | |
| | | |

测试结果(Test Results) : 請見下一頁 (Please refer to next pages).





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<u>測試結果(Test Results)</u>

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

| 测試項目 (Test Items) | 單位 (Unit) | 测試方法 (Method) | 方法偵測 極限值 (MDL) | 結果 (Result) No.1 |
|--|--------------|---|----------------------|------------------------|
| 鎘 / Cadmium (Cd) | mg/kg | 參考IEC 62321-5: 2013方法,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 | 參考IEC 62321-5: 2013方法,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. |
| 汞 / Mercury (Hg) | mg/kg | 參考IEC 62321-4: 2013方法,以感應耦合電 漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES. | 2 | n. d. |
| 六價鉻 / Hexavalent Chromium Cr(VI) | mg/kg | 参考IEC 62321: 2008方法,以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS. | 2 | n. d. |
| 全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide) | mg/kg | 参考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 | 10 | n. d. |
| 全氟辛酸 / PFOA (CAS No.: 335-67-1) | mg/kg | LC/MS. | 10 | n. d. |



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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | 方法偵測 極限值 (MDL) | 結果 (Result) No.1 |
|---|--------------|---|----------------------|------------------------|
| 多溴聯苯總和 / Sum of PBBs | mg/kg | | - | n. d. |
| 一溴聯苯 / Monobromobiphenyl | mg/kg | 1 F | 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 | 參考IEC 62321-6: 2015方法, 以氣相層析/質 | 5 | n. d. |
| 多溴聯苯醚總和 / Sum of PBDEs | mg/kg | 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 | 0. 2015 and performed by 007 ms. | 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. |
| 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 (α - HBCDD, β - HBCDD, γ - 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. |



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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | 方法偵測 極限値 (MDL) | 結果 (Result) No.1 |
|--|--------------|--|----------------------|------------------------|
| 鄰苯二甲酸二異丁酯 / DIBP (Di- isobutyl phthalate) (CAS No.: 84-69- 5) | mg/kg | 參考IEC 62321-8 (111/321/CD),以氣相層析 儀/質譜儀檢測之. / With reference to IEC 62321-8 (111/321/CD). Analysis was performed by GC/MS. | 50 | n. d. |
| 鄰苯二甲酸二丁酯 / DBP(Dibuty1 phthalate)(CAS No.: 84-74-2) | mg/kg | | 50 | n. d. |
| 鄰苯二甲酸丁苯甲酯 / BBP(Butyl Benzyl phthalate)(CAS No.: 85-68-7) | 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. |
| 鄰苯二甲酸二正辛酯 / DNOP(Di-n- octyl phthalate)(CAS No.: 117-84-0) | 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. |
| 鄰苯二甲酸二正己酯 / DNHP(Di-n- hexyl phthalate)(CAS No.: 84-75-3) | mg/kg | | 50 | n. d. |
| 鹵素 / Halogen | | | | |
| 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) | 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. |



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| 測試項目 (Test Items) | 單位 (Unit) | 測試方法 (Method) | 方法偵測 極限值 (MDL) | 結果 (Result) No.1 |
|----------------------|--------------|--|----------------------|------------------------|
| 绨 / Antimony (Sb) | mg/kg | 參考US EPA 3052方法,以感應耦合電漿原子 發射光譜儀檢測. / With reference to US EPA Method 3052. Analysis was performed by ICP-AES. | 2 | n. d. |
| 鈹 / Beryllium (Be) | mg/kg | 參考US EPA 3052方法,以感應耦合電漿原子 發射光譜儀檢測. / With reference to US EPA Method 3052. Analysis was performed by ICP-AES. | 2 | n. d. |
| 紅磷 / Red phosphorus | ** | 本測試以熱裂解儀分析. / Analysis was performed by Pyrolyzer-GC/MS. | _ | Negative |

備註(Note):

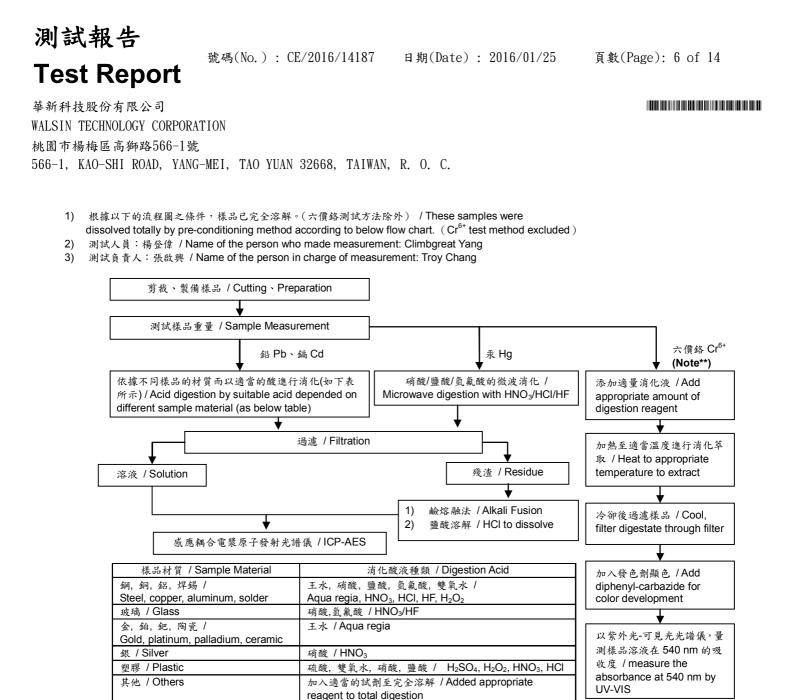
- 1. mg/kg = ppm; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)
- 5. **= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. 樣品的測試是基於申請人要求混合測試,報告中的混合測試結果不代表其中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参考資訊(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 $1\mu g/m^2$ 。

(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 $1\mu g/m^2$.)





Note** (For IEC 62321)

(1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.

(2) 針對金屬材料加入純水,加熱至沸腾萃取. / For metallic material, add pure water and heat to boiling.



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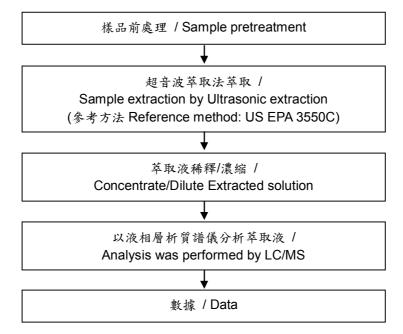
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全氟辛酸/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

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



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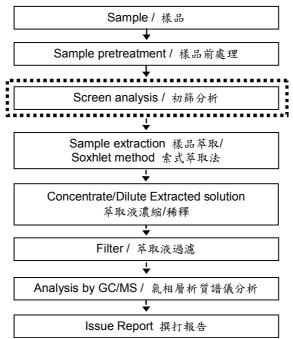
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多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

 測試人員:翁賜彬 / Name of the person who made measurement: Roman Wong
測試負責人:張啟興 / 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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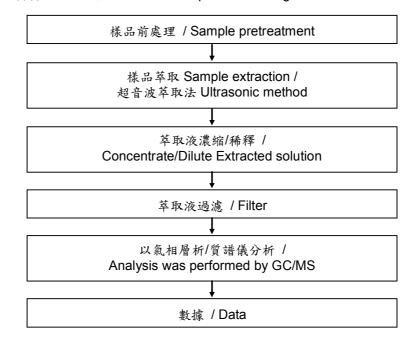
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六溴環十二烷分析流程圖 / HBCDD analytical flow chart

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



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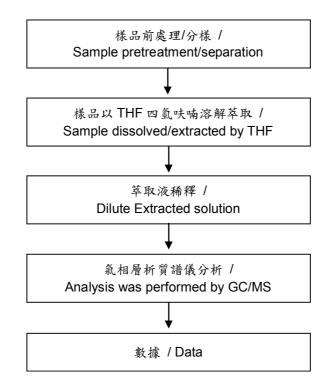
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可塑劑分析流程圖 / Analytical flow chart of phthalate content

■ 測試人員: 徐毓明 / Name of the person who made measurement: Andy Shu

■ 測試負責人:張啟興 / Name of the person in charge of measurement: Troy Chang

【测試方法/Test method: IEC 62321-8】





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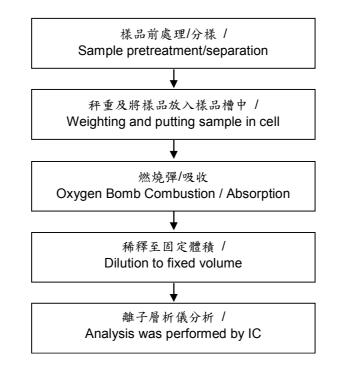
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鹵素分析流程圖 / Analytical flow chart of halogen content

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



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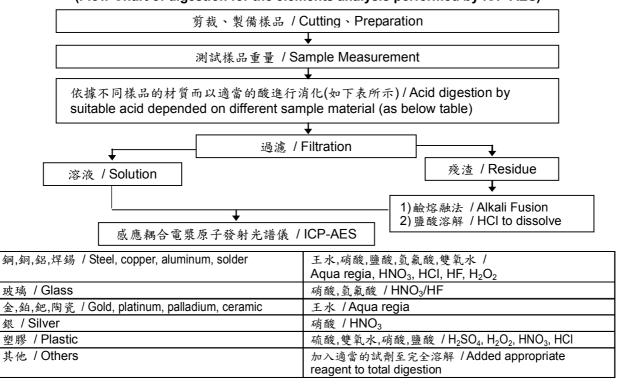
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- 根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 測試人員:楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 測試負責人:張啟興 / Name of the person in charge of measurement: 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)





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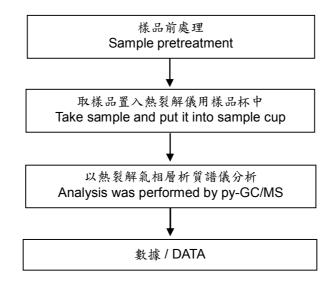
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紅磷分析流程 / Analytical flow chart of Red phosphorus

- 測試人員:林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人:張啟興 / Name of the person in charge of measurement: Troy Chang



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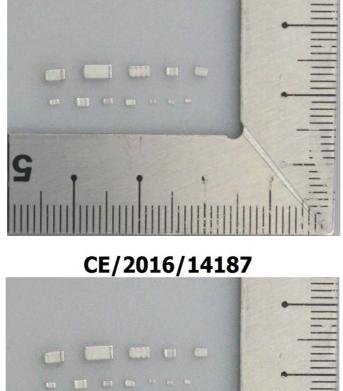
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> * 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. * (The tested sample / part is marked by an arrow if it's shown on the photo.)

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** 報告結尾 (End of Report) **