結論

測試報告

Test Report

結論 (Conclusion)

測試結果 (Test Results)

測試需求 (Test Requested)

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):

送樣廠商 (Sample Submitted By) : 台灣化學纖維股份有限公司 (FORMOSA CHEMICALS & FIBRE CORPORATION)

樣品名稱 (Sample Description) : POLYCARBONATE (聚碳酸酯樹脂)

樣品型號 (Style/Item No.) : TAIRILITE AC387X

收件日期 (Sample Receiving Date) : 2020/05/25

測試期間 (Testing Period) : 2020/05/25 to 2020/05/29

測試需求 (Test Requested) : 依據客戶指定，參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚 , DBP, BBP, DEHP, DIBP. (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBS, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).)

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

結論 (Conclusion) : 根據客戶所提交的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚 , DBP, BBP, DEHP, DIBP的測試結果符合RoHS 2011/65/EU Annex II暨其修訂指令(EU) 2015/863之限值要求。 (Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBS, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.)
測試報告
Test Report
台灣化學纖維股份有限公司
FORMOSA CHEMICALS & FIBRE CORPORATION
台北市敦化北路201號
201, TUNG HWA N. ROAD, TAIPEI, TAIWAN

測試結果(Test Results)

測試部位(PART NAME) No.1  透明塑膠粒 (TRANSPARENT PLASTIC PELLETS)

<table>
<thead>
<tr>
<th>測試項目 (Test Items)</th>
<th>單位 (Unit)</th>
<th>測試方法 (Method)</th>
<th>MDL</th>
<th>結果 (Result) No.1</th>
<th>限值 (Limit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>鉻 / Cadmium (Cd)</td>
<td>mg/kg</td>
<td>參考 IEC 62321-5 (2013), 以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-5 (2013) and performed by ICP-OES.</td>
<td>2</td>
<td>n.d.</td>
<td>100</td>
</tr>
<tr>
<td>鉛 / Lead (Pb)</td>
<td>mg/kg</td>
<td>參考 IEC 62321-4:2013+ AMD1:2017, 以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-4:2013+ AMD1:2017 and performed by ICP-OES.</td>
<td>2</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>水銀 / Mercury (Hg)</td>
<td>mg/kg</td>
<td>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.</td>
<td>8</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>六價鉻 / Hexavalent Chromium Cr(VI)</td>
<td>mg/kg</td>
<td>參考 IEC 62321-4:2013+ AMD1:2017, 以感應耦合電漿發射光譜儀檢測. / With reference to IEC 62321-4:2013+ AMD1:2017 and performed by ICP-OES.</td>
<td>8</td>
<td>n.d.</td>
<td>1000</td>
</tr>
<tr>
<td>多溴聯苯醚和 / Sum of PBBs</td>
<td>mg/kg</td>
<td>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.</td>
<td>5</td>
<td>n.d.</td>
<td>1000</td>
</tr>
</tbody>
</table>
### 測試項目 (Test Items)

<table>
<thead>
<tr>
<th>测试项目 (Test Items)</th>
<th>單位 (Unit)</th>
<th>測試方法 (Method)</th>
</tr>
</thead>
<tbody>
<tr>
<td>多溴聯苯醚總和 / Sum of PBDEs</td>
<td>mg/kg</td>
<td>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.</td>
</tr>
<tr>
<td>一溴聯苯醚 / Monobromodiphenyl ether</td>
<td>mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>二溴聯苯醚 / Dibromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>三溴聯苯醚 / Tribromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>四溴聯苯醚 / Tetrabromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>五溴聯苯醚 / Pentabromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>六溴聯苯醚 / Hexabromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>七溴聯苯醚 / Heptabromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>八溴聯苯醚 / Octabromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>九溴聯苯醚 / Nonabromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>十溴聯苯醚 / Decabromodiphenyl ether</td>
<td>mg/kg</td>
<td>5 n.d.</td>
</tr>
<tr>
<td>邻苯二甲酸二(2-乙基己基)酯 / DEHP (Di-(2-ethylhexyl) phthalate) (CAS No.: 117-81-7)</td>
<td>mg/kg</td>
<td>50 n.d.</td>
</tr>
<tr>
<td>邻苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)</td>
<td>mg/kg</td>
<td>50 n.d.</td>
</tr>
<tr>
<td>邻苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)</td>
<td>mg/kg</td>
<td>50 n.d.</td>
</tr>
<tr>
<td>邻苯二甲酸二异壬酯 / DIBP (Diisononyl phthalate) (CAS No.: 84-69-5)</td>
<td>mg/kg</td>
<td>50 n.d.</td>
</tr>
</tbody>
</table>

### 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. 合格結果之判定係以測試結果與限值做比較。 / The statement of compliance conformity is based on comparison of testing results and limits.
測試報告

Test Report

台灣化學纖維股份有限公司
FORMOSA CHEMICALS & FIBRE CORPORATION
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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。（六價銻測試方法除外）
These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr(VI) test method excluded.)

剪裁、製備樣品 / Cutting, Preparation
測試樣品重量 / Sample Measurement
六價銻 Cr(VI)
金屬 / Metal
非金屬 / Non-metal
ABS / PC / PVC
其他材料 / Others
鹼熔融法 / Boiling water extraction
水蒸氣取樣 / Cool, filter digestate through filter
加入發色劑顯色 / Add diphenyl-carbazide for color development
以 UV-VIS, 量測樣品溶液在 540 nm 的
吸光度 / Measure the absorbance at 540 nm by UV-VIS

酸消解 / Acid digestion with microwave / hotplate
過濾 / Filtration
溶液 / Solution

過濾 / Filtration
溶液 / Solution

1) 無機溶解法 / Alkal fusion
2) 鹽酸溶解 / HCl to dissolve

以 UV-VIS, 量測樣品溶液在 540 nm 的
吸光度 / Measure the absorbance at 540 nm by UV-VIS

超音波溶解 / Dissolving by ultrasonication
在 150~160°C 下消解 / Digesting at 150~160°C
取水層 / Separating to get aqueous phase

加入發色劑顯色 / Add diphenyl-carbazide for color development
多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

1. 初次測試程序 / First testing process
2. 選擇性篩檢程序 / Optional screen process
3. 確認程序 / Confirmation process

Sample / 樣品
↓
Sample pretreatment / 樣品前處理
↓
Screen analysis / 初篩分析
↓
Sample extraction / 樣品萃取
Soxhlet method / 索式萃取法
↓
Concentrate/Dilute Extracted solution / 萃取液濃縮/稀釋
↓
Filter / 萃取液過濾
↓
GC/MS / 氣相層析質譜儀
Test Report

 cocci / Analytical flow chart - Phthalate

【測試方法/Test method: IEC 62321-8】

Sample pretreatment/separation

Sample dissolved/extracted by THF

Dilute Extracted solution

Analysis was performed by GC/MS
Test Report

FORMOSA CHEMICALS & FIBRE CORPORATION

201, TUNG HWA N. ROAD, TAIPEI, TAIWAN

* 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.)

** 報告結尾 (End of Report) **

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SGS Taiwan Ltd. 台灣檢驗科技股份有限公司