

測試報告

Test Report

號碼(No.) : CE/2015/53481

日期(Date) : 2015/05/25

頁數(Page): 1 of 9

新能化工股份有限公司
ZENITH CHEMICAL CORP.

台北市衡陽路10號9樓

9F, NO. 10, HENG YANG RD., TAIPEI, TAIWAN



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) : 新能化工股份有限公司 (ZENITH CHEMICAL CORP.)
樣品名稱(Sample Description) : NICKEL CHLORIDE
收件日期(Sample Receiving Date) : 2015/05/18
測試期間(Testing Period) : 2015/05/18 TO 2015/05/25

測試需求(Test Requested) :

- (1) 依據客戶要求, 參考RoHS 2011/65/EU Annex II 指令測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚。(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) 其他測試項目請見下一頁。 / Please refer to next pages for the other item(s).

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

結論(Conclusion) : (1) 根據客戶所提供的樣品, 其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚的測試結果符合 RoHS 指令 2011/65/EU Annex II 之限值要求 (Based on the performed tests on submitted samples, the test result(s) of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II.)


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

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測試結果(Test Results)

測試部位(PART NAME)No.1 : 綠色結晶體 (GREEN CRYSTAL)

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)	限值 (Limit)
				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.	100
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.	1000
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.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321: 2008方法, 以UV-VIS 檢測. / With reference to IEC 62321: 2008 and performed by UV- VIS.	2	n.d.	1000
砷 / Arsenic (As)	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.	-
鉻 / Chromium (Cr)	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.	-

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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	限值 (Limit)	
多溴聯苯總和 / Sum of PBBs	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.	1000	
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.	-	
多溴聯苯醚總和 / Sum of PBDEs	mg/kg			-	n.d.	1000
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 14582:2007, 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	287000	-	
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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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)

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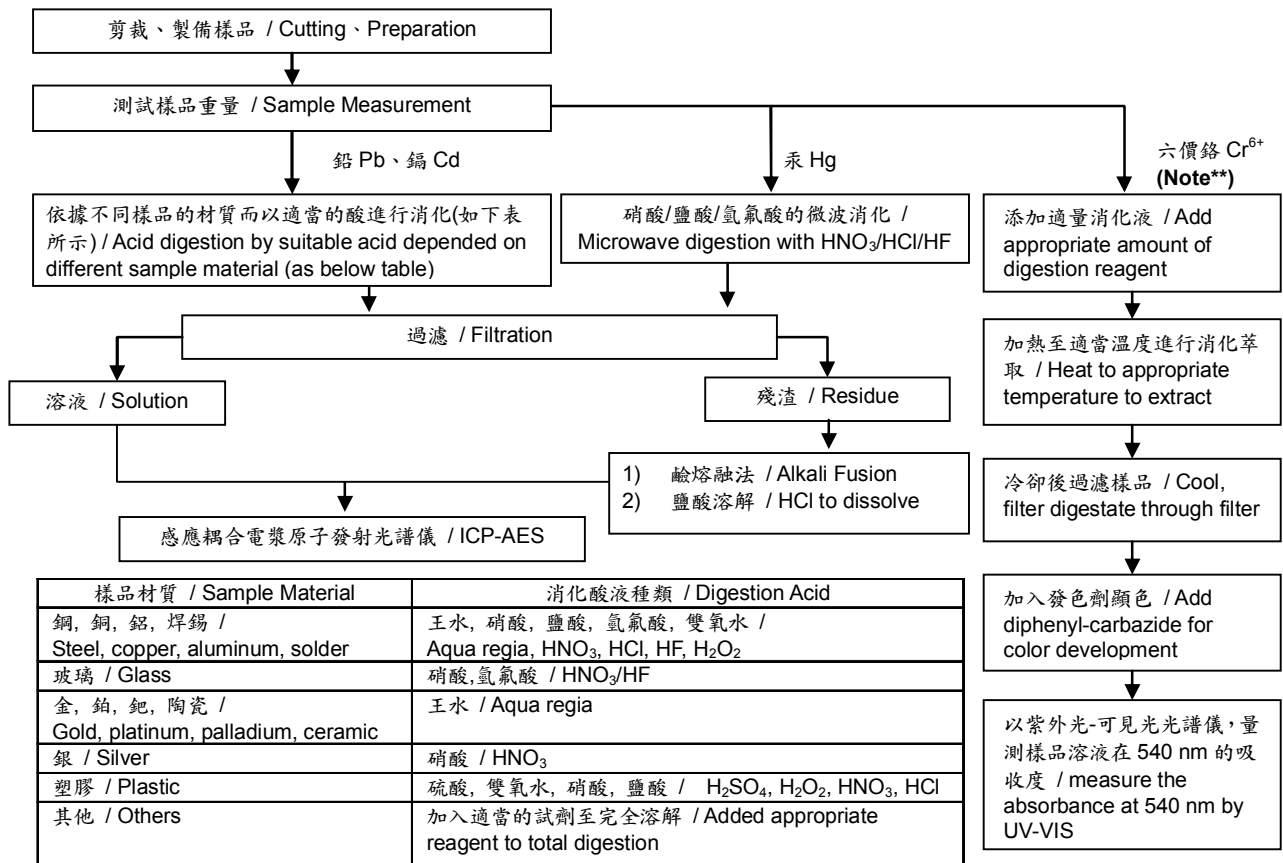
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / 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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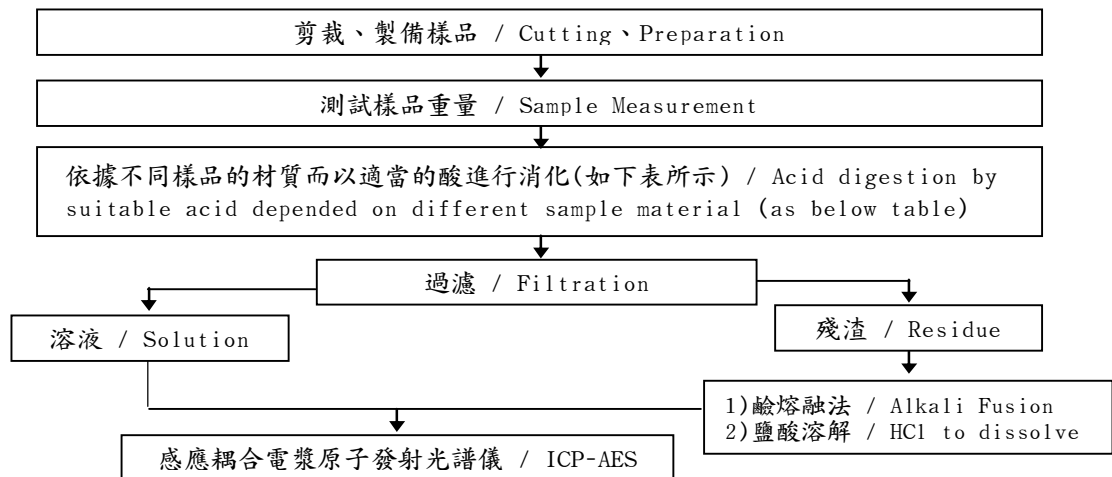
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

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 ₂ O 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 ₂ SO ₄ , H ₂ O 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

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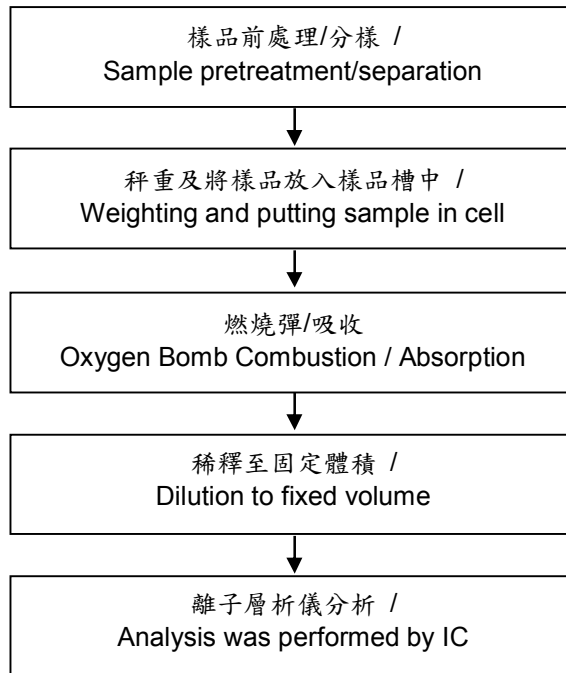
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鹵素分析流程圖 / Analytical flow chart of halogen content

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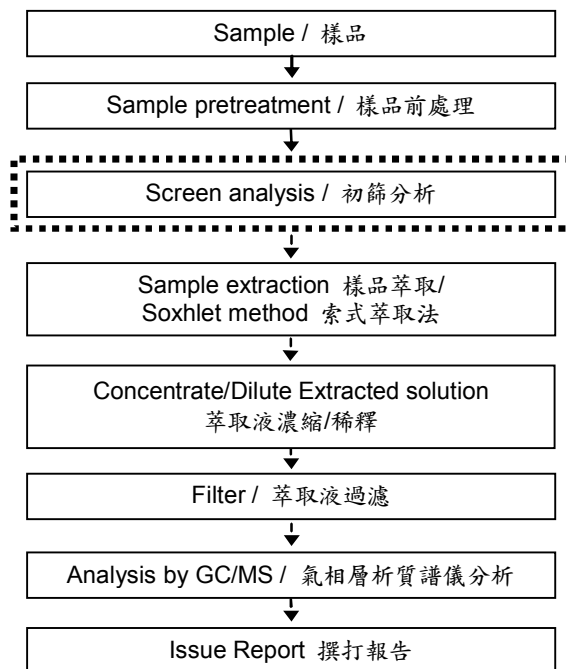
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多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

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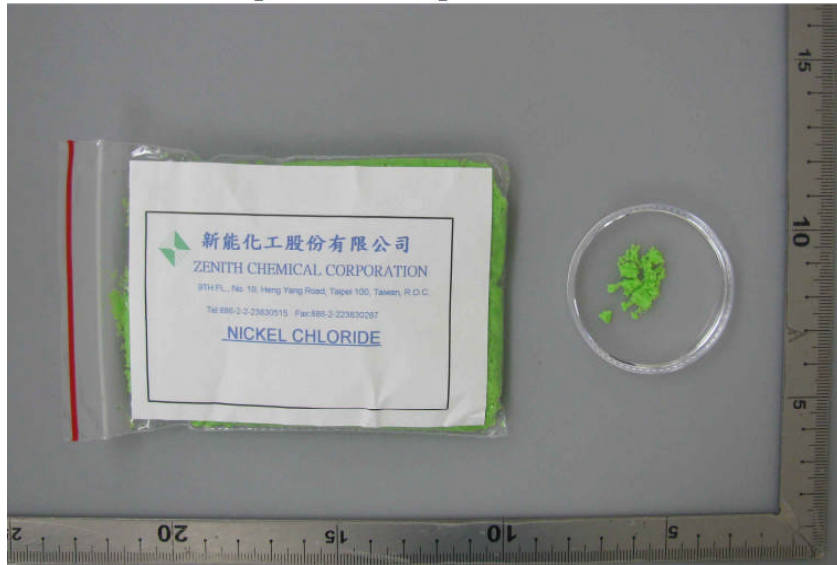
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* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。*
(The tested sample / part is marked by an arrow if it's shown on the photo.)

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** 報告結尾 (End of Report) **

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