

Test Report

頁數(Page): 1 of 14 號碼(No.): CE/2018/33016 日期(Date): 2018/03/19

崑仲股份有限公司 KIN JOIN CO., LTD. 台中市大里區仁化路166號

NO. 166, RENHUA RD., DALI DIST., TAICHUNG CITY 41278, 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):

送樣廠商(Sample Submitted By) 崑仲股份有限公司 (KIN JOIN CO., LTD.)

樣品名稱(Sample Description) THERMOPLASTIC ELASTOMERS (TPR) (熱可塑橡膠)

收件日期(Sample Receiving Date) 2018/03/12

2018/03/12 TO 2018/03/19 測試期間(Testing Period)

測試需求(Test Requested):

(1) 依據客戶指定,參考RoHS 2011/65/EU Annex II及其修訂指令(EU) 2015/863測試編、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, DEHP, DIBP contents in the submitted sample(s).)

(2) 依據客戶指定,檢測 PAHs 及其他測項. (As specified by client, to test PAHs and other item(s).)

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

結論(Conclusion) :

(2) 根據客戶所提供的樣品,18項多環芳香烴測試結果符合德國產品安全委員會(AfPS) GS PAHIS第 1 類 之限值要求. (Based upon the performed tests on the submitted sample(s), the test results of PAHs (18 items) comply with the limits of PAHs requirement (Category 1) as set by German Committee on Product Safety (AfPS) GS PAHs.)





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測試結果(Test Results)

測試部位(PART NAME)No.1 : 白色橡膠粒(WHITE RUBBER PELLETS)

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
鍋 / 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	2	n. d.
鉛 / Lead (Pb)	mg/kg	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),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 62321-7-2 (2017),以UV-VIS 檢測;参考IEC 62321-5 (2013),以 ICP-AES檢測. / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS.; With reference to IEC 62321-5 (2013) and performed by ICP-AES.	8	n. d.
多溴聯苯總和 / Sum of PBBs	mg/kg		-	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	參考IEC 62321-6 (2015),以氣相層析	5	n. d.
五溴聯苯 / Pentabromobiphenyl	mg/kg	/質譜儀檢測. / With reference to	5	n. d.
六溴聯苯 / Hexabromobiphenyl	mg/kg	IEC 62321-6 (2015) and performed by GC/MS.	5	n. d.
七溴聯苯 / Heptabromobiphenyl	mg/kg	Joy Go, mo.	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.



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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
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	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	參考IEC 62321-6 (2015),以氣相層析 /質益儀检測 / With reference to	5	n. d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg	/質譜儀檢測. / With reference to	5	n. d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg	IEC 62321-6 (2015) and performed by GC/MS.	5	n. d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg	by GC/ms.	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.
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n. d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg	参考IEC 62321-8 (2017),以氣相層析 儀/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 (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.



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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
 多環芳香煙 / Polycyclic Aromatic		+		NO. 1
Hydrocarbons (PAHs)				
苊 / Acenaphthene (CAS No.: 83-32-9)	mg/kg		0.2	n. d.
苊烯 / Acenaphthylene (CAS No.: 208-96-8)	mg/kg		0. 2	n. d.
蔥 / Anthracene (CAS No.: 120-12-7)	mg/kg	1	0.2	n. d.
苯駢蒽 / Benzo[a]anthracene (CAS No.: 56-55-3)	mg/kg		0. 2	n. d.
苯騈(a)芘 / Benzo[a]pyrene (CAS No.: 50-32-8)	mg/kg		0.2	n. d.
苯(b)苯駢芴 / Benzo[b]fluoranthene (CAS No.: 205-99-2)	mg/kg		0. 2	n. d.
苯駢苝 / Benzo[g, h, i]perylene (CAS No.: 191-24-2)	mg/kg		0.2	n. d.
苯(k)苯駢芴 / Benzo[k]fluoranthene (CAS No.: 207-08-9)	mg/kg		0. 2	n. d.
Chrysene (CAS No.: 218-01-9)	mg/kg	析/質譜儀檢測. / With reference to	0.2	n. d.
二苯駢蒽 / Dibenzo[a,h]anthracene (CAS No.: 53-70-3)	mg/kg	AfPS GS 2014:01 PAK. Analysis was performed by GC/MS.	0. 2	n. d.
苯駢芴 / Fluoranthene (CAS No.: 206-44-0)	mg/kg		0. 2	n. d.
芴 / Fluorene (CAS No.: 86-73-7)	mg/kg	1	0.2	n. d.
茚酮芘 / Indeno[1, 2, 3-c, d] pyrene (CAS No.: 193-39-5)	mg/kg		0. 2	n. d.
茶 / Naphthalene (CAS No.: 91-20-3)	mg/kg	1 Γ	0.2	n. d.
菲 / Phenanthrene (CAS No.: 85-01-8)	mg/kg] [0. 2	n. d.
芘 / Pyrene (CAS No.: 129-00-0)	mg/kg] [0.2	n. d.
苯(j)苯駢芴 / Benzo[j]fluoranthene (CAS No.: 205-82-3)	mg/kg		0. 2	n. d.
苯駢(e)芘 / Benzo[e]pyrene (CAS No.: 192-97-2)	mg/kg		0. 2	n. d.
多環芳香烴18項總和 / Sum of 18 PAHs	mg/kg		-	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	結果 (Result)
(1000 1000)		(MDL)		No. 1
鹵素 / Halogen				
鹵素(氟)/ Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50	n. d.
鹵素(氣)/ Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	參考BS EN 14582 (2016),以離子層析 儀分析. / With reference to BS EN	50	n. d.
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	14582 (2016). Analysis was performed by IC.	50	n. d.
鹵素(碘)/ Halogen-Iodine(I)(CAS No.: 14362-44-8)	mg/kg		50	n. d.
三丁基錫 / Tributyl Tin (TBT)	mg/kg		0.03	n. d.
三苯基錫 / Triphenyl Tin (TphT)	mg/kg	参考ISO 17353 (2004),以氣相層析儀 /火焰光度偵測器檢測. / With reference to ISO 17353 (2004).	0.03	n. d.
氧化雙三丁基錫 / Bis(tributyltin)oxide (TBTO)*** (CAS No.: 56-35-9)	mg/kg		-	n. d.
二丁基錫 / Dibutyl Tin (DBT)	mg/kg	Analysis was performed by GC/FPD.	0.03	n. d.
二辛基錫 / Dioctyl Tin (DOT)	mg/kg		0.03	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)
- 5. **(\ldot)**:

若鉻含量小於六價鉻之方法偵測極限值,則六價鉻為n.d.,不須再測試六價鉻。

The result of Cr(VI) is "n.d." as the result of Chromium (Cr) is less than the MDL of Cr(VI), and confirmation test of Cr(VI) is not required.

若鉻含量未小於六價鉻之方法偵測極限值,需進行六價鉻測試。

If the Chromium (Cr) content is not less than the MDL of Cr(VI), confirmation test of Cr(VI) is required.

- 6. ***: 該物質是由三丁基錫之測試結果計算得知. 其MDL是針對三丁基錫之評估. (The substance was calculated by the test results of Tributyl Tin. The MDL was evaluated for Tributyl Tin.)
- 7. 參數換算表 / Parameter Conversion Table: http://twap.sgs.com/sgsrsts/chn/download-REACH_tw.asp



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Δ 德國產品安全委員會(AfPS) GS PAHs 要求 /

AfPS (German commission for Product Safety): GS PAHs requirements

	第1類(Category 1)	第2類(Ca	ategory 2)	第3類(C	ategory 3)
項目 (Parameter)	意圖放入嘴內的材料或 玩具會與皮膚有所接觸 (超過30秒). (Material indented to be put in the mouth or toys with intended skin contact (longer than	不屬於第1類的材料並可預見與皮膚接觸 逾30秒(長期或經常與皮膚接觸). (Materials not falling under category 1 with foreseeable contact to skin for longer than 30 seconds (long-term skin or frequent contact).)		可預見與皮膚接觸短於30秒(短期與皮膚 接觸),以及不屬於第1類或第2類的材料. (Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 seconds (short-term skin contact).)	
	30 s).)	列於2009/48/EC之 玩具 (Toy under 2009/48/EC)	列於德國產品安全法 之其他產品(Other products under ProdSG)	列於2009/48/EC之 玩具(Toy under 2009/48/EC)	列於德國產品安全法 之其他產品(Other products under ProdSG)
Naphthalene	< 1		< 2	<	10
Acenaphthylene					
Acenaphthene					
Fluorene					
Phenanthrene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Anthracene					
Fluoranthene					
Pyrene					
Benzo[a]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[k]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[a]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno[1, 2, 3-c, d] pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo[a, h]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
18項PAH總濃度 (Sum of 18 PAH)	< 1	< 5	< 10	< 20	< 50

單位(Unit):mg/kg



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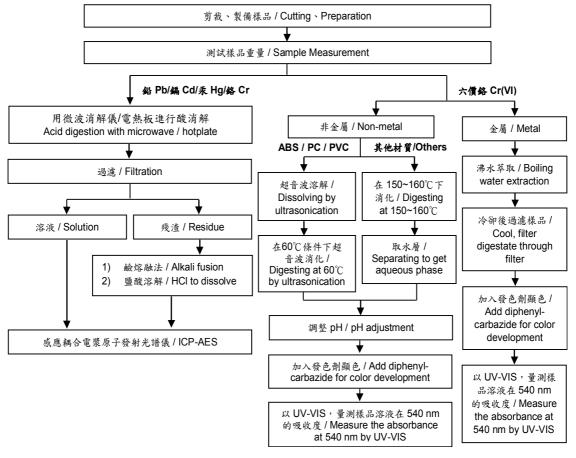
重金屬流程圖 / Analytical flow chart of Heavy Metal

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. (Cr6+ test method excluded)

測試人員:王志瑋 / Technician: JR Wang

測試負責人:張啟興/Supervisor: Troy Chang





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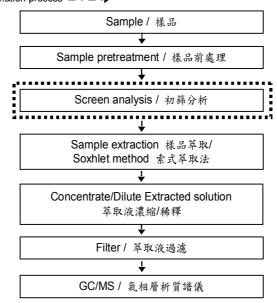
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多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

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 - - - - ▶





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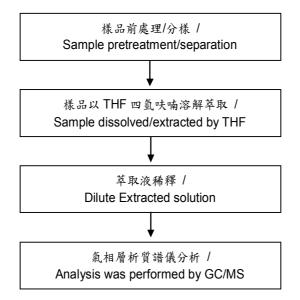
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可塑劑分析流程圖 / Analytical flow chart - Phthalate

測試人員:徐毓明 / Technician: Andy Hsu

測試負責人:張啟興 / Supervisor: Troy Chang

【測試方法/Test method: IEC 62321-8】





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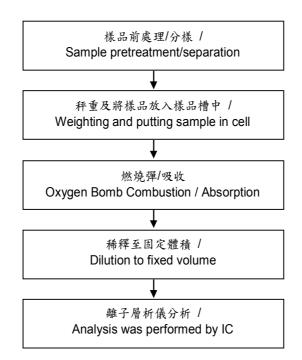
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鹵素分析流程圖 / Analytical flow chart - Halogen

日期(Date): 2018/03/19

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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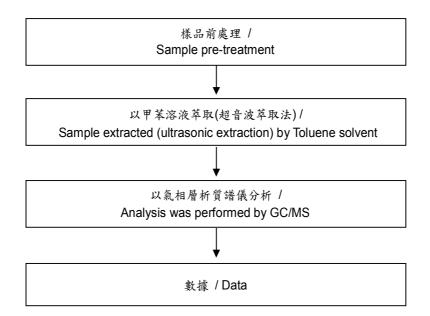
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<u>多環芳香烴分析流程圖 /</u> Analytical flow chart - PAHs (Polycyclic Aromatic Hydrocarbons)

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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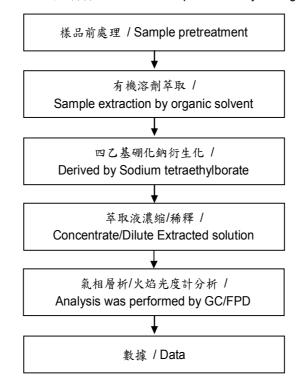
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有機錫分析流程圖 / Analytical flow chart - Organic-Tin

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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> * 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) **